AWS Billing and Cost Management

User Guide

Version 2.0

AWS Billing and Cost Management: User Guide

Table of Contents

What is AWS Billing and Cost Management?

AWS Billing and Cost Management is the service that you use to pay your AWS bill, monitor your usage, and budget your costs.

The service automatically charges the credit card you provided when you signed up for a new account with AWS. Charges appear on your credit card bill monthly. You can view or update credit card information, and designate a different credit card for AWS to charge, on the **Payment Methods** page in the Billing and Cost Management console. For more information about accessing the console, see Opening the Billing and Cost Management Console and Dashboard (p. 33).

> **Note**
> If you chose India as your contact address country when you signed up, you might be an Amazon Internet Services Pvt. Ltd (AISPL) customer, and you might need to approve the charges before your credit card can be billed. For more information about paying as an AISPL customer, see To pay your AISPL bill (p. 87).

Topics

Features in Billing and Cost Management

The Billing and Cost Management service provides features that you can use to estimate and plan your AWS costs, receive alerts if your costs exceed a threshold that you set, assess your biggest investments in AWS resources, and, if you work with multiple AWS accounts, simplify your accounting.

Analyzing Costs with Graphs

The AWS Billing and Cost Management console includes the no-cost Cost Explorer (p. 43) tool for viewing your AWS cost data as a graph. With Cost Explorer, you can filter graphs by API operations, Availability Zones, AWS service, custom cost allocation tags, Amazon EC2 instance type, purchase options, region, usage type, usage type groups, or, if you use Consolidated Billing, by linked account. You can also see a forecast of future costs based on your historical cost data. For more information, see Customizing Your Cost Explorer Cost Analysis (p. 48).

Budgets

You can use budgets to track your AWS costs. Budgets use the cost visualization provided by Cost Explorer to show you the status of your budgets and to provide forecasts of your estimated costs. You can also use budgets to create CloudWatch alarms that notify you when you go over your budgeted amounts, or when your estimated costs exceed your budgets.

If you are using consolidated billing, only the payer account can create and manage budgets. Individual linked accounts cannot create or manage budgets. You can grant linked accounts read-only access to your budgets using an IAM policy. For more information, see Controlling Access (p. 103).

For more information about budgets, see Managing Your Costs with Budgets (p. 65).

Alerts on Cost Limits

You can use Amazon CloudWatch to create billing alerts when your AWS costs exceed specified thresholds. For more information, see Monitoring Charges with Alerts and Notifications (p. 33).

Payment Currencies

When you set a payment currency, you can view your estimated bills and pay your AWS invoices in your preferred currency.

The currency conversion happens after your bill has been finalized. Until then, all preferred currency amounts shown in the console are estimated in USD. AWS guarantees your exchange rate, so that refunds use the same exchange rate as your original transaction.

Additional details:

- AWS Marketplace and DevPay invoices are not eligible for this service and will be processed in USD.
- This service is available only if your default payment method is a Visa or MasterCard.
- The rates change daily. The rate applied to your invoice will be the current rate when your invoice is created. You can check the current rate on the Billing and Cost Management console.
- You can switch back to USD.
- Currency conversion is provided by Amazon Services LLC.

AWS Cost and Usage reports

You can choose to have AWS publish billing reports to an Amazon Simple Storage Service (Amazon S3) bucket that you own. You can choose to receive reports that break down your costs by the hour or month, by product or product resource, or by tags that you define yourself. AWS updates the report in your bucket once a day in comma-separated value (CSV) format. You can view the reports using spreadsheet software such as Microsoft Excel or Apache OpenOffice Calc, or access them from an application using the Amazon S3 API.

> **Important**
> If you are a Consolidated Billing customer, the Amazon S3 bucket that you designate to receive the reports must be owned by the payer account in your account family. That is, you cannot receive billing reports in a bucket that is owned by a linked account. You can also have billing reports break down your costs by linked account if you are a Consolidated Billing customer. For more information, see Group Data by Linked Accounts.

For more information about each of these reports and how to configure them, see Understanding Your Usage with Billing Reports (p. 17).

Consolidated Billing

The AWS platform is designed to accommodate every size of company, from small startups to enterprises. If your company is large, or likely to grow, you might want to set up multiple AWS accounts that reflect your company's structure. For example, you can have one account for the entire company and accounts for each employee, you can have an account for the entire company with IAM users for each employee, or you can have an account for the entire company, accounts for each department or team within the company, and accounts for each employee.

If you set up multiple AWS accounts, you can choose to have each account receive a bill (that is, function as a payer account), or you can use the Consolidated Billing feature to consolidate multiple linked accounts under one payer account. Consolidated Billing is designed to simplify your accounting and let you take advantage of lower-priced usage tiers for many services.

To learn more, see Paying Bills for Multiple Accounts Using Consolidated Billing (p. 88).

Are You a First-Time Billing User?

If you're new to the AWS Billing and Cost Management service, we recommend that you begin with the Getting Started (p. 4) section, which shows you how to use the **Billing and Cost Management** console.

If you're new to AWS altogether, we recommend that you review Getting Started with AWS. This guide has useful general information about using AWS and managing your account.

Related Services

The Billing and Cost Management service is tightly integrated with the AWS Identity and Access Management (IAM) service. You use the IAM service in conjunction with Billing and Cost Management to ensure that other people who work in your account have only as much access as they need to get their job done.

For more information about how to allow or deny access to your billing information, see Controlling Access (p. 103).

The IAM service is also how you control access to all of your AWS resources, not just your billing information, so it's important to familiarize yourself with the basic concepts and best practices of IAM before you get too far along with setting up the structure of your AWS account.

For details about how to work with IAM and why it is important to do so, see IAM Concepts and IAM Best Practices in the *IAM User Guide*.

Getting Started

This Getting Started section provides steps for a few of the most common tasks you're likely to want to perform using the Billing and Cost Management console.

Topics

Step 1: Review Your Usage

Billing and Cost Management offers you a number of different ways to view and monitor your AWS usage. Here's how to quickly check to see what you've used so far in the current month.

To open the Billing and Cost Management console and review your usage and charges

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.

   The console opens to the **Dashboard**, where you can see your current month-to-date usage graphs.
2. On the navigation pane, choose the applicable option:

   Cost Explorer
   Choose **Cost Explorer** to track and analyze your AWS usage. Cost Explorer is free for all accounts.

   For more information about Cost Explorer, see Analyzing Your Costs with Cost Explorer (p. 43).

   Budgets
   Choose **Budgets** to view, create, or delete budgets for your account.

   For more information about budgets, see Monitoring Your Usage and Costs (p. 32).

   Bills
   Choose **Bills** to see details about your current charges.

Payment History
Choose **Payment History** to see your past payment transactions.

Step 2: Turn on AWS Cost and Usage reports

In addition to the features described in step 1, AWS Billing and Cost Management offers a set of billing reports about your AWS usage. The reports show you which AWS services that you used, the amount of time that you used them, the amount of data that you transferred in and out of storage, the average storage space that you use, and more.

Billing and Cost Management can deliver your reports to an Amazon S3 bucket that you create. Amazon S3 is the AWS cloud storage offering. If you are using Consolidated Billing, the Amazon S3 bucket must be owned by the payer account. Reports cannot be delivered to a bucket owned by a linked account.

To create an Amazon S3 bucket for your reports

1. Open the Amazon S3 console at https://console.aws.amazon.com/s3/.
2. Choose **Create Bucket**.
3. In the dialog box, for **Bucket Name**, enter the name for your bucket.

   Note
   Your bucket name must be all lowercase, 3-63 characters long, and cannot contain spaces. You can use lowercase letters, numbers, hyphens (-), and periods (.) in your bucket name.
4. Choose the region that you want your Amazon S3 bucket to be in.
5. **Note**
   (Optional) If you choose **Set Up Logging**, you can enable access logs that track who accesses your Amazon S3 bucket. Choose the bucket that you want the access logs to be delivered to, and the name of a folder that you want the logs to be stored in, and then choose **Create**.

   Choose **Create**.

Now that you have an Amazon S3 bucket, you need to give the Billing and Cost Management service permission to deliver the billing reports to that bucket.

To grant Billing and Cost Management permission to deliver reports to your Amazon S3 bucket

1. Open the Amazon S3 console at https://console.aws.amazon.com/s3/.
2. On your bucket menu, choose the image of the magnifying glass () next to your billing bucket.
3. On the bucket page, choose **Permissions**.
4. Under **Permissions**, choose **Add bucket policy**.
5. In the dialog box text area, paste the following text:

```
{
  "Version": "2012-10-17",
  "Statement": [
  {
    "Effect": "Allow",
    "Principal": {
      "AWS": "386209384616"
    },
```

```
    "Action": [
      "s3:GetBucketAcl",
      "s3:GetBucketPolicy"
    ],
    "Resource": "arn:aws:s3:::bucketname"
  },
  {
    "Effect": "Allow",
    "Principal": {
      "AWS": "386209384616"
    },
    "Action": "s3:PutObject",
    "Resource": "arn:aws:s3:::bucketname/*"
  }
  ]
}
```

6. Replace ***bucketname*** with the name of your bucket.
7. Choose **Save**.

Now that you have an Amazon S3 bucket for your billing reports, you can turn on the reports.

To create an AWS Cost and Usage report

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Reports**.
3. Choose **Create report**.
4. For **Report name**, type a name for your report.
5. For **Time unit**, choose **Hourly** if you want the line items in the report to be aggregated by the hour. Choose **Daily** if you want the line items in the report to be aggregated by the day.
6. For **Include**, to include the IDs of each individual resource in the report, select **Resource IDs**.

   To include manifests that enable you to upload the report to Amazon Redshift or Amazon QuickSight, select **Redshift Manifest** or **QuickSight Manifest**. If you select a manifest, your report is stored with `.gz` compression.
7. For **Enable support for...**, select whether you want to upload your AWS Cost and Usage report to Amazon Redshift or Amazon QuickSight.
8. Choose **Next**.
9. For **S3 bucket**, type the name of the bucket where you want the reports to be delivered, and choose **Verify**.

   The bucket must have appropriate permissions to be valid. For more information on adding permissions to the bucket, see Editing Bucket Permissions. For an example policy, choose **sample policy**.
10. For **Report path prefix**, type the prefix that you want prepended to the name of your report.
11. Choose **Next**.
12. Review the settings for the report. After you have reviewed them, choose **Review and Complete**.

Step 3: Download or Print Your Bill

AWS Billing and Cost Management closes the billing period at midnight on the last day of each month, and then calculates your bill. Most bills are ready for you to download by the seventh accounting day of the month.

To download your bill

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Bills**.
3. For **Date**, choose the month of the bill you want to work with.
4. Choose **Download CSV** to download a comma-separated variable file, or choose **Print**.

Step 4: Set Up Alerts to Monitor Charges to Your Account

You can use Amazon CloudWatch to create and email alerts to you when your monthly charges for using an AWS product exceed a threshold that you set. These alerts can only be set for exceeding a threshold, so if you want to be alerted before a certain threshold is reached, create an alert for a threshold that is lower than the one you don't want to exceed. Alerts are emails that AWS sends when a CloudWatch alarm triggers. CloudWatch alarms are alarms that monitor your services. To create alarms that notify you, you must first enable alerts and then create the alarm. You need to enable alerts only once.

> **Important**
> Turning on billing alerts enables the creation of billing alarms, but does not create any alarms for you. For best results, wait at least 15 minutes after enabling alerts before you create a CloudWatch alarm.

By default, IAM users don't have access to billing information, and therefore do not have access to billing alerts or alarms. If you are logged in to AWS as an IAM user, verify that the AWS account owner has granted IAM users access to the billing information. For more information about IAM restrictions, see Granting Access to Your Billing Information and Tools (p. 103).

> **Note**
> If your account is linked to a reseller account, billing alerts are not available for your account.

To enable billing alerts

Before you create a billing alarm, you must enable billing alerts. You need to do this only once. After you enable billing alerts, you can't turn them off.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Preferences**.
3. Select the **Receive Billing Alerts** check box.
4. Choose **Save preferences**.

To create a billing alarm

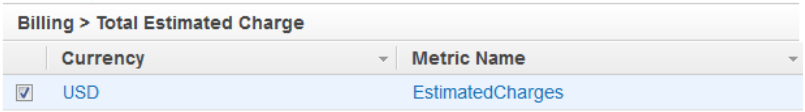
1. (Optional) If you want to send your alert to an AWS-managed distribution list instead of a single email address, follow these steps to set up an Amazon Simple Notification Service (Amazon SNS) notification list. If you want to send your alert to a single email address, go to step 2.

   To create an Amazon SNS notification list:

   a. Open the Amazon SNS console at https://console.aws.amazon.com/sns/.
   b. On the navigation pane, choose **SNS Home**.
   c. In the **Common actions** section, choose **Create topic**.

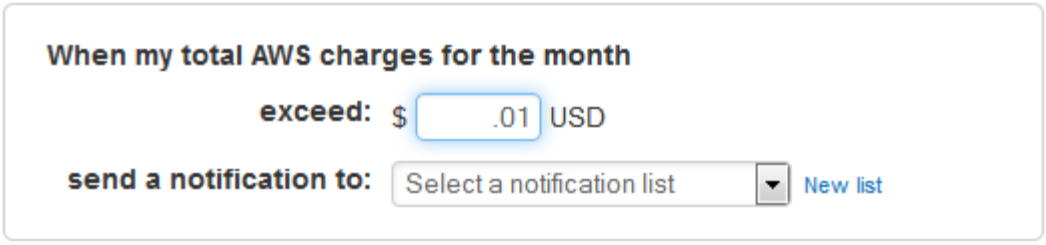
d. In the dialog box, for **Topic name**, enter the name for your notification list.
e. (Optional) If you want to use this notification list to send SMS messages, for **Display name**, enter the name you want to appear on your SMS messages.
f. Choose **Create topic**.

2. Open the CloudWatch console at https://console.aws.amazon.com/cloudwatch/.
3. If necessary, change the region on the navigation bar to US East (N. Virginia). The billing metric data is stored in this region, even for resources in other regions.
4. On the navigation pane, under **Metrics**, choose **Billing**.
5. In the list of billing metrics, select the check box next to **Currency** USD, for the metric named **EstimatedCharges**, as shown in the following image.



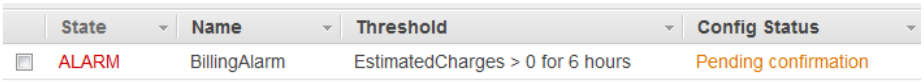
6. Choose **Create Alarm**.
7. Define the alarm as follows.

a. If you want the alarm to trigger as soon as you go over the free tier, set **When my total AWS charges for the month exceed** to $.01. This means that you'll receive a notification as soon as you incur a charge. Otherwise, set it to the amount you want to trigger the alarm, and you will be notified when you go over that amount.
b. Choose the **New list** link next to the **send a notification to** box.



c. When prompted, enter your email address or choose your Amazon SNS notification from the drop down.
d. Choose **Create Alarm**.

8. In the **Confirm new email addresses** dialog box, confirm the email address or choose **I will do it later**. If you don't confirm the email address now, the alarm remains in the `Pending confirmation` status until you do so, and does not send an alert. To view the status of your alarm, choose **Alarms** in the navigation pane.



For more information about CloudWatch alarms, see Monitor Your Estimated Charges Using Amazon CloudWatch in the *Amazon CloudWatch User Guide*.

Step 5: Get Answers to Questions About Your Bill

If you have questions about your bill, see the AWS Knowledge Center.

If you don't find the answer you're looking for in the Knowledge Center, you can access account and billing support free of charge. For more information about AWS Support, see Contacting Customer

Support About Your Bill (p. 115). For information about closing your account, see Closing an Account (p. 84).

Where Do I Go From Here?

Explore some of the features designed to help you dig a little deeper and streamline your accounting practices.

- Tracking Your Free Tier Usage (p. 12)
- Understanding Your Usage with Billing Reports (p. 17)
- Customizing Your Cost Explorer Cost Analysis (p. 48)
- Managing Your Costs with Budgets (p. 65)
- Paying Bills for Multiple Accounts Using Consolidated Billing (p. 88)

Using the Free Tier

You can test-drive some AWS services free of charge, within certain usage limits. AWS calls this the AWS Free Tier. The free tier is designed to give you hands-on experience with a range of AWS services at no charge. For example, you can explore AWS as a platform for your business by setting up a test website with a server, alarms, and database. You can also try out services for developers, such as AWS CodePipeline, AWS Data Pipeline, and AWS Device Farm.

When you create an AWS account, you are automatically signed up for the free tier for 12 months. Your free tier eligibility expires at the end of the 12-month period. When your free tier expires, AWS starts charging the regular rates for any AWS services and resources that you are using.

To avoid charges while on the free tier, you must keep your usage below the free tier limits. You are charged for any usage that exceeds the limits. To help you stay within the limits, you can track your free tier usage and set a billing alarm to notify you if you start incurring charges. For more information, see Free Tier Limits (p. 11), Tracking Your Free Tier Usage (p. 12), and Creating a Billing Alarm (p. 13). For tips about avoiding unexpected charges, see Avoiding Unexpected Charges (p. 77). Contact AWS Customer Support if you require additional explanation of unexpected charges on your bill.

If you don't use the full benefits provided by the free tier in a given month, the benefits don't roll over to the next month. To maximize your free tier benefits, be sure to spend time with AWS each month, trying out the services that you're curious about.

For more information about which services offer a free tier, see AWS Free Tier.

Topics

Eligibility for the Free Tier

You receive the benefits of the free tier automatically for 12 months after you sign up for an AWS account. If you exceed the usage limits of the free tier, use a service that does not provide free tier benefits, or continue to use AWS after you are no longer eligible for the free tier, you are charged at the standard billing rates for your AWS usage. For a list of services that offer free tier benefits, see AWS Free Tier.

If you have an existing AWS account but you're not sure if it's still eligible for the free tier, open the Billing and Cost Management console. If your account is eligible for the free tier, you will see a message in the **Alerts & Notifications** section, as shown in the following screenshot.

You can also choose **Bills** in the navigation pane of the console to see when you created your AWS account. In the **Date** drop-down box, you'll find one bill for each month since you opened your account, even if you did not have charges.

If your company created your AWS account, check whether the account uses Consolidated Billing. Consolidated Billing is a feature that combines payment for multiple AWS accounts under a single AWS account, called the *payer account*. For accounts that use Consolidated Billing, the creation date of the payer account determines free tier eligibility.

When your free tier eligibility is coming to an end, AWS sends a notification to the email address that you used when you signed up for AWS. If you decide to continue using AWS after your free tier eligibility ends, be sure to clean up any resources that you no longer need to avoid being charged for their use. If you decide not to continue using AWS, you can close your account.

Free Tier Limits

All services that offer a free tier have limits on what you can use without being charged. Many services have multiple types of limits. For example, Amazon EC2 has limits on both the type of instance you can use, and how many hours you can use in one month. Amazon S3 has a limit on how much memory you can use, and also on how often you can call certain operations each month. For example, the free tier covers the first 20,000 times you retrieve a file from Amazon S3, but you are charged for additional file retrievals. Each service has limits that are unique to that service.

Some of the most common limits are by time, such as hourly or by the minute, or by requests, which are the requests you send to the service, also known as API operations. For more information about free tier limits, see AWS Free Tier.

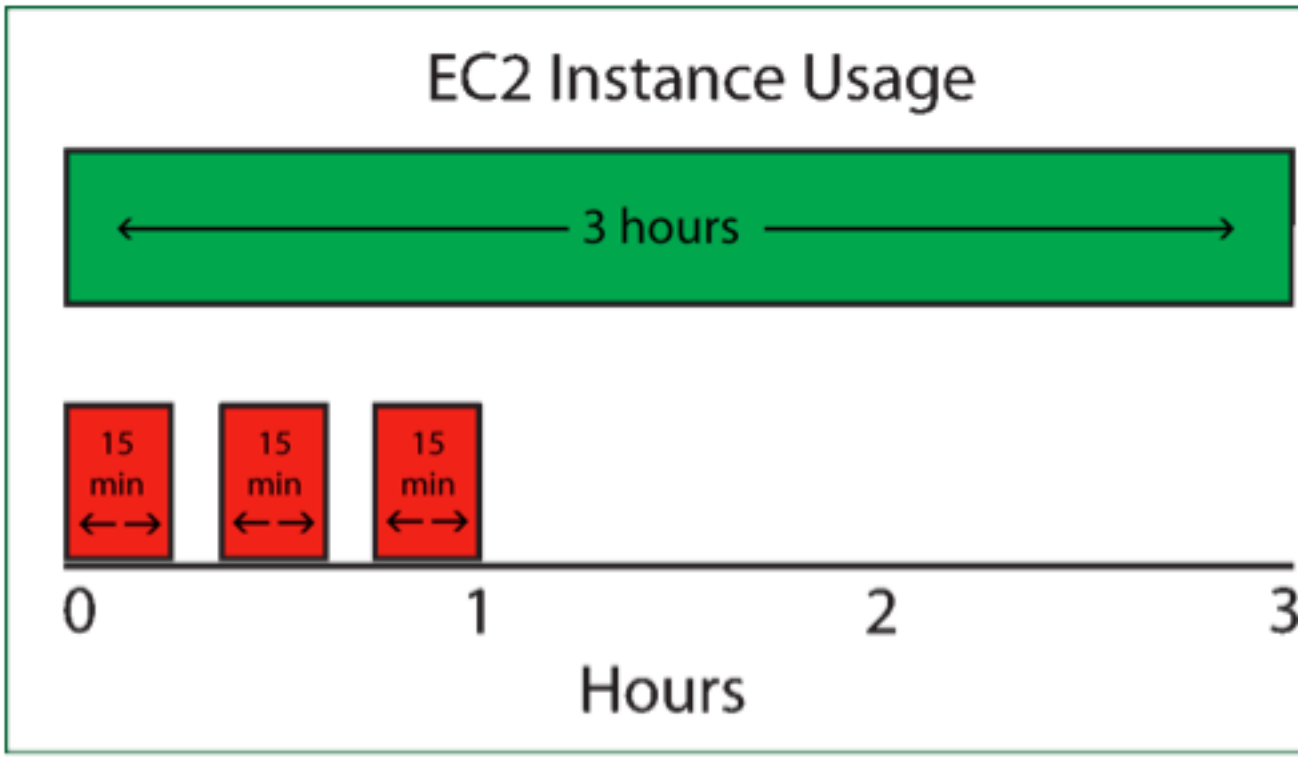
Topics

Hourly Usage in the Free Tier

Some services, such as Amazon EC2, Amazon RDS, and Elastic Load Balancing, charge for usage on an hourly basis. The free tier for these services provides you with a monthly allotment of hours for the first 12 months. For example, the free tier for Amazon EC2 provides you with 750 hours usage of Linux (any combination of `t2.micro` and `t1.micro` instances), plus 750 hours usage of Windows (any combination of `t2.micro` and `t1.micro` instances). How you divide this allotment is up to you. For example, you can use one Linux instance continuously for a month, or 10 Linux instances for 75 hours a month.

In some cases, leaving your resources running maximizes your free tier benefits. For example, if you run an Amazon EC2 instance for only a portion of an hour, AWS counts that as an entire hour. Therefore, if you stop and start an Amazon EC2 instance three times in a single hour, you use up three

hours of your monthly allotment. The following diagram illustrates how this works. Both the red and green usage scenarios below use up three hours of your monthly allotment.



For more information, see Amazon EC2 Pricing.

Amazon Machine Images

When you start an Amazon EC2 instance, you must select an Amazon Machine Image (AMI) that is eligible for the free tier. Because of licensing restrictions, some AMIs are not eligible for the free tier.

> **Important**
> Third-party applications or services from AWS Marketplace are not eligible for the free tier.

AMIs that are eligible for the free tier are marked in the Amazon EC2 Launch Wizard as **Free tier eligible**. The free tier allotment for Linux and Microsoft Windows instances is counted separately; you can run 750 hours of a Linux `t2.micro` or `t1.micro` instance plus 750 hours of a Windows `t2.micro` or `t1.micro` instance each month for the first 12 months.

For more information, see Amazon EC2 Pricing.

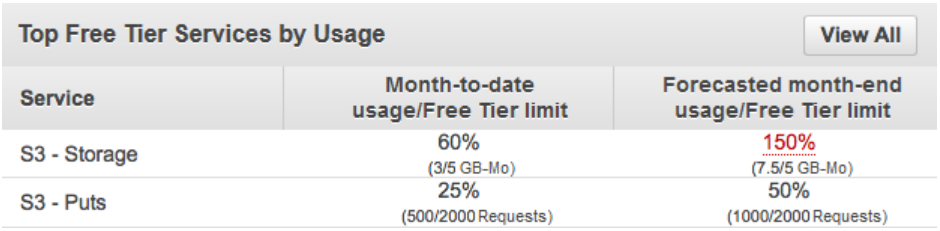
Tracking Your Free Tier Usage

If you are eligible for the free tier and using a free tier offering, you can track your usage with the **Top Free Tier Services by Usage** table on the dashboard of the Billing and Cost Management console. The table does not appear if you are using a service that does not offer a free tier, your free tier has expired, or you are accessing AWS through Amazon Internet Services Pvt. Ltd (AISPL).

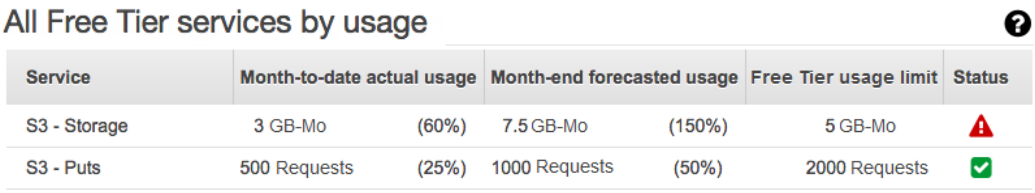
> **Note**
> If you are using Consolidated Billing, the free tier usage tables are available only to the payer account.

The **Top Free Tier Service by Usage** table shows how much you've used of the free tier limits for your top five services, along with a forecast of how much you are predicted to use by the end of the month. The table shows usage as both a percentage of the free tier limit and as a ratio of the free tier limit. For example, if you use 3 GB of the free tier Amazon S3 storage, the table shows 60% and `3/5 GB`.

The table is broken out by service limit. This means that a service might have multiple lines, and you can track each free tier limit closely. For example, each month you get 5 GB of Amazon S3 storage and 2,000 Amazon S3 `Put` operations. The free tier usage table will have two lines, one for `S3 - Storage` and one for `S3 - Puts`, as shown in the following screenshot.



To see more details about your free tier usage, including all of your active free tier services, choose **View All** in the **Top Free Tier Services by Usage** table. The detailed table includes additional information such as the free tier limits and a status icon to alert you if you have exceeded the limits, or are predicted to exceed the limits.



Creating a Billing Alarm

Even if you're careful to stay within the free tier, it's a good idea to create a billing alarm to notify you if you exceed the limits of the free tier. Billing alarms can help to protect you against unknowingly accruing charges if you inadvertently use a service outside of the free tier or if traffic exceeds your expectations.

After you complete this procedure, you'll receive an email as soon as your account's usage exceeds the free tier limits. At that point, you can decide whether to terminate the AWS resources that have exceeded the free tier limits, or keep them running and be billed at the standard AWS rates.

Create a Billing Alarm to Notify You if Your Usage Exceeds the Free Tier

To create a billing alarm, you must first enable billing alerts. The following procedure explains how.

> **Note**
> If your account is linked to a reseller account, billing alerts are not available for your account.

To enable billing alerts

Before you create a billing alarm, you must enable billing alerts. You need to do this only once. After you enable billing alerts, you can't turn them off.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Preferences**.
3. Select the **Receive Billing Alerts** check box.
4. Choose **Save preferences**.

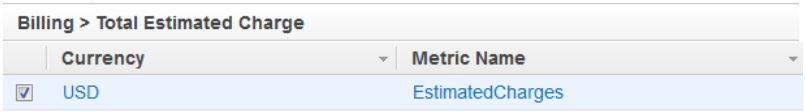
Once you have enabled billing alerts, you can create a CloudWatch billing alarm.

To create a billing alarm

1. (Optional) If you want to send your alert to an AWS-managed distribution list instead of a single email address, follow these steps to set up an Amazon Simple Notification Service (Amazon SNS) notification list. If you want to send your alert to a single email address, go to step 2.

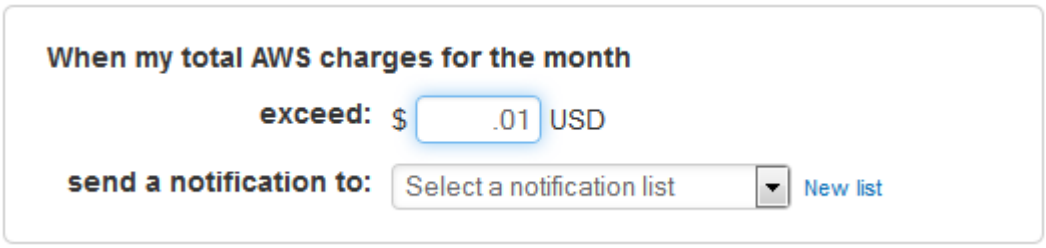
   To create an Amazon SNS notification list:

   a. Open the Amazon SNS console at https://console.aws.amazon.com/sns/.
   b. On the navigation pane, choose **SNS Home**.
   c. In the **Common actions** section, choose **Create topic**.
   d. In the dialog box, for **Topic name**, enter the name for your notification list.
   e. (Optional) If you want to use this notification list to send SMS messages, for **Display name**, enter the name you want to appear on your SMS messages.
   f. Choose **Create topic**.
2. Open the CloudWatch console at https://console.aws.amazon.com/cloudwatch/.
3. If necessary, change the region on the navigation bar to US East (N. Virginia). The billing metric data is stored in this region, even for resources in other regions.
4. On the navigation pane, under **Metrics**, choose **Billing**.
5. In the list of billing metrics, select the check box next to **Currency** USD, for the metric named **EstimatedCharges**, as shown in the following image.



6. Choose **Create Alarm**.
7. Define the alarm as follows.

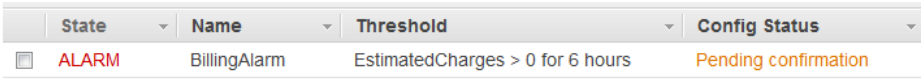
   a. If you want the alarm to trigger as soon as you go over the free tier, set **When my total AWS charges for the month exceed** to $.01. This means that you'll receive a notification as soon as you incur a charge. Otherwise, set it to the amount you want to trigger the alarm, and you will be notified when you go over that amount.
   b. Choose the **New list** link next to the **send a notification to** box.



   c. When prompted, enter your email address or choose your Amazon SNS notification from the drop down.

d. Choose **Create Alarm**.

8. In the **Confirm new email addresses** dialog box, confirm the email address or choose **I will do it later**. If you don't confirm the email address now, the alarm remains in the `Pending confirmation` status until you do so, and does not send an alert. To view the status of your alarm, choose **Alarms** in the navigation pane.



Viewing Your Bill

You receive AWS invoices monthly for usage charges and recurring fees. For one-time fees, such as fees for purchasing and All Upfront Reserved Instance, you are charged immediately.

You can view estimated charges for the current month and final charges for previous months at any time. This section describes how to view your monthly bill and past bills and how to receive and read billing reports.

Topics

Viewing Your Monthly Charges

At the end of a billing cycle or at the time you choose to incur a one-time fee, AWS charges the credit card you have on file and issues your invoice as a PDF file. You can download the PDF from the **Account Activity** page in the Billing and Cost Management console using the following steps.

> **Note**
> IAM users need explicit permission to see some of the pages in the Billing and Cost Management console. For more information, see Controlling Access (p. 103).

To view your monthly charges

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. In the navigation pane, choose Bills.
3. For **Date**, choose a month.

   The **Summary** section displays a summary and details of your charges for that month. It is not an invoice, however, until the month's activity closes and AWS calculates final charges.

   For Consolidated Billing customers, the **Bills** page lists totals for all accounts on the **Consolidated Bill Details** tab. Choose the **Bill Details by Account** tab to see the activity for each account in the Consolidated Billing account family.

To view your charges for a different month

- On the **Bills** page, select the month you want from the **Date** list.

To download a copy of your charges as a PDF document

1. On the **Bills** page, select a month from the **Date** list for which all activity is closed.
2. On the **Summary** tab, choose **Usage Charges and Recurring Fees**.
3. Choose the **Invoice <invoiceID>** link.

To download a monthly report

- Choose the **Download CSV** button, and then choose the appropriate option.

Getting an Invoice Emailed to You

Follow these steps to have a PDF copy of your monthly invoice sent to the email address associated with your account.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. Choose Preferences on the navigation pane.
3. Select the **Receive PDF Invoice by Email** check box.
4. Choose **Save preferences**.

