AWS Account Billing

About AWS Account Billing

Version 1.0

AWS Account Billing: About AWS Account Billing

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Welcome to AWS Account Billing

Important
AWS released a new Account Billing console in November 2013 that supersedes the Billing Portal. The AWS Account Billing guide also supersedes this guide. The Billing Portal is scheduled for deprecation and will no longer be supported after April 30, 2014.

Amazon Web Services (AWS) bills your account, or accounts, for usage. This progressive billing method ensures you pay only for what you use. To help manage your charges, AWS provides several easy-to-use billing features that help you monitor and pay your bill for one or many accounts.

How Do I...?

How Do I?	Relevant Topics
Change the account name, address, email and the credit card used to pay my bill?	See Editing Account and Credit Card Information (p. 5).
Contact AWS Support about my bill?	See If You Have Questions About Your Bill (p. 3).
Get notified when my bill reaches a specific amount?	See Billing Alerts on your Account Activity page.
Give other users access to my bill?	See Controlling User Access to Your AWS Account Billing Information (p. 43).
Get one bill for multiple accounts?	See Consolidated Billing (p. 23).
Download my bill?	See Getting Your Bill (p. 7).
Get a detailed breakdown of my AWS usage by service?	See Usage Reports on your Account Activity page.
Find out about free tier usage?	See Getting Started with the AWS Free Usage Tier.
Estimate service billing rates and my monthly bill?	See the AWS Simple Monthly Calculator.

How Do I?	Relevant Topics
Find out about Amazon EC2 reserved instance discounts?	See Reserved Instance Volume Discounts.

If You Have Questions About Your Bill

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Introduction

When you have a question about your bill, you can contact AWS Support by using the resources listed on the AWS Contact Us page. This page guides you through the process of opening a support case for your inquiry. Billing inquiries are included in Basic Support, which AWS provides to all customers at no additional charge. The AWS Support home page provides detailed information about AWS support plans.

Contacting AWS Support

1. Navigate to the AWS Support Center. If prompted, enter the email address and password for your account.
2. Click **Open a new case**.
3. On the **Open a new case** page, select **Account and Billing Support** and provide the information specified on the form.
4. After completing the form, you can click **Submit Case** for an email response or **Call Me** to request a telephone support from an AWS Support representative. Instant messaging support is not available for billing inquiries.

Note
AWS Support does not publish a direct phone number for reaching a support representative. Opening a support case is the fastest and most direct method for communicating with AWS Support.

Canceling AWS Services or Closing Your AWS Account

You can cancel your subscriptions to individual AWS services or close your AWS account from the Manage Your Account page. The links you need are located near the bottom of that page.

Other AWS Support Resources

You can find all other methods for contacting AWS on the **Contact Us** page. This page also provides a set of self-service links that you may find useful:

- AWS Developer Forums.
- Explanation of some types of unexpected charges.
- Information about the Free Usage Tier.
- Troubleshooting multi-factor authentication (MFA).
- Changing your account name, email, or password.
- Canceling an AWS service or account.
- Getting permission for penetration testing.

Editing Account and Credit Card Information

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Topics

This topic describes how to edit your AWS account information and how to change the credit card information for your AWS charges. When you sign up to use AWS, you provide account information such as your user name and email, and if you choose, email addresses for people in your organization who handle billing, operations, or security. In addition, you provide a credit card to which AWS charges your usage, along with a billing address.

Only the account owner can view account information. IAM users created under the account cannot view Account Billing information. An account owner can grant IAM users permission to view only the Account Activity and Usage Reports pages, however. In addition, linked accounts in a consolidated billing family cannot access billing information for the paying account or any other account in a consolidated billing family. To learn about how to grant an IAM user permission to view the **Account Activity** or **Usage Reports** pages, see the topic Controlling User Access to Your AWS Account Billing Information (p. 43)

The topic Account Billing Permissions Reference (p. 47) summarizes the levels of access to Account Billing pages for different kinds of users.

Editing AWS Account Information

After you have signed up for AWS, you can access your AWS account information by using the following steps:

To update or delete account information

1. Sign in to the AWS Billing Portal.
2. Click **Personal Information** in the **Account** list on the left side of the page.
3. Follow the instructions on the **Personal Information** page to modify your account information.

Updating a Payment Method

You can change the name, expiration date, and billing address on the credit card you use to pay your AWS bill.

To update your credit card

1. Navigate to the Payment Method page and sign in using the email address and password associated with your AWS account.
2. Click **Edit this Card** and follow the instructions on the page.

Adding a New Payment Method

You can also add a new credit card to your account and designate it as your payment method using the following steps:

To update your credit card

1. Navigate to the Payment Method page and sign in using the email address and password associated with your AWS account.
2. Enter the information for your new credit card under **Enter a New Payment Method** and click **Continue** and enter the requested information until you have completed the process.

Removing a Payment Method

Use the following steps to remove a credit from the list of payment methods displayed on the **Payment Method** page.

To update your credit card

1. Navigate to the www.amazon.com page and sign in using the email address and password associated with your AWS account.
2. Click **Your Account** and select **Your Account**.
3. In the **Payment** section, click **Manage Payment Options**.
4. Next to the card you want to remove from the list of payment methods, click **Delete** and follow any instructions that appear.

Note
Clicking this button removes a credit card from the display; the credit card is marked inactive in Amazon's records. The deleted card can still be charged for any remaining AWS balance. If you are closing your AWS account, make sure to also cancel your AWS subscriptions; AWS continues to charge you for usage accrued through the time of cancellation.

Getting Your Bill

Important
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Topics

AWS invoices monthly for your usage charges and recurring fees; for one-time fees, you are charged immediately. You have several ways to view your estimated charges for the current month, as well as final charges for previous months. This section describes the billing formats provided by AWS.

Current Charges

The Account Activity page is a detailed statement of your charges. This page includes estimated usage charges and invoices for one-time fees for the current month. You can also view a previous month's statements and invoices.

Download Invoice

At the end of a billing cycle or for one-time fees, AWS issues your invoice as a PDF file.

To get a PDF file invoice

1. Go to Account Activity.
2. Select the statement month using the **Select a different statement** field.
3. In the **Summary** section, click the option to **View charges and download PDFs**.

Detailed Reports

You can get detailed reports of your charges for a month in CSV (comma-separated value) format. The report is generated for both estimated month-to-date charges and final month-end charges. You can also get a CSV report that lists account activity in hourly increments. You can view these reports in common applications that can read CSV files such as Microsoft Excel, or you can write custom applications that access the billing data within the CSV file.

> **Note**
> Consolidated billing customers: AWS is enhancing the CSV report format to include additional data. During the transition, AWS will provide two versions of the CSV report for your accounts. One report includes a subset of the content in the other report.

These detailed reports are available after you sign up for CSV reports on the Billing Preferences page. For information about signing up for CSV reports, see Set Up Programmatic Billing Access.

Programmatic Access to the Report

If you sign up for Programmatic Billing Access, you can get your CSV report for your estimated and final charges from an Amazon S3 bucket you specify. The file contains charges for the account, broken down by AWS product and individual type of usage.

For more information about getting this CSV report published to an Amazon S3 bucket, see Programmatic Billing Access (p. 37).

Monthly and Detailed Billing Reports

AWS generates reports of estimated charges that provide details of AWS usage for accounts. You can obtain reports that show usage at both monthly and hourly granularity. These reports also display usage by accounts linked to a payer account for consolidated billing customers.

The following sections describe the monthly and detailed billing (hourly) reports, discuss ways they can be used to understand your AWS costs, and list the columns in each report.

Monthly Report

You can download a monthly report of your estimated AWS charges from the **Account Activity** page. For consolidated billing customers, this report is currently available only to the payer accounts 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 at this time.

The report contains line items for each AWS product and operation the account uses. The estimated report is updated multiple times per day. You can see monthly reports for previous months by selecting the statement period.

Detailed Billing (Hourly) Report

Detailed billing reports provide line items for every hour (or partial hour) of AWS activity for an account. For consolidated billing customers, the report displays a line item for all AWS usage by linked accounts and the payer account. The term for this set of accounts linked to a payer account is the consolidated billing *account family*. You see two line items for all usage in the detailed billing reports for consolidated billing accounts. One line belongs to the payer and represents the charge for the usage. The other line belongs to the linked account and is an *allocation* of cost from the payer account charges to the linked account. The topic Blended Rates for Consolidated Billing Accounts (p. 31) explains this allocation process in detail.

Note
The detailed billing report is not a bill, but an estimate of costs and charges for AWS usage. Only the invoice you receive each month contains your actual charges.

Tip
As a best practice, avoid running AWS services under the account you designate as the payer account. This practice eliminates the need to think of the payer account as distinct from the linked accounts.

You choose to have the detailed billing report generated on the **Billing Preferences** page, as with the monthly report. Unlike with the monthly report, however, you cannot download it from the **Account Activity** page. Instead, it is delivered to the same Amazon S3 bucket as the monthly report as a .zip file. You can access this file programmatically using the Amazon S3 API, or by manually navigating to the bucket using the Amazon S3 console. These reports are only available starting with the date at which you opted in to the feature.

The detailed billing report can run to sizes of more than a gigabyte, and may exceed the capacity of tools such as Microsoft Excel to display every line. Your database administrator may need to import it into a database for analysis. To reduce its size, the hourly report contains only a subset of fields in the monthly report. For example, it does not display fields that would be the same for every record, such as **Invoice Date** or **Billing Period Start Date**. See the section CSV Report Fields (p. 10).