Understanding Your Usage with Billing Reports

Billing reports provide information about your usage of AWS resources and estimated costs for that usage. You can have AWS generate billing reports that break down your estimated costs in different ways:

- By the hour, day, or month
- By each account in your organization
- By product or product resource
- By tags that you define yourself

You can create tags for your AWS resources to add your own labels to nearly every line item in your reports. For example, you can use the billing reports to do any of the following:

- Bring your billing data into an application that can read the data
- Build an application that uses your billing data
- Monitor your month-to-date charges
- Forecast your monthly charges
- Share your data with a partner
- Import your billing data into your accounting system
- Retrieve your bill for multiple accounts

AWS delivers the reports in CSV format to an Amazon S3 bucket that you specify, and updates the reports at least once a day. You can view the reports in applications that can read CSV files, such

as Microsoft Excel, or you can write custom applications that import the billing data from the file for analysis. Some files in the reports can grow big enough to exceed the file size limitations of these programs. If an AWS Cost and Usage report exceeds the size limit of these programs, AWS splits the AWS Cost and Usage report into multiple files. If you are the account owner, you can download any of the reports using the Amazon S3 console, or you can retrieve the reports programmatically using the Amazon S3 APIs.

> **Note**
> During the current billing period (monthly), AWS generates estimated billing reports. The billing reports are not bills, but estimates of costs and charges for AWS usage. Only the monthly invoice that you receive contains your actual charges.

Topics

Controlling Access to Your Billing Report Files

Anyone who has permissions to access the specified Amazon S3 bucket can see your billing report files. Make sure that only people who have a business need to see your billing report files have this access. If necessary, you can edit the bucket policy to control access to the contents of the bucket. For more information about editing bucket policies, see Access Control.

Setting Up an S3 Bucket for Your Billing Reports

To receive billing reports, you must have an S3 bucket in your AWS account to store the reports in. You can specify an existing bucket or create a new one. To create a bucket, see Creating a Bucket in the Amazon Simple Storage Service Console User Guide.

You must also apply a resource-based permissions policy to your S3 bucket to allow AWS to write files to the bucket. For an example bucket policy and information about how to apply your policy to a bucket, see Step 2: Turn on AWS Cost and Usage reports (p. 5).

> **Note**
> Storing the billing reports data in your S3 bucket is billed at standard S3 rates.

Types of Billing Reports

You can generate many different types of reports of your usage. For example, you can get AWS Cost and Usage reports, detailed billing reports, Amazon EC2 Usage Reports, and AWS Usage Reports. The AWS Usage Reports are provided for you, but you must set up the other billing reports in order to receive them.

> **Note**
> The billing reports are not bills, but estimates of costs and charges for AWS usage. Only the monthly invoice you receive contains your actual charges.

You can obtain the following billing reports for your AWS account usage.

AWS Cost and Usage report

Lists AWS usage for each product category used by an account and its IAM users in hourly or daily line items, as well as any cost allocation tags that you've created. If you choose the option to include individual resource IDs when you first create the report, the report will list the resource IDs for the AWS resources used by your account. The report is stored in an S3 bucket that you specify in your account. Standard AWS storage rates apply. For more information, see AWS Cost and Usage Report (p. 20).

Format of the report file name:

<*report-name*>-<file-number>.csv.<zip|gz>

For more information about where to find AWS Cost and Usage reports, see AWS Cost and Usage Report (p. 20).

Detailed billing report

Lists AWS usage for each product category used by an account and its IAM users in hourly line items. The report is stored in an S3 bucket that you specify in your account. Standard AWS storage rates apply. For more information, see Detailed Billing Report (p. 24).

We strongly recommend that you use AWS Cost and Usage reports instead of the detailed billing reports. The data in the AWS Cost and Usage reports has been normalized, making the reports easier to read and understand than the detailed billing reports.

Format of the report file name:

<AWS account number>-aws-billing-detailed-line-items-yyyy-mm.csv.zip

Detailed billing report with resources and tags

Contains the same data as the detailed billing report, but also includes any cost allocation tags that you've created and resource IDs for the AWS resources used by your account. The report is stored in an S3 bucket that you specify in your account. Standard AWS storage rates apply. For more information, see Detailed Billing Report with Resources and Tags (p. 25).

We strongly recommend that you use AWS Cost and Usage reports instead of the detailed billing reports. The data in the AWS Cost and Usage reports has been normalized, making the reports easier to read and understand than the detailed billing reports.

Format of the report file name:

<AWS account number>-aws-billing-detailed-line-items-with-resources-and-tags-yyyy-mm.csv.zip

Monthly report

Lists AWS usage for each product category used by an account and its IAM users in monthly line items. You can download the report from the Bills page of the Billing and Cost Management console. For more information, see Monthly Report (p. 25).

Format of the report file name:

<AWS account number>-aws-billing-csv-yyyy-mm.csv

Monthly cost allocation report

Contains the same data as the monthly report, but also includes any cost allocation tags that you've created. The report is stored in an S3 bucket that you specify in your account. Standard AWS storage rates apply. For more information, see Monthly Cost Allocation Report (p. 25).

Format of the report file name:

<AWS account number>-aws-cost-allocation-yyyy-mm.csv

EC2 usage reports

Contains the same Amazon EC2 data as the detailed billing report, but also includes lease information and usage analysis for the Amazon EC2 resources that are used by your account.

Format of the report file name:

InstanceUsageReport_yyyy-mm-dd.csv or ReservedInstanceUsageReport_yyyy-mm-dd.csv

AWS usage reports

Lists AWS usage for each service, usage type, operation, and time period, at the chosen report granularity. This report is generated dynamically when you request it.

Format of the report file name:

report.csv

AWS Cost and Usage Report

The AWS Cost and Usage report tracks your AWS usage and provides estimated charges 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 customize the AWS Cost and Usage report to aggregate the information either by the hour or by the day. For Consolidated Billing customers, this report is available only to the payer account and includes activity for all the accounts linked to the payer account. Linked account owners can obtain the report only from the payer account owner.

AWS delivers the report files to an S3 bucket that you specify in your account, and updates the report at least once a day. The report is finalized at the end of each month. Finalized reports have the calculations for your blended and unblended costs, and cover all of your usage for the month. The report is available starting within 24 hours of the date that you created a report on the **Reports** page of the Billing and Cost Management console. For more information about setting up the report, see Turning On Billing Reports (p. 26).

From S3, you can either download the report from the Amazon S3 console or upload the report into Amazon Redshift or Amazon QuickSight. For more information about uploading to Amazon Redshift, see Uploading an AWS Cost and Usage Report to Amazon Redshift (p. 28). For more information about uploading to Amazon QuickSight, see Create a Data Set Using Amazon S3 Files in the *Amazon QuickSight User Guide*. If you chose to create Amazon Redshift and Amazon QuickSight manifests when you created your report, Billing and Cost Management provides the S3 data and Amazon QuickSight manifests for you.

Note

AWS supports four AWS Cost and Usage reports per account. The reports are free of charge, but standard S3 storage rates apply.

AWS Cost and Usage Report Files

The AWS Cost and Usage report is a CSV file or a collection of CSV files that is stored in an Amazon S3 bucket. During the report period, AWS delivers a new report and a new manifest file each time the report is updated. The new report includes all of the information included in the previous report, as well as information new to the current report. AWS builds on previous reports until the end of the billing period. After the end of the billing period, AWS generates a new report with none of the information from the previous report. The size of an individual report can grow to more than a gigabyte, and might exceed the capacity of desktop spreadsheet applications to display every line. If a report is larger than most applications can handle, AWS splits the report into multiple files that are stored in the same folder in the S3 bucket.

The AWS Cost and Usage report uses the following S3 organization and naming conventions:

```
<report-prefix>/<report-name>/yyyymmdd-yyyymmdd/<assemblyId>/<report-name>-
<file-number>.csv.<zip|gz>
```

- `report-prefix` = The prefix that you assigned to the report when you created the report.

- `report-name` = The name that you assigned to the report when you created the report.
- `yyyymmdd-yyyymmdd` = The range of dates covered by the report. Reports are finalized at the end of the date range.
- `assemblyId` = An ID that AWS creates each time that the report is updated.
- `file-number` = If the update includes a large file, AWS might split the file into multiple files. The file-number tracks the different files in an update.
- `csv` = The format of the report files.
- `zip` or `gz` = The type of compression applied to the report files.

For example, your report could be delivered as a collection of the following files:

```
<example-report-prefix>/<example-report-name>/20160101-20160131/<123456789>/
<example-report-name>-<1>.csv.<zip>
<example-report-prefix>/<example-report-name>/20160101-20160131/<123456789>/
<example-report-name>-<2>.csv.<zip>
<example-report-prefix>/<example-report-name>/20160101-20160131/<123456789>/
<example-report-name>-<3>.csv.<zip>
<example-report-prefix>/<example-report-name>/20160101-20160131/<123456789>/
<example-report-name>-Manifest.json
```

All reports in a report date range are delivered to the same `report-prefix/report-name/yyyymmdd-yyyymmdd` folder. Each report is given a unique assemblyId and delivered to the assemblyId subfolder in the date range folder. If the report is too large for a single file, the report is split into multiple files and delivered to the same assemblyId folder.

When the AWS Cost and Usage report is updated, AWS creates and delivers a manifest file. The manifest file lists all of the detail columns that are included in the report to date, a list of report files if the report was split into multiple files, the time period covered by the report, and other information about a specific AWS Cost and Usage report. Manifest files are also stored in the date range and assemblyId folders, using the following naming conventions:

```
<report-prefix>/<report-name>/YYYYMMDD-YYYYMMDD/<report-name>-Manifest.json
```

```
<report-prefix>/<report-name>/YYYYMMDD-YYYYMMDD/<assemblyId>/<report-name>-
Manifest.json
```

Each time that AWS creates a new AWS Cost and Usage report for a date range, it overwrites the manifest file stored in the date range folder with an updated manifest file. AWS delivers the same updated manifest file to the assemblyId folder along with the files for that update. Manifest files in the assemblyId folder are not overwritten.

If you chose the option to include an Amazon Redshift manifest in your report when you set up your AWS Cost and Usage report, AWS also creates and delivers an Amazon Redshift manifest file and a file with the SQL commands that you need to upload your report into Amazon Redshift. You can open the SQL file with a regular text editor. The manifest and SQL files use the following naming conventions:

```
<report-prefix>/<report-name>/YYYYMMDD-YYYYMMDD/<assemblyId>/<report-name>-
RedshiftManifest.json
```

```
<report-prefix>/<report-name>/YYYYMMDD-YYYYMMDD/<assemblyId>/<report-name>-
RedshiftCommands.sql
```

If you use the commands in the RedshiftCommands file, you don't need to open the RedshiftManifest file.

Important
The RedshiftManifest file determines which report files the `copy` command in the RedshiftCommands file uploads. Deleting or removing the RedshiftManifest file breaks the copy command in the RedshiftCommands file.

AWS Cost and Usage Report Details

The AWS Cost and Usage report contains details about your usage. The following sections describe most of the items and columns in the report.

All time intervals include the start time and exclude the end time. All times are in UTC. For example, an AWS Cost and Usage report with a `bill/BillingPeriodStartDate` of `2015-11-01T00:00:00Z` and a `bill/BillingPeriodEndDate` of `2015-12-01T00:00:00Z` includes the first second of November, but does not include the first second of December.

Topics

Identity Details

You can use the identity line items in the AWS Cost and Usage report to find specific line items that have been split across multiple AWS Cost and Usage report files.

identity/LineItemId
The ID associated with this line item. Use this ID to correlate line items that have been split across multiple AWS Cost and Usage report files.

identity/TimeInterval
The time interval that this line item applies to, in UTC.

Billing Details

You can use the billing line items in the AWS Cost and Usage report to find information about the charges covered by the report, such as the charge type and the beginning and end of the billing period.

billing/InvoiceId
The ID associated with this report. Until the report is finalized, the **InvoiceId** is blank.

billing/BillingEntity
The AWS seller that your account is with, such as AWS or AISPL.

billing/BillType
The type of bill that this report covers.

billing/PayerAccountId
The account ID of the paying account.

billing/BillingPeriodStartDate
The start date of the billing period covered by this report, in UTC.

billing/BillingPeriodEndDate
The end date of the billing period covered by this report, in UTC.

Line Item Details

You can use the line item columns to find information about your charges.

lineItem/UsageAccountId
The ID of the account that this line item applies to.

lineItem/LineItemType
The type of charge covered by this line item.

lineItem/UsageAccountId
The ID of the account that this line item applies to.

lineItem/UsageStartDate
When the usage for this line item started.

lineItem/UsageEndDate
When the usage for this line item ended.

lineItem/ProductCode
The product code of the service that this line item is for.

lineItem/UsageType
The type of usage covered by this line item. If you paid for a Reserved Instance, the report has one line that shows the monthly committed cost, and multiple lines that show a charge of `0`.

lineItem/Operation
The AWS operation covered by this line item.

lineItem/AvailabilityZone
The Availability Zone associated with this line item charge.

(Optional) lineItem/ResourceId
If you chose to include individual resources IDs in your report, this column contains the ID of the resource to which this line item applies.

lineItem/UsageAmount
The number of usage measurements covered by this line item.

lineItem/CurrencyCode
The currency that this line item is given in.

lineItem/UnblendedRate
The rate that this line item would have been charged for an unconsolidated account.

lineItem/UnblendedCost
How much this line item would have cost for an unconsolidated account.

lineItem/BlendedRate
The rate applied to this line item for a consolidated account.

lineItem/BlendedCost
How much this line is charged to a consolidated account.

lineItem/LineItemDescription
A description of the pricing tier covered by this line item.

lineItem/TaxType
The type of tax applied to this line item.

Reservation Details

You can use the reservation columns to find out more about a reserved resource. The columns include the following:

reservation/AvailabilityZone
The Availability Zone of the resource associated with this line item.

reservation/ReservationARN
The ARN of the Reserved Instance that this line item benefitted from.

Pricing Details

You can use the pricing columns to find information about the prices for a line item. The columns include the following:

pricing/LeaseContractLength
The length of time that your Reserved Instance is reserved for.

pricing/PurchaseOption
How you chose to pay for this line item. Valid values are `All Upfront`, `Partial Upfront`, and `No Upfront`.

pricing/rateType
The type of rate that applies to this line item, such as `Fixed`.

pricing/term
Whether your AWS usage is Reserved or On-Demand.

Product Details

You can use the product columns to find information about the service and type of line item. Different services include different product columns in their reports. Examples include the following:

product/SKU
A unique code for a product. Use the SKU code to correlate product details and pricing.

product/InstanceType
If you used Amazon Elastic Compute Cloud (Amazon EC2), the type of Amazon EC2 instance is included in the product/InstanceType column.

product/OperatingSystem
If you used Amazon EC2, the type of operating system of an Amazon EC2 instance is included in the product/OperatingSystem column.

product/Region
If you used Amazon EC2, the Availability Zone of the Amazon EC2 instance is included in the product/Region column.

product/Tenancy
If you used Amazon EC2, the type of tenancy allowed on the Amazon EC2 instance, such as single tenant or multiple tenant, is included in the product/Tenancy column.

Resource Tags

You can use the resource columns to find information about the specific resources covered by a line item. These columns include user-defined cost allocation tags. Examples include the following:

resourceTags/user:Creator
You can use a user:Creator tag to track which user created a resource.

resourceTags/user:Name
You can use a user:Name tag to track which resources are associated with a specific user.

resourceTags/user:Owner
You can use a user:Owner tag to track which user owns a resource.

resourceTags/user:Purpose
You can use a user:Purpose tag to track why a resource was created.

Detailed Billing Report

Detailed billing reports are similar to AWS Cost and Usage reports. They contain the same information about your charges, but calculate the individual line items differently. If you sign up for both the detailed

billing report and the AWS Cost and Usage reports, the line items will not match until the reports are finalized at the end of the month. We strongly recommend that you use AWS Cost and Usage reports instead as the data in the AWS Cost and Usage report has been normalized, making the data easier to read and understand than the detailed billing reports.

Detailed billing reports are updated multiple times a day, and are stored in Amazon S3 as CSV files using the following naming convention:

```
123456789012-aws-billing-csv-yyyy-mm.csv
```

123456789012 = account ID

yyyy = year

mm = month

The current month's reports are overwritten throughout the billing period until final reports are generated at the end of the billing period. Then, new files are created for the next billing period. The reports for the previous months remain in the designated S3 bucket until you delete them.

Detailed Billing Report with Resources and Tags

The detailed billing report with resources and tags adds additional dimensions by which you can view your AWS charges. This report includes resource identifiers for many of the AWS services. Amazon EC2, for example, provides a ResourceID value for each Amazon EC2 instance that is run under your account. You can use this field for viewing your charges for each AWS resource, as well as for data filtering and aggregation.

In addition, any cost allocation tags you have applied to your resources are appended to each line item in the report. You can filter or aggregate on these tags. For more information about creating these tags, see Using Cost Allocation Tags (p. 70). You are not required to create and use cost allocation tags to get the detailed billing report with resources and tags.

> **Note**
> This report contains line items for every hour of operation for every resource and can grow quite large. The report is compressed into a ZIP file, but might exceed the maximum number of rows you can display in a desktop spreadsheet application.

As with the other detailed billing reports, you can sign up for this report on the Preferences page of the Billing and Cost Management console .

Monthly Report

You can download a monthly report of your estimated AWS charges from the **Bills** page of the Billing and Cost Management console. For Consolidated Billing customers, this report is available only for a payer account and includes activity for all the accounts linked to the payer account. Linked account owners can obtain the monthly report only from the payer account owner.

The report contains line items for each unique combination of AWS product, usage type, and operation that the account uses. The estimated report is updated up to several times per day. You can get monthly reports for previous months by selecting the statement period, starting with the report for the month when you signed up for monthly reports. Reports from before you signed up are not available.

Monthly Cost Allocation Report

You can create custom cost allocation tag sets for your AWS resources that can describe the business dimensions of your AWS usage. These tag sets enable you to organize and track your AWS costs.

Many AWS services expose tagging in their feature sets. You create the tags within those services by using the console, API, or the AWS command line interface (CLI). For more information, see Using Cost Allocation Tags (p. 70).

When you have created these tags, you can then obtain a monthly cost allocation report, which is essentially the monthly report with your cost allocation tag sets included.

Amazon EC2 Usage and Reserved Instance Utilization Reports

The Billing and Cost Management console provides links to two Amazon EC2 reports designed to help you analyze your usage of Amazon EC2 resources and Reserved Instances:

Instance Usage Report
: The instance usage report displays data about your Amazon EC2 instances. For more information, see the Instance Usage Reports in the Amazon EC2 User Guide for Linux Instances.

Reserved Instance Utilization Report
: The Reserved Instance utilization report displays data about how an account utilized its Reserved Instances. For more information, see Reserved Instance Utilization Report in the Amazon EC2 User Guide for Linux Instances.

AWS Usage Reports

You can download dynamically generated AWS usage reports. Each report covers a single service, and you can choose which usage type, operation, and time period is included. You can also choose how the data is aggregated. For more information about generating AWS usage reports, see Turning On Billing Reports (p. 26).

Turning On Billing Reports

Use the **Reports** page of the Billing and Cost Management console to turn on the AWS Cost and Usage reports and generate EC2 and AWS usage reports. Use the **Preferences** page to turn on detailed billing reports.

To create an AWS Cost and Usage report

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Reports**.
3. Choose **Create report**.
4. For **Report name**, type a name for your report.
5. For **Time unit**, choose **Hourly** if you want the line items in the report to be aggregated by the hour. Choose **Daily** if you want the line items in the report to be aggregated by the day.
6. For **Include**, to include the IDs of each individual resource in the report, select **Resource IDs**.

   To include manifests that enable you to upload the report to Amazon Redshift or Amazon QuickSight, select **Redshift Manifest** or **QuickSight Manifest**. If you select a manifest, your report is stored with `.gz` compression.
7. For **Enable support for...**, select whether you want to upload your AWS Cost and Usage report to Amazon Redshift or Amazon QuickSight.
8. Choose **Next**.
9. For **S3 bucket**, type the name of the bucket where you want the reports to be delivered, and choose **Verify**.

The bucket must have appropriate permissions to be valid. For more information on adding permissions to the bucket, see Editing Bucket Permissions. For an example policy, choose **sample policy**.

10. For **Report path prefix**, type the prefix that you want prepended to the name of your report.
11. Choose **Next**.
12. Review the settings for the report. After you have reviewed them, choose **Review and Complete**.

Note
It can take up to 24 hours for AWS to start delivering reports to your S3 bucket. After delivery starts, AWS updates the AWS Cost and Usage report files at least once a day.

In addition to the AWS Cost and Usage reports, AWS Billing and Cost Management provides four different types of detailed billing report, two types of EC2 usage report, and the dynamically generated AWS usage reports.

To turn on detailed billing reports

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Preferences**.
3. Select the **Receive Billing Reports** check box.
4. Designate the Amazon S3 bucket where you want AWS to publish your detailed billing reports.
5. After your S3 bucket has been verified, under **Report**, select the check boxes for the reports that you want to receive.
6. Choose **Save preferences**.

Note
It can take up to 24 hours for AWS to start delivering reports to your S3 bucket. After delivery starts, AWS updates the detailed report files multiple times per day.

To turn on EC2 usage reports

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Preferences**.
3. Select the **Receive Billing Reports** check box.
4. Designate the Amazon S3 bucket where you want AWS to publish your detailed billing reports.
5. After your S3 bucket has been verified, under **Report**, select the check box for **Detailed billing report with resources and tags**.
6. Wait 24 hours or more for report data to be collected.

For information about how to use the EC2 usage reports, see Instance Usage Reports and Reserved Instance Utilization Report in the Amazon EC2 User Guide for Linux Instances.

To generate your AWS usage reports

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. Choose **Reports**.
3. Choose **AWS Usage Reports**.

The **Usage Reports** page opens.

4. From the **Service** menu, select a service.
5. Follow the instructions on the page and make your selections from the **Usage Types**, **Operation**, **Time Period**, and **Report Granularity** menus.
6. Choose the appropriate **Download report** button for the type of report that you want to generate and download.

Viewing Your AWS Cost and Usage reports

You can use the Billing and Cost Management console to see a list of the AWS Cost and Usage reports that AWS is generating for you.

To view your AWS Cost and Usage reports

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Reports**. Your AWS Cost and Usage reports are listed on the **Reports** page.

Uploading an AWS Cost and Usage Report to Amazon Redshift

You can upload AWS Cost and Usage reports to Amazon Redshift, allowing you to analyze your AWS costs and usage.

> **Important**
> Amazon Redshift columns are case insensitive and have stricter character limitations than user-defined tags. To prevent conflicts between Amazon Redshift and user-defined tags, AWS replaces your tags with the tags `userTag0`, `userTag1`, `userTag2`, etc. After you create an Amazon Redshift table and upload your report into it, you can create an Amazon Redshift table that maps the AWS-defined tags to your user-defined tags. The tag table allows you to look up your original tags.
> For example, if you have the tags `OWNER` and `Owner`, Amazon Redshift doesn't allow you to create a table with two columns named "owner". Instead, you create a report table with the columns `userTag0` and `userTag1` instead of `OWNER` and `Owner`, and then create a table with the columns `remappedUserTag` and `userTag`. The `remappedUserTag` column stores the AWS-defined tags `userTag0` and `userTag1`, and the `userTag` column stores your original tags, `OWNER` and `Owner`

AWS provides the commands to create your Amazon Redshift table, upload your report, create your tag table, and insert all of the tag rows into your tag table. The commands are provided to you in the `RedshiftCommands.sql` file that is stored alongside your manifest file in S3, and in the **Redshift file Helper file** in the Billing and Cost Management console. AWS also provides a RedshiftManifest file, which controls which report the commands in the RedshiftCommand file uploads. Deleting or removing the RedshiftManifest file breaks the copy command in the RedshiftCommands file.

To find the `RedshiftCommands.sql` file in the Billing and Cost Management console

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. In the navigation pane, choose **Reports**.
3. Choose the arrow next to the report that you want to upload to Amazon Redshift.

4. Next to **Helper files**, choose **Redshift file**.
5. Copy the commands from the dialog box and paste them into your SQL client.

The following procedure assumes familiarity with databases and Amazon Redshift.

To upload an AWS Cost and Usage report to Amazon Redshift

1. Create an Amazon Redshift cluster. For more information, see Creating a Cluster in the *Amazon Redshift Cluster Management Guide*.
2. Sign in to the AWS Management Console and open the Amazon S3 console at https://console.aws.amazon.com/s3/.
3. Navigate to the S3 location where you store your AWS Cost and Usage report.
4. Open the `RedshiftCommands.sql` file. The file contains customized commands to create an Amazon Redshift table, upload the AWS Cost and Usage report from S3, and create a tag table that allows user-defined tags to be imported into Amazon Redshift.
5. In the `copy` command, replace *<AWS_ROLE>* with the ARN of an IAM role that has permissions to access the S3 bucket where you store your AWS Cost and Usage reports, and replace *<S3_BUCKET_REGION>* with the region your S3 bucket is in. For example, `us-east-1`.
6. Use a SQL client to connect to the cluster. For more information, see Accessing Amazon Redshift Clusters and Databases in the *Amazon Redshift Cluster Management Guide*.
7. Copy the SQL commands from the `RedshiftCommands.sql` file to your SQL client in the following order:
   - create table - This command creates an Amazon Redshift table with a schema customized to match your report.
   - copy - This command uses the provided IAM role to upload the AWS Cost and Usage report files from S3 to Amazon Redshift.
   - create tag table - This command creates a table that allows you to map AWS-defined tags to your user-defined tags.
   - insert - These commands insert the user-defined tags into the tag table.
8. After you have copied all of the data from your AWS Cost and Usage reports into Amazon Redshift, you can query the data using SQL. For more information about querying data in Amazon Redshift, see Amazon Redshift SQL in the *Amazon Redshift Database Developer Guide*.

The number of columns in the AWS Cost and Usage report can change from month to month, such as when a new cost allocation tag is created or a service adds a new product attribute. We recommend that you copy the data from your AWS Cost and Usage report into a new table every month, and then copy the columns that interest you into a separate month-by-month table.

Downloading Billing Reports

You can download your billing report from S3 after AWS delivers it to your S3 bucket.

To download a report from Amazon S3

1. Sign in to the AWS Management Console and open the Amazon S3 console at https://console.aws.amazon.com/s3/.
2. Choose the bucket that you specified when you created the report.
3. Select the report that you want to download.
4. For **Actions**, choose **Download**.
5. Open the context (right-click) menu for the download link, and choose **Save Link As**.
6. Browse to the folder where you want to save the report, and choose **Save**.

Turning Off Billing Reports

You can turn off delivery of an AWS Cost and Usage report at any time by deleting the report from the Billing and Cost Management console. Deleting a report from the console does not delete reports from the S3 bucket. To delete a report from the S3 bucket, use the S3 console.

It can take up to 24 hours after deleting a report for the report to stop updating.

To delete an AWS Cost and Usage report data report

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Reports**.
3. Select the report that you want to delete, and choose **Delete**.
4. In the **Delete** dialog box, choose **Delete**.

To delete a report from an S3 bucket

1. Sign in to the AWS Management Console and open the Amazon S3 console at https://console.aws.amazon.com/s3/.
2. Choose the bucket that you specified when you created the report.
3. Select the report that you want to delete.
4. For **Actions**, choose **Delete**.
5. In the dialog box, choose **OK**.

To turn off detailed billing reports

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Preferences**.
3. For **Receive Billing Reports**, clear the check box.
4. Choose **Save preferences**.

> **Note**
> If you turn off detailed billing reports, you can no longer download the monthly report from the **Bills** page.

Blended and Unblended Rates in AWS Billing Reports

AWS meters usage in hourly increments; for each product resource in use, a rate is applied for operations performed by usage type in that hour, with each operation comprising a line item. The reports shows both blended and unblended rates for each line item. An unblended rate is the cost per hour for a product, usage type, and the operation performed. A blended rate is an average rate calculated for identical instance usage in an Availability Zone for members of a Consolidated Billing family.

The inclusion of the blended and unblended rates allows you to use reports for the following:

- Makes both the blended and unblended rates and costs for every hour of usage transparent. Unblended costs correspond to the published rate for a product and operation in a region with no

discounts applied for eligible Reserved Instances in the account family. For more information about blended and unblended rates, see Understanding Consolidated Bills (p. 97)

- Enables you to locate the exact time at which usage switched to lower costs pricing tiers based on volume. Lower rates apply automatically when usage reaches the next tier of volume rates. You can tell when a transition to a lower-priced tier occurs because two line items appear for two partial hours of usage, one each for the higher and lower rate, respectively.
- Makes visible the way that Reserved Instance discounts are applied first to the linked accounts that purchased a Reserved Instance, and then to other accounts in the family running the same products in the same Availability Zone.

For more information about Consolidated Billing and the potential savings that apply when you purchase Reserved Instances, see the following topics:

- Paying Bills for Multiple Accounts Using Consolidated Billing (p. 88)
- Understanding the Pricing Benefit and Consolidated Billing in the *Amazon Elastic Compute Cloud Developer Guide*

Monitoring Your Usage and Costs

You can monitor your AWS usage with the following methods:

Topics

Reading Your Dashboard Graphs

Even if you're using the free tier, it's a good idea to periodically check the Billing and Cost Management console dashboard. From the dashboard, you can check various graphs that show different breakdowns of your AWS usage.

On the dashboard you can view the following graphs:

- **Spend Summary**
- **Month-to-Date Spend by Service**
- **Month-to-Date Top Services by Spend**

Spend Summary
: The **Spend Summary** graph shows you how much you spent last month, the estimated costs of your AWS usage for the month-to-date, and a forecast for how much you are likely to spend this month. The forecast is an estimate based on your past AWS costs, so your actual monthly costs might not match the forecast.

Month-to-Date Spend by Service
: The **Month-to-Date Spend by Service** graph shows the top services that you use most, and the proportion of your costs that that service contributed to. The **Month-to-Date Spend by Service** graph does not include forecasting.

Month-to-Date Top Services by Spend

The **Month-to-Date Top Services by Spend** graph shows the services that you use most, along with the costs accrued for the month-to-date. The **Month-to-Date Top Services by Spend** graph does not include forecasting.

Opening the Billing and Cost Management Console and Dashboard

To open the Billing and Cost Management console and dashboard

- Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.

  The console opens to the **Dashboard**, where you can see your current month-to-date usage graphs.

For more information about forecasts, see Analyzing Your Costs with Cost Explorer (p. 43).

Monitoring Charges with Alerts and Notifications

You can monitor your AWS costs by using CloudWatch. With CloudWatch, you can create billing alerts that notify you when your usage of your services exceeds thresholds that you define. You specify these threshold amounts when you create the billing alerts. When your usage exceeds these amounts, AWS sends you an email notification. You can also sign up to receive notifications when AWS prices change.

To create billing alerts and register for notifications, you must first enable them in the Billing and Cost Management console by using the following procedure.

Note
If your account is linked to a reseller account, billing alerts are not available for your account.

To enable billing alerts

Before you create a billing alarm, you must enable billing alerts. You need to do this only once. After you enable billing alerts, you can't turn them off.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Preferences**.
3. Select the **Receive Billing Alerts** check box.
4. Choose **Save preferences**.

After you enable billing alerts, you can set them up and subscribe to notifications by using the following procedure.

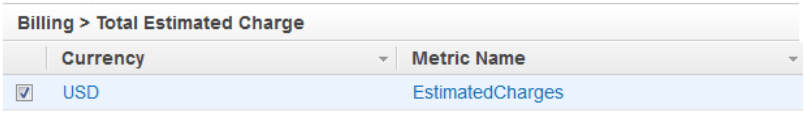
To create a billing alarm

1. (Optional) If you want to send your alert to an AWS-managed distribution list instead of a single email address, follow these steps to set up an Amazon Simple Notification Service (Amazon SNS) notification list. If you want to send your alert to a single email address, go to step 2.

To create an Amazon SNS notification list:

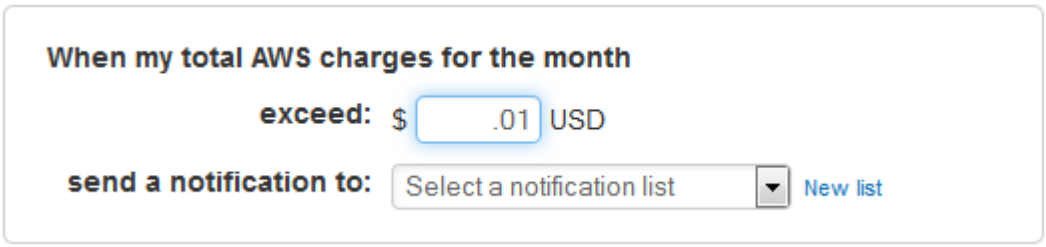
a. Open the Amazon SNS console at https://console.aws.amazon.com/sns/.
b. On the navigation pane, choose **SNS Home**.
c. In the **Common actions** section, choose **Create topic**.
d. In the dialog box, for **Topic name**, enter the name for your notification list.
e. (Optional) If you want to use this notification list to send SMS messages, for **Display name**, enter the name you want to appear on your SMS messages.
f. Choose **Create topic**.

2. Open the CloudWatch console at https://console.aws.amazon.com/cloudwatch/.
3. If necessary, change the region on the navigation bar to US East (N. Virginia). The billing metric data is stored in this region, even for resources in other regions.
4. On the navigation pane, under **Metrics**, choose **Billing**.
5. In the list of billing metrics, select the check box next to **Currency** USD, for the metric named **EstimatedCharges**, as shown in the following image.



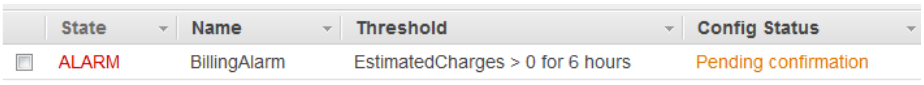
6. Choose **Create Alarm**.
7. Define the alarm as follows.

a. If you want the alarm to trigger as soon as you go over the free tier, set **When my total AWS charges for the month exceed** to $.01. This means that you'll receive a notification as soon as you incur a charge. Otherwise, set it to the amount you want to trigger the alarm, and you will be notified when you go over that amount.
b. Choose the **New list** link next to the **send a notification to** box.



c. When prompted, enter your email address or choose your Amazon SNS notification from the drop down.
d. Choose **Create Alarm**.

8. In the **Confirm new email addresses** dialog box, confirm the email address or choose **I will do it later**. If you don't confirm the email address now, the alarm remains in the `Pending confirmation` status until you do so, and does not send an alert. To view the status of your alarm, choose **Alarms** in the navigation pane.



To sign up for price update notifications

1. Sign in to the AWS Management Console and open the Amazon SNS console at https://console.aws.amazon.com/sns/.

2. If you are new to Amazon SNS, choose **Get Started**.
3. If necessary, change the region on the navigation bar to US East (N. Virginia). The billing metric data is stored in this region, even for resources in other regions.
4. On the navigation pane, choose **Subscriptions**.
5. Choose **Create Subscription**.
6. For **Topic ARN**, if you want to be notified every time a price changes, enter `arn:aws:sns:us-east-1:278350005181:price-list-api`. If you want to be notified about price changes once a day, enter `arn:aws:sns:us-east-1:278350005181:daily-aggregated-price-list-api` instead.
7. For **Protocol**, use the default `HTTP` setting.
8. For **Endpoint**, choose the format that you want to receive the notification in, such as SQS, Lambda, or email.
9. Choose **Create Subscription**.

Using the AWS Price List API

The AWS Price List API enables you to query for the prices of AWS services. You can also subscribe to Amazon Simple Notification Service (Amazon SNS) notifications to be notified when prices for the services change. AWS prices change periodically, such as when AWS cuts prices, when new instance types are launched, or when new services are introduced.

To access the pricing information, download the offer file:

- **Offer file** – A JSON or CSV file that lists the products and prices for a single AWS service. For more information, see Downloading an Offer File (p. 36).

To find a list of all available offer files, download the offer index file:

- **Offer index file** – A JSON file that lists the supported AWS services, with a URL for each offer file where you can download pricing details. The file also includes metadata about the offer index file itself. For more information, see Downloading an Offer Index File (p. 36).

Offer files do not include information about expiring free tier offers or Amazon EC2 Spot Instances. Only some services have offer files.

> **Note**
> The AWS Price List API provides pricing details for your information only. If there is a discrepancy between the offer file and a service pricing page, AWS charges the prices listed on the service pricing page. For more information about AWS service pricing, see Cloud Services Pricing.

To receive SNS notifications when prices change, see Setting Up Change Notifications (p. 36).

Topics

Downloading an Offer Index File

To download the offer index file, go to the following URL:

```
https://pricing.us-east-1.amazonaws.com/offers/v1.0/aws/index.json
```

The URL opens the offer index file. In the offer index file, search for the service that you want prices for. You need the service code to download the service-specific offer file.

For more information, see Reading the Offer Index File (p. 42).

Downloading an Offer File

To download the offer file for the service that you want, go to the URL for that offer file. For example, to download the current json version of the Amazon EC2 offer file, go to the following URL:

```
https://pricing.us-east-1.amazonaws.com/offers/v1.0/aws/AmazonEC2/current/
index.json
```

Note that the offer index file has the JSON URLS. To download the CSV version, replace the `.json` extension in the offer file URL with `.csv`. If you want to download the offer file for a specific service and know the service code, replace the `AmazonEC2` in the URL with the service code to download the offer file for that service. If you do not know the service code, download the offer index file to find it.

If you are accessing the offer files programmatically, you can use the offer index file to find the current URLs. For more information about the offer index file, see Finding Prices in an Offer File (p. 37) and Reading an Offer File (p. 38).

Setting Up Change Notifications

You can sign up to receive notifications when AWS prices change, such as when AWS cuts prices, when new instance types are launched, or when new services are introduced. You can sign up to be notified everytime a price changes, or once a day. If you sign up to be notified once a day, the notification includes all price changes applied during that day.

To sign up for price update notifications

You can use the console to sign up for Amazon SNS notifications.

1. Sign in to the AWS Management Console and open the Amazon SNS console at https://console.aws.amazon.com/sns/.
2. If you are new to Amazon SNS, choose **Get Started**.
3. If necessary, change the region on the navigation bar to US East (N. Virginia). The billing metric data is stored in this region, even for resources in other regions.
4. On the navigation pane, choose **Subscriptions**.
5. Choose **Create Subscription**.
6. For **Topic ARN**, if you want to be notified every time a price changes, enter `arn:aws:sns:us-east-1:278350005181:price-list-api`. If you want to be notified about price changes once a day, enter `arn:aws:sns:us-east-1:278350005181:daily-aggregated-price-list-api` instead.
7. For **Protocol**, use the default `HTTP` setting.
8. For **Endpoint**, choose the format that you want to receive the notification in, such as SQS, Lambda, or email.
9. Choose **Create Subscription**.

If you signed up for once a day notifications, the email has multiple update sections.

The email notification looks like this:

```
Subject: [Pricing Update] We have published a new version of the offer file
 for Service offer code.

Message :
Hello,
You have received this notification because you subscribed to receiving
 updates from SNS topic arn:aws:sns:us-east-1:278350005181:pricing.

Update
We've published a new version of the offer file for Service offer code. Use
 the following URLs to download the file:
You can download the current files using the following URLs
JSON Format : JSON URL
CSV Format : CSV URL

To learn more about the file formats, see Documentation URL.

You can opt to get one email for all price changes made the previous
 day by subscribing to the following SNS topic: arn:aws:sns:us-
east-1:278350005181:daily-aggregated-price-list-api.

Thank You,
Amazon Web Services Team
```

The programmatic notification looks like this:

```
{
  "formatVersion" : "v1",
  "offerCode" : "Service offer code",
  "version" : "The version number for the new offer file",
  "timestamp" : "When this notification was sent",
  "url" : {
    "json" : "JSON URL",
    "csv" : "CSV URL"
  }
}
```

Finding Prices in an Offer File

You can use the offer files to find the prices and terms for a specific product. For example, you can find a list of Amazon EC2 instance prices.

The following procedures show how to find Amazon EC2 products by downloading an offer file as a CSV or JSON file and sorting the results.

To find an EC2 Reserved Instance using the CSV file

1. Download the EC2 CSV file.
2. Open the CSV file with your program of choice. For this example, we use Excel.
3. Select all cells in the Excel spreadsheet.
4. In the navigation bar of the spreadsheet, choose **Data**.
5. In the **Data** bar, choose **Sort**.

6. In the **Sort by** drop down list, choose column **TermType**, and then choose **OK**.
7. Scroll down until you find the value `reserved` in the **TermType** column. Products that are marked `reserved` in the TermType column have reserved rate pricing.

To find an EC2 Reserved Instance using the JSON file

1. Download the JSON file.
2. Open the JSON file with your program of choice. For this example, we use Notepad++.
3. Press CRTL+F.
4. For **Find what:**, type *`reserved`*.
5. Choose **Find All in Current Document**.

The **reserved** search results open in a new pane at the bottom of the window.

Reading an Offer File

An offer file lists the products and prices for a single AWS service. Offer files are available as either CSV or JSON files. You can read the files in multiple ways, such as using a spreadsheet program to read and sort the CSV file, a text program to read the file, or a program that parses JSON.

Offer files include the following types of information:

- Offer File Details – File metadata about the offer file itself, such as the format version and the publication date.
- Product Details – Product metadata that lists the products in an offer file along with product information.
- Pricing Details (Terms) – Prices for all the products in this offer file.

> **Note**
> In a CSV file, the product and pricing details are combined into one section. In a JSON file, they are separate sections.

Topics

CSV File

The first five rows of the CSV are the metadata for the offer file. The sixth row has all of the column names for the products and their attributes, such as the SKU, the `OfferTermCode`, the `RateCode`, the `TermType`, and more. The number of columns varies depending on the service. The first 12 columns contain all of the pricing details, while the other columns contain the product details for a service.

The following table shows an example of a CSV offer file.

formatVersion	
disclaimer	
offerCode	

version	
publicationDate	
sku	There is one SKU row for each combination of product and pricing details. The row has all of the attributes for the product, including price per unit and type of product. These attributes include the following billing information about this product:
	sku
	offerTermCode
	rateCode
	termType
	description
	effectiveDate
	startingRange
	endingRange
	unit
	pricePerUnit
	currencyCode
	attributes
	attributeName
	attributeValue

JSON File

In the JSON files, the product details and pricing details are in separate sections. The same product can be offered under multiple terms, and the same term could apply to multiple products. For example, an EC2 instance is available for an `Hourly` or `Reserved` term. Use the SKU of a product to identify the terms that are available for that product.

A JSON offer file looks like this:

```
{
   "formatVersion":"The version of the file format",
   "disclaimer":"The disclaimers for the offer file",
   "offerCode":"The code for the service",
   "version":"The version of the offer file",
   "publicationDate":"The publication date of the offer file",
   "Product Details": {
      "sku": {
         "sku":"The SKU of the product",
         "productFamily":"The product family of the product",
         "attributes": {
            "attributeName":"attributeValue",
         }
```

```
      }
   },
   "Pricing Details (Terms)": {
      "termType": {
         "sku": {
            "sku": {
               "offerTermCode":"The term code of the product",
               "sku":"The SKU of the product",
               "effectiveDate":"The effective date of the pricing details",
               "termAttributesType":"The attribute type of the terms",

               "termAttributes": {
                  "attributeName":"attributeValue",
               },
               "priceDimensions": {
                  "rateCode": {
                     "rateCode":"The rate code of the price",
                     "description":"The description of the term",
                     "unit":"The usage measurement unit for the price",
                     "startingRange":"The start range for the term",
                     "endingRange":"The end range for the term",

                     "pricePerUnit": {
                        "currencyCode":"currencyRate",
                     }
                  }
               }
            }
         }
      }
   }
}
```

Offer File Definitions

Each of the sections in an offer file includes specific details about that product:

- Offer File Details – File metadata about the offer file itself, such as the format version and the publication date.
- Product Details – Product metadata that lists the products in an offer file along with product information.
- Pricing Details (Terms) – Prices for all the products in this offer file.

> **Note**
> In a CSV file, the product and pricing details are combined into one section. In a JSON file, they are separate sections.

The following lists provide definitions for each detail.

Offer File Details

This section provides metadata about the offer file itself.

Format Version
An attribute that tracks which format version the offer file is in. The `formatVersion` of the file is updated when the structure is changed. For example, the version will change from `v1` to `v2`.

Disclaimer
Any disclaimers that apply to the offer file.

Offer Code
A unique code for the product of an AWS service. For example, `AmazonEC2` for Amazon EC2 or `AmazonS3` for Amazon S3.

Version
An attribute that tracks the version of the offer file. Each time a new file is published, it contains a new version number. For example, `20150409T022205` and `20150910T182105`.

Publication Date
The date and time (UTC) when an offer file was published. For example, `2015-04-09T02:22:05Z`, `2015-09-10T18:21:05Z`.

Product Details

This section provides information about products in an AWS service offer file. Products are indexed by SKU.

Product Details:SKU
A unique code for a product. Use the `SKU` code to correlate product details and pricing. For example, a product with a SKU of `HCNSHWWAJSGVAHMH` is available only for a price that also lists `HCNSHWWAJSGVAHMH` as a `SKU`.

Product Details:SKU:Product Family
The category for the type of product. For example, `compute` for Amazon EC2 or `storage` for Amazon S3.

Product Details:SKU:Attributes
A list of all of the product attributes.

Product Details:SKU:Attributes:Attribute Name
The name of a product attribute. For example, `Instance Type`, `Processor`, or `OS`.

Product Details:SKU:Attributes:Attribute Value
The value of a product attribute. For example, `m1.small` (an instance type), `xen` (a type of processor), or `Linux` (a type of OS).

Pricing Details (Terms)

This section provides information about the prices for products in an AWS service offer file. Prices are indexed first by the terms (`onDemand` and `reserved`), and then by SKU.

Pricing Details:Term Type
The specific type of term that a term definition describes. The valid term types are `reserved` and `onDemand`.

Pricing Details:Term Type:SKU
A unique code for a product. Use the `SKU` code to correlate product details and pricing. For example, a product with a SKU of `HCNSHWWAJSGVAHMH` is available only for a price that also lists `HCNSHWWAJSGVAHMH` as a `SKU`.

Pricing Details:Term Type:SKU:Offer Term Code
A unique code for a specific type of term. For example, `KCAKZHGHG`. Product and price combinations are referenced by the SKU code followed by the term code, separated by a period. For example, `U7ADXS4BEK5XXHRU.KCAKZHGHG`.

Pricing Details:Term Type:SKU:Effective Date
The date that an offer file goes into effect. For example, if a term has an `EffectiveDate` of November 1, 2005, the price is not valid before November 1, 2005.

Pricing Details:Term Type:SKU:Term Attributes Type
A unique code for identifying what product and product offering are covered by a term. For example, an EC2-Reserved attribute type means that a term is available for EC2 reserved hosts.

Pricing Details:Term Type:SKU:Term Attributes
A list all of the attributes that are applicable to a term type, in the format `attribute-name:attribute-value`. For example, length of term and type of purchase covered by the term.

Pricing Details:Term Type:SKU:Term Attributes:Attribute Name
The name of a `TermAttribute`. You can use it to look up specific attributes. For example, you can look up terms by `length` or `PurchaseOption`.

Pricing Details:Term Type:SKU:Term Attributes:Attribute Value
The value of a `TermAttribute`. For example, terms can have a length of one year and a purchase option of `All Upfront`.

Pricing Details:Term Type:SKU:Price Dimensions
The pricing details for the offer file, such as how usage is measured, the currency that you can use to pay with, and the pricing tier limitations.

Pricing Details:Term Type:SKU:Price Dimensions:Rate Code
A unique code for a product/offer/pricing-tier combination. Product and term combinations can have multiple price dimensions, such as a free tier, a low use tier, and a high use tier.

Pricing Details:Term Type:SKU:Price Dimensions:Rate Code:Description
The description for a price or rate.

Pricing Details:Term Type:SKU:Price Dimensions:Rate Code:Unit
The type of unit that each service uses to measure usage for billing. For example, EC2 uses hours as a measuring unit, and S3 uses GB as a measuring unit.

Pricing Details:Term Type:SKU:Price Dimensions:Rate Code:Starting Range
The lower limit of the price tier covered by this price. For example, 0 GB or 1,001 API calls.

Pricing Details:Term Type:SKU:Price Dimensions:Rate Code:Ending Range
The upper limit of the price tier covered by this price. For example, 1,000 GB or 10,000 API calls.

Pricing Details:Term Type:SKU:Price Dimensions:Rate Code:Price Per Unit
A calculation of how much a single measured unit for a service costs.

Pricing Details:Term Type:SKU:Price Dimensions:Rate Code:Price Per Unit:Currency Code
A code that indicates the currency for prices for a specific product.

Pricing Details:Term Type:SKU:Price Dimensions:Rate Code:Price Per Unit:Currency Rate
The rate for a product in various supported currencies. For example, $1.2536 per unit.

Reading the Offer Index File

After you have the offer index file, you can use it to find an offer file.

Topics

Offer Index File

The offer index file is available as a JSON file. You can read the file multiple ways, such as using a text program to read the JSON file or a program that parses the JSON.

The offer index file consists of two main sections: the metadata about the offer index file itself, and a list of the services that AWS offers. The information about an offer file includes the URL where you can download the prices for that service.

The offer index file looks like this:

```
{
   "formatVersion":"The version number for the offer index format",
```

```
   "disclaimer":"The disclaimers for this offer index",
   "publicationDate":"The publication date of this offer index",
   "offers":{
      "offerCode":{
         "offerCode":"The service that this price list is for",
         "currentVersionUrl":"The URL for this offer file"
      },
   },
}
```

Offer Index Definitions

The following list defines the terms that are used in the offer index file:

FormatVersion
An attribute that tracks which format version the offer index file is in. The `formatVersion` of the file is updated when the structure is changed. For example, the version will change from `v1` to `v2`.

Disclaimer
Any disclaimers that apply to the offer index file.

PublicationDate
The date and time (UTC) when an offer index file was published. For example, `2015-04-09T02:22:05Z`, `2015-09-10T18:21:05Z`.

Offers
A list of available offer files.

Offers:OfferCode
A unique code for the product of an AWS service. For example, `AmazonEC2` or `AmazonS3`. The `OfferCode` is used as the lookup key for the index.

Offers:CurrentVersionUrl
The URL where you can download the most up-to-date offer file.

Analyzing Your Costs with Cost Explorer

Cost Explorer is a free tool that you can use to view graphs of your costs (also known as spend data) for up to the last 13 months, and forecast how much you are likely to spend for the next three months. You can use Cost Explorer to see patterns in how much you spend on AWS resources over time, identify areas that need further inquiry, and see trends that you can use to understand your costs. You can also specify time ranges for the data you want to see, and you can view time data by day or by month.

For example, you can use Cost Explorer to see which service you use the most, which Availability Zone (AZ) most of your traffic is in, which linked account uses AWS the most, and more.

With Cost Explorer, you can filter your view by a variety of filters.

- API operation
- Availability Zone (AZ)
- AWS service
- Custom cost allocation tags (p. 70)
- Amazon EC2 instance type
- Linked account (p. 88)
- Purchase option
- Region

- Usage type
- Usage type group

> **Note**
> Each time you apply filters to your costs, Cost Explorer creates a new graph. You can, however, use your browser's bookmark feature to save configuration settings (p. 59) for repeated use. Forecasts are not saved, and the most recent forecast is displayed when you revisit your saved graph.

For more information about Cost Explorer filters, see Filtering the Data You Want to View (p. 51). For more information about working with tags, see Applying Tags (p. 71).

In addition, Cost Explorer provides Preconfigured Views, that display at-a-glance information about your cost trends and give you a head start on customizing views that suit your needs.

Cost Explorer displays data from the last 13 months, the current month, and the forecasted costs for the next three months. When you first sign up for Cost Explorer, the current month's data is available for viewing in about 24 hours. The rest of your data takes a few days longer. Cost Explorer updates your data at least once every 24 hours.

Cost Explorer uses the same data set used to generate the AWS Cost and Usage reports and the detailed billing reports. For an exhaustive review of the data, you can download the figures in a comma-separated value (CSV) file.

Topics

Enabling Cost Explorer

You can enable Cost Explorer for your account using this procedure. After you enable Cost Explorer, AWS prepares the data about your costs for the current month and the last four months, and then calculates the forecast for the next three months. The current month's data is available for viewing in about 24 hours. The rest of your data takes a few days longer. Cost Explorer updates your cost data at least once every 24 hours.

> **Note**
> If your account is a linked account in a Consolidated Billing family, the payer account must enable Cost Explorer. For more information about Consolidated Billing, see Paying Bills for Multiple Accounts Using Consolidated Billing (p. 88).
> Cost Explorer is enabled for your account automatically if you are signed up to receive detailed billing report with resources and tags through programmatic billing access. Enabling Cost Explorer, however, does not enable programmatic billing access.

To sign up for Cost Explorer

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Cost Explorer**.
3. On the **Welcome to Cost Explorer** page, choose **Enable Cost Explorer**.

For more information about controlling access to Cost Explorer see Controlling Access for Cost Explorer (p. 64).

Starting Cost Explorer

You can start Cost Explorer by opening the Billing and Cost Management console and choosing **Launch Cost Explorer**.

To open Cost Explorer

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. In the navigation pane, choose **Cost Explorer**.
3. On the Cost Explorer page, choose **Launch Cost Explorer**.

   Note
   Cost Explorer is available in any AWS account for no cost.

Forecasting with Cost Explorer

A forecast is a prediction of how much you will use AWS over the next three months, based on your past usage. Forecasting provides an estimate of what your AWS bill will be, and enables you to use alarms and budgets for amounts that you are predicted to use. Because forecasts are predictions, the forecasted billing amounts are estimated, and might differ from your actual charges for each statement period.

Like weather forecasts, billing forecasts can vary in accuracy. Different ranges of accuracy have different confidence intervals. The higher the confidence interval, the more likely the forecast is to be correct. For example, say you have a budget set to 100 dollars, and you've used 75 dollars in the past three weeks. Cost Explorer forecasts that there is an 80% probability that your billed costs will be in the 90 to 100 dollar range, and an 95% probability that your billed costs will be in to 80 to 110 dollar range.

Cost Explorer forecasts have confidence intervals of 95% and 80%. If AWS does not have enough data to forecast within an 95% confidence interval, Cost Explorer does not show a forecast.

Reading Forecasts

How you read the Cost Explorer forecasts depends on the type of graph that you're using. Forecasts are available for plot and bar graphs, but not for stacked bar graphs.

When you use plot graphs, there are two sets of lines on either side of your costs line. The pair of lines that are closest to the cost line indicate the 80% confidence interval, and the pair of lines that are furthest from the cost line indicate the 95% confidence interval. The wider the range included in the forecast, the higher the probability that your bill will fall in the forecasted range.

When you are using bar graphs, there are two sets of lines on either side of the top of your bar. The closer, darker lines indicate the 80% confidence interval, and the further, fainter lines indicate the 95% confidence interval. The wider the range included in the forecast, the higher the probability that your bill will fall in the forecasted range.

Using Forecasts with Consolidated Billing

If you are using consolidated billing, the paying account's forecasts will be calculated with the data from all of the accounts in the consolidated billing family. After you add a new linked account to the family, forecasts are less accurate until the new spending patterns of the consolidated billing family are analyzed.

Using Preconfigured Views

Cost Explorer provides three preconfigured views designed to give you at-a-glance visibility into how your costs are distributed by service. You can use these views to quickly identify unusual costs, and then choose **Customize View** to make a more detailed investigation.

The Cost Explorer preconfigured views display graphs based on fixed filter settings. They are intended to provide quick access to information that is most commonly useful to an organization. All of the preconfigured views display a graph. Beneath the graph, the page shows a *data table* that displays the cost figures used to create the graph. You can also download a CSV report that contains the line items used to generate the views.

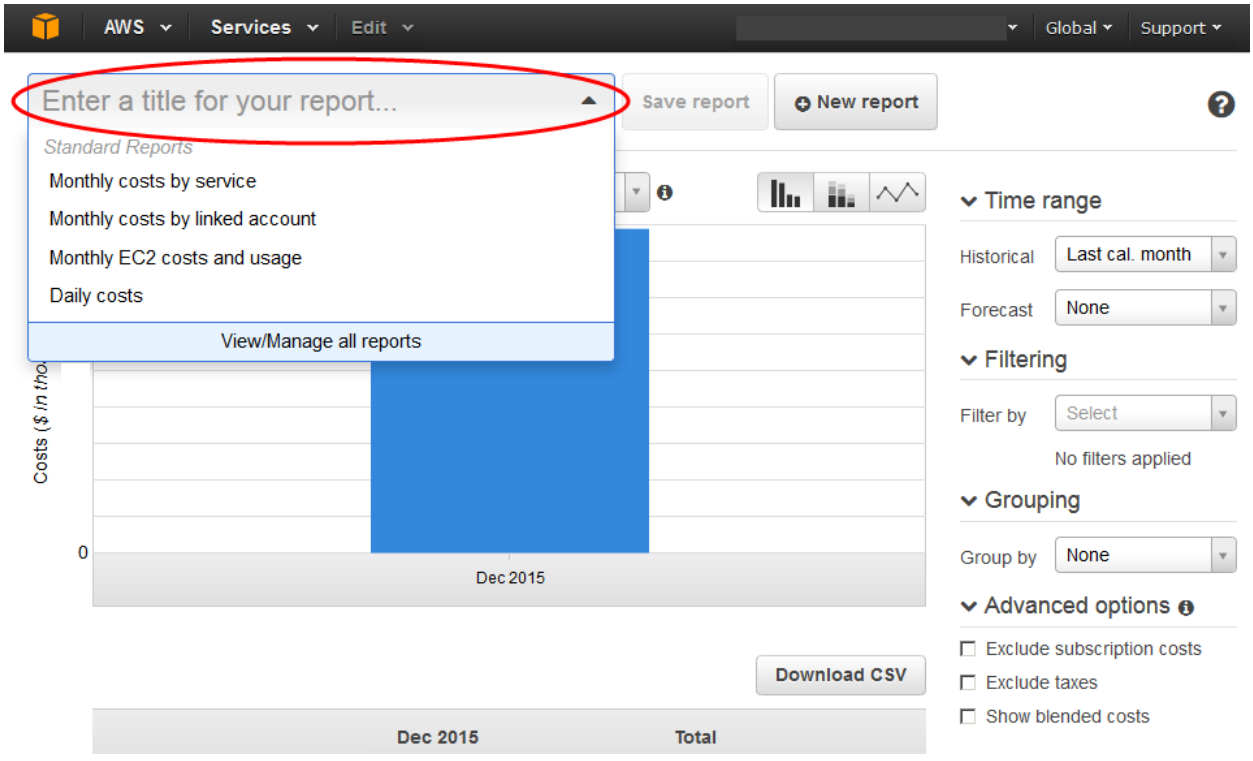
Preconfigured views are available for monthly and daily time ranges. For Consolidated Billing customers, view by linked accounts is available in a monthly time-range format. You access the preconfigured reports through the Billing and Cost Management console.

The preconfigured reports are a specific set of Cost Explorer views. For more information about how the graph displays services and how the data table displays cost figures, see Reading the Cost Explorer Graph (p. 58) and Reading the Cost Explorer Data Table (p. 58), respectively.

To open the Preconfigured Views

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Cost Explorer**.
3. On the Cost Explorer page, choose **Launch Cost Explorer**.

   Note
   Cost Explorer is available in any AWS account for no cost.
4. Choose the link shown in the following image to select the view you want:



In all the preconfigured views, a data table below the graph displays the actual figures used to generate the graph.

> **Note**
> Charges for your current billing period shown on these reports are estimated. Estimated charges shown on this page, or shown on any notifications that we send to you, may differ from your actual charges for this statement period. This is because estimated charges presented on this page do not include usage charges accrued during this statement period after the date you view this page. One-time fees and subscription charges are assessed separately from usage and reoccurring charges, on the date that they occur.

Daily Spend View

Daily Spend View displays your total costs for each of the last 30 days.

Monthly Spend by Service View

Monthly Spend by Service View displays the distribution of an account's costs by AWS service for the previous 90 days, listed by month.

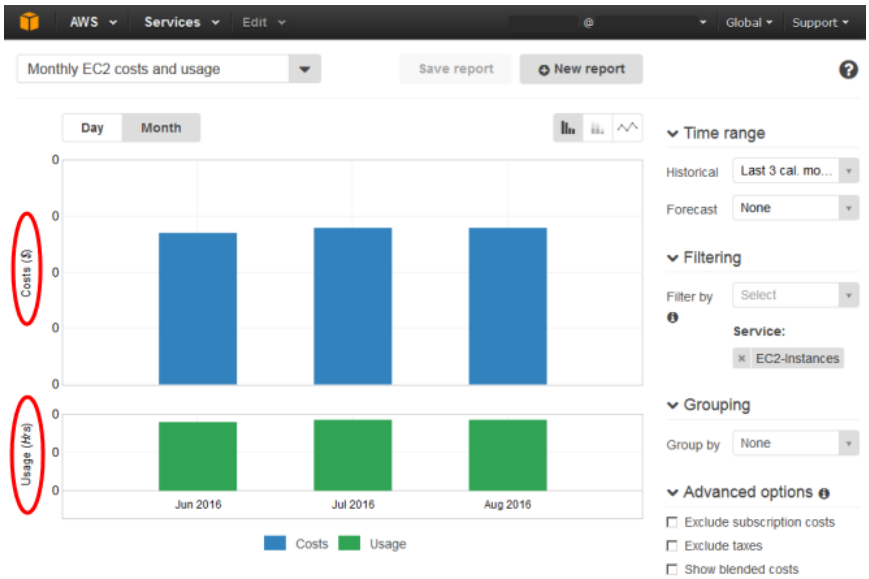
Monthly Spend by Linked Account View

Monthly Spend by Linked Account View displays how your costs were distributed among the linked accounts in a consolidated billing account family.

Monthly EC2 Costs and Usage

Monthly EC2 Costs and Usage displays your Amazon EC2 costs for the last three calendar months, along with your usage hours. You can use this view to track how many Amazon EC2 usage hours you've used, along with your accumulated Amazon EC2 costs.

The Monthly EC2 Costs and Usage view shows two solid bar graphs. Your Amazon EC2 service costs are shown in the first graph, and your Amazon EC2 usage hours are shown in the second graph.



Customizing Your Cost Explorer Cost Analysis

You can choose your own time ranges for Cost Explorer queries, and use the Cost Explorer filters to refine your query and drill down into particular types of cost. For example, you can use Cost Explorer to see which Availability Zone (AZ) had the most traffic for the first two weeks of a month.

Topics

Note
Certain Cost Explorer features are relevant only to Consolidated Billing customers. For example, only the owner of the payer account in a Consolidated Billing account family can view cost data across multiple linked accounts in the account family. Also, while default views in Cost Explorer use unblended costs for graphs that include Consolidated Billing linked accounts, you can use the Advanced Options (p. 56) in Cost Explorer to omit subscription charges or to view costs using blended costs.

Starting Cost Explorer

To open Cost Explorer

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. In the navigation pane, choose **Cost Explorer**.
3. On the Cost Explorer page, choose **Launch Cost Explorer**.

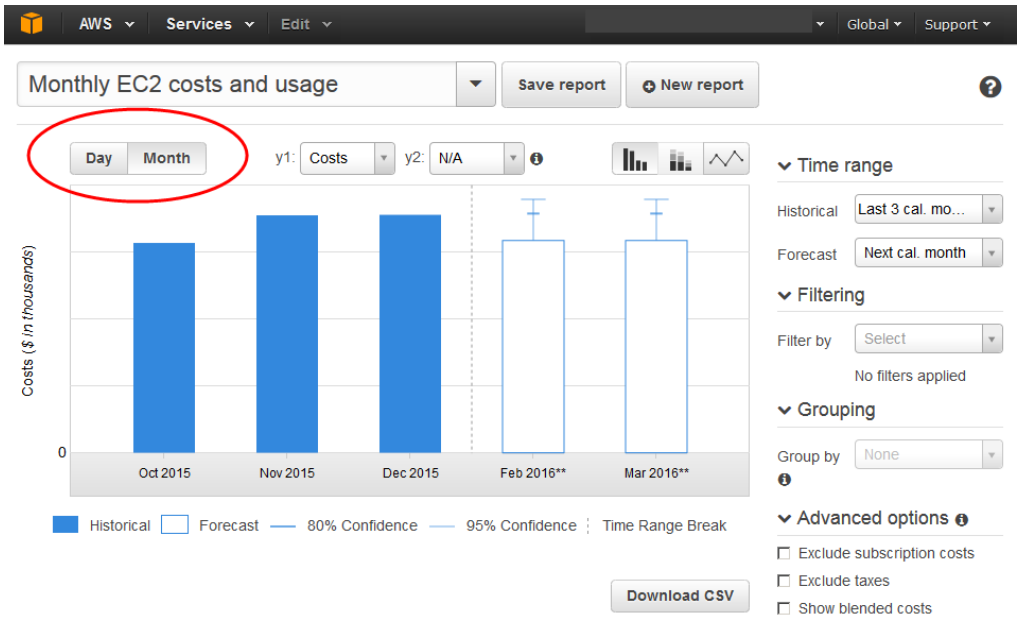
   Note
   Cost Explorer is available in any AWS account for no cost.