Blended and Unblended Rates: You can use the detailed billing report to perform detailed cost analyses on your usage. 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 hourly report 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 following list describes the aims of the detailed billing report:

- Making 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 Blended Rates for Consolidated Billing Accounts (p. 31).
- Enabling you to locate the exact time at which usage switched to lower-cost 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.
- Showing how 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.

To learn more about consolidated billing and the potential savings that apply when you purchase Reserved Instances, see the following topics:

- Consolidated Billing (p. 23) in *About AWS Account Billing*.
- Understanding the Pricing Benefit and Consolidated Billing in the *Amazon Elastic Compute Cloud Developer Guide*.

Detailed Billing (Hourly) Report with Resources and Cost Allocation Tags

The Detailed Billing Report with Resources and Cost Allocation 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 run under your

account. You can use this field to view your charges for each AWS resource, as well as for filtering and aggregating data.

Any cost allocation tags you have applied to your resources are also appended to each line item in the report. You can filter or aggregate on these tags too. For information about creating cost allocation tags, see Cost Allocation and Tagging (p. 16). For cost allocation tags to appear in this report, you must select them as described in the section How to Apply Tags (p. 17).

> **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 may exceed the maximum number of rows you can display in an Excel spreadsheet.

You can sign up for this report on the Billing Preferences page.

> **Note**
> For Consolidated Billing customers, AWS publishes detailed billing reports only to the payer account's Amazon S3 bucket. Linked accounts do not receive detailed reports.

CSV Report Fields

The following table lists the fields that appear in the monthly and detailed billing reports. Click the link on each field name to read a description and usage notes.

CSV Billing Report Fields

Field Name	Monthly Report	Hourly Report	Hourly Report with Resources and Tags
Account and Invoice Information Fields			
InvoiceID (p. 11)	X	X	X
Paying Account ID (p. 11)	X	X	X
Linked Account ID (p. 11)	X	X	X
Record Type (p. 12)	X	X	X
Record ID (p. 12)	X		X
Billing Period Start Date (p. 12)	X		
Billing Period End Date (p. 12)	X		
Invoice Date (p. 12)	X		
Product Usage Information Fields			
Product Code (p. 13)	X		
Product Name (p. 13)	X	X	X
Seller of Record (p. 13)	X		
Usage Type (p. 13)	X	X	X
Operation (p. 13)	X	X	X
Availability Zone (p. 13)		X	X
Reserved Instance (p. 13)		X	X

Field Name	Monthly Report	Hourly Report	Hourly Report with Resources and Tags
Rate ID (p. 13)	X	X	X
Subscription ID (p. 13)		X	X
Pricing Plan ID (p. 13)		X	X
Item Description (p. 14)	X	X	X
Usage Start Date (p. 14)	X	X	X
Usage End Date (p. 14)	X	X	X
Usage, Cost, and Tax Information Fields			
Usage Quantity (p. 14)	X	X	X
Blended Rate (p. 14)	X	X	X
Blended Cost (p. 14)		X	X
Unblended Rate (p. 14)		X	X
Unblended Cost (p. 14)		X	X
Currency Code (p. 14)	X		
Cost Before Tax (p. 14)	X		
Credits (p. 15)	X		
Tax Amount (p. 15)	X		
Tax Type (p. 15)	X		
Total Cost (p. 15)	X		
ResourceID and Custom Tags			
ResourceID (p. 15)			X
Cost Allocation Tags (p. 15)			X

Billing Reports CSV Field Reference

The following list describes the information that appears in the fields of both the monthly and detailed billing CSV reports.

Account and Invoice Information Fields

InvoiceID
The 8-digit identifier for the AWS invoice. This value maps to the invoice number on the PDF file for the corresponding month.

Paying Account ID
The 12-digit AWS identifier for the paying account for the report.

Linked Account ID
For consolidated billing accounts, the 12-digit AWS identifier for the linked account.

Record Type

The CSV files can contain several different types of record:

- Statement Total—A summary of all charges in the billing period.
- Invoice Total—A summary of all charges for an invoice. An invoice total for each invoice is included.
- Account Total—A summary of all charges for an account in a billing period. For consolidated billing customers, this includes a total for each linked account. This total can include multiple invoices per account. This record type appears only in reports for consolidated billing accounts.
- Payer Line Item—An item that includes all usage with the same product, usage type, and operation. Sum all the payer line items to reconcile the amount with your account totals.
- Linked Account Line Item—For consolidated billing customers only: Linked-account line items are proportionally allocated from the paying-account line items based on linked account usage. Summing all linked-account line items reconciles your statement and invoice totals if you add the CB Rounding Error value.

  AWS does not provide payer-level line items in the detailed billing (hourly) report, so there is no distinction between the paying account and linked accounts. All usage appears as "Line Item."
- CB Rounding Error—For consolidated billing customers only: This difference results from rounding charges that are allocated from the consolidated billing account invoice to individual linked accounts. If you have opted in to the hourly report, your CB rounding error reflects both rounding errors from consolidated billing as well as from the calculation of hourly charges, i.e., splitting the bill over 720 or 744 hours. The invoice reconciles when you add the rounding errors to the sum of all line items. In the hourly report, this record type appears as "Rounding."

Hourly Report Usage Notes:

Record ID

Unique identifier for each line item. Record IDs are unique for the billing period.

Billing Period Start Date

The start of the applicable charge period. All usage charges and recurring fees between the period start and end are included in your monthly invoice.

In most months, the start of the charge period is the first day of the month. If the account is new, or was added to the consolidated bill, or if the price for the listed product changed during the month the report covers, the Start Date reflects the date of the change.

For example, if an AWS account was added to the consolidated bill on December 10 at noon UTC, then the Start Date shown in the December report is 2009-12-10 12:00:00 UTC. If the price for the listed product changes on December 23 at 9:00 a.m. UTC, the report lists a second row for the new price with a Start Date of 2009-12-23 09:00:00 UTC.

Example: 2/1/2012 00:00:00

Billing Period End Date

The end of the applicable charge period. All usage charges and recurring fees between the period start and end are included in your monthly invoice. If the account is terminated, or is removed from the consolidated bill, or if the price for the listed product changed, the End Date reflects the date of the change.

Example: 2012/2/29 23:59:59

Invoice Date

The date and time your AWS invoice was issued.

Example: 2013/1/3 8:22:38

Product Usage Information Fields

Product Code
Short name of the AWS product.

Product Name
Long name of the AWS product.

Seller of Record
The official seller of services; this will normally be Amazon Web Services, Inc.. Services purchased from AWS Marketplace list a different seller of record.

Detailed Billing Report Usage Notes: AWS Marketplace users receive two hourly reports. One report is for AWS Marketplace activity, and contains your Marketplace ID in the name of the report. The other report reflects AWS usage outside AWS Marketplace.

Usage Type
Specifies operational details of the usage line item.

The following example describes Amazon EC2 High-Memory Double Extra Large Instance box usage in the US West (Oregon) region.

Example: USW1-BoxUsage:m2.2xlarge

Operation
Describes the specific usage of the line item. For example, a value of "RunInstances" indicates the operation of an Amazon EC2 instance.

Availability Zone
Specifies Availability Zone in which charged usage occurred.

Hourly Report Usage Notes: This column enables you to group instances by Availability Zone. Reserved Instance discounts apply only to on-demand instances within the same Availability Zone as the Reserved Instance(s).

Reserved Instance
Indicates whether the line item was calculated at a Reserved Instance rate. Values are "Y" for Yes and "N" for No. Reserved Instance purchase fees are also flagged with a "Y".

Rate ID
Numeric rate ID that maps to the Item description. The value is assigned by AWS for the Item description, and identifies the billing rate for computation purposes.

Subscription ID
Unique identifier for the AWS product described by the line item.

Pricing Plan ID
Numeric ID for the rate listed in the AWS pricing plan for the corresponding service.

Item Description
Description of the type of usage for this line item. This description matches the description in the Account Activity page, including the average price of any usage that is based on a volume pricing tier. Any price value shown is rounded to three decimal places.

> **Note**
> In the monthly report, you may occasionally encounter inconsistencies between rates listed in the Item Description field and the Unblended Rate field. This is due to the allocation of blended rates that are applied as part of consolidated billing.

Usage Start Date
The start of usage for this line item.

Usage End Date
The end of usage for this line item.

Usage, Cost, and Tax Information Fields

Usage Quantity
Computing resources used, in the units specified by each service. For example, your service may determine pricing by amount of storage, number of requests, or hours of operation. For more information about how usage is calculated, go to http://aws.amazon.com/pricing/.

> **Note**
> Some services refer to this field as "Usage Value."

Blended Rate
For consolidated billing accounts, the effective rate for the line item, calculated as an average of the cost of identical Amazon EC2 instances operating in that hour in the same Availability Zone. For a detailed explanation of blended rates and how they are calculated, see Blended Rates for Consolidated Billing Accounts (p. 31).

Blended Cost
Cost for the operation listed in the line item based on the blended rate. For some operations, such as BoxUsage for a full hour of an Amazon EC2 instance, the blended rate and the blended cost are the same. For other operations, such as I/O requests or data transfer, this column is the product of the blended rate multiplied by the value in the Usage Quantity column.