Choosing Time Ranges for the Data You Want to View

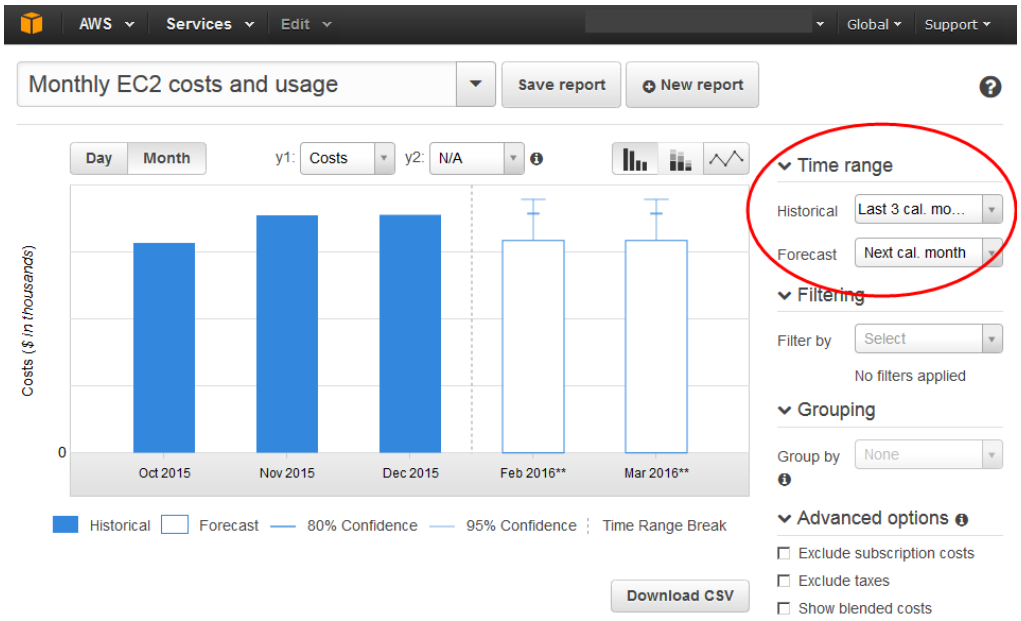
You can choose to view your cost data in monthly or daily *levels of granularity*, and you can use preconfigured time ranges or set custom start and end dates.

To set the granularity and time range for your data

1. Starting Cost Explorer (p. 48).
2. Choose a time granularity of **Day** or **Month**.



3. For **Time Range**, choose the **Historical** and **Forecast** time periods for which you want to view your cost data. For detailed information about available time ranges, see Time Range Options (p. 49).
4. (Optional) For a custom time range, select **Custom**, and then use the calendar controls to set a start date and an end date for your custom time range.



Time Range Options

In Cost Explorer, months are defined as calendar months. Days are defined as 12:00:00 AM to 11:59:59 PM. Based on these definitions, when you select **Last 3 Cal. Months** for a date range, you see cost data for the present month and for the two previous months. For example, if you view your

graph on March 6, 2014 and select three months, your graph includes data for January, February, and March 2014. All times are in Universal Coordinated Time (UTC).

You can choose time ranges for both your past costs and your forecasted future costs.

The following list defines each time range option for your past costs in Cost Explorer.

- Custom

  Displays data for the time range for the **Start** and **End** dates that you specify with calendar controls in the following format: mm/dd/yyyy. You can specify daily or monthly **Start** and **End** values.
- Last 7 Days

  Displays cost data from the current day and the previous six days.
- Last 14 Days

  Displays cost data from the current day and the previous 13 days.
- Month-to-Date

  Displays cost data for the current calendar month. You can specify daily or monthly values.
- Last Cal. Month

  Displays cost data from the last month. You can specify daily or monthly values.
- Last 3 Cal. Months

  Includes cost data from the current month and the previous two months. You can specify daily or monthly granularity. If you specify daily granularity, the first date displayed is the first day of the month prior to last, and the end date will be today. If you choose 3 months on April 8, for example, you see bars for each day starting on February 1.
- Year-to-Date

  Displays cost data from the current calendar year. You can specify monthly values.
- Last Cal. Year

  Displays cost data from the last calendar year.

The following list defines each time range option for your forecast costs in Cost Explorer.

- Custom

  Displays forecast data for the time range for the **Start** and **End** dates that you specify with calendar controls in the following format: mm/dd/yyyy. You can specify daily or monthly **Start** and **End** values.
- Today + Next 6 Days

  Displays forecast data for the current day and the next 6 days.
- Today + Next 13 Days

  Displays forecast data for the current day and the next 13 days.
- Today to Cal. Month-End

  Displays forecast data for the current day and the rest of the month.
- Current Cal. Month

  Displays forecast data for the current month and the next month.
- Next Cal. Month

  Displays forecast data for the next month.

- Current + Next 2 Cal. Months

  Displays forecast data for the current month and the next two months.

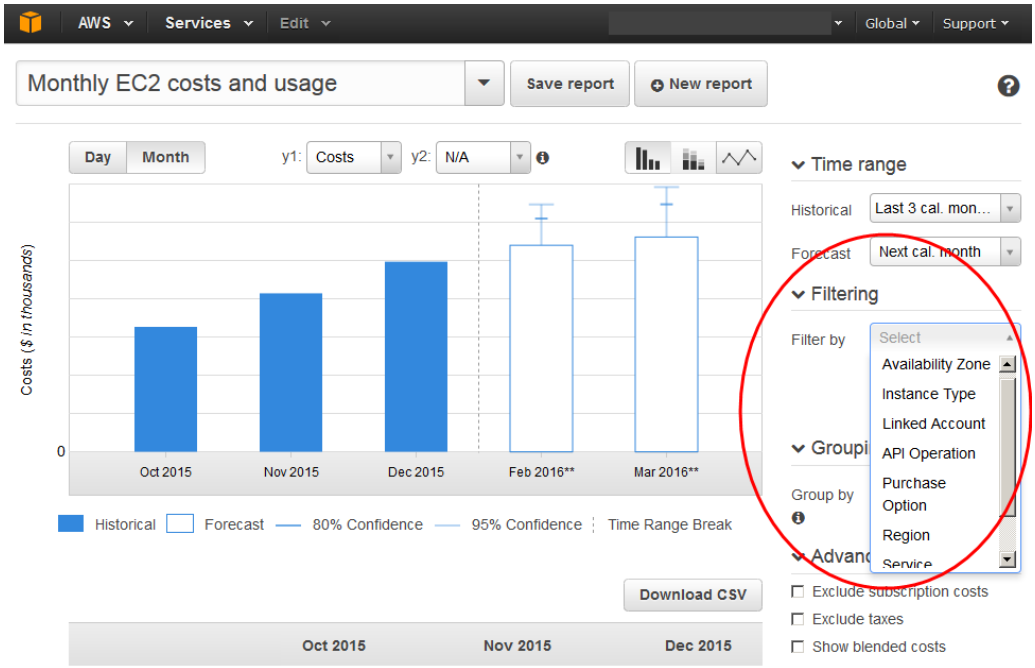
Filtering the Data You Want to View

With Cost Explorer you can filter how you view your AWS costs by API operation, Availability Zone (AZ), AWS service, custom cost allocation tags, EC2 instance types, linked accounts, purchase options, region, usage type, and usage type group.

You can apply multiple filters to look at intersecting data sets. For example, you can use the **Linked Account** and **Services** filters to identify the linked account that spent the most money on Amazon EC2.

To filter your data

1. Starting Cost Explorer (p. 48).
2. For **Filter**, choose **Availability Zone**, **Instance Type**, **Linked Account**, **API Operation**, **Purchase Option**, **Region**, **Service**, **Tag**, **Usage type**, or **Usage type group** . After you make a selection, a new control appears with additional options.
3. Select the items from each list that you want to display in the graph, or start typing the name of a filter type to have Cost Explorer auto-complete your selection. After you have chosen your filters, choose **Apply**.



You can continue refining your cost analysis by using multiple filters, by grouping your data by filter type, and by using the options in the **Advanced Options** tab.

Combining Filters to Show Data in Common

Cost Explorer displays a graph that represents the data in common to the filters you've selected, which means that you can use filters together to analyze subsets of cost data. For example, if you set the **Service** filter to show costs related to Amazon EC2 and Amazon RDS services, and then select **Non-**

Reserved using the **Purchase Option** filter, the cost graph shows how much money **Non-Reserved** instances on Amazon EC2 and Amazon RDS cost for each of the three months specified.

Filters and Logical Operations (AND/OR)

When you select multiple filters, and values for each filter, Cost Explorer applies rules that emulate the logical AND and OR operators to your selections. Within each filter, Cost Explorer emulates the logical OR filter to your selection of filter types. In other words, the graph it displays adds the aggregate costs for each item together. Using the previous example, you see bars for both of the selected services, Amazon EC2 and Amazon RDS.

When you select multiple filters, Cost Explorer applies the logical AND operator to your selections. In other words, if you use the **Services** filter and specify Amazon EC2 and Amazon RDS costs for inclusion, and then also apply the **Purchase Options** filter to select a single type of purchase option, you see *only* the **Non-Reserved** charges incurred by Amazon EC2 and Amazon RDS.

Filter and Group Options

In Cost Explorer, you can filter by the following groups:

- API Operations

  API operations are requests made to and tasks performed by a service, such as write and get requests to Amazon S3.
- Availability Zones

  Availability Zones are distinct locations within a region that are insulated from failures in other Availability Zones. They provide inexpensive, low-latency network connectivity to other Availability Zones in the same region.
- AWS Services

  AWS services are AWS products (e.g., “EC2”). To learn more, see AWS Products & Services.
- Custom Cost Allocation Tags

  Cost allocation tags are tags that you can use to track costs associated with specific areas/entities within your business, by defining a tag key and values.
- EC2 Instance Type

  EC2 instance types are the types of Amazon EC2 instances that you specified when you launched an Amazon EC2 host. The instance type determines the hardware of the computer used to host your instance.
- Linked Accounts

  Linked accounts are members of a Consolidated Billing *Account Family*, paid for by a *paying account*. Consolidated Billing is a billing option that enables AWS customers with more than one account to receive a single bill across all of their accounts. Businesses can link all their accounts to the payer account and receive a single, itemized bill for the entire company, rather than separate bills for each AWS account. The payer account has access to the cost information for each linked account, making it easy for businesses to track costs for each workgroup or project.
- Purchase Options

  Purchase options include Amazon EC2 Reserved Instances or Non-Reserved Instances, including both On-Demand and Spot purchases.
- Region

  Regions are the geographic areas where AWS hosts your resources.
- Usage Type

Usage types are the units that each service uses to measure the usage of a specific type of resource. For example, the `BoxUsage:c1.medium(Hrs)` usage type filters by the running hours of Amazon EC2 `c1.medium` instances.

- Usage Type Group

  Usage type groups are filters that collect a specific category of usage type filters into one filter. For example, `BoxUsage:c1.medium(Hrs)`, `BoxUsage:m3.xlarge(Hrs)`, and `BoxUsage:t1.micro(Hrs)` are all filters for Amazon EC2 instance running hours, so they are collected into the `EC2: Running Hours` filter.

  Usage type groups are available for Amazon EC2, DynamoDB, and Amazon S3. The specific groups available to your account depend on what services you've used. The list of groups that might be available includes but is not limited to the following:

  - **DDB: Data Transfer - Internet (In)**

    Filters by costs associated with how many GB are transferred to your DynamoDB databases.
  - **DDB: Data Transfer - Internet (Out)**

    Filters by costs associated with how many GB are transferred from your DynamoDB databases.
  - **DDB: Indexed Data Storage**

    Filters by costs associated with how many GB that you have stored in DynamoDB.
  - **DDB: Provisioned Throughput Capacity - Read**

    Filters by costs associated with how many units of read capacity that your DynamoDB databases used.
  - **DDB: Provisioned Throughput Capacity - Write**

    Filters by costs associated with how many units of write capacity that your DynamoDB databases used.
  - **EC2: CloudWatch - Alarms**

    Filters by costs associated with how many CloudWatch alarms that you have.
  - **EC2: CloudWatch - Metrics**

    Filters by costs associated with how many CloudWatch metrics that you have.
  - **EC2: CloudWatch - Requests**

    Filters by costs associated with how many CloudWatch requests that you make.
  - **EC2: Data Transfer - CloudFront (Out)**

    Filters by costs associated with how many GB are transferred from your Amazon EC2 instances to a CloudFront distribution.
  - **EC2: Data Transfer - CloudFront (In)**

    Filters by costs associated with how many GB are transferred to your Amazon EC2 instances from a CloudFront distribution.
  - **EC2: Data Transfer - Inter AZ**

    Filters by costs associated with how many GB are transferred into, out of, or between your Amazon EC2 instances in different Availability Zones.
  - **EC2: Data Transfer - Internet (In)**

    Filters by costs associated with how many GB are transferred to your Amazon EC2 instances from outside of the AWS network.
  - **EC2: Data Transfer - Internet (Out)**

Filters by costs associated with how many GB are transferred from an Amazon EC2 instance to a host outside of the AWS network.

- **EC2: Data Transfer - Region to Region (In)**

  Filters by costs associated with how many GB are transferred to your Amazon EC2 instances from a different AWS Region.

- **EC2: Data Transfer - Region to Region (Out)**

  Filters by costs associated with how many GB are transferred from your Amazon EC2 instances to a different AWS Region.

- **EC2: EBS - I/O Requests**

  Filters by costs associated with how many I/O requests that you make to your Amazon EBS volumes.

- **EC2: EBS - Magnetic**

  Filters by costs associated with how many GB that you have stored on Amazon EBS Magnetic volumes.

- **EC2: EBS - Provisioned IOPS**

  Filters by costs associated with how many IOPS-months that you have provisioned for Amazon EBS.

- **EC2: EBS - SSD(gp2)**

  Filters by costs associated with how many GB per month of General Purpose storage that your Amazon EBS volumes use.

- **EC2: EBS - SSD(io1)**

  Filters by costs associated with how many GB per month of Provisioned IOPS SSD storage that your Amazon EBS volumes use.

- **EC2: EBS - Snapshots**

  Filters by costs associated with how many GB per month that your Amazon EBS snapshots store.

- **EC2: EBS - Optimized**

  Filters by costs associated with how many MB per instance hour that your Amazon EBS-optimized instances use.

- **EC2: ELB - Running Hours**

  Filters by costs associated with how many hours that your Elastic Load Balancing load balancers ran.

- **EC2: Elastic IP - Additional Address**

  Filters by costs associated with how many Elastic IP addresses that you have attached to running Amazon EC2 instances.

- **EC2: Elastic IP - Idle Address**

  Filters by costs associated with Elastic IP addresses that you have that are not attached to running Amazon EC2 instances.

- **EC2: NAT Gateway - Data Processed**

  Filters by costs associated with how many GB that your network address translation gateways (NAT gateways) processed.

- **EC2: NAT Gateway - Running Hours**

  Filters by costs associated with how many hours that your NAT gateways ran.

- **EC2: Running Hours**

  Filters by costs associated with how many hours that your Amazon EC2 instances ran.
- **RDS: Running Hours**

  Filters by costs associated with how many hours that your Amazon RDS databases ran.
- **S3: API Requests - Standard**

  Filters by costs associated with `GET` and all other standard storage Amazon S3 requests.
- **S3: Data Transfer - CloudFront (In)**

  Filters by costs associated with how many GB are transferred into Amazon S3 from a CloudFront distribution.
- **S3: Data Transfer - CloudFront (Out)**

  Filters by costs associated with how many GB are transferred from a CloudFront distribution to Amazon S3 data transfers, such as how much data was uploaded from your Amazon S3 bucket to your CloudFront distribution.
- **S3: Data Transfer - Inter AZ**

  Filters by costs associated with how many GB are transferred into, out of, or between Amazon S3 buckets in different Availability Zones.
- **S3: Data Transfer - Internet (In)**

  Filters by costs associated with how many GB are transferred to an Amazon S3 bucket from outside of the AWS network.
- **S3: Data Transfer - Internet (Out)**

  Filters by costs associated with how many GB are transferred from an Amazon S3 bucket to a host outside of the AWS network.
- **S3: Data Transfer - Region to Region (In)**

  Filters by costs associated with how many GB are transferred to Amazon S3 from a different AWS Region.
- **S3: Data Transfer - Region to Region (Out)**

  Filters by costs associated with how many GB are transferred from Amazon S3 to a different AWS Region.
- **S3: Storage - Standard**

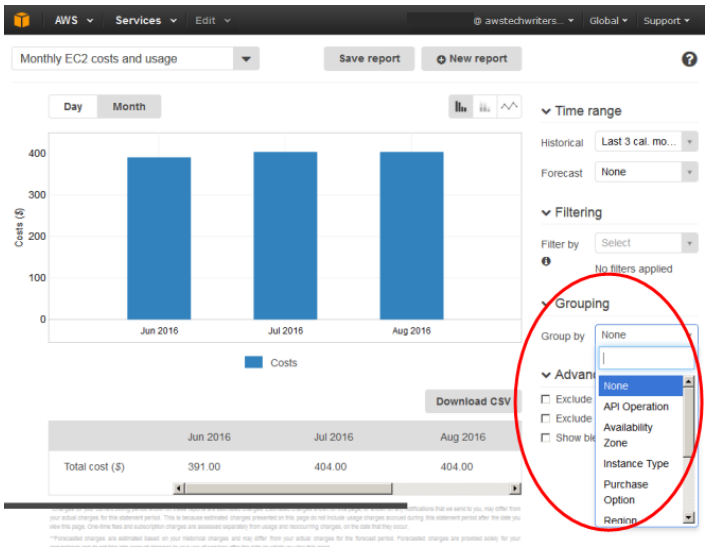
  Filters by costs associated with how many GB that you have stored in Amazon S3.

Grouping Data By Filter Type

Use the **Group By** button to have Cost Explorer display the cost data groups by filter type: API operation, Availability Zone, AWS service, custom cost allocation tags, EC2 instance type, linked account, purchase option, region, usage type, or usage type group. By default, Cost Explorer does not use grouping. Forecasting is not available for graphs that have grouping. If you don't select a **Group By** option, Cost Explorer displays total costs for the specified date range.

To group your data by filter type

1. Starting Cost Explorer (p. 48).
2. (Optional) Use the **Filter** controls to configure a view of your cost data.
3. Choose **Group By** to group by the option that you want.



The data table beneath the graph also groups your cost figures by the option you selected.

Advanced Options

You can customize how you view your data in Cost Explorer using advanced options to show or hide specific types of data, such as blended rates, subscriptions such as Reserved Instance purchases, tagged resources, or taxes.

Topics

Hiding Subscription Costs

When you purchase a Reserved Instance from AWS, you pay an up-front fee in exchange for a lower rate for using the instance. By default, Cost Explorer includes subscription charges when it calculates your AWS costs. Subscription costs can result in spikes for the days or months when you made your purchases. You can display cost data based on usage by omitting subscription charges.

By default, Cost Explorer includes refunds in cost graphs. Refunds are included as subscription charges, so if you choose to omit subscription charges in Cost Explorer, refunds are also excluded. Refunds are listed as a separate line item in the data table. They do not appear as an item in the graph because they represent a negative value in the calculation of your costs. The graph displays only positive values.

To hide subscription charges in your graph

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. In the navigation pane, choose **Cost Explorer**.
3. On the Cost Explorer page, choose **Launch Cost Explorer**.

   Note
   Cost Explorer is available in any AWS account for no cost.

4. On the right navigation pane, under **Advanced Options**, select **Exclude subscription costs**.

Hiding Tagged Resource Costs

By default, Cost Explorer includes costs both for resources that have cost allocation tags and for resources that don't have cost allocation tags in your cost graph. You can hide the tagged resources in Cost Explorer, enabling you to discover untagged resources that contribute to your costs. For more information about cost allocation tags, see Using Cost Allocation Tags (p. 70)

To hide tagged resource charges in your graph

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. In the navigation pane, choose **Cost Explorer**.
3. On the Cost Explorer page, choose **Launch Cost Explorer**.

   Note
   Cost Explorer is available in any AWS account for no cost.
4. In the navigation pane, under **Advanced Options**, select **Exclude tagged resources**.

Hiding Taxes

By default, Cost Explorer includes taxes in your cost graph. Cost Explorer does not differentiate between different kinds of taxes and adds them together as a single component of customer costs. If you have selected five or fewer filters for display, tax expenses display as a single bar. With six or more filters displayed, taxes are aggregated into a sixth bar, stack slice, or plot line that is labeled **Other**.

If you choose to omit subscription charges from your graph, Cost Explorer continues to include any taxes associated with the subscription charge.

Tax costs are included in the display only when you select monthly granularity for your cost graph. When you filter your cost graph, the following rules govern the inclusion of taxes:

1. Taxes are excluded if you select non-**Linked Account** filters, either singly or in combination with other filters.
2. Taxes are included if you select the **Linked Accounts** filters.

To hide taxes in your graph

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. In the navigation pane, choose **Cost Explorer**.
3. On the Cost Explorer page, choose **Launch Cost Explorer**.

   Note
   Cost Explorer is available in any AWS account for no cost.
4. On the right navigation pane, under **Advanced Options**, select **Exclude taxes**.

Showing Blended Costs

Consolidated Billing customers can view costs using *blended rates*, either for payer accounts or linked accounts. Blended rates average the benefit of volume discounts and reserved capacity purchase across the accounts in the Consolidated Billing family. Forecasts are available only for unblended rates. For more information, see Understanding Consolidated Bills (p. 97).

To show blended costs in your graph

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. In the navigation pane, choose **Cost Explorer**.
3. On the Cost Explorer page, choose **Launch Cost Explorer**.

   Note
   Cost Explorer is available in any AWS account for no cost.
4. On the right navigation pane, under **Advanced Options**, select **Show blended costs**.

Selecting a Style for your Graph

Cost Explorer provides three styles for graphing your cost data. Using the **View By** buttons, you can view cost data as the following:

- Plot lines
- Grouped bars
- Stacked bars

To change the graph view style

1. Starting Cost Explorer (p. 48).
2. On the navigation pane, choose **Cost Insights**.
3. Choose the **View By** button that corresponds to the graph style that you want to see:
   - Choose the first button for solid bars.

     
   - Choose the second button for stacked bars. Forecasting is not available for this style.

     
   - Choose the third button for plot lines.

Reading the Cost Explorer Graph

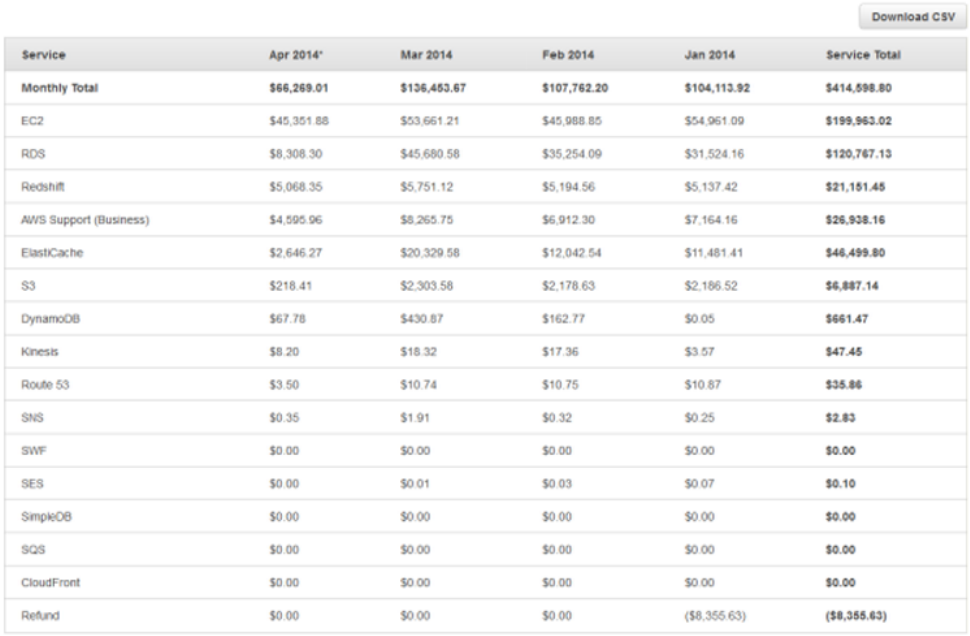
The Cost Explorer graph displays data for up to six filters. If you choose seven or more of these entities, the graph displays five bars, stacks, or lines, and then aggregates all remaining items in a sixth. The data table below the graph, however, breaks out the data for individual services that are aggregated in the graph.

Reading the Cost Explorer Data Table

Below each Cost Explorer graph is a data table, which displays the cost figures that the graph represents. If your graph is using a grouping, then the table displays the aggregate amounts for the filter types that you choose for your graph. If your graph is not using a grouping, then the table displays the aggregate amounts for your past and forecasted cost data. The maximum table size is 20 rows

by 30 columns. If the data exceeds the maximum table size, it appears in a truncated form. You can download (p. 59) the CSV file that contains the complete data set for your graph.

In the grouped data table, each row is a value for one of the filter type options: API operations, Availability Zones, AWS services, custom cost allocation tags, EC2 instance types, linked accounts, purchase options, region, usage type, or usage type group. The columns represent time intervals. For example, the following data table shows the account's costs for selected services for the last three months, with an aggregated total for the three months in the last column.


Download CSV

Service	Apr 2014*	Mar 2014	Feb 2014	Jan 2014	Service Total
Monthly Total	**$66,269.01**	**$136,453.67**	**$107,762.20**	**$104,113.92**	**$414,598.80**
EC2	$45,351.88	$53,661.21	$45,988.85	$54,961.09	**$199,963.02**
RDS	$8,308.30	$45,680.58	$35,254.09	$31,524.16	**$120,767.13**
Redshift	$5,068.35	$5,751.12	$5,194.56	$5,137.42	**$21,151.45**
AWS Support (Business)	$4,595.96	$8,265.75	$6,912.30	$7,164.16	**$26,938.16**
ElastiCache	$2,646.27	$20,329.58	$12,042.54	$11,481.41	**$46,499.80**
S3	$218.41	$2,303.58	$2,178.63	$2,186.52	**$6,887.14**
DynamoDB	$67.78	$430.87	$162.77	$0.05	**$661.47**
Kinesis	$8.20	$18.32	$17.36	$3.57	**$47.45**
Route 53	$3.50	$10.74	$10.75	$10.87	**$35.86**
SNS	$0.35	$1.91	$0.32	$0.25	**$2.83**
SWF	$0.00	$0.00	$0.00	$0.00	**$0.00**
SES	$0.00	$0.01	$0.03	$0.07	**$0.10**
SimpleDB	$0.00	$0.00	$0.00	$0.00	**$0.00**
SQS	$0.00	$0.00	$0.00	$0.00	**$0.00**
CloudFront	$0.00	$0.00	$0.00	$0.00	**$0.00**
Refund	$0.00	$0.00	$0.00	($8,355.63)	**($8,355.63)**

> **Note**
> Data transfer costs are included in the services with which they are associated, such as Amazon EC2 or Amazon S3. They are not represented as either a separate line item in the data table or a bar in the graph.

In the ungrouped data table, the row is your costs. The columns represent time intervals.

Downloading the CSV

When you want to review comprehensive detail, you can download a CSV file of the cost data that Cost Explorer uses to generate the graph, which is the same data that appears in the data table under the graph. The data table sometimes does not display the complete data set used for the graph. The CSV file contains the complete data set, including the current forecast numbers. For more information, see Reading the Cost Explorer Data Table (p. 58).

To download a CSV file

1. Starting Cost Explorer (p. 48).
2. Configure Cost Explorer to use the options that you want to see in the CSV.
3. Choose **Download CSV**.

Saving Your Cost Explorer Configuration with Bookmarks or Favorites

You can save your date, filter, chart style, group by, and advanced settings by saving the Cost Explorer URLs as favorites or bookmarks in your browser. When you return to the link that you saved, Cost

Explorer refreshes the page using current cost data for time range you selected, and displays the most recent forecast. This feature makes it easy to save a configuration that you're likely to refresh and return to often, such as "Spend Report - Last Seven Days." You can also save a configuration for a specific, unchanging range of time (such as "Spend Report, First Week of June") by using the **Custom** time range and setting fixed start and end dates for your graph.

> **Warning**
> If you want to save a number of configurations, make sure to give each bookmark or favorite a unique name, so that you don't overwrite older configurations when you save a new URL.

Managing Your Cost Explorer Reports

You can save the results of a Cost Explorer query as a Cost Explorer report. This allows you to track your Cost Explorer results and forecasts over time.

Topics

Creating a Cost Explorer Report

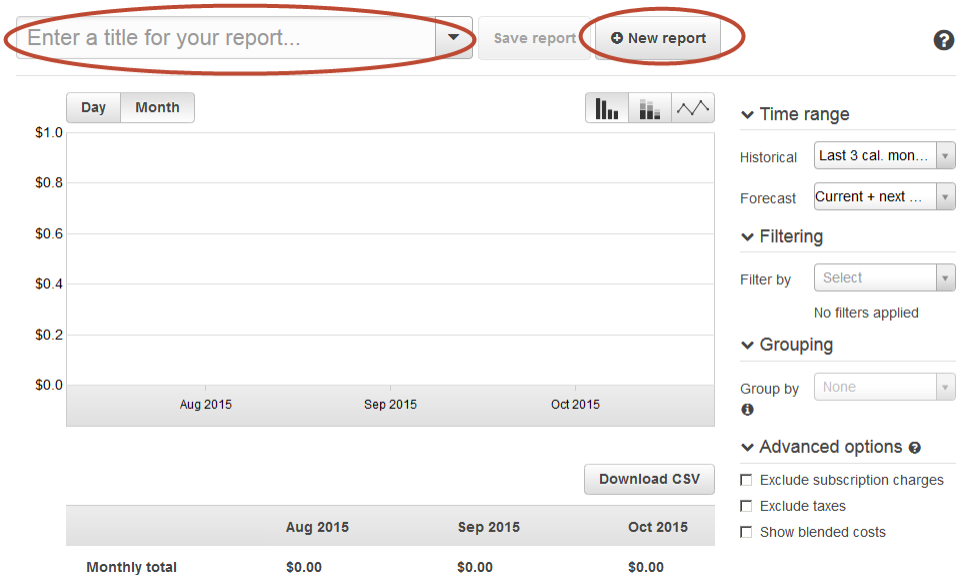
You can use the console to save the results of a Cost Explorer query as a report.

> **Note**
> Cost Explorer reports can be modified. We strongly recommend that you do not use them for auditing purposes.

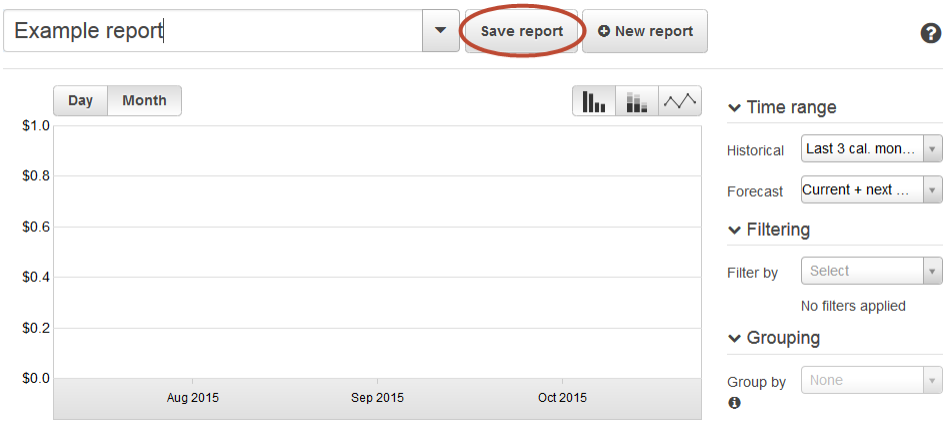
To save a Cost Explorer report

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. In the navigation pane, choose **Cost Explorer**.
3. On the Cost Explorer page, choose **Launch Cost Explorer**.

   > **Note**
   > Cost Explorer is available in any AWS account for no cost.
4. Choose **New report**. This resets all of your Cost Explorer settings to you default settings.
5. For the report name text field, enter a name for your report.



6. Customize your Cost Explorer settings. For more information, see Customizing Your Cost Explorer Cost Analysis (p. 48).
7. Choose **Save report**.



8. In the **Save report** dialog box, choose **Continue**.

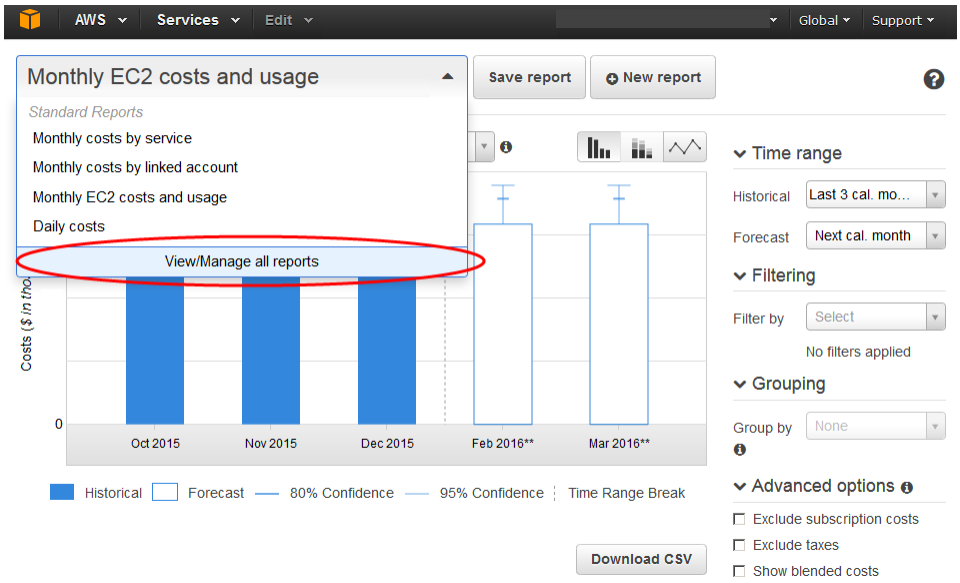
Viewing a Cost Explorer Report

You can use the console to view saved Cost Explorer reports.

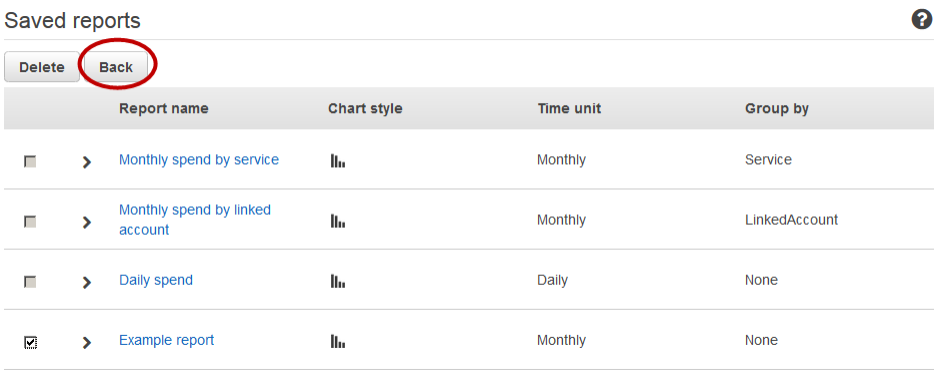
To view your saved reports

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. In the navigation pane, choose **Cost Explorer**.
3. On the Cost Explorer page, choose **Launch Cost Explorer**.

   Note
   Cost Explorer is available in any AWS account for no cost.
4. On the report drop down menu, choose **View/Manage all reports**.



5. To return to the Cost Explorer page, choose **Back**.



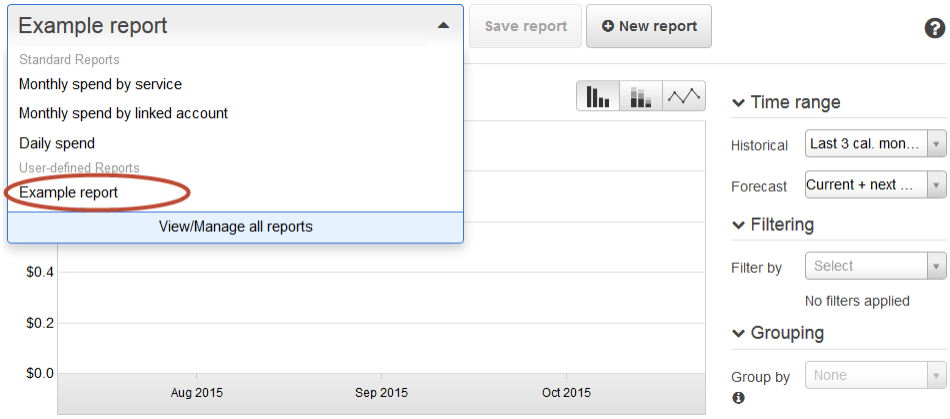
Editing a Cost Explorer Reports

You can use the console to edit Cost Explorer reports.

To edit your report

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. In the navigation pane, choose **Cost Explorer**.
3. On the Cost Explorer page, choose **Launch Cost Explorer**.

   Note
   Cost Explorer is available in any AWS account for no cost.
4. On the report drop down menu, choose the report that you want to edit.



Note
You cannot edit the preconfigured reports. If you choose one of the preconfigured reports as a starting point for a report, enter a new report name in the report name field and continue with this procedure.

5. Customize your Cost Explorer settings. For more information, see Customizing Your Cost Explorer Cost Analysis (p. 48).
6. Choose **Save report**.
7. In the **Save report** dialog box, choose **Continue**.

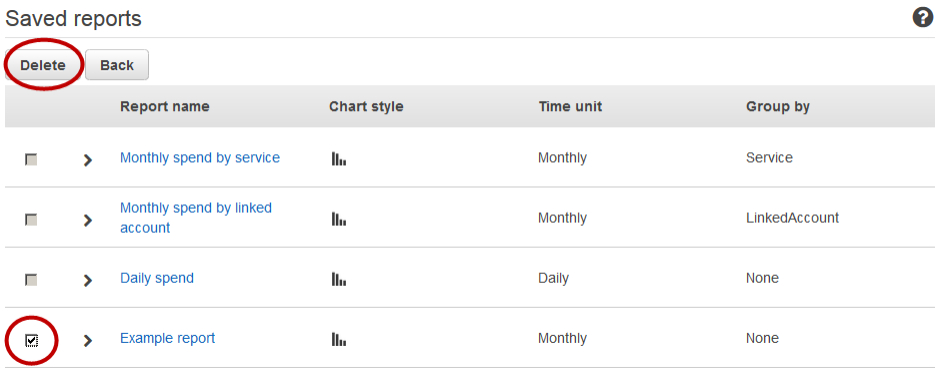
Deleting a Cost Explorer Reports

You can use the console to delete saved Cost Explorer reports.

To delete a saved report

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. In the navigation pane, choose **Cost Explorer**.
3. On the Cost Explorer page, choose **Launch Cost Explorer**.

   Note
   Cost Explorer is available in any AWS account for no cost.
4. On the report drop down menu, choose **View/Manage all reports**.
5. Next to the report that you want to delete, select the check box.
6. On the navigation bar, choose **Delete**.
7. In the **Delete Report** dialog box, choose **Delete**.



Controlling Access for Cost Explorer

How you manage access to the information in Cost Explorer depends on how your AWS account is set up. Your account might be set up to use the AWS Identity and Access Management service to grant different levels of access to different IAM users. Your account might be part of a Consolidated Billing family, in which case it is either a *paying account* or a *linked account*. For information about managing access to Billing and Cost Management pages, see Controlling Access (p. 103) For more information about consolidated billing, see Paying Bills for Multiple Accounts Using Consolidated Billing (p. 88).

Granting Cost Explorer Access

You can only enable Cost Explorer if you are the owner of the AWS account and you are using your root credentials. If you are a paying account owner, enabling Cost Explorer enables Cost Explorer for the entire Consolidated Billing family, ie, all linked accounts in the family are also granted access. You cannot grant or deny access individually.

Cost Explorer And IAM Users

An AWS account owner who is not using Consolidated Billing has full access to all Billing and Cost Management information, including Cost Explorer. After you enable Cost Explorer, you should interact with Cost Explorer as an IAM user. If you have permission to view the Billing and Cost Management console, you can use Cost Explorer.

An IAM user must be granted explicit permission to view pages in the Billing and Cost Management console, and, with appropriate permissions, can view costs for the AWS account that owns the IAM user. For the policy that grants the necessary permission to an IAM user, see Controlling Access (p. 103).

Consolidated Billing Considerations

A Consolidated Billing paying account owner has full access to all Billing and Cost Management information for costs incurred under the paying account and under linked accounts, and can view their costs in Cost Explorer.

The owner of a linked account can see costs for that linked account, but cannot see costs for any other account in the Consolidated Billing family.

Managing Your Costs with Budgets

A budget is a way to plan your usage and your costs (also known as spend data), and to track how close your usage and costs are to exceeding your budgeted amount. Budgets use data from Cost Explorer to provide you with a quick way to see your usage-to-date and current estimated charges from AWS, and to see how much your predicted usage accrues in charges by the end of the month. Budgets also compare the current estimated usage and charges to the amount that you indicated that you want to use or spend, and lets you see how much of your budget has been used. AWS updates your budget status several times a day. Budgets track your unblended costs, subscriptions, and refunds.

You can create budgets for different types of usage and different types of cost. For example, you can create a budget to see how many EC2 hours you have used, or how many GB you have stored in an S3 bucket. You can also create a budget to see how much you are spending on a particular service, or how often you call a particular API operation. Budgets use the same data filters as Cost Explorer.

> **Note**
> You can create up to 20,000 budgets per AWS payer account. Your first two active budgets are free of charge. Each additional active budget costs $0.02 per day.

You can also set up notifications that warn you if you go over your budgeted amount, or are forecast to go over your budgeted amount. Notifications can be sent to an Amazon SNS topic and to email addresses. When a budget goes over the notification amount, AWS sends a notification to the SNS topic and email addresses that are associated with your budget notification.

If you are using consolidated billing, only the payer account can create, manage, or update budgets. Individual linked accounts cannot create, manage, or update budgets. You can grant linked accounts read-only access to your budgets using an IAM policy. For more information, see Controlling Access (p. 103).

Topics

Creating a Budget

You can create budgets to track your usage and costs.

To create a budget

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Budgets**.
3. At the top of the page, choose **Create Budget**.
4. Under **Budget details**, for **Name**, type the name of your budget. Your budget name must be unique within your account, and can use A-Z, a-z, spaces, and the following characters: `_.:/=+-%@`

5. For **Select cost or usage**, choose **Cost** to create a cost budget or **Usage** to create a usage budget.
6. For **Period**, choose how often you want the budget to reset the actual and forecasted spend. Choose **Monthly** for every month, **Quarterly** for every three months, and **Annually** for every year.
7. (Optional) For **Start date**, choose the date that you want the budget to start on. If you do not specify a start date, your budget defaults to the first date of the current month.
8. (Optional) For **End date**, choose the date that you want the budget to end on. You can specify an end date up to 18 months in the future, or no end date. If you do not specify an end date, your budget recurs until you delete or update it.
9. For **Budgeted Amount**, enter the total amount that you want to use or spend for this budget period. Usage units are determined by your budget type. For example, costs are measured in dollars, EC2 instance hours are measured in hours, and data transfer is measured in GB. A budget tracks only one type of usage unit.
10. (Cost budgets only) For **Include costs related to**, select the filters and filter values that you want to use.

    Budgets use the same filters as Cost Explorer. For more information about Cost Explorer filters, see Filtering the Data You Want to View (p. 51). For example, you can choose the filter `Service` and the filter value `Amazon Elastic Compute Cloud` (Amazon EC2).
11. (Usage budgets only) For **Include usage related to**, select the filters, filter values, and (if a filter type has more than one usage type) the usage type that you want to use.

    Budgets use the same filters as Cost Explorer. For more information about Cost Explorer filters, see Filtering the Data You Want to View (p. 51). For example, you can choose the filter `Service`, the filter value `Amazon Elastic Compute Cloud`, and the usage type `USW2-BoxUsage:t2.micro (Hrs)`.
12. (Optional) Under **Notifications**, define the notifications that you want this budget to have. When you create this budget, AWS creates the budget notifications for you. A budget can have up to five budget notifications. If you do not want notifications, leave the **Notifications** fields blank.

    a. For **Notify me when**, choose whether the notification is for an actual cost (**Actual**), or a forecasted cost (**Forecasted**).
    b. For **usage is**, choose the comparison operator that you want your budget to use.
    c. For **% of budgeted usage**, type the percentage of the budget that you want to be notified at. For example, for a budget of 100 dollars, if you want to be notified at 80 dollars (80% of your budget), type "80".
    d. (Optional) For **Email contacts**, type the email addresses that you want the notifications to be sent to. Separate multiple email addresses with a comma. A notification can have up to ten email addresses.

       To receive a notification, you must specify either an email address, an SNS topic, or both.
    e. (Optional) For **SNS topic ARN**, type or paste the ARN for your SNS topic, and then choose **Verify**. If you want to use an Amazon SNS topic for your notification but don't have one, see Create a Topic in the *Amazon Simple Notification Service Developer Guide*.

       AWS verifies that your budget has permission to send notifications to your Amazon SNS topic by sending a test email to your Amazon SNS topic. If the Amazon SNS topic ARN is valid but the **Verify** step fails, check the Amazon SNS topic policy to make sure that it allows your budget to publish to that topic.

       For a sample policy and instructions on granting your budget permissions, see Creating an Amazon SNS Topic for Budget Notifications (p. 68). A notification can be subscribed to only one Amazon SNS topic.

       To receive a notification, you must specify either an email address, an SNS topic, or both.
    f. (Optional) To create additional notifications, choose **Add new notification**.

13. Choose **Create**.

Important
When you finish creating the budget, Amazon SNS sends a confirmation email to the email addresses that you specify. The subject line is **AWS Notification - Subscription Confirmation**. A recipient must choose **Confirm subscription** in the confirmation email to begin receiving notifications.

Viewing Your Budgets

The **Budgets** dashboard shows you the state of your budgets at a glance. Your budgets are listed on the dashboard along with the following data:

- The usage or costs already accrued for that budget during this budget period
- Your forecasted usage or costs for the budget period
- The total usage or amount that you specified for the budget period
- A status bar that shows your usage or costs compared to your budgeted or forecasted amount
- A status bar that shows your forecasted usage or costs compared to your budgeted or forecasted amount

To view your budgets

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Budgets**.
3. To see the filters and cost variances for your budgets, choose the arrow icon that precedes the budget's name in your list of budgets ( ).
4. To change your dashboard columns, choose the gear icon in the upper-right corner.
   a. Clear the check boxes for the columns that you want to hide, or select the columns that you want to show.
   b. Choose **Done**.

Editing a Budget

You can edit budgets created after October 20, 2016. You can't edit the budget name.

To edit a budget

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Budgets**.
3. On the **Budgets** page, select the budget that you want to edit, and then choose **Edit**.
4. Change the parameters that you want to edit. You can't change the budget name.
5. Choose **Done**.

Downloading a Budget

You can download your budgets as a CSV file. The file includes all of the data for all of your budgets, such as Budget Name, Current Value and Forecasted Value, Budgeted Value, and more.

To download a budget

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Budgets**.
3. Choose **Download CSV**.
4. Open or save your file.

Copying a Budget

You can copy an existing budget to a new one. This allows you to retain the filters and notification settings from your original budget while still allowing you to make changes. Billing and Cost Management automatically populates the fields on the creation page for the new budget, where you can update the budget parameters.

Budgets created before October 20, 2016 can't be copied.

To copy a budget

Budgets use the same filters as Cost Explorer. For more information about the filters, see Filtering the Data You Want to View (p. 51).

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Budgets**.
3. From the list of budgets, select the budget that you want to copy.
4. At the top of the page, choose **Copy**.
5. Change the parameters that you want to update. You must change the budget name.
6. Choose **Create**.

Deleting a Budget

You can delete your budgets and the associated notifications at any time. You can't recover a budget after you delete it.

To delete a budget

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Budgets**.
3. On the **Budgets** page, select the budgets that you want to delete, and then choose **Delete**.
4. In the **Delete Budget** box, choose **Delete**.

Creating an Amazon SNS Topic for Budget Notifications

When you create a budget that sends notifications to an Amazon Simple Notification Service (Amazon SNS) topic, you need to either have a pre-existing Amazon SNS topic or create an Amazon SNS topic. Amazon SNS topics allow you to send notifications over SMS in addition to email. Your budget must have permissions to send a notification to your topic.

To create an Amazon SNS topic and grant permissions to your budget, use the Amazon SNS console.

To create an Amazon SNS notification topic and grant permissions

1. Sign in to the AWS Management Console and open the Amazon SNS console at https://console.aws.amazon.com/sns/.
2. On the navigation pane, choose **Topics**.
3. On the **Topics** page, choose **Create new topic**.
4. In the dialog box, for **Topic name**, type the name for your notification topic.
5. In the dialog box, for **Display name**, type the name that you want displayed when you receive a notification.
6. Choose **Create topic**. Your topic appears in the list of topics on the **Topics** page.
7. Select your topic, and copy the ARN next to your topic name.

8. For **Actions**, choose **Edit topic policy**.
9. In the dialog box, choose **Advanced view**.
10. In the policy text field, after **"Statement": [**, add the following text:

```
{
  "Sid": "<replaceable>ExampleSid123456789012</replaceable>",
  "Effect": "Allow",
  "Principal": {
    "Service": "budgets.amazonaws.com"
  },
  "Action": "SNS:Publish",
  "Resource": "<replaceable>your topic ARN</replaceable>"
},
```

11. Replace **ExampleSid123456789012** with a string. The Sid must be unique within the policy.
12. Replace *your topic ARN* with the Amazon SNS topic ARN from step seven.
13. Choose **Update policy**. This grants your budget permissions to publish to your topic.

You can now use the Amazon SNS topic ARN to set up Amazon SNS notifications for a budget.

Checking or Resending Notification Confirmation Emails

When you create a budget with notifications, you also create Amazon Simple Notification Service (Amazon SNS) notifications. In order for notifications to be sent, you must accept the subscription to the Amazon SNS notification topic.

To confirm that your notification subscriptions have been accepted or to resend a subscription confirmation email, use the Amazon SNS console.

To check your notification status or to resend a notification confirmation email

1. Sign in to the AWS Management Console and open the Amazon SNS console at https://console.aws.amazon.com/sns/.
2. On the navigation pane, choose **Subscriptions**.
3. On the **Subscriptions** page, for **Filter**, enter `budget`. A list of your budget notifications appears.
4. Under **Subscription ARN**, you will see `PendingConfirmation` if a subscription has not been accepted. If you do not see a `PendingConfirmation`, all of your budget notifications have been activated.

5. (Optional) To resend a confirmation request, select the subscription with a pending confirmation, and choose **Request confirmations**. Amazon SNS will send a confirmation request to the email addresses that are subscribed to the notification.

   - When each owner of an email address receives the email, they must choose the **Confirm subscription** link to activate the notification.

Using Cost Allocation Tags

Topics

You can use cost allocation tags to categorize and track your AWS costs. When you apply tags to your AWS resources (such as Amazon EC2 instances or Amazon S3 buckets) and activate the tags, AWS generates a cost allocation report as a comma-separated value (CSV file) with your usage and costs aggregated by your active tags. You can apply tags that represent business categories (such as cost centers, application names, or owners) to organize your costs across multiple services.

The cost allocation report includes all of your AWS costs for each billing period. The report includes both tagged and untagged resources, so you can clearly organize the charges for resources. For example, if you tag resources with an application name, you can track the total cost of a single application that runs on those resources. The following shows a partial report with columns for each tag.

Total Cost	user:Owner	user:Stack	user:Cost Center	user:Application
0.95	DbAdmin	Test	80432	Widget2
0.01	DbAdmin	Test	80432	Widget2
3.84	DbAdmin	Prod	80432	Widget2
6.00	DbAdmin	Test	78925	Widget1
234.63	SysEng	Prod	78925	Widget1
0.73	DbAdmin	Test	78925	Widget1
0.00	DbAdmin	Prod	80432	Portal
2.47	DbAdmin	Prod	78925	Portal

At the end of the billing cycle, the total charges (tagged and untagged) on the billing report with cost allocation tags reconciles with the total charges on your **Bills** page total and other billing reports for the same period.

You can also use tags to filter views in Cost Explorer. Note that before you can filter views by tags in Cost Explorer, you must have applied tags to your resources and activate them, as described in the following sections. For more information about Cost Explorer, see Analyzing Your Costs with Cost Explorer (p. 43).

This topic discusses how to structure and receive cost allocation reports. For more information on how to get a billing report that includes your cost allocation tags, use the procedures in Monthly Cost Allocation Report (p. 25).

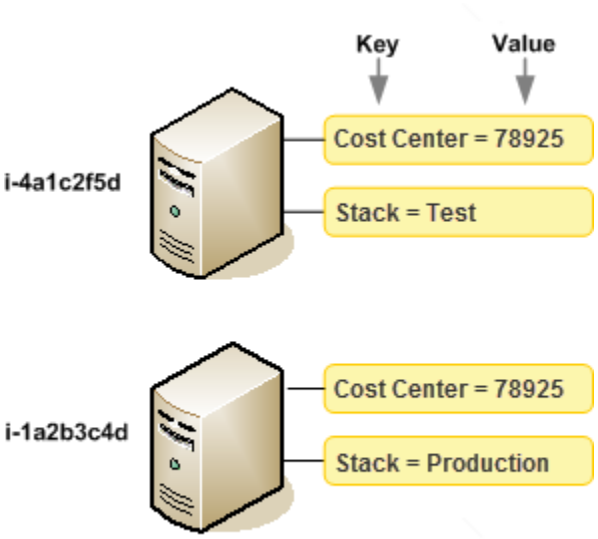
Note
AWS writes billing reports to an Amazon S3 bucket that you create and own. You can retrieve these reports from the bucket using the Amazon S3 API, AWS Management Console for Amazon S3, or the Amazon S3 command line interface (CLI). The cost allocation report

cannot be downloaded from the **Account Activity** page of the Billing and Cost Management console.

What Is a Tag?

A tag is a label you assign to an AWS resource. Each tag consists of a *key* and a *value*, both of which you define. AWS uses tags as a mechanism to organize your resource costs on your cost allocation report.

The following diagram illustrates the concept. In the diagram, you've assigned tags to two Amazon EC2 instances, one called Cost Center and another called Stack. Each of the tags also has an associated value.



Applying Tags

For ease of use and best results, use the AWS Tag Editor, which provides a central unified way to create and manage your tags. For more information, see Working with Tag Editor in Getting Started with the AWS Management Console.

You can also apply tags to resources through API requests or through the AWS Management Console for services that support tagging. Each AWS service has its own implementation of tags. You can work with these implementations individually, or use Tag Editor to simplify the process. The following is a current list of services that support tags.

AWS Product	For more information, see...	
Amazon Elastic Block Store (Amazon EBS)	Tagging Your Resources in the *Amazon Elastic Compute Cloud User Guide*.	
Amazon ElastiCache (ElastiCache)	Using Cost Allocation Tags in ElastiCache in the *Amazon ElastiCache User Guide*.	
Amazon Elastic Compute Cloud (Amazon EC2)	Tagging Your Resources in the *Amazon Elastic Compute Cloud User Guide*.	
Elastic Load Balancing	Add or Remove Tags in the *Elastic Load Balancing Developer Guide*.	

AWS Product	For more information, see...	
Amazon EMR	Tagging Amazon EMR Clusters in the *Amazon EMR Developer Guide*.	
Amazon Glacier	Tagging Your Amazon Glacier Resources in the *Amazon Glacier Developer Guide*.	
Amazon Kinesis	Tagging Your Amazon Kinesis Streams in the *Amazon Kinesis Developer Guide*.	
Amazon Redshift	Tagging Resources in Amazon Redshift in the *Amazon Redshift Cluster Management Guide*.	
Amazon Relational Database Service (Amazon RDS)	Tagging Amazon RDS Resources in the *Amazon Relational Database Service User Guide*.	
Amazon Route 53	Tagging Amazon Route 53 Resources in the *Amazon Route 53 Developer Guide*.	
Amazon Simple Storage Service (Amazon S3)	Billing and Reporting of Buckets in the *Amazon Simple Storage Service Developer Guide*.	
Amazon Virtual Private Cloud (Amazon VPC)	Amazon VPC and Amazon EC2 resources that can be tagged are listed in Tagging Your Resources in the *Amazon Elastic Compute Cloud User Guide*.	
Auto Scaling	Tagging Auto Scaling Groups and Amazon EC2 Instances in the *Auto Scaling Developer Guide*.	
AWS CloudFormation	Tagging Your Member Resources in the *AWS CloudFormation User Guide*.	
AWS Elastic Beanstalk	Tagging Your Environments and Applications in the *AWS Elastic Beanstalk Developer Guide*.	
Amazon WorkSpaces	Tag a WorkSpace in the *Amazon WorkSpaces Administration Guide*.	

For a full list of taggable resources, use the Tag Editor to search for taggable resources. For more information about how to search resources using Tag Editor, see Searching for Resources to Tag.

> **Note**
> For services that launch "underlying" resources supporting tagging, such as Amazon EMR or AWS Marketplace, you can tag the underlying resources (such as the associated Amazon EC2 instance) for your report.

It's a good idea to devise a set of tag keys that represent how you want to organize your costs. If you use a consistent set of tag keys to track your costs, your billing report with cost allocation tags will display the keys as additional columns with applicable values for each row.

Activating Tags

In order for tags to appear on your billing reports, you must activate your tags in the billing console.

To activate your tags

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. In the navigation pane, choose **Cost Allocation Tags**.
3. Select the tag(s) that you want to activate.
4. Choose **Save**.

For an example of how tags appear in your billing report with cost allocation tags, see Viewing a Cost Allocation Report (p. 76).

Tag Restrictions

The following basic restrictions apply to tags:

- Maximum key length: 128 Unicode characters
- Maximum value length: 256 Unicode characters
- Maximum number of tags per resource: 10 for S3 buckets, 50 for other AWS resources
- Reserved prefix—`aws:`

  AWS-assigned tag names and values are automatically assigned the `aws:` prefix, which the user cannot assign. AWS-assigned tag names do not count towards the resource tag limits. User-assigned tag names have the prefix `user:` in the Cost Allocation Report.
- Use each key only once for each resource. If you attempt to use the same key twice on the same resource, your request will be rejected.
- You cannot tag a resource at the same time you create it. Tagging requires a separate action after the resource is created.
- You cannot backdate the application of a tag.
- Allowed characters are letters, whitespace, and numbers, plus the following special characters: + - = . _ : /

  Note
  If you need characters outside this allowed set, you can apply standard base-64 encoding to your tag.

Setting Up Your Monthly Cost Allocation Report

Setting Up a Monthly Cost Allocation Report

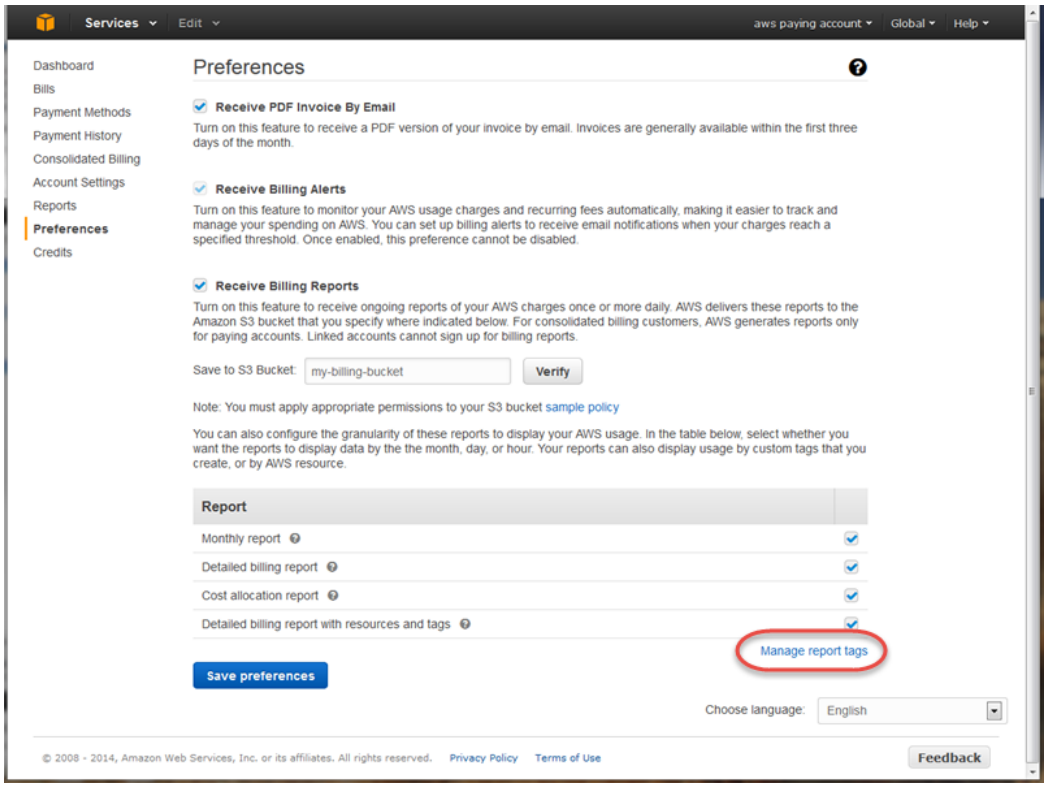
The cost allocation report includes the same line items as the detailed billing report (see Understanding Your Usage with Billing Reports (p. 17)), *plus* additional columns you've selected to include in the report identified by your tag keys.

By default, new tag keys that you add using the API or the AWS Management Console are automatically excluded from the cost allocation report. You can add them using the procedures described in this topic.

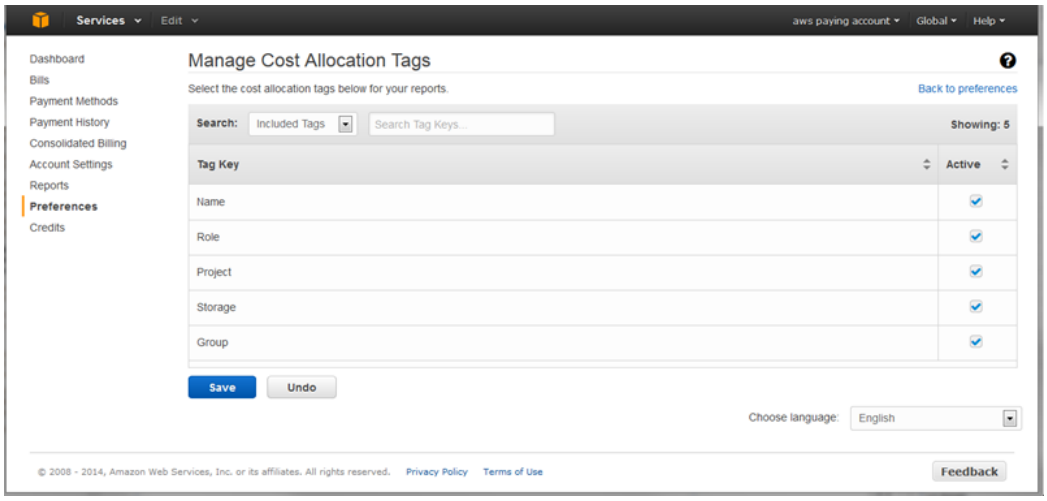
When you select tag keys to include in your cost allocation report, each key becomes an additional column that lists the value for each corresponding line item. Since you might use tags for more than just your cost allocation report (e.g., tags for security or operational reasons), you can include or exclude individual tag keys for the report. This ensures that you're seeing meaningful billing information that helps organize your costs. A small number of consistent tag keys makes it easier to track your costs. For more information, see Viewing a Cost Allocation Report (p. 76).