Unblended Rate
Published rate per hour of operation for the usage type specified in the Item Description field.

Unblended Cost
Cost for the operation listed in the line item based on the unblended rate. For some operations, such as BoxUsage for a full hour of an Amazon EC2 instance, the unblended rate and the unblended cost are the same. For other operations, such as I/O requests or data transfer, this column is the product of the blended rate multiplied by the value in the Usage Quantity column.

Currency Code
Currency of the displayed charges. Example: USD

Cost Before Tax
The month-to-date charges, before any applicable taxes.

Hourly Report Usage Notes: Taxes are not broken down by line items in hourly reports. Taxes are applied only to monthly line items. In the hourly report, tax is listed using separate line items.

Credits
Amount of credit that applies to the line item.

Hourly Report Usage Notes: In an hourly report, credits are line items instead of columns. Credit lines are applied to invoices, not to the entire report. Sort by the Invoice ID to find the credits that apply to an invoice.

Tax Amount
Estimated tax collected by AWS.

Tax Type
Type of tax collected by AWS, such as US sales tax or VAT.

Total Cost
The total charges, after any applicable taxes.

Resource and Custom Tag Fields

ResourceID
Identifier for the AWS resource as defined by each AWS service.

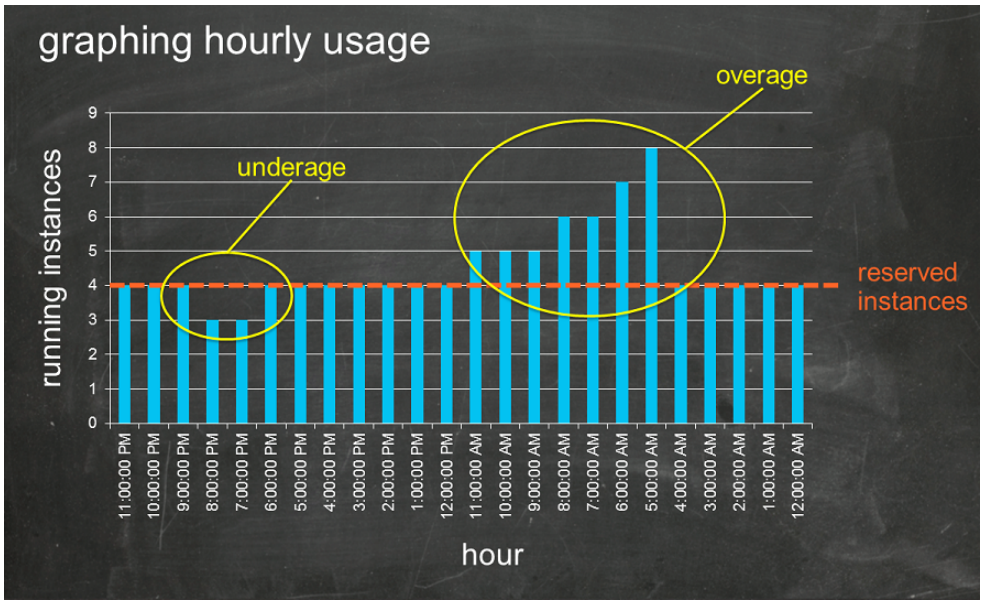
Cost Allocation Tags
If you have added cost allocation tags to your resources, each tag appears as an additional column in the CSV file.

Understanding Overages and Underages

The detailed billing (hourly) report can be used to visualize your usage over time. You can determine, for example, when you are underusing your Reserved Instance capacity, or when application load is precipitating the use of on-demand instance hours.

The following graph shows usage by an account over the course of a 24-hour period. The account has purchased four Reserved Instances, which meets demand in every hour except between 5:00:00 AM and 11:59:59 AM. During these hours, up to four additional instances operate to meet demand. In addition, low demand requires only three instances during two hours from 7:00:00 PM to 8:59:59 PM.

Note: When you do not use Reserved Instance capacity, the reservation is not applied to overages in other hours. For consolidated billing customers, unused capacity can be applied to other accounts in the family for identical usage types in the same Availability Zone.



Cost Allocation and Tagging

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

To get a Cost Allocation Report, you must sign up for Programmatic Billing Access (p. 37) and get the report from the designated Amazon S3 bucket using the Amazon S3 API. The Cost Allocation Report is not available from the **Account Activity** page of the AWS Management Console.

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 utilizing those resources. The following shows a partial report with columns for each tag.

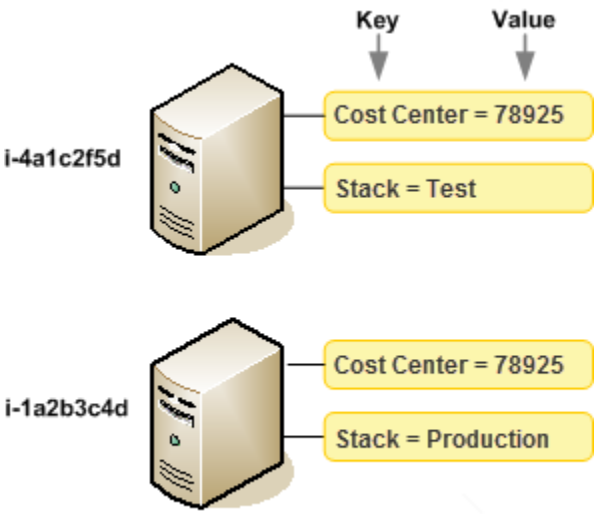
Total Cost	user:Owner	user:Stack	user:Cost Center	user:Application
0.95	DbAdmin	Test	80432	Widget2
0.01	DbAdmin	Test	80432	Widget2
3.84	DbAdmin	Prod	80432	Widget2
6.00	DbAdmin	Test	78925	Widget1
234.63	SysEng	Prod	78925	Widget1
0.73	DbAdmin	Test	78925	Widget1
0.00	DbAdmin	Prod	80432	Portal
2.47	DbAdmin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

At the end of the billing cycle, the total charges (tagged and untagged) on the Cost Allocation Report reconcile with the total charges on your Downloadable CSV Report and your **Account Activity** page total.

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 to organize 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.



How to Apply Tags

You apply tags to resources through simple API requests or through the AWS Management Console for services that support tagging. Each AWS service has its own implementation of tags. The following is a current list of services that support tags.

AWS Product	For more information, see...
Amazon Elastic Compute Cloud (Amazon EC2)	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*.
Amazon Simple Storage Service (Amazon S3)	Billing and Reporting of Buckets in the *Amazon Simple Storage Service Developer Guide*.
Amazon Elastic Block Store (Amazon EBS)	Amazon EBS *volume* charges can be allocated, but Amazon EBS *snapshot* charges cannot. See Tagging Your Resources in the *Amazon Elastic Compute Cloud User 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*.
AWS CloudFormation	Tagging Your Member Resources in the *AWS CloudFormation User Guide*.

AWS Product	For more information, see...
Amazon Relational Database Service (Amazon RDS)	DB Instance Tags in the *Amazon Relational Database Service User Guide*.

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

We recommend that you devise a set of tag keys that represent how you want to organize your costs. You can use a consistent set of tag keys to track your costs to have your Cost Allocation Report display the keys as additional columns with applicable values for each row.

For an example of how tags appear in your Cost Allocation Report, see Viewing a Cost Allocation Report (p. 20).

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
- Reserved prefix—`aws:`

  AWS-assigned tag names and values are assigned the `aws:` prefix, which the user cannot assign. AWS-assigned tag names do not count towards the tag limit of 10. 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 representable in UTF-8, plus the following special characters: + - = . _ : /

  Note
  If you need to use characters outside this set, you can standard base-64 encode your tag.

Getting a Cost Allocation Report

To get a Cost Allocation Report, first sign up for Programmatic Billing Access. Then, opt in to the Cost Allocation Report. AWS publishes the report as a CSV file to the Amazon S3 bucket you specify for Programmatic Billing Access. AWS publishes the report several times each day.

CSV files are stored in your designated bucket using the following naming convention.

```
123456789012-aws-cost-allocation-yyyy-mm.csv
```

123456789012 = account ID

y = year

m = month

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 final reports for the previous months remain in the designated Amazon S3 bucket.

You'll see two sets of reports in your bucket: one is the Downloadable CSV Report for Programmatic Billing Access, and the other is your Cost Allocation Report.

To sign up for the Cost Allocation Report

1. Set up your account for Programmatic Billing Access (p. 37), if you haven't done so already. Enable CSV Reports and Programmatic Billing Access. AWS publishes Cost Allocation Reports to a designated Amazon S3 bucket.
2. Go to the Billing Preferences page.
3. In the **Cost Allocation Report** section, click **Sign Up Now**.

4. When you are signed up for the Cost Allocation Report, the status line shows *Enabled*.

Configuring a Cost Allocation Report

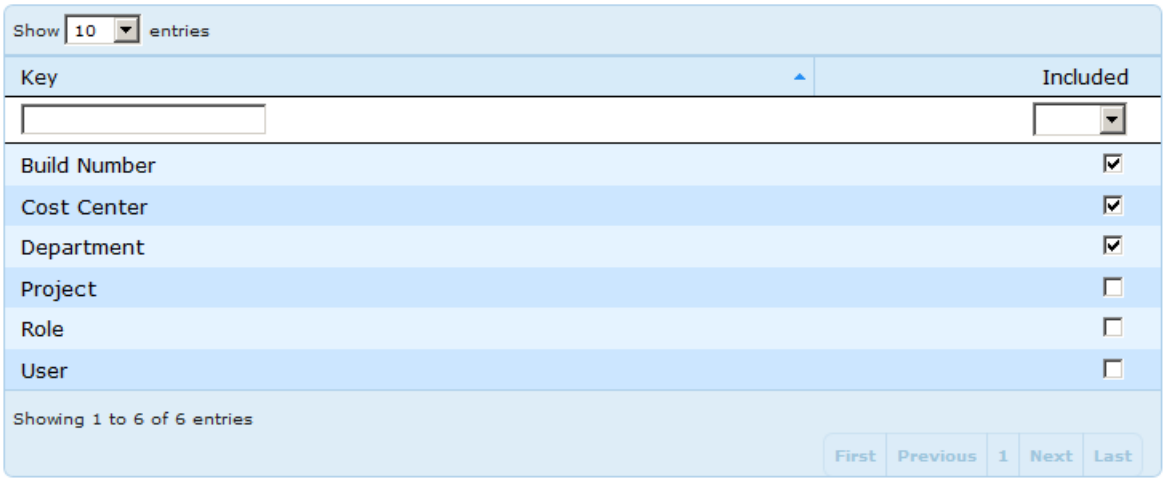
The Cost Allocation Report includes the same line items as the Downloadable Report (see Monthly and Detailed Billing Reports (p. 8)), *plus* additional columns you've selected to include in the report identified by your tag keys.

Note
By default, new tag keys that you add using the API or the AWS Management Console are automatically excluded from the Cost Allocation Report.

When you select tag keys to include in your Cost Allocation Report, each key becomes an additional column and includes 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. 20).

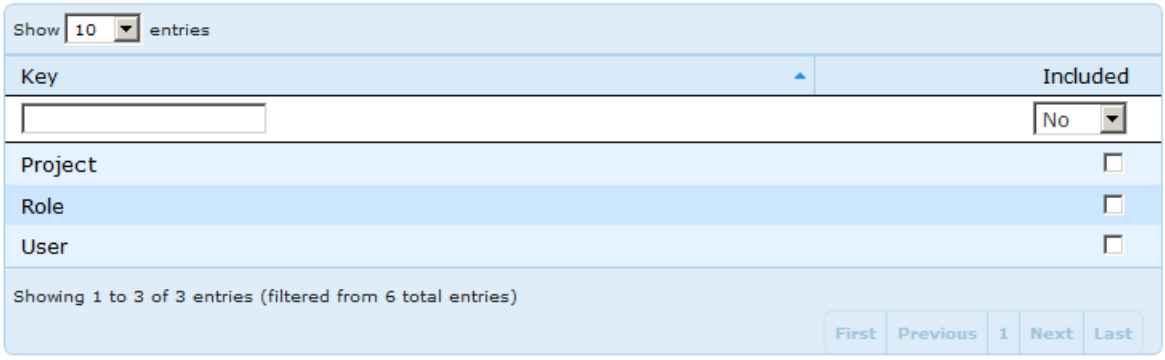
To configure the keys that appear in the Cost Allocation Report

1. After signing up for the Cost Allocation Report, select the Manage Cost Allocation Report page (which is also accessible through your Billing Preferences page). 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.



2. Select **No** from the **Included** column.

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



Note
Conversely, to remove tags from the report, select **Yes** from the **Included** column and clear the check boxes that correspond to the tag keys you want to exclude. If you have a long list of tag keys to search, you can filter the list using the text box located under the **Key** label.

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.

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 an application like Microsoft Excel 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.

Consolidated Billing

Important
AWS released a new Account Billing console in November 2013 that supersedes the Billing Portal. The AWS Account Billing guide also supersedes this guide. The Billing Portal is scheduled for deprecation and will no longer be supported after April 30, 2014.

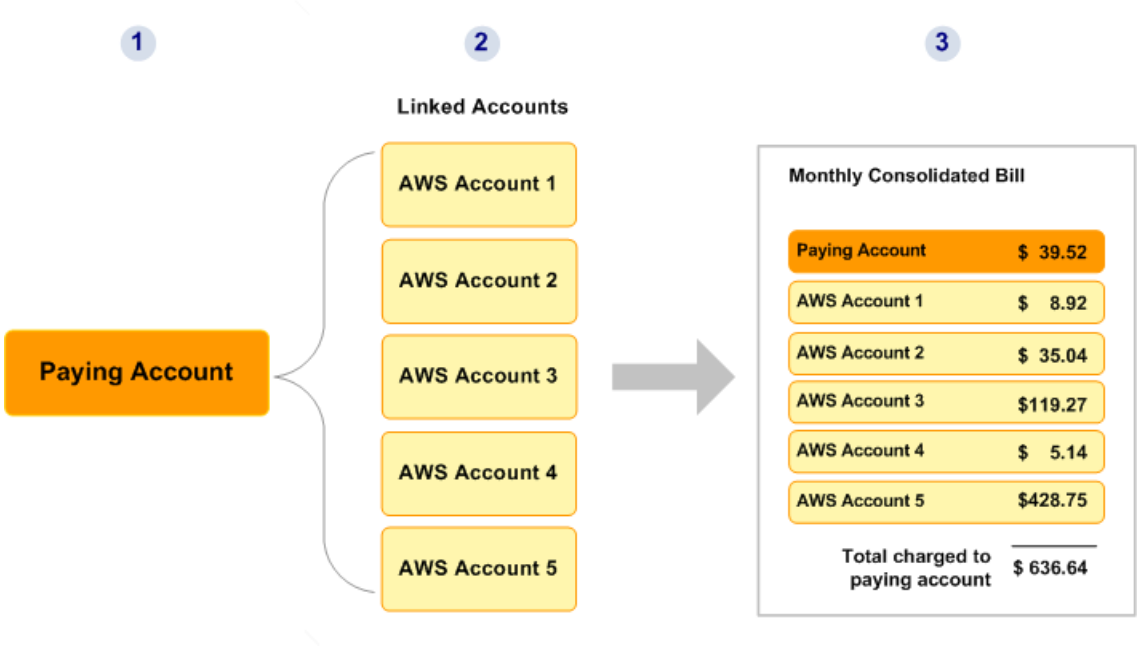
Topics

Consolidated billing enables you to consolidate payment for multiple Amazon Web Services (AWS) accounts within your company by designating a single paying account. Consolidated Billing enables you to see a combined view of AWS charges incurred by all accounts, as well as obtain a detailed cost report for each of the individual AWS accounts associated with your paying account. Consolidated billing is offered at no additional charge.

Here's how it works:

Consolidated Billing Process

1. You sign up for consolidated billing, which designates your account as a *paying account*. This enables your account to pay the charges of the other accounts, which we call *linked accounts* in this guide.
2. You add accounts to the consolidated bill.
3. Each month we charge you for all the accounts you added to the consolidated bill.



The paying 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 paying account owner cannot access data belonging to the linked account owners (e.g., their files in Amazon S3). Each account owner uses their own AWS credentials to access their resources (e.g., their own AWS Secret Access Key).

Owners of paying accounts are advised to secure their accounts by using AWS Multi-Factor Authentication and a strong password. For more information, see Security for the Paying Account (p. 27).

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 we combine usage from all the accounts to qualify you for volume pricing discounts (for more information, see Volume Discounts (p. 26)).

When to Use Consolidated Billing

This section will help you determine whether consolidated billing is appropriate for you.

You should use consolidated billing for 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.

In the future, AWS plans to provide additional functionality for user permissions and consolidating billing.

Using Consolidated Billing

Topics

This section describes the basics of how to use consolidated billing.

Signing Up

To sign up and make your account a *paying account*, go to the Consolidated Billing page and follow the instructions there.

> **Note**
> You only need to sign up the *paying* 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 paying account by using AWS Multi-Factor Authentication and a strong password. For more information, see Security for the Paying Account (p. 27).

Adding an Account to a Consolidated Bill

The following steps are performed by the owner of the paying account. Linked accounts cannot be linked to a paying account by the non-linked account owner. Only paying 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 Changing a Former Paying Account to a Linked Account (p. 28). Once the account is converted back, you can then link it to a paying account.

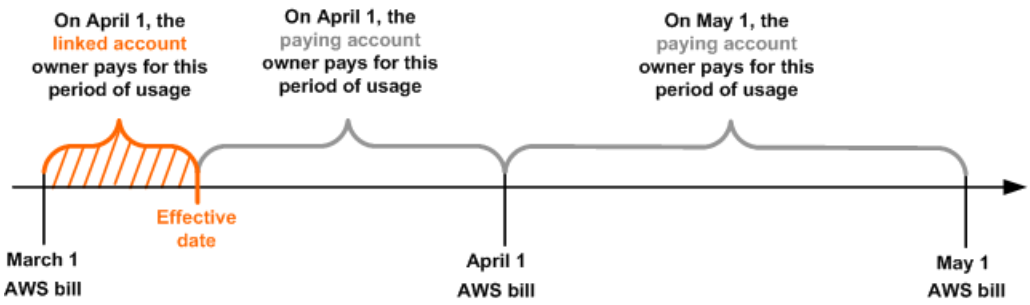
To add an account

1. From the Consolidated Billing page, click **Send a Request**. You will be prompted to enter the email addresses of owners of accounts you want to link to the paying account.
2. AWS sends an email to the linked account owner.
3. The linked account owner clicks a hyperlink in the email, logs in to the AWS web site 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.