To create the keys that appear in the cost allocation report

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. Select **Preferences** on the navigation panel on the left.
3. For **Receive Billing Reports**, type a valid Amazon S3 bucket name and then choose **Verify**.
4. Underneath the **Detailed Billing Reports** selection grid, choose **Manage report tags**, as shown in the following image:

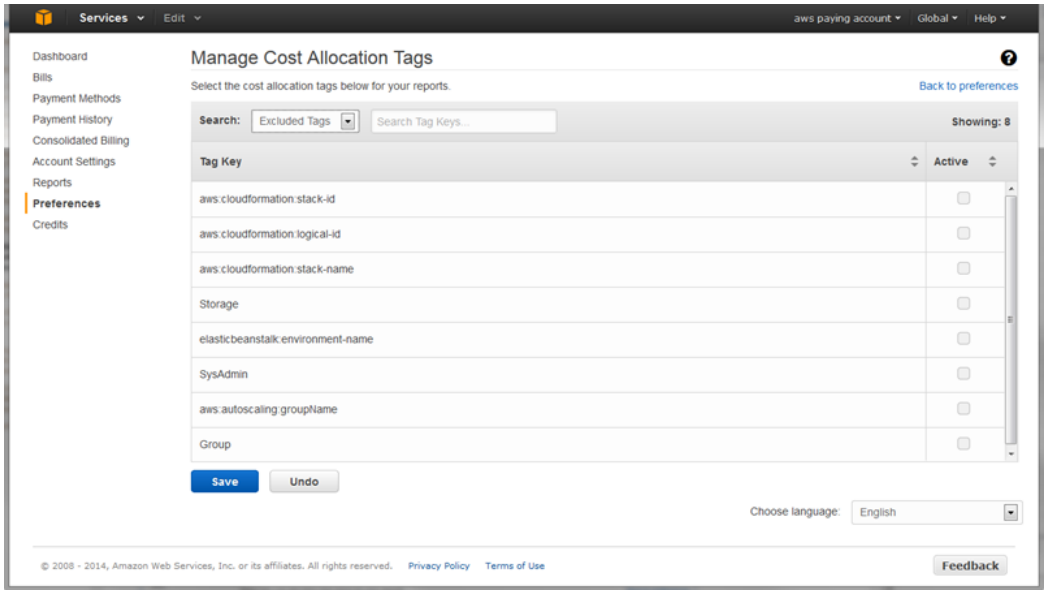


5. The page displays a list of tags you've created using either the API or the console for the applicable AWS service. Tag keys that currently appear in the report are selected, while the check boxes for excluded tag keys are cleared. Use the **Search** drop-down box to switch display excluded tags, as shown in Step 5.



6. Select **Excluded Tags** in the **Search** column.

   Select any check boxes for tags that you want to add to the report.



7. Choose **Save** after you make your changes.

For Consolidated Billing customers, your cost allocation report includes all the usage, costs, and tags for your linked accounts. By default, all keys registered by linked accounts where you are the *payer* are available for you to include or exclude from your report. The detailed billing report with resources and tags also includes any cost allocation tag keys that you select using the preceding steps.

Getting an Hourly Cost Allocation Report

The cost allocation report is one of several that AWS publishes to an Amazon S3 bucket several times a day.

> **Note**
> During the current billing period (monthly), AWS generates an estimated Cost Allocation Report. The current month's file is overwritten throughout the billing period until a final report is

generated at the end of the billing period. Then, a new file is created for the next billing period. The reports for the previous months will remain in the designated Amazon S3 bucket.

Viewing a Cost Allocation Report

The following example tracks the charges for several cost centers and applications. Resources (such as Amazon EC2 instances and Amazon S3 buckets) are assigned tags like "Cost Center"="78925" and "Application"="Widget1". In the Cost Allocation Report, the user-assigned tag keys have the prefix "user", such as "user:Cost Center" and "user:Application". AWS-assigned tag keys have the prefix "aws". The keys are column headings identifying each tagged line item's value, such as "78925".

Total Cost	user:Owner	user:Stack	user:Cost Center	user:Application
0.95	DbAdmin	Test	80432	Widget2
0.01	DbAdmin	Test	80432	Widget2
3.84	DbAdmin	Prod	80432	Widget2
6.00	DbAdmin	Test	78925	Widget1
234.63	SysEng	Prod	78925	Widget1
0.73	DbAdmin	Test	78925	Widget1
0.00	DbAdmin	Prod	80432	Portal
2.47	DbAdmin	Prod	78925	Portal

You can use a desktop spreadsheet application to create pivot tables that group the keys and the values for each key so you can see combined values for tagged resources. The following example organizes information first by "Cost Center" and within each cost center further organizes the information by the "Application" tag.

COST CENTER	Usage	Before Tax
⊟ 78925	62369611	$1,008.23
⊟ Widget1	2256	$240.63
⊟ AmazonEC2	300	$6.00
$0.02 per Micro Instance (t1.micro) instance-hour (or partial hour)	300	$6.00
⊟ AWSDataTransfer	1956	$234.63
$0.000 per GB - first 1 GB of data transferred out per month	1956	$234.63
⊟ Widget2	36337396	$690.97
⊟ AmazonEC2	72160	$10.87
$0.020 per Micro Instance (t1.micro) instance-hour (or partial hour)	543	$10.86
$0.10 per 1 million I/O requests	71617	$0.01
$0.10 per GB-month of provisioned storage	0	$0.01
⊟ AmazonRDS	36146062	$679.97
$0.10 per 1 million I/O requests	36140859	$3.61
$0.20 per GB-month of provisioned storage for Multi-AZ deployments	1673	$334.68

Pick your keys carefully so you have a consistent hierarchy of values; otherwise, your report won't aggregate costs effectively, and you'll have many line items.

Note

If you add or change the tags on a resource part way through a billing period, costs will be split into before and after the update as two separate lines in your Cost Allocation Report.

Unallocated Resources in Your Report

Any charges that cannot be allocated by tags in your Cost Allocation Report default to the standard billing aggregation (organized by Account/Product/Line Item) and are included in your report. Situations where you can have unallocated costs include:

- You signed up for a Cost Allocation Report mid-month.
- Some resources aren't tagged for part, or all, of the billing period.
- You are using services that currently do not support tagging.
- Subscription-based charges, such as Premium Support and AWS Marketplace monthly fees, cannot be allocated.
- One-time fees, such as Amazon EC2 Reserved Instance upfront charges, cannot be allocated.
- Amazon Elastic Block Store (Amazon EBS) *snapshot* charges cannot be allocated, even though Amazon EBS *volume* charges can be allocated.

Avoiding Unexpected Charges

Here are some suggestions to help you avoid unexpected charges on your bill. The first two items are for those who are using the one-year AWS Free Tier. The following items address specific features or behaviors within individual services from AWS that can sometimes result in unexpected charges, particularly if you unsubscribe from the service or close your account.

> **Note**
> If you close your account or unsubscribe from a service, make sure that you take the appropriate steps for every region in which you've allocated AWS resources.

Topics

Usage Exceeds Free Tier

If you are using the free tier, make sure that your usage does not exceed the limits specified at AWS Free Tier. You are charged On Demand rates for any usage that exceeds the free tier limits. You can check your free tier usage on the Billing and Cost Management console.

For more information on tracking your free tier usage, see Tracking Your Free Tier Usage (p. 12).

AWS Free Tier Expired

If you receive unexpected charges after a period of inactivity, your free tier period might have expired. Any resources allocated to your account after your free tier period expires begin to incur charges. To check for resources in use, open the AWS Management Console. **Be sure to check each region where you have allocated resources.**

For more information about free tier offerings and terms, see AWS Free Tier.

Bill Received After Account Closure

Each month's usage is calculated and billed at the beginning of the following month. If you close your account, but use opt-in services during the month, you receive a bill for the opt-in service usage at the beginning of the following month.

Elastic Beanstalk Environments

Elastic Beanstalk is designed to ensure that all the resources you need are running, which means that it automatically relaunches any services that you stop. To avoid this, you must terminate your Elastic Beanstalk environment before you terminate resources that Elastic Beanstalk has created. For more information, see Terminating an Environment in the *AWS Elastic Beanstalk Developer Guide*.

Elastic Load Balancing (ELB)

Like Elastic Beanstalk environments, ELB load balancers are designed to keep a minimum number of Amazon Elastic Compute Cloud (Amazon EC2) instances running. You must terminate your load balancer before you delete the Amazon EC2 instances registered with it. For more information, see Delete Your Load Balancer in the *Elastic Load Balancing User Guide*.

Services Started in AWS OpsWorks

If you use the AWS OpsWorks environment to create AWS resources, you must use AWS OpsWorks to terminate those resources, or AWS OpsWorks will restart them. For example, if you use AWS OpsWorks to create an Amazon EC2 instance, but then terminate it by using the Amazon EC2 console, the AWS OpsWorks auto healing feature categorizes the instance as failed and restarts it. For more information, see AWS OpsWorks User Guide.

Amazon EC2 Instances

After you remove load balancers and Elastic Load Balancing environments, you can stop or terminate Amazon EC2 instances. Stopping an instance allows you to start it again later, but you might be charged for storage. Terminating an instance permanently deletes it. For more information, see Instance Lifecycle in the *Amazon EC2 User Guide for Linux Instances*, particularly Stop and Start Your Instance and Terminate Your Instance.

> **Note**
> Amazon EC2 instances serve as the foundation for multiple AWS services. They can appear in the Amazon EC2 console Instances list even if they were started by other services. For example, Amazon Relational Database Service (Amazon RDS) instances run on Amazon EC2 instances. If you terminate an underlying Amazon EC2 instance, the service that started it might interpret the termination as a failure and restart the instance. For example, the AWS OpsWorks service has a feature called *auto healing* that restarts resources when it detects failures. In general, it is a best practice to delete resources through the services that started them.

Additionally, if you create Amazon EC2 instances from an Amazon Machine Image (AMI) that is backed by an instance store, check Amazon S3 for the related bundle. Deregistering an AMI does not delete the bundle. For more information, see Deregistering Your AMI.

Amazon Elastic Block Store Volumes

Most Amazon EC2 instances are configured so that their associated Amazon EBS volumes are deleted when they are terminated, but it is possible to set up an instance that preserves its volume and the data. Check the Volumes pane in the Amazon EC2 console for volumes that you don't need anymore.

For more information, see Deleting an Amazon EBS Volume in the *Amazon EC2 User Guide for Linux Instances*.

If you have stored snapshots of your Amazon EBS volumes and no longer need them, you should delete them as well. Deleting a volume does not automatically delete the associated snapshots. For more information, see Deleting an Amazon EBS Snapshot.

Elastic IP Addresses

Any Elastic IP addresses that are attached to an instance that you terminate are unattached, but they are still allocated to you. If you don't need that IP address anymore, release it to avoid additional charges. For more information, see Releasing an Elastic IP Address in the *Amazon EC2 User Guide for Linux Instances*.

Services Launched by Other Services

A number of AWS services can launch resources, so be sure to check for anything that might have launched through any service you've used.

Storage Services

When you are minimizing costs for AWS resources, be sure to keep in mind any services that might incur storage costs, such as Amazon RDS and Amazon S3.

Managing Your Account

Use the procedures in this chapter to manage your account settings, your default currency, your alternate contacts, and more.

Topics

Managing an AWS Account

Use the Account Settings pages of the Billing and Cost Management console to perform the following tasks:

- Edit your user name, password, or email address
- Edit your contact information
- Change the local currency associated with your account
- Add, update, or remove alternate contacts

To edit your AWS user name, password, or email address

You can change the name, password, and email address associated with your AWS account.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation bar, choose your account name, and then choose **My Account**.
3. On the **Account Settings** page, next to **Account Settings**, choose **Edit**.
4. Next to the field that you want to update, choose **Edit**.
5. After you have entered your changes, choose **Save changes**.
6. After you have made your changes, choose **Done**.

To edit your contact information

You can change the contact information associated with your AWS account, including your mailing address, telephone number, and website address.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation bar, choose your account name, and then choose **My Account**.
3. Under **Contact Information**, choose **Edit**.
4. For the fields that you want to change, type your updated information, and then choose **Update**.

Note
You can choose to add an email address for billing in the Alternate Contacts section to have AWS send a copy of billing-related emails to that email address. For example, AWS sends your Billing contact address a copy of your monthly bill.

To change the local currency associated with your account

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation bar, choose your account name, and then choose **My Account**.
3. Scroll down to the **Payment Currency Preference** section. Next to **Payment Currency Preference**, choose **Edit**.
4. For **Select Payment Currency**, select the currency that you want to pay your bill in, and then choose **Update**.

To add, update, or remove alternate contacts

You can add alternate contacts to your account. Alternate contacts enable AWS to contact another person about issues with your account, even if you are unavailable.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation bar, choose your account name, and then choose **My Account**.
3. Scroll down to the **Alternate Contacts** section, and then choose **Edit**.
4. For the fields that you want to change, type your updated information and then choose **Update**.

Managing an Account in India

If you sign up for a new account and choose India for your contact address, your user agreement will be with Amazon Internet Services Pvt. Ltd (AISPL), a local AWS seller in India. AISPL will manage your billing, and your invoice total will be listed in rupees instead of dollars. Note that after you create an account with AISPL, you can't change the country in your contact information.

If you have an existing account with an India address, your account is either with AWS or AISPL, depending on when you opened the account. To learn whether your account is with AWS or AISPL, see the procedure Determining Which Company Your Account is With (p. 82). If you are an existing AWS customer, you can continue to use your AWS account. You also can choose to have both an AWS account and an AISPL account, though they can't be consolidated into the same payment family. For information about managing an AWS account, see Managing an AWS Account (p. 80). (Currently, you can't migrate an existing account from AWS to AISPL.)

If your account is with AISPL, follow the procedures in this chapter to manage your account. This chapter explains how to sign up for an AISPL account, edit information about your AISPL account, and add or edit your Permanent Account Number (PAN).

As part of the credit card verification process during sign up, AISPL charges your credit card 2 INR. AISPL refunds the 2 INR after verification is complete. You might be redirected to your bank as part of the verification process.

Topics

Determining Which Company Your Account is With

AWS services are provided by both AWS and AISPL. Use this procedure to determine which seller your account is with.

To determine which company your account is with

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. In the page footer, look at the copyright notice. If the copyright is for Amazon Web Services, then your account is with AWS. If the copyright is for Amazon Internet Services Private Ltd., then your account is with AISPL.

Signing Up for AISPL

AISPL is a local seller of AWS. Use the following procedure to sign up for an AISPL account if your contact address is in India.

To sign up for an AISPL account

If your contact address is in India and you want to open an account, you sign up with AISPL instead of AWS.

1. Go to https://console.aws.amazon.com/, and then choose **Sign In to the Console**.
2. On the **Sign In** page, type the email address that you want to use.
3. Under your email address, select **I am a new user**, and then choose **Sign in using our secure server**.
4. For each of the login credential fields, type your information, and then choose **Create account**.
5. For each of the contact information fields, type your information.
6. After you have read the customer agreement, select the terms and conditions check box, and then choose **Create Account and Continue**.
7. On the **Payment Information** page, enter the payment method that you want to use.
8. Under **PAN Information**, choose **No** if you do not have a Permanent Account Number (PAN) or want to add it later. If you have a PAN and want to add it now, choose **Yes**, and in the **PAN** field type your PAN.
9. Choose **Verify Card and Continue**. AISPL charges your card 2 INR as part of the verification process. AISPL refunds the 2 INR after verification is complete.
10. For **Provide a telephone number**, type your phone number. If you have a phone extension, for **Ext**, type your phone extension.
11. Choose **Call Me Now**. After a few moments, a four-digit pin will appear on your screen.
12. Accept the automated call from AISPL. On your phone keypad, type the four-digit pin displayed on your screen.
13. Once the automated call verifies your contact number, choose **Continue to Select Your Support Plan**.

14. On the **Support Plan** page, select your support plan, and then choose **Continue**. Once your payment method is verified and your account is activated, you will receive an email confirming the activation of your account.

Managing Your AISPL Account

Use the Account Settings and Tax Settings pages of the Billing and Cost Management console to perform the following tasks:

- Edit your user name, password, or email address
- Edit your contact information
- Add, update, or remove alternate contacts
- Add or edit a Permanent Account Number (PAN)
- View a tax invoice

To edit your user name, password, or email address

You can change the name, password, and email address associated with your AISPL account.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation bar, choose your account name, and then choose **My Account**.
3. Next to **Account Settings**, choose **Edit**.
4. Next to the field that you want to update, choose **Edit**.
5. After you have entered your changes, choose **Save changes**.
6. After you have made your changes, choose **Done**.

To edit your contact information

You can change the contact information associated with your AISPL account, including your mailing address, telephone number, and website address. You cannot edit your country.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation bar, choose your account name, and then choose **My Account**.
3. Under **Contact Information**, choose **Edit**.
4. For the fields that you want to change, type your updated information, and then choose **Update**.

Note
You can choose to add an email address for billing in the Alternate Contacts section to have AISPL send a copy of billing-related emails to that email address. For example, AISPL sends a copy of your monthly bill to your Billing contact address.

To add, update, or remove alternate contacts

You can add alternate contacts to your account. Alternate contacts enable AISPL to contact another person about issues with your account, even if you are unavailable.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation bar, choose your account name, and then choose **My Account**.
3. Scroll down to the **Alternate Contacts** section, and then choose **Edit**.

4. For the fields that you want to change, type your updated information, and then choose **Update**.

To add or edit a PAN

You can add your Permanent Account Number (PAN) to your account and edit it.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Tax Settings**.
3. On the **Tax Settings** navigation bar, choose **Edit**.
4. For **Permanent Account Number (PAN)**, enter your PAN, and then choose **Update**.

To view a tax invoice

You can view your tax invoices in the console.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Bills**.
3. Under **Other Details**, for **Tax Invoices**, choose **View Invoices**.

Closing an Account

To close your account

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation bar, choose your account name, and then choose **My Account**.
3. Scroll to the end of the page, select the check box under **Close Account**, and then choose **Close Account.**

Note
After your AWS account is closed, you can still sign in to view your past bills and to contact Customer Support. For more information, see Contacting Customer Support About Your Bill (p. 115).

Managing Your Payments

To open an AWS account, you must have a valid credit card on file. Use the procedures in this chapter to add, update, or remove credit cards and to make payments.

Topics

Managing Your AWS Payments

You can use the Payment Methods page of the Billing and Cost Management console to perform the following tasks:

- View credit cards associated with your account
- Add a credit card to your AWS account
- Designate a credit card as the default payment
- Confirm that your credit card is up to date
- Make a payment
- Remove a credit card from your AWS account

> **Note**
> If you have questions about payment methods, see Contacting Customer Support About Your Bill (p. 115).

To view credit cards associated with your AWS account

You can use the console to view the credit cards associated with your account.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose Payment Methods.

To add a credit card to your AWS account

You can use the console to add a credit card to your account.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose Payment Methods.
3. Choose **Add a card**.
4. For the credit card fields, type the information, and then choose **Continue**.
5. For your credit card information fields, type your card billing address.
6. Choose **Continue**.

To designate a credit card as the default payment method

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose Payment Methods.
3. Next to the credit card that you want to use as your default payment method, choose **Make Default**.

To confirm that your credit card is up to date

You must have a valid, unexpired credit card on file to make a payment.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. In the navigation pane, choose **Payment Methods**.
3. Ensure that the **Expires On** date for your card is in the future. If your card has expired, add a new card or update your current card.

To make a payment

AWS charges your default credit card automatically at the beginning of each month. If that charge doesn't process successfully, you can use the console to update your credit card and make a payment.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. In the navigation pane, choose **Payment Methods**.
3. On the **Payment Methods** page, confirm that the card that you want to use is marked as your default card.
4. Confirm that your card has not expired.
5. Choose **Make a Payment**.

To remove a credit card from your AWS account

To remove a credit card from your AWS account, you must remove it from your Amazon.com account.

1. Sign in to the Amazon.com console with your Amazon.com credentials and open the Your Account page.
2. Under **Amazon Wallet**, choose Manage Payment Options.
3. Choose the credit card that you want to delete.

4. In the card details, choose **Delete**.
5. In the **Delete Payment Method** dialog box, choose **Confirm delete**.

Managing Your Payments in India

If your account is with AISPL, follow the procedures in this chapter to manage your payment methods and payments, and to verify credit card payments with your bank. To learn whether your account is with AWS or AISPL, see the procedure Determining Which Company Your Account is With (p. 82).

- View credit cards associated with your account
- Add a credit card to your AISPL account
- Pay your AISPL bill
- Remove a credit card from your AISPL account
- Activate your subscription

> **Note**
> If you have questions about payment methods, see Contacting Customer Support About Your Bill (p. 115).

To view credit cards associated with your AISPL account

You can use the console to view the credit cards associated with your account.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Payment Methods**.

To add a credit card to your AISPL account

You can use the console to add a credit card to your account.

> **Note**
> AISPL charges your card 2 INR as part of the credit card verification process. AISPL refunds the 2 INR after verification is complete.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Payment Methods**.
3. Choose **Add a card**.
4. For the credit card fields, type the information, and then choose **Continue**.
5. For your credit card information fields, type your card billing address.
6. Choose **Continue**.

> **Note**
> You might be redirected to your bank to authorize the charge to your Visa or Mastercard.

To pay your AISPL bill

You can use the console to pay your AISPL bills.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.

2. On the navigation pane, choose **Payment History**.
3. Next to the invoice that you want to pay, choose **Pay Now**. You will be redirected to your payment methods.
4. On the **Payment Methods** page, select the payment method that you want to use.
5. In the **Make Payment** box, type the three or four-digit security code of your payment method, and then choose **Make Payment**.
6. For Visa and Mastercard payment methods, you will be redirected to your bank to verify your payment. For American Express payment methods, your payment will be processed by your bank, and no action from you is required. Once your payment is verified, you will be redirected to your account page. Your invoice will show the **Pay Now** link until your payment has been processed by your bank.

To remove a credit card from your AISPL account

You can use the console to remove a credit card from your account.

> **Note**
> When you choose **Delete**, AISPL stops displaying the credit card and marks it inactive in the AWS records. The deleted card can still be charged for any remaining AISPL balance. If you close your AISPL account, be sure to also cancel your AWS subscriptions; AISPL continues to charge you for usage accrued up to the time that you cancel your subscriptions.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Payment Methods**.
3. Ensure that your account has a second valid payment method.
4. Next to the card that you want to remove, choose **Delete**.

To activate your subscription

You can use the console to activate your subscription.

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. On the navigation pane, choose **Payment History**.
3. Next to the invoice for your subscription, choose **Pay Now**. You will be redirected to your payment methods.
4. On the **Payment Methods** page, select the payment method that you want to use.
5. In the **Make Payment** box, type the three or four-digit security code of your payment method, and then choose **Make Payment**.
6. For Visa and Mastercard payment methods, you will be redirected to your bank to verify your payment. For American Express payment methods, your payment will be processed by your bank, and no action from you is required. Once your payment is verified, your subscription will be activated and you will be redirected to your account page. Your invoice will show the **Pay Now** link until your payment has been processed by your bank.

Paying Bills for Multiple Accounts Using Consolidated Billing

You can use the Consolidated Billing feature to consolidate payment for multiple Amazon Web Services (AWS) accounts or multiple Amazon International Services Pvt. Ltd (AISPL) accounts within

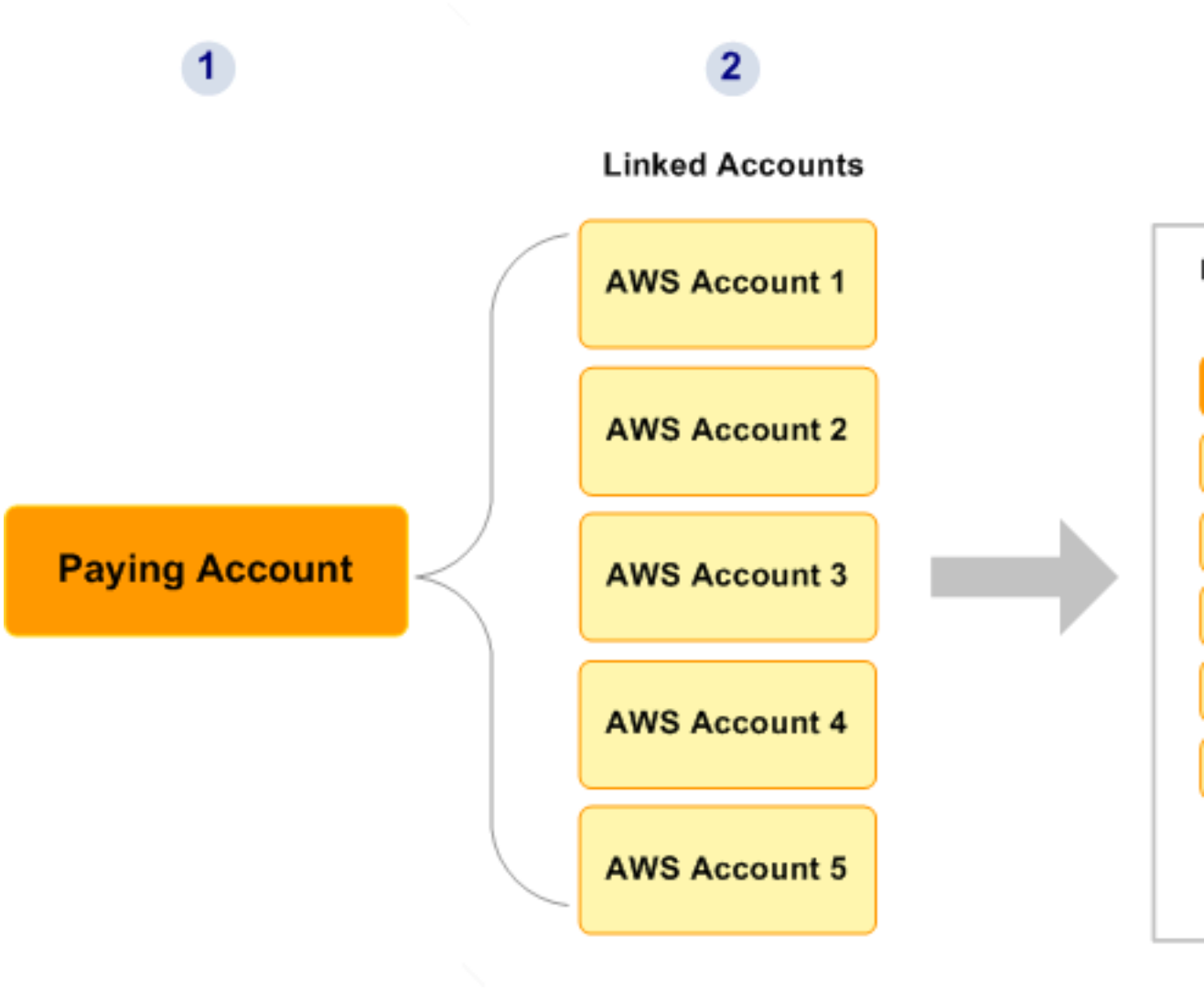
your organization by designating one of them to be the payer account. With Consolidated Billing, you can see a combined view of AWS charges incurred by all accounts, as well as get a cost report for each individual account associated with your payer account. Consolidated Billing is offered at no additional charge. AWS and AISPL accounts cannot be consolidated together.

Topics

Here's an overview of how you use the Consolidated Billing feature:

Consolidated Billing Process

1. You sign up for Consolidated Billing in the AWS Billing and Cost Management console, and designate your account as a *payer account*. Now your account can pay the charges of the other accounts, which are called *linked accounts*. The payer account and the accounts linked to it are called a Consolidated Billing *account family*.
2. You add linked accounts to the consolidated bill.
3. Each month AWS charges your payer account for all the linked accounts you added to the consolidated bill.



The payer account is billed for all charges of the linked accounts. However, each linked account is completely independent in every other way (signing up for services, accessing resources, using AWS Premium Support, etc.). The payer account owner cannot access data belonging to the linked account owners (e.g., their files in Amazon S3). Each account owner uses their own IAM user name and password, with account permissions assigned independently of any other account in the Consolidated Billing family.

For more information about IAM, see the following:

- Identity and Access Management (IAM)
- Getting Started
- IAM User Guide

Owners of payer accounts are advised to secure their accounts by using AWS Multi-Factor Authentication and a strong password. For more information, see Securing the Consolidated Billing Payer's Account (p. 96).

Benefits of Consolidated Billing

- **One Bill—**You get one bill for multiple accounts.

- **Easy Tracking—**You can easily track each account's charges and download the cost data in CSV format.
- **Combined Usage—**If you have multiple accounts today, your charges might actually decrease because AWS combines usage from all the accounts to qualify you for volume pricing discounts (for more information, see Volume Discounts (p. 92)).

When to Use Consolidated Billing

The Consolidated Billing feature is probably a good option for you in any of the following scenarios:

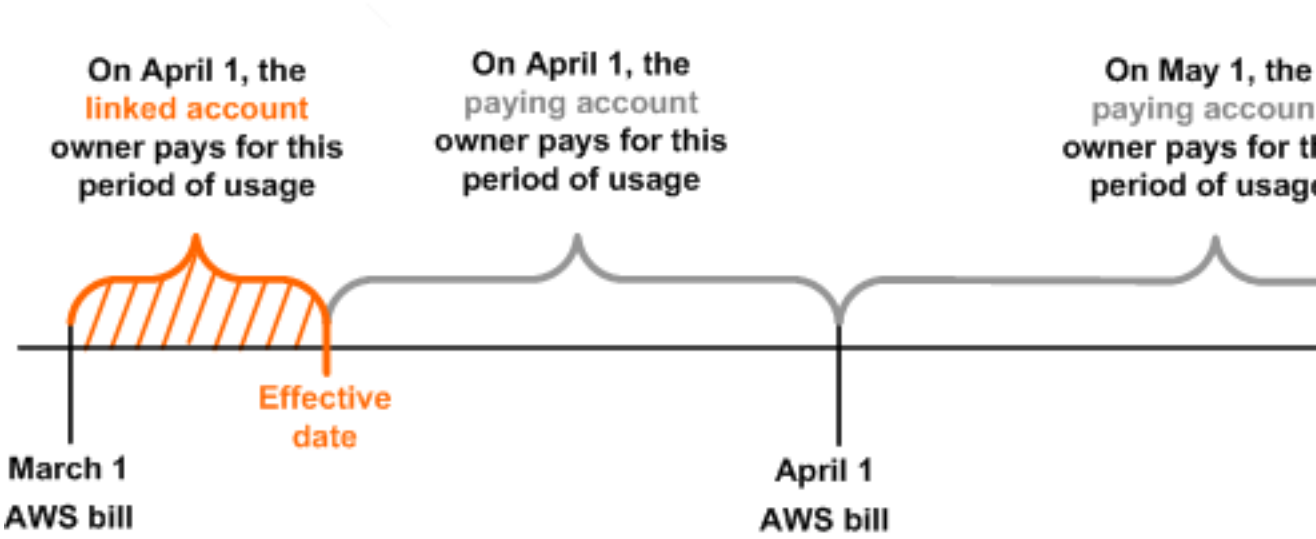
- You have multiple accounts today and want to get a single bill and track each account's charges (e.g., you might have multiple projects, each with its own AWS account).
- You have multiple cost centers to track.
- You've acquired a project or company that has its own existing AWS account and you want to consolidate it on the same bill with your other AWS accounts.

Consolidated Billing is strictly an accounting and billing feature. It is not a method for controlling accounts, or provisioning resources for accounts. It doesn't change how the accounts function or how they are accessed. Consolidated Billing, therefore, cannot be used for sharing computing resources between accounts.

> **Note**
> You can also use cost allocation tagging to create a custom tag set that maps to your organization's cost centers. For more information, see Using Cost Allocation Tags (p. 70).

Effective Date

When the linked account owner accepts your request to pay the charges for the account, you immediately become responsible for the linked account's charges. If that happens somewhere in the middle of the month, you're billed only for the latter part of the month. The linked account owner is still billed for the first part of the month, as shown in the following diagram.



Billing and Account Activity

Each month, AWS charges the payer account owner, and not the owners of the linked accounts. The paying account's AWS **Bills** page shows the total usage and charges across all the accounts on the bill. That page is updated multiple times each day. Each day, AWS makes a downloadable cost report available.

Although the owners of the linked accounts aren't charged, they can still see their usage and charges by going to their AWS **Bills** pages. They can't view or obtain data for the paying account or any other linked accounts on the bill.