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 going forward. 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 paying account owner, and not the owners of the linked accounts. The paying account's AWS **Account Activity** page shows the total usage and charges across all the accounts on the bill. That page is updated multiple times each day. Each day, we make a downloadable cost report available. For more information, see Detailed Reports (p. 8).

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

> **Note**
> For Consolidated Billing customers, AWS publishes detailed billing reports only to the payer account's Amazon S3 bucket. Linked accounts do not receive detailed reports.

Volume Discounts

For billing purposes, we treat 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, we combine the usage from all accounts to determine which volume pricing tiers to apply, giving you a lower overall price

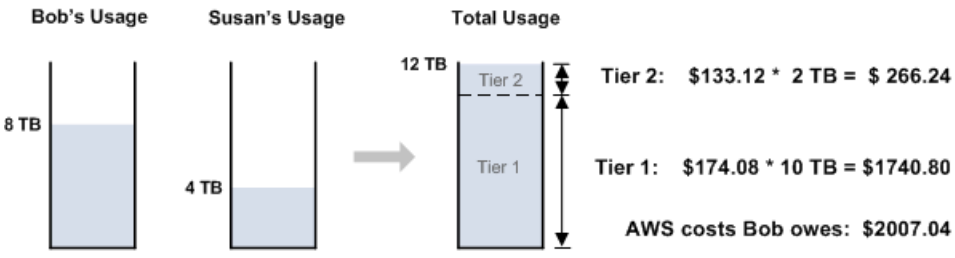
whenever possible. We then allocate each linked account a portion of the overall volume discount based on the account's usage.

The **Account Activity** 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 for the 12 TB total that Bob and Susan used, following is the total amount that Bob's paying account is charged: ($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 Account Activity 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.

Security for the Paying Account

Your paying account can pay the charges for and have information about multiple (or all) AWS accounts within your organization. Because the paying 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 from the AWS Security Credentials page.

Removing an Account from a Consolidated Bill

At any time, the paying 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 paying 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 paying account owner removes the linked account

1. From the Consolidated Billing page, the paying account owner searches for the linked account from the list of accounts on the consolidated bill.

2. The paying account owner selects the account and clicks **Remove from Bill**.

How the linked account owner removes the linked account

1. The linked account owner goes to the Payment Method page for the account and confirms that a valid credit card is on file with AWS.
2. From the Payment Method page, the linked account owner clicks **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 paying account owner, Susan is the linked account owner, and Vicky is the new paying 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.

Changing a Former Paying Account to a Linked Account

A former paying account can become a linked account. You just need to make sure the paying 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 Removing an Account from a Consolidated Bill (p. 27)).
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 paying account's consolidated bill.

Other Things You Need to Know

Topics

- AWS Credits (p. 30)
- AWS Support Charges for Consolidated Billing Accounts (p. 30)

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, 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 $0.64 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.

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-east-1 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-east-1 with the exact same attributes in order to get the cost benefit on his consolidated bill.

AWS Credits

To give the paying account owner the lowest bill, any AWS credits on the paying and linked accounts are applied to the consolidated bill. If a linked account is removed from a consolidated bill, any unused credits belonging to that account go with it.

AWS Support Charges for Consolidated Billing Accounts

AWS calculates AWS Support fees independently for each linked account. An AWS Support subscription for the paying 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.

Blended Rates for Consolidated Billing Accounts

Important
AWS released a new Account Billing console in November 2013 that supersedes the Billing Portal. The AWS Account Billing guide also supersedes this guide. The Billing Portal is scheduled for deprecation and will no longer be supported after April 30, 2014.

Topics

Pricing Tiers and Reserved Instances

AWS Account Billing includes two features designed to ensure that we charge you the lowest available prices available for your usage of AWS products and services:

- *Pricing tiers*. Pricing tiers reward higher usage with lower unit prices for services.
- *Capacity reservations*. Discounted rates are available when you purchase some services in advance for a specific term.

Pricing Tiers

Some AWS services are priced in *tiers* that define 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. These services offer multiple tiers of usage pricing. Each AWS service publishes its pricing information independently. You can access all pricing pages from the AWS Service Pricing Overview page.

Your AWS usage is measured every month. As the month proceeds and your usage increases, you cross to lower-priced tiers. 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. 33) later in this topic.

Reserved Instances: Capacity Reservations

AWS also offers discounted hourly rates in exchange foran 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 Elastic Compute Cloud Developer Guide* and Working with Reserved DB Instances in the *Amazon Relational Database Service Developer Guide*.

Reserved Instances and Consolidated Billing

This section explains how AWS determines the blended price for Consolidated Billing.

The following list explains the foundations for Consolidated Billing bill calculation logic:

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 monthly and detailed 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, avoid running AWS services under the account you designate as the payer account. This practice eliminates the need to think of the payer account as distinct from the linked accounts.
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 detailed billing report for the month, and for your AWS invoice. For information about the monthly and detailed billing (hourly) reports, see Monthly and Detailed Billing Reports (p. 8)

Blended Rate Examples

This section contains examples of how blended rates are calculated for two types of operations:

- Usage of Amazon S3 for Standard Storage.
- Usage of small Linux/Unix Amazon EC2 instances.

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

Account	Tier	Storage Amount	Unblended 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
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

Calculation Process

Note: Blended rates apply only to Consolidated Billing customers.

The following steps describe how blended rates for Amazon EC2 instances are calculated 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 monthly report, you can see line items for these aggregated costs; the detailed billing (hourly) report (p. 8) 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 detailed billing report (p. 8), 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 detailed billing (hourly) report. 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 for Consolidated Billing Accounts that Use Reserved Instance Pricing

The example in this section shows how the Consolidated Billing logic aggregates cost to paying accounts and then allocates it to the linked accounts based on proportional usage. For this example, assume that all usage is of the same usage type (p. 13) and is occurring in the same Availability Zone.

The following table lists the rate for Reserved Instance and on-demand instance usage for the example.

Example Amazon EC2 Hourly Rates

Rate Type	Hourly Rate
Reserved Instance	$0.025
On-demand Instance	$0.10

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 running in the same Availability Zone. This Consolidated Billing account family has purchased four Reserved Instances; see the line items listed in the table for the distribution among linked accounts. Linked Account 1 has three Reserved Instances; Linked Account 2 has one Reserved Instance.

In this example, Linked Account 1 has experienced fluctuations in application load that have produced both a 60-hour under-utilization of Reserved Instance resources and a need for 40 additional hours of on-demand usage.

Example Amazon EC2 Hourly Rates

Line Item Account	Billing Type	Unblended Rate	Usage Type	Usage Quantity	Unblended Cost	Blended Rate	Blended Cost
Payer Acct	Reserved Instance	$0.025	BoxUsage:t1.micro	2880	$72		
Payer Acct	OnDemand	$0.10	BoxUsage:t1.micro	1280	$128		
Linked Acct 1	Reserved Instance	$0.025	BoxUsage:t1.micro	2100	$52.50	0.048077	$100.96
Linked Acct 1	OnDemand	$0.10	BoxUsage:t1.micro	40	$4.00	0.048077	$1.92
Linked Acct 2	Reserved Instance	$0.025	BoxUsage:t1.micro	720	$18	0.048077	$34.62
Linked Acct 2	OnDemand	$0.10	BoxUsage:t1.micro	100	$10	0.048077	$4.81
Linked Acct 3	Reserved Instance	$0.025	BoxUsage:t1.micro	60	$1.50	0.048077	$2.88
Linked Acct 3	OnDemand	$0.10	BoxUsage:t1.micro	490	$49	0.048077	$23.56
Linked Acct 4	OnDemand	$0.10	BoxUsage:t1.micro	650	$65	0.048077	$31.26

The data in the preceding table presents the following information:

- The Consolidated Billing family has purchased 2,880 hours of capacity at a Reserved Instance rate.

- Linked Account 1 has purchased three Reserved Instances and has used 2,100 hours of the reservation. Due to fluctuations in application load, 60 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 40 hours of on-demand usage.
- Linked Account 2 has purchased a Reserved Instance and used the full 720 hours. In addition, this account needed 100 additional hours of on-demand hours to meet application load requirements.
- Linked Accounts 3 and 4 operated with on-demand hours alone.
- Actual usage of Reserved Instance hours totals 2,880 hours.
- Actual usage of on-demand hours totals 1,280 hours.
- Aggregate usage at the payer level incurs $200 of charges. After dividing this amount by the total hours of usage (4,160) a blended rate of $0.048077 per hour is obtained.
- Aggregating the blended costs results in a total of $200.01.
- Using the total blended cost at the payer level, blended costs are then allocated to line items for the linked accounts.
- To reconcile the linked account line item totals with the payer account line items requires adding a line item for a rounding error of $0.01 (not shown in example).
- The 60 Reserved Instance hours that Linked Account 1 did not use were applied to 60 hours of Amazon EC2 usage by Linked Account 3. This reduced the number of on-demand hours used by the account from 550 to 490.

You can check that your 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 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

Note

You can control the Availability Zone and usage type of your instances using the RunInstances action of the Amazon EC2 API. For more information, see Launching an Instance from an AMI in the Amazon Elastic Compute Cloud Developer Guide.

Programmatic Billing Access

Important
AWS released a new Account Billing console in November 2013 that supersedes the Billing Portal. The AWS Account Billing guide also supersedes this guide. The Billing Portal is scheduled for deprecation and will no longer be supported after April 30, 2014.

Topics

Programmatic Billing Access leverages existing Amazon Simple Storage Service (Amazon S3) APIs so you can build applications that reference your billing data from a CSV (comma-separated value) file stored in an Amazon S3 bucket.

Note
IAM users with access to the billing pages can set the Programmatic Billing preferences.

Here's how it works:

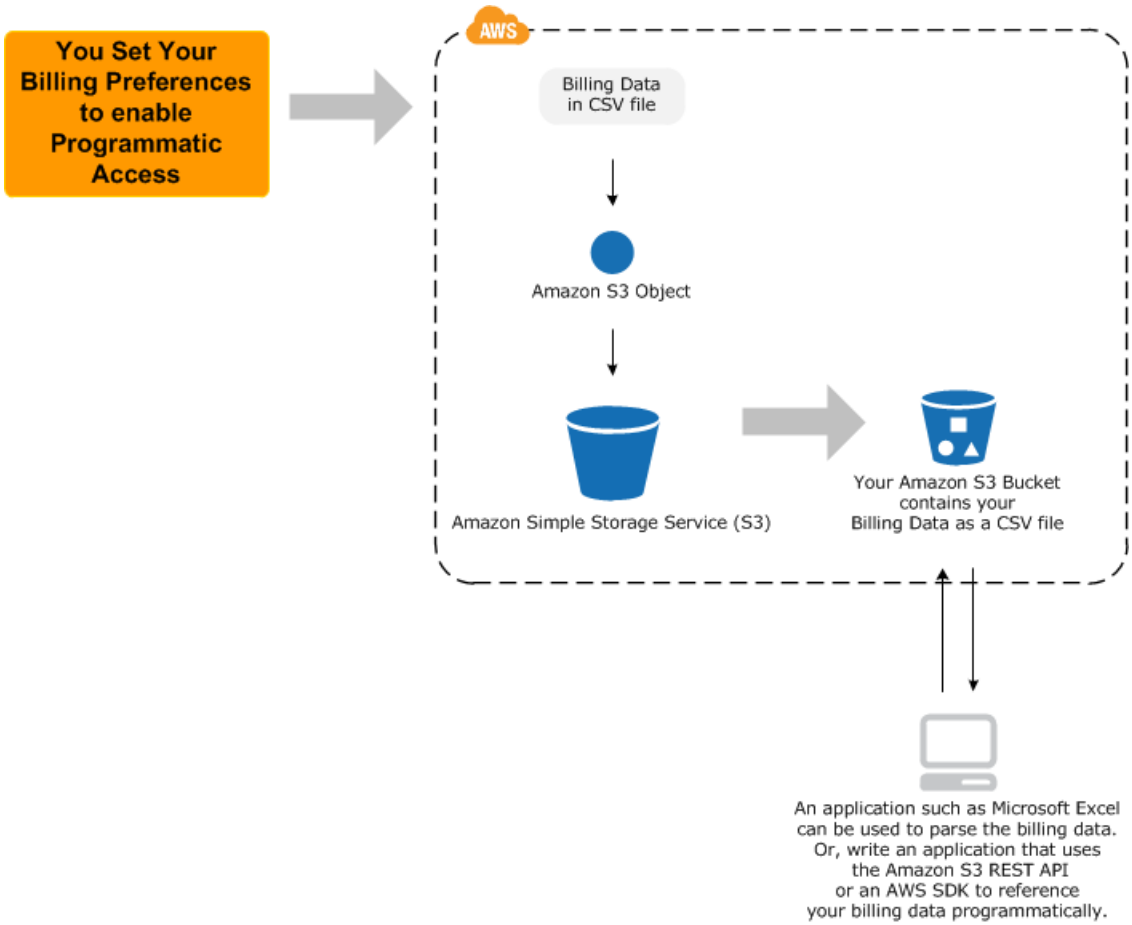
Programmatic Billing Access Process

1. Log in to the Billing Preferences page.
2. Enable CSV reporting of your billing statement.
3. Sign up for Programmatic Billing Access by providing a bucket location for the CSV files.
4. Set a policy on the bucket granting AWS access to publish your CSV files to the bucket at the specified location.

   Note
   The CSV files are stored in Amazon S3 at standard Amazon S3 pricing.
5. Use an application, such as Microsoft Excel, to parse the billing data. Or, use the existing Amazon S3 API to write an application that accesses your billing data.

   AWS provides SDKs for developing applications in specific languages. For links to the complete set of AWS SDKs, see Sample Code & Libraries.

The following diagram shows how Programmatic Billing Access works.



Benefits of Programmatic Billing Access

- **CSV file—**You get a detailed report in a format that is readable by many common applications.
- **Easy viewing in Microsoft Excel—**You can open the file directly into Excel, and use pivot tables to create different views.
- **Leverage Amazon S3 API —**The CSV file is stored in Amazon S3 as an object. You can then use the existing Amazon S3 API to build custom applications that reference the object. For more information, see the Amazon Simple Storage Service Developer Guide.

> **Note**
> For Consolidated Billing customers, AWS publishes detailed billing reports only to the payer account's Amazon S3 bucket. Linked accounts do not receive detailed reports.

When to Use Programmatic Billing Access

You should use Programmatic Billing Access for any of the following scenarios:

- You want to bring your billing data into an application that can read a CSV file.
- You want to build an application that uses your billing data.
- You want to monitor your month to date charges.

- You want to forecast your monthly charges.
- You want to share your data with a partner.
- You want to import your billing data into your accounting system.
- You want to retrieve your bill for multiple accounts.

Using Programmatic Billing Access

Topics

This section describes the basics of how to use Programmatic Billing Access.

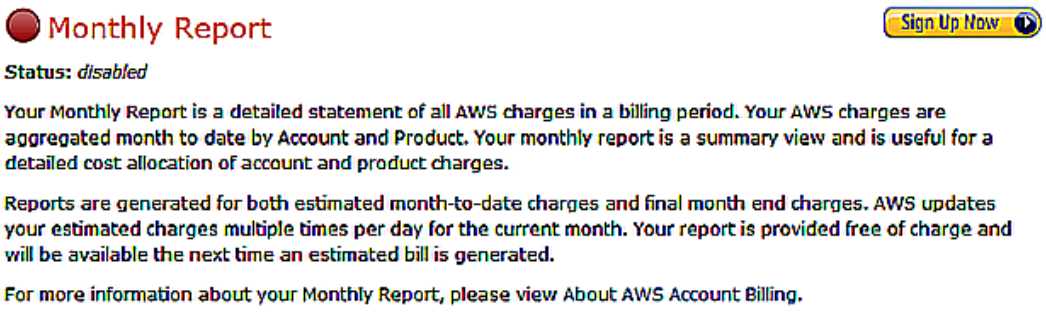
Set Up Programmatic Billing Access

Storing data in your Amazon S3 bucket is billed at standard Amazon S3 rates. Enabling Programmatic Billing Access, however, is free, though you need to set your billing preferences to have AWS put the CSV file in your designated bucket.

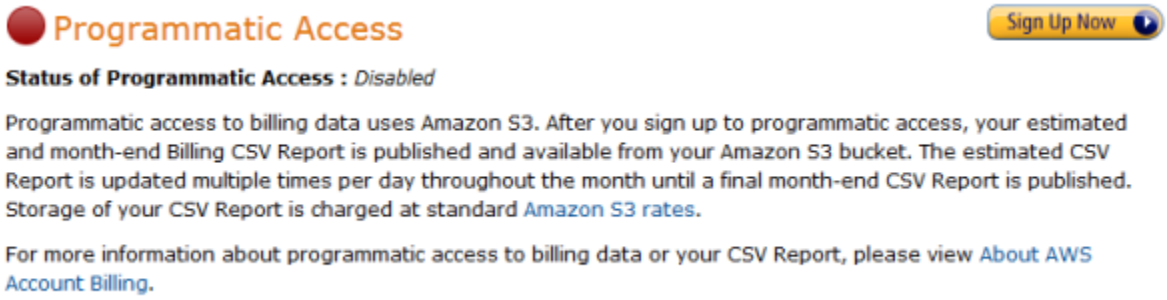
To enable Programmatic Billing Access

1. If you don't already have an Amazon S3 bucket to store the CSV file, create one. You can use an existing bucket.

   For instructions on creating a new bucket, see Creating a Bucket.
2. Go to the Billing Preferences page.
3. In the **Monthly Report** section, click **Sign Up Now** to enable CSV reporting.



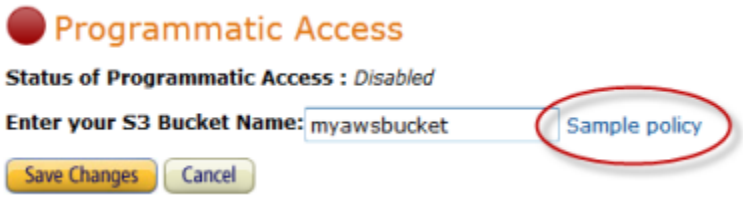
4. In the **Programmatic Access** section, sign up for Programmatic Billing Access by clicking **Sign Up Now**.