Volume Discounts

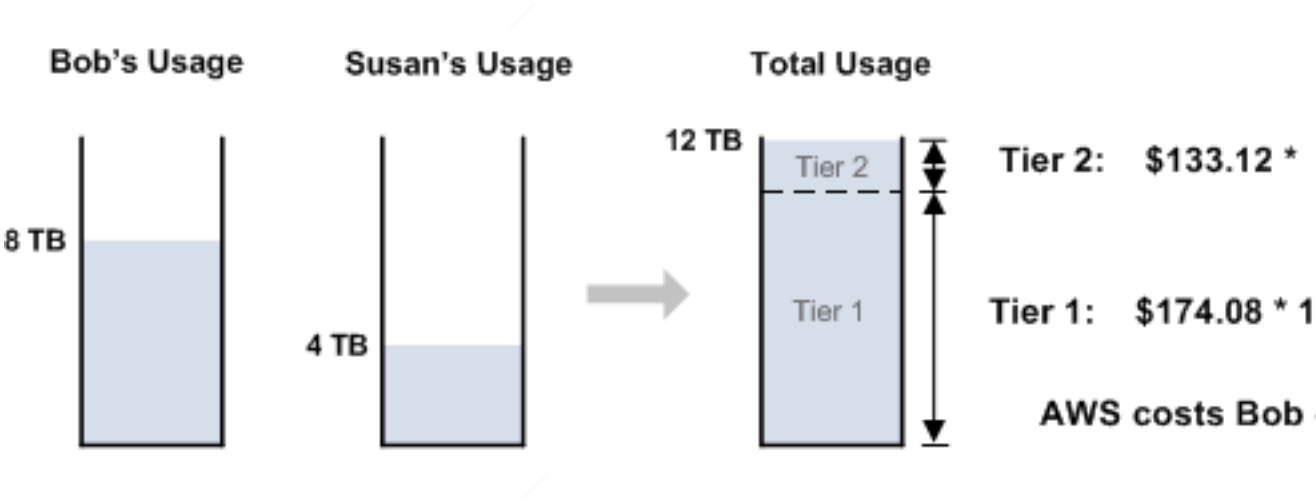
For billing purposes, AWS treats all the accounts on the consolidated bill as if they were one account. Some services, such as Amazon EC2 and Amazon S3, have volume pricing tiers across certain usage dimensions that give you lower prices when you use the service more. With consolidated billing, AWS combines the usage from all accounts to determine which volume pricing tiers to apply, giving you a lower overall price whenever possible. AWS then allocates each linked account a portion of the overall volume discount based on the account's usage.

The **Bills** page for each linked account displays an average tiered rate that is calculated across all the accounts on the consolidated bill. For example, let's say that Bob's consolidated bill includes both Bob's own account and Susan's account. Bob's account is the paying account, so he pays the charges for both himself and Susan.

As shown in the following figure, Bob uses 8 TB of data transfer out during the month, and Susan uses 4 TB (for a total of 12 TB used).

For the purposes of this example, AWS charges $0.17 per GB for the first 10 TB of data transfer out used, and $0.13 per GB for the next 40 TB used. This translates into $174.08 per TB for the first 10 TB, and $133.12 per TB for the next 40 TB (remember that 1 TB = 1024^4 bytes).

This means that for the 12 TB total that Bob and Susan used, the total amount that Bob's paying account is charged is the following: ($174.08 * 10 TB) + ($133.12 * 2 TB) = $1740.80 + $266.24 = $2007.04.



The cost-per-unit of data transfer out for the month is therefore $2007.04 / 12 TB = $167.25 per TB. That is the average tiered rate shown on the **Bills** page for each linked account on the consolidated bill, and in the downloadable cost report.

Without the benefit of tiering across the entire consolidated bill, AWS would have charged Bob and Susan each $174.08 per TB for their usage, for a total of $2088.96.

Note that Amazon SimpleDB in particular has a free tier, so we apply that free tier to the total usage across all the accounts; we don't apply the free tier to each account's usage. For more information about Amazon SimpleDB billing tiers, go to the Amazon SimpleDB product page.

Consolidated Billing Non-usage Charges

Topics

There are a few other things to know about how consolidated billing works with other parts of AWS.

Amazon EC2 Reserved Instances

For billing purposes, Consolidated Billing treats all the accounts on the consolidated bill as one account. This means that all accounts on a consolidated bill can receive the hourly cost benefit of Amazon EC2 Reserved Instances purchased by any other account.

For example, Bob and Susan each have an account on Bob's consolidated bill. Susan has 5 Reserved Instances of the same type, and Bob has none. During one particular hour, Susan uses 3 instances and Bob uses 6, for a total of 9 instances used on Bob's consolidated bill. We bill 5 as Reserved Instances, and the remaining 4 as normal instances.

Let's say the Reserved Instances cost $0.02 per instance-hour. For these instances, we charge 5 x $0.02 = $0.10.

Let's say the normal Amazon EC2 rate is $0.10 per instance-hour. For the remaining 4 instances, we charge 4 x $0.10 = $0.40.

So, the total amount Bob is charged for the 9 instances is $0.10 + $0.40 = $0.50. If we hadn't applied the cost benefit of Susan's 5 Reserved Instances to the 9 instances on Bob's consolidated bill, he would have instead paid $0.66 total.

In terms of cost attribution, we attribute a dollar amount to Bob and Susan based on each person's usage. Susan used 3 of the 9 instances (one-third), and Bob used 6 (two-thirds). Therefore on the bill, one-third of the $0.50 is attributed to Susan, and the other two-thirds is attributed to Bob.

Bob receives the cost benefit from Susan's Reserved Instances only if he launches his instances in the Availability Zone where Susan purchased her Reserved Instances. For example, if Susan specified us-west-2a when she purchased her Reserved Instances, Bob must specify us-west-2a when he launches his instances in order to get the cost benefit on his consolidated bill. However, the actual locations of Availability Zones are independent from one account to another. For example, the us-west-2a Availability Zone for Bob's account might be in a different location than for Susan's account.

Amazon RDS Reserved DB Instances

For billing purposes, Amazon RDS Reserved DB Instances are treated in a manner similar to Amazon EC2 Reserved Instances. For example, let's use a scenario that's like the one described previously, where Bob and Susan each have an account on Bob's consolidated bill. Susan has 5 Reserved DB Instances, and Bob has none. During one particular hour, Susan uses 3 DB Instances and Bob uses 6, for a total of 9 DB Instances used on Bob's consolidated bill. We bill 5 as Reserved DB Instances, and the remaining 4 as On-Demand DB Instances (for Amazon RDS Reserved DB Instance charges,

go to the pricing page). Bob receives the cost benefit from Susan's Reserved DB Instances only if he launches his DB Instances in the same region where Susan purchased her Reserved DB Instances.

Also, all the attributes of Susan's Reserved DB Instances (DB Engine, DB Instance class, Deployment type, and License Model) should match the attributes of the DB Instances launched by Bob. For example, let's say Susan purchased a Reserved DB Instance in us-west-2a with the following attributes:

- DB Engine: MySQL
- DB Instance Class: m1.xlarge
- Deployment Type: Multi-AZ
- License Model: General Public License

This means that Bob must launch his DB Instances in us-west-2a with the exact same attributes in order to get the cost benefit on his consolidated bill.

AWS Credits

AWS credits are credits that you can apply to your account to cover the costs associated with eligible AWS services. AWS applies the credits to your bill until the credits are exhausted or expire. For more information about eligible services, see Redeem Your AWS Promotional Credit .

To give the owner of the payer account owner the lowest bill, any AWS credits redeemed by the payer and linked accounts are applied to the consolidated bill. Credits can apply to only one account per billing cycle. The following rules determine which account AWS credits are applied to:

- If the credits are redeemed during a billing period, for that billing period the credits are applied to the bill that belongs to the account that was paying when the credits were redeemed. If the credits are redeemed while the account is a single account, the credits are applied to the single account bill for that billing period. If the credits are redeemed while the account is part of a consolidated family, the credits are applied to the consolidated bill for that billing period.
- If the credits were redeemed before a billing period starts, the credits are applied to the bill that belongs to the account that was paying at the beginning of the billing period.

For example, if Susan redeems 100 dollars of credit on January 1 and joins Bob's consolidated billing family on January 15, Susan's credits are applied to her account for the usage incurred from Jan 1 through January 15. From February onwards, Susan's credits are applied to Bob's consolidated bill. If Susan has 50 dollars of credit and unlinks from Bob's consolidated billing family on April 16, Susan's credits are applied to Bob's consolidated bill for April. From May onwards, Susan's credits are applied to Susan's account.

AWS Support Charges for Consolidated Billing Accounts

AWS calculates AWS Support fees independently for each linked account. An AWS Support subscription for the payer account does not apply to the entire account family. Each account must subscribe independently.

Likewise, any AWS Support fees associated with Reserved Instance purchases apply only to the individual accounts that made the purchase.

Creating and Editing Consolidated Billing Account Families

The sections in this topic describe how to sign up for consolidated billing and how to add an AWS account to a consolidated billing account family.

Topics

Signing Up for Consolidated Billing

To sign up for consolidated billing

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. Choose **Consolidated Billing** and follow the instructions on the page.

> **Note**
> You only need to sign up the *payer* account for consolidated billing. You don't need to sign up any of the accounts that you want to add to your consolidated bill.

You must have a valid payment method on file with AWS. You can use any form of payment that AWS supports. You must also have a valid phone number on file with AWS in case we ever need to contact you. Verifying your phone number takes only a couple of minutes and involves receiving a phone call during the sign-up process and entering a PIN number using the phone keypad.

We recommend you secure your payer account by using AWS Multi-Factor Authentication and a strong password. For more information, see Securing the Consolidated Billing Payer's Account (p. 96).

Adding an Account to a Consolidated Billing Family

Adding an Account to a Consolidated Bill

The following steps are performed by the owner of the payer account. Linked accounts cannot be linked to a payer account by the non-linked account owner. Only payer account owners can send the email requesting a link to the account.

To link an account to the consolidated bill, you need the email address of that account.

> **Important**
> You don't need to sign up linked accounts for consolidated billing. The owner of the paying account simply needs to send a request to the account owner from the **Consolidated Bill** page. If you accidentally signed a non-paying account up for consolidated billing, see How the linked account owner removes the linked account (p. 96). Once the account is converted back, you can then link it to a payer account.

To add an account

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. Choose Consolidated Billing on the navigation pane on the left.
3. On the **Manage Requests and Accounts** page, choose **Send a Request**.

4. On the **Send a Consolidated Billing Request** page, enter email addresses for the accounts that you would like to link to your paying account. If you choose, you can add notes that will be added to the email body.
5. Choose **Send**.
6. The linked account owner chooses a hyperlink in the email, logs in to the AWS website when prompted, and accepts or denies the request.

If the linked account owner accepts the request, the linked account becomes part of the consolidated bill. You can add up to 20 linked accounts to the consolidated bill. If you need to add more, contact us at https://aws-portal.amazon.com/gp/aws/html-forms-controller/contactus/aws-account-and-billing.

Securing the Consolidated Billing Payer's Account

Your payer account can pay the charges for and have information about multiple (or all) AWS accounts within your organization. Because the payer account has access to billing data for all linked accounts and sets payment methods, you should secure it. We recommend you use AWS multi-factor authentication (MFA). For more information, go to http://aws.amazon.com/mfa. We also recommend you use a strong password that is at least 8 characters long, with uppercase and lowercase letters, at least one number, and at least one special character. You can change your password on the AWS Security Credentials page.

Removing an Account from a Consolidated Bill

At any time, the payer account or linked account owner can end the relationship between the accounts. The account separation takes effect immediately and the linked account owner is billed for that account going forward. If the separation occurs somewhere in the middle of the month, the payer account owner is billed only for the earlier part of the month, and the linked account owner is billed for the latter part.

How the payer account owner removes the linked account

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. O the navigation pane, choose Consolidated Billing.
3. On the **Manage Requests and Accounts** page, find the account that you want to remove on the **Linked Accounts** tab.
4. Choose **Remove from bill**.

How the linked account owner removes the linked account

1. Sign in to the AWS Management Console and open the Billing and Cost Management console at https://console.aws.amazon.com/billing/home#/.
2. Choose Consolidated Billing on the navigation pane and verify that the page lists a valid credit card.
3. Choose **Remove your account from the Consolidated Bill**.

Moving an Account to a Different Consolidated Bill

A linked account can move from one consolidated bill to another. Following is the overall process. In this example, Bob is the payer account owner, Susan is the linked account owner, and Vicky is the new payer account owner.

1. Either Bob or Susan removes Susan's account from Bob's consolidated bill.

2. Vicky sends a request to put Susan's account on her consolidated bill.
3. Susan receives the request and accepts it.
4. Susan's account becomes part of Vicky's consolidated bill.

After Susan's account is removed from Bob's consolidated bill, there might be a short period before Susan accepts Vicky's request. During the interim period, Susan is responsible for any charges she incurs (and so must have a valid payment method on file with AWS). Any charges she incurs during the interim period can't be charged to Vicky's account.

Converting a Payer Account to a Linked Account

A former payer account can become a linked account. You just need to make sure the payer account doesn't have any other accounts on its consolidated bill or any outstanding requests to invite other accounts.

To change a former paying account to a linked account

1. Ensure the paying account has no other accounts on its consolidated bill (see How the linked account owner removes the linked account (p. 96)).
2. Cancel any pending requests to invite other accounts to be on the bill, which you can do from the Consolidated Billing page.
3. When you receive the request to add your account to a consolidated bill, accept it.

Your account is added to the payer account's consolidated bill.

Understanding Consolidated Bills

To ensure that you pay the lowest available prices for AWS products and services, AWS offers pricing tiers that reward higher usage with lower prices and discounted rates for purchasing in advance (Reserved Instances).

Topics

Pricing Tiers and Reserved Instances

AWS Billing and Cost Management includes two features designed to ensure that you pay the lowest available prices for AWS products and services:

- *Pricing tiers*. Pricing tiers reward higher usage with lower unit prices for services.
- *Reserved Instances*. Rates are discounted when you purchase some instances in advance for a specific period of time.

Pricing Tiers

Some AWS services are priced in *tiers*, which specify unit costs for defined amounts of AWS usage. As your usage increases, you cross thresholds into new pricing tiers that specify lower unit costs for additional usage in a month. Each AWS service publishes its pricing information independently. You can access all pricing pages from the AWS Service Pricing Overview page.

The AWS whitepaper How AWS Pricing Works also discusses usage scenarios and pricing options.

Your AWS usage is measured every month. To measure usage, AWS treats all accounts linked under consolidated billing–that is, each *account family*–as a single account. Linked accounts do not reach tier thresholds individually. Instead, all usage in the account family is aggregated for each service, which ensures faster access to lower-priced tiers. As each month begins, your service usage is reset to zero. For an example, see Calculating Blended Rates For Amazon S3 Standard Storage (p. 99) later in this topic.

Reserved Instances: Capacity Reservations

AWS also offers discounted hourly rates in exchange for an upfront fee and term contract. Services such as Amazon Elastic Compute Cloud (Amazon EC2) and Amazon Relational Database Service (Amazon RDS) use this approach to sell reserved capacity for hourly use of *Reserved Instances*. For more information, see Reserved Instances in the *Amazon EC2 User Guide for Linux Instances* and Working with Reserved DB Instances in the *Amazon Relational Database Service Developer Guide*.

When you reserve capacity with Reserved Instances, your hourly usage is calculated at a discounted rate for instances of the same usage type in the same Availability Zone. When you exceed the number of instances in your reservation and launch additional instances of the same instance type in the same Availability Zone, AWS averages the rates of the Reserved Instances and the On-Demand instances to give you a *blended rate*.

Blended Rates

Blended rates are the averaged rates of the Reserved Instances and On-Demand instances used by linked accounts. This section explains how AWS determines the blended rates for customers who use consolidated billing.

> **Note**
> Linked account consoles show a blended rate that is meant for display purposes only, and does not reflect the actual charges.

Here is how consolidated bills are calculated:

1. A Reserved Instance is a capacity reservation. It is not a virtual machine. It is a commitment by a customer to pay in advance for specific Amazon EC2 or Amazon RDS instance capacity. In return, the customer gets a discounted rate over the cost of an On-Demand instance that is created or deleted in response to application load. From a technical perspective, there is no difference between a Reserved Instance and an On-Demand instance. When a customer launches an instance, AWS checks the account records for Reserved Instance purchases that can be applied to that instance.
2. Consolidated Billing customers have multiple accounts that roll up into a single account that is designated as the payer account. This group of accounts is often called an *account family*. Owners of payer accounts see all usage incurred by the account family. This activity is aggregated to the payer account, and then *allocated* to the linked accounts that generated the charge in proportion to the linked account's usage. In other words, the linked account line items that you see in AWS Cost and Usage report and monthly billing (hourly) reports and on the **Account Activity** page are calculated recursively: The charges are calculated at the payer level and then allocated to linked accounts. Blended rates appear only on linked account line items.

   > **Tip**
   > As a best practice, consider not running any AWS services under the account you designate as the payer account. This practices reduces confusion that can arise because payer account usage appears twice in the AWS Cost and Usage report and detailed billing reports. It appears once as an aggregated line item and again as an allocated line item.
3. Estimated charges for all accounts are calculated several times each day. Because blended prices are an average for variable usage across an account family, they are dynamic, and vary with each set of calculations. If you look at each iteration of your daily reports, you will probably see different values each time in the Blended Rate column for your discount-eligible usage. Blended rates are finalized for the last AWS Cost and Usage report for the month, and for your AWS invoice. For

more information about the AWS Cost and Usage report and monthly billing (hourly) reports, see Understanding Your Usage with Billing Reports (p. 17).

Blended Rate Examples

This section contains examples of how blended rates are calculated for the following types of operations:

- Calculating Blended Rates For Amazon S3 Standard Storage.
- Calculating Blended Rates for Amazon EC2.

Calculating Blended Rates For Amazon S3 Standard Storage

Blended rates for Amazon S3 Standard Storage are calculated by taking the amount of data stored per month and dividing by the total cost of storage as the account becomes eligible for lower-cost tiers. For a hypothetical example, standard storage is available at the pricing tiers listed below:

Amazon S3 Pricing Tiers

Tier Description	Price per GB
First 1 TB/month	$0.10
Next 49 TB/month	$0.08
Next 450 TB/month	$0.06

The following table lists Amazon Simple Storage Service (Amazon S3) usage of type standard storage for a Consolidated Billing account family that includes a payer account and three linked accounts.

Example Standard Storage Usage Blended Cost

Accou	Tier	Storage Amount	Unbler Rate	Unblended Cost	Blended Cost	Blended Rate
Payer	First 1 TB / month	1 TB	$0.10	$100		
	Next 49 TB / month	49 TB	$0.08	$3920		
	Next 450 TB / month	45 TB	$0.06	$2700		
Linked 1	First 1 TB / month	1 TB	$0.10	$100	70.737	0.070737
	Next 49 TB / month	14 TB	$0.08	$1120	990.318	0.070737
	Next 450 TB / month	15 TB	$0.06	$900	1061.055	0.070737
Linked 2	Next 49 TB / month	20 TB	$0.08	$1600	1414.74	0.070737
	Next 450 TB / month	15 TB	$0.06	$900	1061.055	0.070737

Accou	Tier	Storage Amount	Unbler Rate	Unblended Cost	Blended Cost	Blended Rate
Linked 3	Next 49 TB / month	15 TB	$0.08	$1200	1061.055	0.070737
	Next 450 TB / month	15 TB	$0.06	$900	1061.055	0.070737

The costs in the preceding table are calculated as follows:

1. All usage for the linked account family adds up to 95 TB (95,000 GB).
2. The total cost is calculated by adding the cost of the first TB (1,000 GB x $0.10 = 100) to the cost of the next 49 TB (49,000 GB x $0.08 = $3920) and the cost of the remaining 45 TB (45,000 GB x $0.06 = $2700), for a total cost of $6720.
3. The blended rate is calculated by dividing the total cost ($6720) by the amount of storage (95,000 GB), to produce a blended rate of $0.070737/GB.
4. Last, the cost for each linked account is allocated by multiplying the blended rate by the total usage, resulting in the amounts listed in the Blended Cost column.

The example shows how using Consolidated Billing helps lower the overall monthly cost of storage. If you calculate the cost for each linked account separately, the total cost is $6780. By aggregating the usage of the three accounts, you reach the lower-priced tiers sooner. The most expensive storage, the first terabyte, is charged at the highest price just once, rather than three times. Three TB of storage at the most expensive rate of $0.10/GB results in charges of $300. Charging this storage as 1 TB ($100) and 2 additional TB at $0.08/GB ($16) results in a total charge of $260.

Calculating Blended Rates for Amazon EC2

Keep in mind that blended rates apply only to Consolidated Billing customers.

Calculation Process

Here's how AWS calculates blended rates for Amazon EC2 instances for Consolidated Billing account families:

1. AWS aggregates usage for all accounts in the consolidated billing account family for the month or partial month and calculates costs based on unblended rates. Line items for these costs are created for the payer account. This bill computation model aims to apply the lowest unblended rates for which each line item is eligible. The allocation logic first applies free tier hours, then Reserved Instance hours, and then applies On-Demand rates to any remaining usage. In the AWS Cost and Usage report and monthly reports, you can see line items for these aggregated costs; the detailed billing (hourly) report (p. 17) does not distinguish between payer and linked accounts.
2. AWS identifies each Amazon EC2 usage type in each region and allocates cost from the aggregated payer costs to the corresponding linked account line items for identical usage types in the same region. In the AWS Cost and Usage report and detailed billing reports (p. 17), you can see which rate is applied for each line item in the Unblended Rate column.

   Note
   When AWS assigns Reserved Instance hours to linked accounts, it always starts first with the linked account that purchased the reservation, which is sometimes called Reserved Instance affinity. If there are hours from the capacity reservation left over, they are applied to other accounts operating identical usage types in the same Availability Zone. Again, this allocation always occurs using unblended rates.
3. Last, AWS calculates an average cost for all identical usage, which can include both On-Demand and Reserved Instance rates, in the Availability Zone and lists the result in each line item in the

Blended Rate column of the AWS Cost and Usage report and detailed billing (hourly) reports. The calculation of this average can result in lines where the unblended cost for the hour is $0.00, but the Blended Rate indicates an allocated cost. In such cases, the Unblended Cost column represents what you actually paid for that specific line item of usage.

Blended Rate Example

The example in this section shows how the Consolidated Billing logic aggregates cost to payer accounts and then allocates it to the linked accounts based on proportional usage. For this example, all usage is of the same usage type, occurs in the same Availability Zone, and is for the same Reserved Instance term. This example covers Full Upfront and Partial Upfront Reserved Instances.

The following table shows line items that represent the calculation of line items for Amazon EC2 usage for a 720-hour (30-day) month. Each instance is of the same usage type (t2.small) running in the same Availability Zone. This Consolidated Billing account family has purchased three Reserved Instances for a 1-year term. Linked Account 1 has three Reserved Instances; Linked Account 2 has no Reserved Instances, but uses some of the reserved hours from Linked Account 1.

In this example, Linked Account 1 has experienced fluctuations in application load that have produced both a 340-hour under-utilization of Reserved Instance resources and a need for 50 additional hours of On-Demand usage.

	A	B	C	D	E	F	G	H	I	J	K
1	Line Item Account	Billing Type	Usage Type	Upfront cost	Monthly cost	Usage available	Usage Quantity	Unblended rate	Unblended Cost	Blended Rate	Blended Cost
2	Payer Account	RI, All Upfront	t2.small	$151.00	$0.00	1440	1440	0.0172	$0.00		$7.13
3	Payer Account	RI, Partial Upfront	t2.small	$102.00	$4.38	720	720	0.0176	$4.38		$3.56
4	Payer Account	On-demand	t2.small	$0.00	$0.00		300	0.026	$7.80		$1.49
6	Linked Account 1	RI, All Upfront	t2.small	$151.00	$0.00	1440	1100	0.0172	$0.00	0.00495122	$5.45
7	Linked Account 1	RI, Partial Upfront	t2.small	$102.00	$4.38	720	720	0.0176	$4.38	0.00495122	$3.56
8	Linked Account 1	On-demand	t2.small	$0.00	$0.00		50	0.026	$1.30	0.00495122	$0.25
10	Linked Account 2	RI, All Upfront	t2.small	$0.00	$0.00	340	340	0.0172	$0.00	0.00495122	$1.68
11	Linked Account 2	On-demand	t2.small	$0.00	$0.00		250	0.026	$6.50	0.00495122	$1.24
13	Overall cost						2460		$12.18		$12.18
14											
15	Key:	Line breaks	RI purchased by a different account								

The data in the preceding table presents the following information:

- The Consolidated Billing family has purchased 1,440 hours of capacity at a Full Upfront rate (two EC2 instances).
- The Consolidated Billing family has purchased 720 hours of capacity at a Partial Upfront rate (one EC2 instance).
- Linked Account 1 has purchased two Full Upfront Reserved Instances and one Partial Upfront Reserved Instance, and has used 1,820 hours of the reservation. Due to fluctuations in application load, 340 reserved instance hours remain, which can be applied to other eligible usage in the account family. In addition, application load when all three Reserved Instances were already running has necessitated an additional 50 hours of On-Demand usage.
- Linked Account 2 has not purchased a Reserved Instance. This account needed 590 hours of On-Demand hours to meet application load requirements.
- 340 hours of unused Reserved Instance time from Linked Account 1 was applied to Linked Account 2's 590 hours of On-Demand use. This reduced Linked Account 2's On-Demand hours to 250 hours.
- Actual usage of Reserved Instance hours totals 2,160 hours.
- Actual usage of On-Demand hours totals 250 hours.
- Aggregate usage at the payer level incurs $12.18 of charges. After dividing this amount by the total hours of usage (2460) a blended rate of $0.00495122 per hour is obtained.

- Using the total blended cost at the payer level, blended costs are then allocated to line items for the linked accounts.
- Aggregating the blended costs results in a total of $12.18.
- (Not included) Sometimes a blended rate requires a line item to account for a rounding error of $0.01.

You can check that your AWS Cost and Usage report, monthly, or detailed billing report is balanced by ensuring that the sum of the blended costs of each linked account line item and the rounding error line item equals the total of all payer account line items.

Tip

Using an Excel spreadsheet to read the AWS Cost and Usage report or detailed billing (hourly) report, you can find the linked account line items to balance against payer line items by filtering on the following columns in the specified order:

1. Product Name
2. Usage Type
3. Operation

Controlling Access

AWS Billing and Cost Management integrates with the AWS Identity and Access Management (IAM) service so that you can control who in your organization has access to specific pages on the AWS Billing and Cost Management console. You can control access to invoices and detailed information about charges and account activity, budgets, payment methods, and credits.

Topics

Granting Access to Your Billing Information and Tools

The AWS account owner can access billing information and tools by signing in to the AWS Management Console using the account password. However, we recommend that you don't use the account password for everyday access to the account, and especially that you don't share account credentials with others to give them access to your account.

Instead, you should create a special user identity called an *IAM user* for anyone who might need access to the account. This approach provides individual sign-in information for each user, and you can grant each user only the permissions that he or she needs to work with your account. For example, you can grant some users limited access to some of your billing information and tools, and grant others complete access to all of the information and tools. (We recommend that the account owner also access the account by using an IAM user identity.)

> **Note**
> IAM is a feature of your AWS account. If you are already signed up for a product that is integrated with IAM, you don't need to do anything else to sign up for IAM, nor will you be charged for using it.

By default, IAM users do not have access to the AWS Billing and Cost Management console. You or your account administrator must grant users access. Do this by activating IAM user access to the Billing and Cost Management console and attaching an IAM policy, either managed or custom, to your users. You need to activate IAM user access for IAM policies to take affect. You need to activate IAM user access only once.

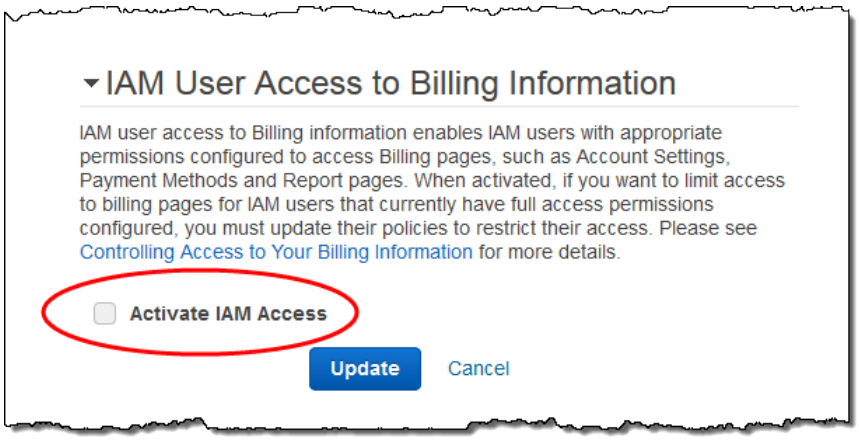
> **Note**
> Permissions for Cost Explorer apply to all accounts and linked accounts, regardless of IAM policies. For more information about Cost Explorer access, see Controlling Access for Cost Explorer (p. 64)

Activating Access to the Billing and Cost Management Console

To be able to grant your IAM users access to your account's Billing and Cost Management console, you must *activate* the functionality.

To activate IAM user access to the Billing and Cost Management console

1. Sign in to the AWS Management Console with your root account credentials (the email address and password that you used to create your AWS account). Don't sign in with your IAM user credentials.
2. On the navigation bar, choose your account name, and then choose **My Account**.
3. Next to **IAM User Access to Billing Information**, choose **Edit**.
4. Select the **Activate IAM Access** check box to activate access to the Billing and Cost Management pages. You can now use IAM policies to control which pages a user can access.



After you have activated IAM user access, you can attach IAM policies to grant or deny access to specific billing features. For more information about using policies to grant IAM users access to Billing and Cost Management features, see Billing and Cost Management Permissions Reference (p. 104).

Important
When you activate IAM user access to the Billing and Cost Management console, you grant full access to all users who already have full access to the AWS APIs. You can restrict their access by applying an IAM policy that constrains their permissions. See Example 4: Allow full access to AWS services but deny IAM users access to the Billing and Cost Management console (p. 109).

Billing and Cost Management Permissions Reference

This topic summarizes the default actions permitted in Billing and Cost Management for each type of billing user, the billing permissions you can apply to your IAM users, and shows examples of policies you can use to allow or deny an IAM user access to your billing information and tools.

Topics

- Billing Permissions Descriptions (p. 106)
- Billing and Cost Management Policy Examples (p. 107)

For a full discussion of AWS accounts and IAM users, see What is IAM? in the *IAM User Guide*.

User Types and Billing Permissions

This table summarizes the default actions permitted in Billing and Cost Management for each type of billing user.

User Type	Description	Billing Permissions
Account owner	The person or entity in whose name your AWS account is set up.	• Has full control of all Billing and Cost Management resources. • Receives a monthly invoice of AWS charges.
IAM user	A person or application defined as a user in an AWS account by an account owner or administrative user. Accounts can contain multiple IAM users.	• Has permissions specifically granted to the user or a group that includes the user. • Can be granted permission to view Billing and Cost Management console pages. For more information, see Controlling Access (p. 103). • Cannot close AWS accounts.
Consolidated Billing payer account owner	The person or entity in whose name an AWS account is set up, when that account pays for the AWS usage of multiple accounts in an organization.	• Has full control of all Billing and Cost Management resources for the payer account only. • Receives a monthly invoice of AWS charges for both the payer account and linked accounts. • Views the activity of linked accounts in the billing reports for the payer account.
Consolidated Billing linked account owner	An AWS account that has its usage paid for by a Consolidated Billing payer account.	• Does not have permission to review any usage reports or account activity except for its own. Does not have access to other linked accounts in the family or to the payer account. • Does not have permission to view billing reports. • Has permission to update account information for itself only; cannot access other linked accounts or payer accounts.

Billing Permissions Descriptions

This table summarizes the permissions you use to allow or deny IAM users access to your billing information and tools. For examples of policies that use these permissions, see Billing and Cost Management Policy Examples (p. 107).

Permission Name	Description
ViewBilling	Allow or deny IAM users permission to view the following Billing and Cost Management console pages: • Billing Dashboard • Bills • Cost Explorer • Budgets • Payment History • Consolidated Billing • Preferences • Credits • Advance Payment (For more information about advance payments, see Understanding Consolidated Bills (p. 97).)
ModifyBilling	Allow or deny IAM users permission to modify the following Billing and Cost Management console pages: • Budgets • Consolidated Billing • Preferences • Credits Note that to allow IAM users to modify these console pages, you must allow both ModifyBilling and ViewBilling. For an example policy, see Example 6: Allow IAM users to modify billing information (p. 110).
ViewAccount	Allow or deny IAM users permission to view Account Settings.
ModifyAccount	Allow or deny IAM users permission to modify Account Settings. Note that to allow IAM users to modify Account Settings, you must allow both ModifyAccount and ViewAccount. For an example of a policy that explicitly denies an IAM user access to the Account Settings console page, see Example 8: Deny access to Account Settings, but allow full access to all other billing and usage information (p. 112).

Permission Name	Description
ViewBudget	Allow or deny IAM users permission to view Budgets. Note that to allow IAM users to view budgets, you must also allow ViewBilling.
ViewPaymentMethods	Allow or deny IAM users permission to view Payment Methods.
ModifyPaymentMethods	Allow or deny IAM users permission to modify Payment Methods. Note that to allow users to modify Payment Methods, you must allow both ModifyPaymentMethods and ViewPaymentMethods.
ViewUsage	Allow or deny IAM users permission to view AWS usage Reports. Note that to allow IAM users to view usage reports, you must allow both ViewUsage and ViewBilling. For an example policy, see Example 2: Allow IAM users to access the Reports console page (p. 108).