5. Enter the name of the bucket to contain the CSV file, as instructed on the page.

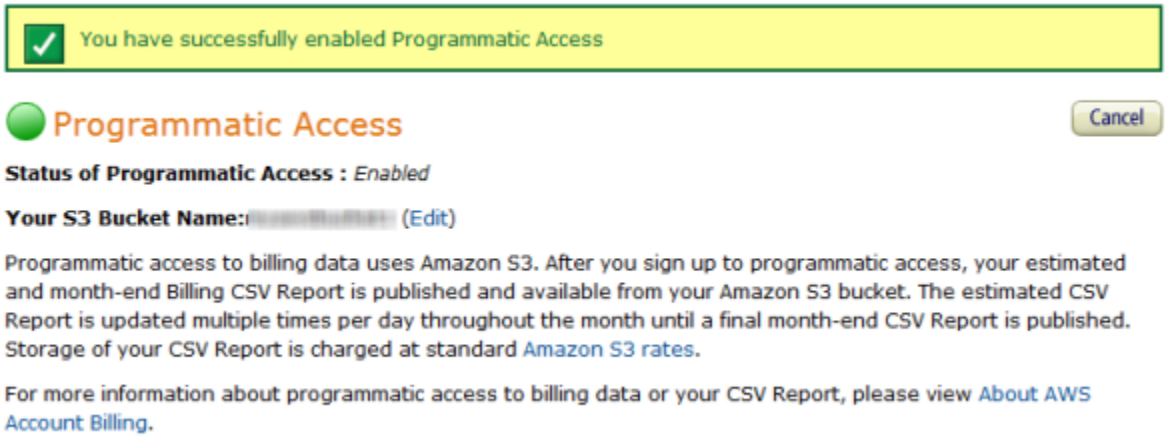
   Note
   If you choose a new Amazon S3 bucket, you will need to create the bucket. For more information see Creating a Bucket.

6. Click **Sample Policy** link to display the policy for your bucket.



   AWS provides you with a policy for your bucket and account.

7. Copy the policy from your Billing Preferences page so you can attach it to the bucket to contain the CSV file in a later step.
8. Click **Save Changes**.
9. Open the Amazon S3 console at https://console.aws.amazon.com/s3.
10. Attach the sample policy to the bucket that will contain the CSV file. For more information on editing bucket policies, see Editing Bucket Permissions in the Amazon S3 documentation.
11. Verify your bucket is set up correctly on the Billing Preferences page. If it is set up correctly, you will see Programmatic Access is *Enabled*. If you recently set the bucket policy, refresh the Billing Preferences page to make sure you're not seeing a cached version.



Note
As the account owner, you can create policies that let IAM users in your account read objects in the Amazon S3 bucket you designate for the CSV file. IAM users cannot be given permissions to modify the access control lists (ACLs) on the CSV file itself, however, because the file is not owned by your account. Instead, it is owned by the account that updates the CSV files. For general information about how to manage policies, see Managing IAM Policies in the guide *Using IAM*.

Reference Your Billing Data

AWS Billing generates estimated reports multiple times per day and a final report at the end of each month. These files will be published and available for download from your Amazon S3 bucket specified in the Billing Preferences page.

The report is saved to your bucket as a CSV file. You can import the file into an application that reads CSV files, such as Microsoft Excel. For details about the CSV file contents, see Detailed Reports (p. 8).

If you're interested in writing a program to access the billing data, see the AWS SDKs for developing applications in specific languages. For links to the complete set of AWS SDKs, see Sample Code & Libraries.

CSV files are stored using the following naming convention.

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

123456789012 = account ID

y = year

m = month

Note
During the current billing period (monthly), AWS generates an estimated CSV report. The current month's CSV 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.

Security for the CSV file

Anyone with root account credentials, or access to the designated Amazon S3 bucket can see your billing report CSV file. We recommend you use AWS Multi-Factor Authentication (for more information, go to http://aws.amazon.com/mfa). We also recommend you use a strong password. You can change your password from the AWS Security Credentials page.

You can also edit the bucket policy to control access to the contents of the bucket. For more information on bucket policies, see Access Control.

Removing an Account from Programmatic Billing Access

At any time, the paying account can disable Programmatic Billing Access on the Billing Preferences page.

To disable Programmatic Billing Access

1. Go to the Billing Preferences page.
2. In the **Programmatic Access** section, click **Cancel**.

   Optionally, in the **CSV Report** section, click **Cancel** to also cancel having AWS Billing generate a CSV report of your charges.

   Note
   If you disable CSV reports, they are no longer available for download from the Account Activity page.

Controlling User Access to Your AWS Account Billing Information

> **Important**
> AWS released a new Account Billing console in November 2013 that supersedes the Billing Portal. The AWS Account Billing guide also supersedes this guide. The Billing Portal is scheduled for deprecation and will no longer be supported after April 30, 2014.

The AWS website integrates with AWS Identity and Access Management (IAM) so you can grant users access to billing information. You can control access to the Account Activity page and the Usage Reports page. The **Account Activity** page displays invoices and detailed information about charges and account activity, itemized by service and by usage type. The **Usage Reports** page provides detailed usage reports for each service you are subscribed to.

> **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 extra for using it.

You can control your users' access to your account billing information in three steps:

1. Configure your security challenge questions.
2. Activate access to the AWS website.
3. Create custom policies for your IAM users.

To perform the first two steps, you must be logged in to AWS as the account owner. To create custom policies for IAM users, you must be logged in as the account owner or as an IAM user who's been granted permissions to manage policies for others.

By default, IAM users do not have access to the **Account Activity** or **Usage Reports** pages. However, as account owner you can grant IAM users permission to see either or both. You can then activate access to the billing pages, and those IAM users will have access to the billing pages according to the permissions you grant. (You can deny them access to some billing information.) The following topics have examples on using policies to control access to the Account Activity and Usage Reports pages.

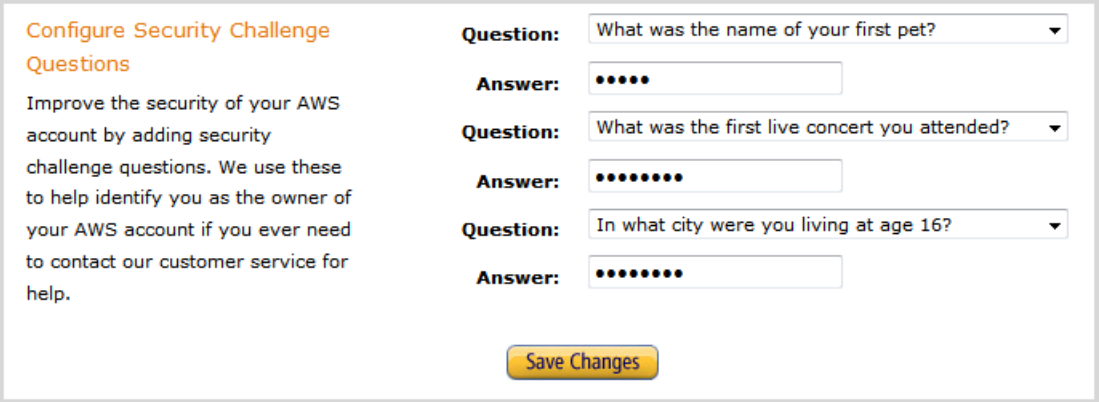
For information about deactivating access to the AWS website, see Deactivate Access to the AWS Website (p. 46).

Configure Your Security Challenge Questions

If you haven't already configured your security challenge questions, you need to do this first. Amazon uses these questions to identify you as the owner of your AWS account if you contact our customer service.

To configure your security challenge questions

1. Log in as the AWS account owner. (Not as an IAM user.)
2. In the **Configure Security Challenge Questions** section on the Personal Information page, configure three security challenge questions.



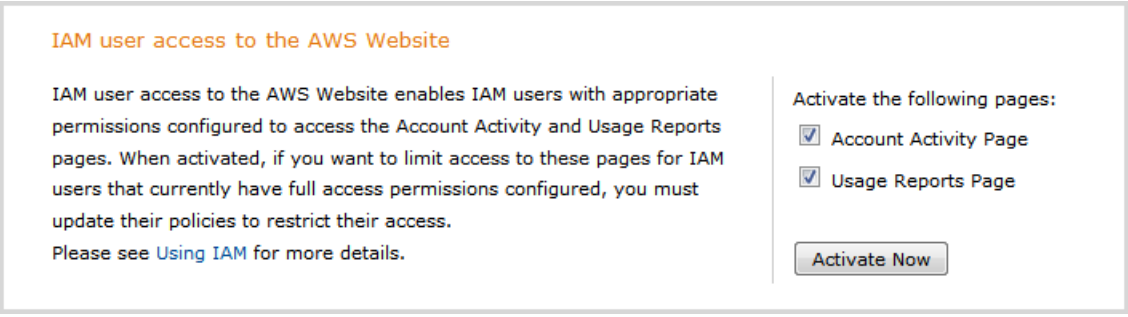
3. Click **Save questions**.

Activate Access to the AWS Website

To grant your IAM users access to your account's billing information, you need to activate the functionality.

To activate access to the AWS website

1. Log in as the AWS account owner. (Not as an IAM user.)
2. In the **IAM user access to the AWS website** section on the Manage Your Account page, click **Activate Now**.



Note
Note that by activating IAM user access to the AWS website, all users for whom you have granted full access to AWS APIs will now also have access to the AWS website. As always,

you may restrict their access by applying a more constrained set of permissions. See Example 5: Allow full access to AWS services but deny users access to billing information (p. 46).