Billing and Cost Management Policy Examples

This topic contains example policies that you can attach to your IAM user or group to control access to your account's billing information and tools. The following basic rules apply to IAM policies:

- `Version` is always `2012-10-17`.
- `Effect` is always `Allow` or `Deny`
- `Action` indicates access, and it can take a wildcard (`*`). In China the action prefix is `awsbillingconsole`. Everywhere else it is `aws-portal`.
- `Resource` is always `*`.
- It's possible to have multiple statements in one policy.

> **Note**
> These policies require that you activate IAM user access to the AWS Billing and Cost Management console on the Account Settings console page. For more information about activating IAM user access, see Activating Access to the Billing and Cost Management Console (p. 104).

Example Topics

- Example 1: Allow IAM users to view your billing information (p. 108)
- Example 2: Allow IAM users to access the Reports console page (p. 108)
- Example 3: Deny IAM users access to the Billing and Cost Management console (p. 109)
- Example 4: Allow full access to AWS services but deny IAM users access to the Billing and Cost Management console (p. 109)

Example 1: Allow IAM users to view your billing information

To allow an IAM user to view your billing information without giving the IAM user access to sensitive account information, such as your password and account activity reports, you can use a policy similar to this example policy. This policy allows IAM users to view the following Billing and Cost Management console pages, without giving them access to the Account Settings or Reports console pages:

- **Dashboard**
- **Cost Explorer**
- **Bills**
- **Payment History**
- **Consolidated Billing**
- **Preferences**
- **Credits**
- **Advance Payment**

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Effect": "Allow",
            "Action": "aws-portal:ViewBilling",
            "Resource": "*"
        }
    ]
}
```

Example 2: Allow IAM users to access the Reports console page

To allow an IAM user to access the **Reports** console page and to view the usage reports that contain account activity information, you would use a policy similar to this example policy.

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Effect": "Allow",
            "Action": [
                "aws-portal:ViewUsage",
                "aws-portal:ViewBilling"
            ],
            "Resource": "*"
        }
    ]
}
```

Example 3: Deny IAM users access to the Billing and Cost Management console

If you want to explicitly deny an IAM user access to the all Billing and Cost Management console pages, you can use a policy similar to this example policy.

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Effect": "Deny",
            "Action": "aws-portal:*",
            "Resource": "*"
        }
    ]
}
```

Example 4: Allow full access to AWS services but deny IAM users access to the Billing and Cost Management console

This policy enables full access to all AWS services but denies the IAM user access to everything on the Billing and Cost Management console. In this case, you should also deny user access to AWS Identity and Access Management (IAM), so that the users cannot access the policies that control access to billing information and tools.

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Effect": "Allow",
            "Action": "*",
            "Resource": "*"
        },
        {
            "Effect": "Deny",
            "Action": [
                "aws-portal:*",
                "iam:*"
            ],
            "Resource": "*"
        }
    ]
}
```

Example 5: Allow IAM users to view the Billing and Cost Management console, except Account Settings

To protect your account password, contact information, and security questions, you can deny user access to **Account Settings**, while still enabling read-only access to the rest of the functionality in the Billing and Cost Management console. Applying this policy to an IAM user enables the IAM user to view all the Billing and Cost Management console pages, including the **Payments Method** and **Reports** console pages, but denies the IAM user access to **Account Settings**.

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Effect": "Allow",
            "Action": "aws-portal:View*",
            "Resource": "*"
        },
        {
            "Effect": "Deny",
            "Action": "aws-portal:*Account",
            "Resource": "*"
        }
    ]
}
```

Example 6: Allow IAM users to modify billing information

To allow IAM users to modify account billing information in the Billing and Cost Management console, you must also allow IAM users to view your billing information. The following policy example allows an IAM user to modify the **Consolidated Billing**, **Preferences**, and **Credits** console pages. It also allows an IAM user to view the following Billing and Cost Management console pages:

- **Dashboard**
- **Cost Explorer**
- **Bills**
- **Payment History**
- **Advance Payment**

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Effect": "Allow",
            "Action": "aws-portal:*Billing",
            "Resource": "*"
        }
    ]
}
```

Example 7: Allow IAM users to create budgets

In order to apply this policy, the user must have IAM permissions to view your Billing console.

If you are using consolidated billing, only the payer account can create and manage budgets. Individual linked accounts cannot create or manage budgets. You can grant linked accounts read-only access to your budgets using an IAM policy. For more information, see Controlling Access (p. 103).

To allow IAM users to create budgets in the Billing and Cost Management console, you must also allow IAM users to view your billing information, create CloudWatch alarms, and create Amazon SNS notifications. The following policy example allows an IAM user to modify the **Budget** console page.

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Sid": "Stmt1435216493000",
            "Effect": "Allow",
            "Action": [
                "aws-portal:ViewBilling",
                "aws-portal:ModifyBilling",
                "budgets:ViewBudget",
                "budgets:ModifyBudget"
            ],
            "Resource": [
                "*"
            ]
        },
        {
            "Sid": "Stmt1435216514000",
            "Effect": "Allow",
            "Action": [
                "cloudwatch:*"
            ],
            "Resource": [
                "*"
            ]
        },
        {
            "Sid": "Stmt1435216552000",
            "Effect": "Allow",
            "Action": [
                "sns:*"
            ],
            "Resource": [
                "arn:aws:sns:us-east-1"
            ]
        }
    ]
}
```

Example 8: Deny access to Account Settings, but allow full access to all other billing and usage information

To protect your account password, contact information, and security questions, you can deny IAM user access to **Account Settings**, while still enabling full access to the rest of the functionality in the Billing and Cost Management console.

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Effect": "Allow",
            "Action": [
                "aws-portal:*Billing",
                "aws-portal:*Usage",
                "aws-portal:*PaymentMethods"
            ],
            "Resource": "*"
        },
        {
            "Effect": "Deny",
            "Action": "aws-portal:*Account",
            "Resource": "*"
        }
    ]
}
```

Example 9: Deposit Reports into an Amazon S3 Bucket

This policy allows Billing and Cost Management to save your detailed AWS bills to an Amazon S3 bucket, as long as you own both the AWS account and the Amazon S3 bucket. Note that this policy must be applied to the Amazon S3 bucket, instead of to an IAM user. That is, it is a resource-based policy, not a user-based policy. You should deny IAM user access to the bucket for IAM users who do not need access to your bills.

Replace *bucketname* with the name of your bucket.

For more information, see Using Bucket Policies and User Policies.

```
{
  "Version": "2012-10-17",
  "Statement": [
  {
    "Effect": "Allow",
    "Principal": {
      "AWS": "386209384616"
    },
    "Action": [
      "s3:GetBucketAcl",
      "s3:GetBucketPolicy"
    ],
    "Resource": "arn:aws:s3:::bucketname"
  },
  {
    "Effect": "Allow",
    "Principal": {
      "AWS": "386209384616"
    },
    "Action": "s3:PutObject",
    "Resource": "arn:aws:s3:::bucketname/*"
  }
  ]
}
```

Limits

The following table describes the current limits within Billing and Cost Management.

Topics

Accounts

Number of consolidated accounts linked to a paying account	20

Budgets

Number of budgets	2
Characters allowed in a budget name	• `0-9` • `A-Z` and `a-z` • `Space` • The following symbols: `_.:/=+-%@`

Reports

Number of AWS Cost and Usage reports	4

Contacting Customer Support About Your Bill

The quickest way to find answers to questions about your bill might be to start with the AWS Knowledge Center.

In addition, all AWS account owners have access to account and billing support free of charge. Only personalized technical support requires a support plan. For more information, visit the AWS Support web site.

This section guides you through contacting AWS Support and opening a support case for your billing inquiry, which is the fastest and most direct method for communicating with AWS Support. AWS Support does not publish a direct phone number for reaching a support representative.

Contacting AWS Support

1. Sign in and navigate to the AWS Support Center. If prompted, type the email address and password for your account.
2. Choose **Open a new case**.
3. On the **Open a new case** page, select **Account and Billing Support** and fill in the required fields on the form.

   After you complete the form, you can choose **Web** for an email response, or **Phone** to request a telephone call from an AWS Support representative. Instant messaging support is not available for billing inquiries.

If you have closed your AWS account, you can still sign in to contact Customer Support and view past bills.

API Reference

This section contains the Billing and Cost Management API Reference documentation. When making the API calls, you need to authenticate your request by providing a signature. Billing and Cost Management supports signature version 4. For more information, see Signature Version 4 Signing Process in the *Amazon Web Services General Reference*.

If you are using a language for which an AWS SDK exists, use the SDK rather than trying to work your way through the APIs. The SDKs make authentication simpler, integrate easily with your development environment, and provide easy access to Billing and Cost Management commands. For more information about the AWS SDKs, including how to set up your environment, links to the SDK documentation, and sample code, see Tools for Amazon Web Services.

Topics

Actions

The following actions are supported:

- CreateBudget
- CreateNotification
- CreateSubscriber
- DeleteBudget
- DeleteNotification
- DeleteSubscriber
- DescribeBudget
- DescribeBudgets
- DescribeNotificationsForBudget
- DescribeSubscribersForNotification

- UpdateBudget
- UpdateNotification
- UpdateSubscriber

CreateBudget

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

Request Parameters

The request requires the following data in JSON format.

accountId
The `accountId` that is associated with the budget.

Type: String

Length constraints: Minimum length of `12`, maximum length of `12`.

Required: Yes

budget
The budget object that you want to create.

Type: Budget object

Required: Yes

notificationsWithSubscribers
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 ten email subscribers. If you include notifications and subscribers in your `CreateBudget` call, AWS creates the notifications and subscribers for you.

Type: NotificationWithsubscribers object

Required: No

Errors

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

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

HTTP Status Code: 400

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

HTTP Status Code: 500

Examples

The following example request creates a budget named `Example Budget`.

Sample Request

```
{
   "Operation":"com.amazonaws.awsbudgets#CreateBudget",
   "Service":"com.amazonaws.awsbudgets#AWSBudgets",
   "Input":{
      "accountId":"111122223333",
      "budget":{
           "budgetName":"Example Budget",
           "budgetLimit":{
            "amount":"100",
         "unit":"USD"
        },
           "costFilters":{
               "AZ":"us-east-1"
        },
           "costTypes":{
            "includeTax":"true",
          "includeSubscriptions":"false",
          "includeBlended":"false"
        },
           "timeUnit":"MONTHLY",
           "timePeriod":{
            "start":"1477353600000",
          "end":"1477958399000"
        },

            "budgetType":"COST"
         },
      "notificationsWithSubscribers":{
           "notification":{
      "notificationType":"FORECASTED",
               "comparisonOperator":"GREATER_THAN",
               "threshold":"80"
     },
           "subscribers":{
               "subscriber":{
             "subscriptionType":"EMAIL",
             "address":"example@example.com"
         },
     }
      }
   }
}
```

CreateNotification

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

Request Parameters

The request requires the following data in JSON format.

accountId
The `accountId` that is associated with the budget.

Type: String

Length constraints: Minimum length of `12`, maximum length of `12`.

Required: Yes

budgetName
The name of the budget. Budget names must be unique within an account.

Type: String

Length constraints: 100 characters

Pattern: [^:]+

Required: Yes

notification
The notification that you want to create.

Type: Notification object

Required: Yes

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

Type: A list of Subscriber objects

Required: Yes

Errors

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

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

HTTP Status Code: 400

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

HTTP Status Code: 500

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

HTTP Status Code: 400

Examples

The following example request creates a notification for the budget named `Example Budget`.

Sample Request

```
{
    "Operation": "com.amazonaws.awsbudgets#CreateNotification",
    "Service": "com.amazonaws.awsbudgets#AWSBudgets",
    "Input": {
        "budgetName": "Example Budget",
        "notification": {
            "notificationType": "ACTUAL",
            "comparisonOperator": "LESS_THAN",
            "threshold": 30
        },
        "subscribers": [ {
                "subscriptionType": "EMAIL",
                "address": "example@example.com"
            },
            {
                "subscriptionType": "EMAIL",
                "address": "example2@example.com"
            },
            {
                "subscriptionType": "SNS",
                "address": "exampleSnsTopic"
            }
        ],
        "accountId": "1234567890"
    }
}
```

CreateSubscriber

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

Request Parameters

The request requires the following data in JSON format.

accountId
The `accountId` that is associated with the budget.

Type: String

Length constraints: Minimum length of `12`, maximum length of `12`.

Required: Yes

budgetName
The name of the budget. Budget names must be unique within an account.

Type: String

Length constraints: 100 characters

Pattern: [^:]+

Required: Yes

notification
The notification that you want to create a subscriber for.

Type: Notification object

Required: Yes

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

Type: Subscriber object

Required: Yes

Errors

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: 500

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

HTTP Status Code: 400

Examples

The following example request creates a subscriber to the notification associated with the budget named `Example Budget`.

Sample Request

```
{
    "Operation": "com.amazonaws.awsbudgets#CreateSubscriber",
    "Service": "com.amazonaws.awsbudgets#AWSBudgets",
    "Input": {
        "accountId": "1234567890",
        "budgetName": "Example Budget",
        "notification": {
            "notificationType": "ACTUAL",
            "comparisonOperator": "LESS_THAN",
            "threshold": 30
        },
        "subscriber":  {
                "subscriptionType": "EMAIL",
                "address": "example@example.com"
        }
    }
}
```

DeleteBudget

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

Caution
Deleting a budget also deletes the notifications and subscribers associated with that budget.

Request Parameters

The request requires the following data in JSON format.

accountId
The `accountId` that is associated with the budget.

Type: String

Length constraints: Minimum length of `12`, maximum length of `12`.

Required: Yes

budgetName
The name of the budget that you want to delete.

Type: String

Pattern: [^:]+

Required: Yes

Errors

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

HTTP Status Code: 400

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

HTTP Status Code: 500

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

HTTP Status Code: 400

Examples

The following example request deletes the budget named `Example Budget`.

Sample Request

```
{
    "Operation": "com.amazonaws.awsbudgets#DeleteBudget",
    "Service": "com.amazonaws.awsbudgets#AWSBudgets",
    "Input": {
        "budgetName": "Example Budget",
        "accountId": "1234567890"
    }
```

```
}
```

DeleteNotification

Deletes a notification.

> **Caution**
> Deleting a notification also deletes the subscribers associated with the notification.

Request Parameters

The request requires the following data in JSON format.

accountId
The `accountId` that is associated with the budget.

Type: String

Length constraints: Minimum length of `12`, maximum length of `12`.

Required: Yes

budgetName
The name of the budget. Budget names must be unique within an account.

Type: String

Length constraints: 100 characters

Pattern: [^:]+

Required: Yes

notification
The notification that you want to delete.

Type: Notification object

Required: Yes

Errors

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

HTTP Status Code: 500

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

The following example request deletes a notification for the budget named `Example Budget`.

Sample Request

```
{
    "Operation": "com.amazonaws.awsbudgets#DeleteNotification",
    "Service": "com.amazonaws.awsbudgets#AWSBudgets",
    "Input": {
        "budgetName": "Example Budget",
        "notification": {
            "notificationType": "ACTUAL",
            "comparisonOperator": "GREATER_THAN",
            "threshold": 80
        },
        "accountId": "1234567890"
    }
}
```

DeleteSubscriber

Deletes a subscriber.

Caution
Deleting the last subscriber to a notification also deletes the notification.

Request Parameters

The request requires the following data in JSON format.

accountId
The `accountId` that is associated with the budget.

Type: String

Length constraints: Minimum length of `12`, maximum length of `12`.

Required: Yes

budgetName
The name of the budget. Budget names must be unique within an account.

Type: String

Length constraints: 100 characters

Pattern: [^:]+

Required: Yes

notification
The notification whose subscriber you want to delete.

Type: Notification object

Required: Yes

subscriber
The subscriber that you want to delete.

Type: Subscriber object

Required: Yes

Errors

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

HTTP Status Code: 500

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

The following example request deletes a subscriber for the budget named `Example Budget`.

Sample Request

```
{
    "Operation": "com.amazonaws.awsbudgets#DeleteSubscriber",
    "Service": "com.amazonaws.awsbudgets#AWSBudgets",
    "Input": {
        "budgetName": "Example Budget",
        "notification": {
            "notificationType": "FORECASTED",
            "comparisonOperator": "LESS_THAN",
            "threshold": 80
        },
        "subscriber": {
            "subscriptionType": "EMAIL",
            "address": "example@example.com"
        },
        "accountId": "1234567890"
    }
}
```

DescribeBudget

Describes a budget.

Request Parameters

The request requires the following data in JSON format.

accountId
The `accountId` that is associated with the budget.

Type: String

Length constraints: Minimum length of `12`, maximum length of `12`.

Required: Yes

budgetName
The name of the budget. Budget names must be unique within an account.

Type: String

Length constraints: 100 characters

Pattern: [^:]+

Required: Yes

Response Elements

This operation returns the following parameters.

budget
Returns a budget object.

Type: Budget object

Errors

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

HTTP Status Code: 500

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

The following example requests a budget named `Example Budget`.

Sample Request

```
{
    "Operation": "com.amazonaws.awsbudgets#DescribeBudget",
    "Service": "com.amazonaws.awsbudgets#AWSBudgets",
    "Input": {
        "budgetName": "Example Budget",
        "accountId": "1234567890"
    }
}
```

DescribeBudgets

Lists the budgets associated with an account.

Request Parameters

The request requires the following data in JSON format.

accountId
The `accountId` that is associated with the budget.

Type: String

Length constraints: Minimum length of `12`, maximum length of `12`.

Required: Yes

maxResults
Optional integer. Specifies the maximum number of results to return in response. This parameter value must be greater than 0.

Type: Integer

Required: No

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

Type: String

Required: No

Response Elements

This operation returns the following parameters.

budgets
A list of budgets associated with an account.

Type: List of Budget objects

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

Type: String

Required: No

Errors

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: 500

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

The following example request lists the budgets for the account `1234567890`.

Sample Request

```
{
    "Operation": "com.amazonaws.awsbudgets#DescribeBudgets",
    "Service": "com.amazonaws.awsbudgets#AWSBudgets",
    "Input": {
        "pageSize": 50,
        "nextToken":
 "eyJhbGciOiJIUzI1NiJ9.SldUQ2xhaW1zU2V0IFtpc3M9bnVsbCwgc3ViExampleV0aGluZ3NvbWV0aGluZywgYXV
        "accountId": "1234567890"
    }
}
```

DescribeNotificationsForBudget

Lists the notifications associated with a budget.

Request Parameters

The request requires the following data in JSON format.

accountId
The `accountId` that is associated with the budget.

Type: String

Length constraints: Minimum length of `12`, maximum length of `12`.

Required: Yes

budgetName
The name of the budget. Budget names must be unique within an account.

Type: String

Length constraints: 100 characters

Pattern: [^:]+

Required: Yes

maxResults
Optional integer. Specifies the maximum number of results to return in response. This parameter value must be greater than 0.

Type: Integer

Required: No

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

Type: String

Required: No

Response Elements

This operation returns the following parameters.

notifications
A list of notifications associated with a budget.

Type: List of Notification objects

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

Type: String

Errors

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: 500

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

The following example request lists notifications associated with the budget named `Example Budget`.

Sample Request

```
{
    "Operation": "com.amazonaws.awsbudgets#DescribeNotificationsForBudget",
    "Service": "com.amazonaws.awsbudgets#AWSBudgets",
    "Input": {
        "budgetName": "Example Budget",
```

```
        "accountId": "1234567890"
        "pageSize": 50,
        "nextToken":
 "eyJhbGciOiJIUzI1NiJ9.SldUQ2xhaW1zU2V0IFtpc3M9bnVsbCwgc3ViExampleV0aGluZ3NvbWV0aGluZywgYXV
    }
}
```

DescribeSubscribersForNotification

Lists the subscribers associated with a notification.

Request Parameters

The request requires the following data in JSON format.

accountId
The `accountId` that is associated with the budget.

Type: String

Length constraints: Minimum length of `12`, maximum length of `12`.

Required: Yes

budgetName
The name of the budget. Budget names must be unique within an account.

Type: String

Length constraints: 100 characters

Pattern: [^:]+

Required: Yes

notification
The notification whose subscribers you want to list.

Type: Notification object

Required: Yes

maxResults
Optional integer. Specifies the maximum number of results to return in response. This parameter value must be greater than 0.

Type: Integer

Required: No

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

Type: String

Required: No

Response Elements

This operation returns the following parameters.

subscribers
A list of subscribers associated with a notification.

Type: List of Subscriber objects

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

Type: String

Errors

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: 500

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

The following example request lists the subscribers associated with the notifications for the budget named `Example Budget`.

Sample Request

```
{
    "Operation":
 "com.amazonaws.awsbudgets#DescribeSubscribersForNotification",
    "Service": "com.amazonaws.awsbudgets#AWSBudgets",
    "Input": {
        "budgetName": "Example Budget",
        "accountId": "1234567890",
        "notification": {
            "notificationType": "FORECASTED",
            "comparisonOperator": "LESS_THAN",
            "threshold": 80
        },
        "pageSize": 50,
        "nextToken":
 "eyJhbGciOiJIUzI1NiJ9.SldUQ2xhaW1zU2V0IFtpc3M9bnVsbCwgc3ViExampleV0aGluZ3NvbWV0aGluZywgYXV
    }
```

```
}
```

UpdateBudget

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

Request Parameters

The request requires the following data in JSON format.

accountId
The `accountId` that is associated with the budget.

Type: String

Length constraints: Minimum length of `12`, maximum length of `12`.

Required: Yes

newBudget
The budget that you want to update your budget to.

Type: Budget object

Required: Yes

Errors

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

HTTP Status Code: 500

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

The following example request updates a budget named `Example Budget`.

Sample Request

```
{
    "Operation": "com.amazonaws.awsbudgets#UpdateBudget",
    "Service": "com.amazonaws.awsbudgets#AWSBudgets",
    "Input": {
        "newBudget":{
           "budgetName":"Example Budget",
           "budgetLimit":{
            "amount":"200",
```

```
          "unit":"USD"
        },
           "costFilters":{
               "AZ":"us-east-1"
        },
           "costTypes":{
            "includeTax":"true",
         "includeSubscriptions":"true",
         "includeBlended":"false"
        },
           "timeUnit":"MONTHLY",
           "timePeriod":{
            "start":"1477353600000",
         "end":"1478958399000"
         },
           "budgetType":"COST"
         },
        "accountId": "1234567890"
    }
}
```

UpdateNotification

Updates a notification.

Request Parameters

The request requires the following data in JSON format.

accountId
The `accountId` that is associated with the budget.

Type: String

Length constraints: Minimum length of `12`, maximum length of `12`.

Required: Yes

budgetName
The name of the budget. Budget names must be unique within an account.

Type: String

Length constraints: 100 characters

Pattern: [^:]+

Required: Yes

oldNotification
The previous notification associated with a budget.

Type: Notification object

Required: Yes

newNotification
The updated notification to be associated with a budget.

Type: Notification object

Required: Yes

Errors

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

HTTP Status Code: 500

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

The following example request updates the notification associated with the budget named `Example Budget`.

Sample Request

```
{
    "Operation": "com.amazonaws.awsbudgets#UpdateNotification",
    "Service": "com.amazonaws.awsbudgets#AWSBudgets",
    "Input": {
        "budgetName": "Example Budget",
        "oldNotification": {
            "notificationType": "ACTUAL",
            "comparisonOperator": "GREATER_THAN",
            "threshold": 30
        },
        "newNotification": {
            "notificationType": "FORECASTED",
            "comparisonOperator": "LESS_THAN",
            "threshold": 50
        },
        "accountId": "1234567890"
    }
}
```

UpdateSubscriber

Updates a subscriber.

Request Parameters

Updates the `subscriber` associated with the budget notification. You can use the `ListSubscribersForNotification` operation to view the contents of the updated subscriber.

The request requires the following data in JSON format.

accountId
The `accountId` that is associated with the budget.

Type: String

Length constraints: Minimum length of 12, maximum length of 12.

Required: Yes

budgetName
The name of the budget. Budget names must be unique within an account.

Type: String

Length constraints: 100 characters

Pattern: [^:]+

Required: Yes

notification
The notification whose subscriber you want to update.

Type: Notification object

Required: Yes

oldSubscriber
The previous subscriber associated with a budget notification.

Type: Subscriber object

Required: Yes

newSubscriber
The updated subscriber associated with a budget notification.

Type: Subscriber object

Required: Yes

Errors

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

HTTP Status Code: 500

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

The following example request updates a subscriber associated with the notification for the budget named `Example Budget`.

Sample Request

```
{
    "Operation": "com.amazonaws.awsbudgets#UpdateSubscriber",
    "Service": "com.amazonaws.awsbudgets#AWSBudgets",
```

```
    "Input": {
        "budgetName": "Example Budget",
        "notification": {
            "notificationType": "ACTUAL",
            "comparisonOperator": "GREATER_THAN",
            "threshold": 30
        },
        "oldSubscriber": {
            "subscriptionType": "SNS",
            "address": "exampleSnstopic"
        },
        "newSubscriber": {
            "subscriptionType": "EMAIL",
            "address": "example@example.com"
        },
        "accountId": "1234567890"
    }
}
```

Data Types

The following data types are supported:

- Budget
- CalculatedSpend
- CostTypes
- CostFilter
- Notification
- NotificationWithsubscribers
- Spend
- Subscriber

Budget

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`.

The ARN pattern for a budget is: `arn:aws:budgetservice::`*`AccountId`*`:budget/`*`budgetName`*

Contents

budgetLimit
The total amount of cost or usage that you want to track with a budget.

Type: Spend object

Required: Yes

budgetName
The name of a budget. Unique within accounts.

Type: String

Pattern: [^:]+

Required: Yes

budgetType
Whether this budget tracks monetary cost or usage.

Type: Enum

Valid Values: COST | USAGE

Required: Yes

calculatedSpend
The actual and forecasted cost or usage being tracked by a budget.

Type: Two Spend objects

Valid Values:

Required: No

costFilters
The cost filters applied to a budget, such as service or region.

Type: String to string map

Required: No

costTypes
The types of cost included in a budget, such as tax and subscriptions.

Type: CostTypes object

Required: Yes

timePeriod
The period of time covered by a budget. 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.

If you created your budget using the Billing and Cost Management console and didn't specify a start date, AWS defaults to the first day of the month. If you created your budget using the Billing and Cost Management console and didn't specify an end date, AWS sets your end date to June 15, 2087. 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

Required: Yes

timeUnit
The length of time until a budget resets the actual and forecasted spend.

Type: Enum

Valid Values: MONTHLY | QUARTERLY | ANNUALLY

Required: Yes

CalculatedSpend

The spend objects associated with this budget. The `actualSpend` tracks how much you've used, cost or usage, 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 or usage that you have used.

Type: Spend object

Required: Yes

forecastedSpend
The amount of cost or usage that you are forecasted to use.

Type: Spend object

Required: No

CostTypes

The types of costs included in this budget.

Contents

includeTax
Specifies whether a budget includes taxes.

Type: Boolean

Required: Yes

includeSubscription
Specifies whether a budget includes subscriptions.

Type: Boolean

Required: Yes

useBlended
Specifies whether a budget uses blended rate.

Type: Boolean

Required: Yes

CostFilter

The Cost Explorer filters for a budget.

Contents

key
The Cost Explorer key for this filter.

Valid keys for a cost filter are `AZ`, `LinkedAccount`, `Operation`, `PurchaseType`, `Service`, and `TagKeyValue`.

Valid keys for a usage filter are `AZ`, `LinkedAccount`, `Operation`, `PurchaseType`, `UsageType:<service name>`, and `TagKeyValue`.

Type: String

Required: No

values
The values for the key, such as a specific Availability Zone, tag, or service name.

Type: List<String>

Required: No

Notification

A notification 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 ten 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 comparisonOperator of `GREATER_THAN`
- A notification threshold of `80`

Contents

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

Type: Enum

Valid values: ACTUAL | FORECASTED

Required: Yes

comparisonOperator
The comparison used for this notification.

Type: Enum

Valid values: GREATER_THAN | LESS_THAN | EQUAL_TO

Required: Yes

notificationThreshold
The threshold associated with a notification. AWS notifies you when you go over the threshold (`ACTUAL` notifications), or when you are forecasted to go over the threshold (`FORECASTED` notifications). Thresholds are always a percentage.

Type: Double

Length constraints: Minimum of 0, maximum of 100.

Required: Yes

NotificationWithsubscribers

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

Contents

notification
The notification associated with a budget.

Type: Notification object

Required: Yes

subscribers
A list of subscribers who are subscribed to this notification.

Type: List of Subscriber objects

Required: Yes

Spend

The amount of cost or usage being 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 associated with a budget forecast, actual spend, or budget threshold.

Type: Double

Required: Yes

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

Type: String

Required: Yes

Subscriber

The subscriber to a budget notification. The subscriber consists of a subscription type and either an Amazon Simple Notification Service (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

subscriptionType
The type of notification that AWS sends to a subscriber.

Type: Enum

Valid Values: SNS | EMAIL

Required: Yes

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

Type: String

Required: Yes

Document History

The following table describes the documentation for this release of the *AWS Billing and Cost Management* guide.

- **Version:** 2.0
- **Last documentation update:** October 20th, 2016

Change	Description	Release Date
Expanded Cost Explorer Functionality	You can now use Cost Explorer to visualize your costs by Usage type groups. For more information, see Analyzing Your Costs with Cost Explorer (p. 43).	September 15, 2016
Expanded Budget Functionality	You can now use budgets to track usage data. For more information, see Managing Your Costs with Budgets (p. 65).	October 20, 2016
Expanded Cost Explorer Functionality	You can now use Cost Explorer to visualize your costs by Usage type groups. For more information, see Analyzing Your Costs with Cost Explorer (p. 43).	September 15, 2016
Improved Amazon Redshift integration for AWS Cost and Usage Reports	AWS Cost and Usage Reports now provide customized queries for uploading your data into Amazon Redshift. For more information, see Uploading an AWS Cost and Usage Report to Amazon Redshift (p. 28).	August 18th, 2016
Expanded Cost Explorer Functionality	You can now use Cost Explorer to visualize your costs by Amazon EC2 instance type or region. For more information, see Analyzing Your Costs with Cost Explorer (p. 43).	January 5th, 2016
AWS Cost and Usage reports	You can now create and download AWS Cost and Usage reports. For more information, see Understanding Your Usage with Billing Reports (p. 17).	December 16th, 2015

Change	Description	Release Date
AWS price list API	You can now download offer files that list the products, prices, and restrictions for a single AWS service. For more information, see Using the AWS Price List API (p. 35).	December 9th, 2015
Cost Explorer Report Manager	You can now save Cost Explorer queries. For more information, see Managing Your Cost Explorer Reports (p. 60).	November 12th, 2015
Free Tier Tracking	You can now track how much of your free tier limit you've used. For more information, see Tracking Your Free Tier Usage (p. 12).	August 12th, 2015
Budgets and Forecasting	You can now manage your AWS usage and costs using budgets and cost forecasts. For more information, see Monitoring Your Usage and Costs (p. 32).	June 29th, 2015
Amazon Internet Services Pvt. Ltd	You can now manage your account settings and payment methods for an Amazon Internet Services Pvt. Ltd (AISPL) account. For more information, see Managing an Account in India (p. 81).	June 1st, 2015
Expanded Cost Explorer Functionality	You can now use Cost Explorer to visualize your costs by Availability Zone, API operation, purchase option, or by multiple cost allocation tags. For more information, see Analyzing Your Costs with Cost Explorer (p. 43).	February 19, 2015
Preferred Payment Currencies	You can now change the currency associated with your credit card. To learn more, see Features in Billing and Cost Management (p. 1).	February 16, 2015
Avoiding Unexpected Charges	Revised and expanded Avoiding Unexpected Charges (p. 77) and Using the Free Tier (p. 10).	August 19, 2014
IAM User Permissions	You can now enable AWS Identity and Access Management (IAM) users and federated users to access and manage your account settings, view your bills, and perform cost management. For example, you can grant people in your finance department full access to the financial setup and control of your AWS account, without having to give them access to your production AWS environment. For more information about managing access to account settings, billing, and cost management, see Controlling Access (p. 103). If you're not using IAM to secure your account yet, we encourage you to learn more about IAM and the benefits it provides.	July 07, 2014
Cost Explorer launched.	Cost Explorer provides a visualization of your AWS costs that enables you to analyze your costs in multiple ways. For more information, see Analyzing Your Costs with Cost Explorer (p. 43).	April 8, 2014
Version 2.0 published.	The AWS Billing and Cost Management User Guide has been reorganized and rewritten to use the new Billing and Cost Management AWS Management Console.	October 25, 2013

AWS Glossary

For the latest AWS terminology, see the AWS Glossary in the *AWS General Reference*.