Create Custom Policies for IAM Users

By default, users that you create in IAM do not have access to billing information such as the Account Activity page and the Usage Reports page. Access to your account's billing information is controlled with IAM policies that you can assign to either a single user or a group of users. For instructions, see Managing IAM Policies in *Using IAM*.

The rest of this section provides simple example policies that you can attach to your user or your group to control access to your account's billing information.

Example 1: Allow users to access the Account Activity page

This policy allows the user to access the **Account Activity** page.

```
{
  "Statement":[{
     "Effect":"Allow",
     "Action":"aws-portal:ViewBilling",
     "Resource":"*"
     }
  ]
}
```

Example 2: Allow users to access the Usage Reports page

This policy allows the user to access the **Usage Reports** page.

```
{
  "Statement":[{
     "Effect":"Allow",
     "Action":"aws-portal:ViewUsage",
     "Resource":"*"
     }
  ]
}
```

Example 3: Deny users access to the Account Activity page

This policy denies the user access to the **Account Activity** page.

```
{
  "Statement":[{
     "Effect":"Deny",
     "Action":"aws-portal:ViewBilling",
     "Resource":"*"
     }
  ]
}
```

Example 4: Deny users access to the Usage Reports page

This policy denies the user access to the **Usage Reports** page.

```
{
  "Statement":[{
     "Effect":"Deny",
     "Action":"aws-portal:ViewUsage",
     "Resource":"*"
     }
  ]
}
```

Example 5: Allow full access to AWS services but deny users access to billing information

This policy enables full access to all AWS services but denies the user access to the **Account Activity** or **Usage Reports** page.

```
{
  "Statement":[{
     "Effect":"Allow",
     "Action":"*",
     "Resource":"*"
     },
     {
     "Effect":"Deny",
     "Action":"aws-portal:*",
     "Resource":"*"
     }
  ]
}
```

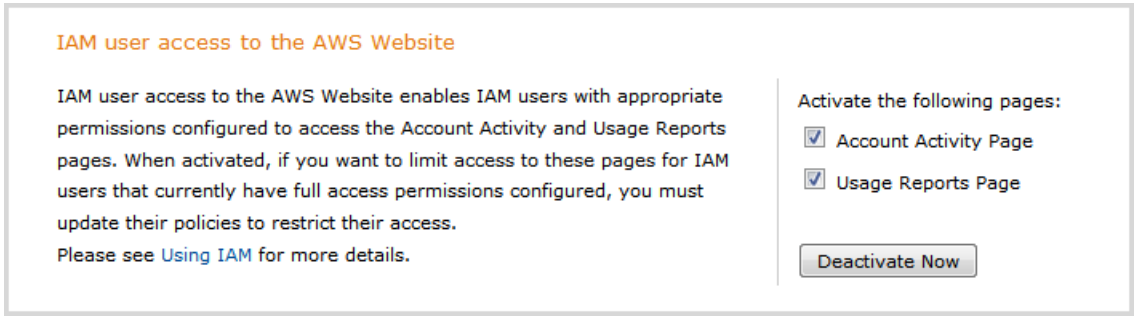
After you set custom IAM policies for your IAM users, you can activate access to the AWS website.

Deactivate Access to the AWS Website

To prevent IAM users from accessing billing information, you can deactivate access to the AWS website. This prevents IAM users from seeing the information even if a policy is attached to users that grants them access to the pages.

To deactivate access to the AWS website

1. Log in as the AWS account owner. (Not as an IAM user.)
2. In the **IAM user access to the AWS Website** section on the Manage Your Account page, click **Deactivate Now**.



Account Billing Permissions Reference

Important
AWS released a new Account Billing console in November 2013 that supersedes the Billing Portal. The AWS Account Billing guide also supersedes this guide. The Billing Portal is scheduled for deprecation and will no longer be supported after April 30, 2014.

This topic summarizes the actions permitted in Account Billing for each type of user listed in the **Account or User Type** column in the table shown here. The owner of an AWS account can view all account information, all usage reports, and all detailed billing reports for an account. The owner can also create policies that grant permission for IAM users to view the **Account Activity** and **Usage Reports** pages. The topic Controlling User Access to Your AWS Account Billing Information (p. 43) describes these policies and their effects in detail.

For a full discussion of user entities such as AWS accounts and IAM users, see the topic IAM Concepts in *Using IAM*.

Consolidated billing has no impact on IAM user permissions. Consolidated billing exists only so that a group of accounts can be combined in a single bill. The payer account cannot view the detailed billing reports of linked accounts, except as they appear as line items in the detailed billing reports for the payer account itself.

Billing Permissions

User Type	Description	Billing Permissions
Account owner	Entity you create to manage your relationship with AWS. The user name is an email address. When you are logged in with your account credentials, your account name is displayed in the navigation bar of the AWS Management Console.	• Has full control of all Account Billing resources and artifacts. • Receives a monthly invoice of AWS charges.
IAM user	A user entity defined in an account by an account owner or administrative user. Accounts can contain multiple IAM users.	• Permissions are granted to an individual IAM user or to a group that includes the user. • Can be granted permission to view **Account Activity** or **Usage Reports** pages.

User Type	Description	Billing Permissions
Consolidated billing payer account owner	An AWS account that pays for the AWS usage of multiple accounts in an organization.	• Has full control of all Account Billing resources and artifacts 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 detailed 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.	• No permission to review usage reports or account activity except for itself. No access to other linked accounts in the family or to the payer account. • No permission to view detailed billing reports even if the account is an AWS root account. • Has permission to update account information for itself only; cannot access other linked accounts or payer accounts.

Where Do I Go to Find Out More About AWS Account Billing?

Important
AWS released a new Account Billing console in November 2013 that supersedes the Billing Portal. The AWS Account Billing guide also supersedes this guide. The Billing Portal is scheduled for deprecation and will no longer be supported after April 30, 2014.

Topics

This section provides you with information about where to go next, how to learn more about AWS, how to stay up to date, and how to get help.

What's Next?

Several documents and tools are available to help you learn more about account billing.

- **AWS Billing FAQs:** For general information about AWS Billing.
- **Getting Started with AWS:** This guide has useful general information about using AWS and managing your account.
- **SDKs**. If you are a developer and want to use the SDKs for Programmatic Billing Access, go to http://aws.amazon.com/code/ where you will find links to the SDKs for Android, iOS, Java, .NET, PHP, and Ruby.

AWS Support

If a particular account is signed up for Developer, Business, or Enterprise Support, the support fees for that account are still computed based on that individual account's portion of the consolidated bill. The pricing tiers for paid support are calculated on an individual account basis. As with standalone accounts, only accounts that are signed up for paid support may contact support with account-specific questions. For more information, see AWS Support.

Amazon DevPay

AWS consolidated billing doesn't support Amazon DevPay products. An account owner who creates a DevPay product pays the AWS charges associated with that product; the charges can't be included as part of a consolidated bill. An account owner who purchases and uses a DevPay product pays the product's charges directly; those charges can't be included as part of a consolidated bill. For more information, see Amazon DevPay FAQs.

Taxes

Any taxes that AWS charges are computed for each account individually (based on the address of the account), and then charged to the paying account. For more information, see AWS Billing FAQs.

Keep Up to Date

AWS is constantly adding new features and services. To keep up to date with what's going on, you can get the latest news about AWS from the following websites:

- Amazon Web Services Blog. Get the latest information about new features and services being launched as well as helpful links to resources.
- What's New. Get the latest announcements on all new features and services released.
- Upcoming Events. Check out upcoming events and conferences that AWS will be hosting or participating in.

Monitor Estimated Charges with Amazon CloudWatch

You can receive email alerts when your month-to-date charges rise above an amount you specify. To get started, create an CloudWatch alarm that includes a threshold and your email address. You will then receive an Amazon SNS notification when your charges exceed the threshold. For more information, see the topic Monitor Your Estimated Charges Using CloudWatch.

Get Help

AWS offers a variety of ways to get help for the services ranging from online help to personal support. To see a list of options, go to http://aws.amazon.com and click **Support**.

Document History

Important
AWS released a new Account Billing console in November 2013 that supersedes the Billing Portal. The AWS Account Billing guide also supersedes this guide. The Billing Portal is scheduled for deprecation and will no longer be supported after April 30, 2014.

The following table describes the documentation for this release of the *About AWS Account Billing* guide.

- **Version—**1.0
- **Last documentation update—**January 31, 2013

Change	Description	Release Date
New Topic: If You Have Questions About Your Bill	Provides information about how to contact AWS Support with questions about your bill.	July 12, 2013
Topic moved from *Using IAM*.	The topic Controlling User Access to Your AWS Account Billing Information is now part of the *About AWS Account Billing* guide.	March 18, 2013
New Topic: Blended Prices for Consolidated Billing Accounts	Detailed explanation of blended rates and how they are calculated, with examples of their use with Amazon S3 and Amazon EC2 services.	January 31, 2013
Detailed Billing Reports	Billing information reported of all AWS usage in hourly intervals, with both blended and unblended costs included. For more information, see	December 13, 2012
Cost Allocation Reports	Request reports that include usage and costs aggregated by tags you assign to resources. For more information, see .	August 21, 2012
New Guide	This release introduces *About AWS Account Billing*.	June 5, 2012