



User Guide

AWS Pricing Calculator



AWS Pricing Calculator: User Guide

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What is AWS Pricing Calculator?

AWS Pricing Calculator is a free web-based planning tool that you can use to create cost estimates for using AWS services. You can use AWS Pricing Calculator for the following use cases:

- Model your solutions before building them
- Explore AWS service price points
- Review the calculations behind your estimates
- Plan your AWS spend
- Find cost saving opportunities

For example, if you are an existing AWS customer and you want to add another EC2 instance to handle to your weekly spike traffic. You can specify your weekly peak information, then choose your EC2 instance and payment options. AWS Pricing Calculator generates an estimate that includes the upfront, monthly, annual costs. You can use the estimate to make an informed decision before using AWS services.

Note

You don't need any experience with cloud computing or AWS to use AWS Pricing Calculator. The tool is useful for those you never used AWS before, and for those who want to reorganize or expand their AWS usage.

You can access AWS Pricing Calculator through a web-based console at <https://calculator.aws/#/>.

Features of AWS Pricing Calculator

With AWS Pricing Calculator, you can do the following tasks:

- **View transparent prices** – View the calculations behind the estimated prices for your service configurations. You can view price estimates by service or by groups of services to analyze your architecture costs.
- **Use groups for hierarchical estimates** – Sort your estimates into groups to align with your architecture for clear service cost analysis.

- **Save your estimates** – Save the link to each estimate to share or revisit at a later time. Estimates are saved to the AWS public servers.
- **Export your estimates** – Export your estimates in CSV or PDF format to share locally with your stakeholders.

Pricing for AWS Pricing Calculator

AWS Pricing Calculator is a free tool to use. It provides an estimate of your AWS fees and charges, but the estimate doesn't include any taxes that might apply. AWS Pricing Calculator provides pricing details for only the information you enter. If the prices on the marketing pages are different from the prices on AWS Pricing Calculator, AWS uses the prices from the marketing pages when generating your estimates. For more information about AWS service pricing, see [Cloud Services Pricing](#).

The prices on AWS Pricing Calculator for the estimates come from the AWS Price List API. For more information about the AWS Price List API, see [Using the AWS Price List API](#) in the [AWS Billing User Guide](#).

Setting up AWS Pricing Calculator

Here is some general information about how to get started with AWS Pricing Calculator.

Prerequisites for using AWS Pricing Calculator

You don't need an AWS account or in-depth knowledge of AWS to use AWS Pricing Calculator.

For best results, we recommend that you have a plan for how you want to use AWS before starting your estimate. For example, decide whether you want to break out your estimate by cost center, by products to run on AWS, or by Regional stacks. Then, you can use the **Group** feature to organize your estimates.

Accessing AWS Pricing Calculator

AWS Pricing Calculator is available through a web-based console at <https://calculator.aws/#/>. Currently, there are no APIs available.

You can use the AWS Pricing Calculator to generate monthly cost estimates for all AWS Regions that are supported by your preferred services. To see which Regions are available for each service, see the corresponding [service user guide documentation](#).

For estimating costs in the China Region, you can access the AWS Pricing Calculator at <https://calculator.amazonaws.cn/>.

Getting started

This chapter gives a walk-through of the AWS Pricing Calculator feature to help you understand how to use AWS Pricing Calculator to generate estimates for your use cases.

Topics

- [Using the AWS Pricing Calculator console](#)
- [Create and configure an estimate](#)

Using the AWS Pricing Calculator console

The AWS Pricing Calculator consists of four major console pages.

- **Landing page**

This page provides an overview of how the tool works and a link to create your estimate. It also provides links to key resources, such as [marketing FAQs](#), and [pricing assumptions](#).

Direct link: <https://calculator.aws/#/>

- **Add Service page**

When you select the **Create estimate** button, you are navigated to the **Add service page**. This page provides a list of all the AWS services that AWS Pricing Calculator supports. You can filter services by location types, and search for services by entering keywords or service names. You can also use the product page links to find more information about each service.

Direct link: <https://calculator.aws/#/addService>

- **Configure service page**

After you select the **Configure** link of a service, you are navigated to the configure service page. You can use this page to choose the AWS Region you want to create the estimate for and input service specific details based on your use case. When you input your use case specifications, you can add these to your estimate.

- **My estimate page**

This page displays your estimate summary in upfront, monthly, 12-month costs. The 12-month cost is the sum of all estimates and groups. The Groups and My estimate sections display the list

of services within your estimate. In this section you can add new services, support, and create new groups.

Additionally, you can use the My estimate page to export your estimates to CSV or PDF files, save your estimate links, and navigate to the AWS console to sign in or create an account.

Direct link: <https://calculator.aws/#/estimate>

Note

AWS provides the Free Tier that you can use to try some AWS services for free. The Free Tier only covers certain instances or usage for a limited amount of time. Free Tier isn't included in your AWS Pricing Calculator estimates unless it's specifically called out otherwise. AWS Pricing Calculator assumes that you aren't using the Free Tier and doesn't include any expiring Free Tier in your estimates.

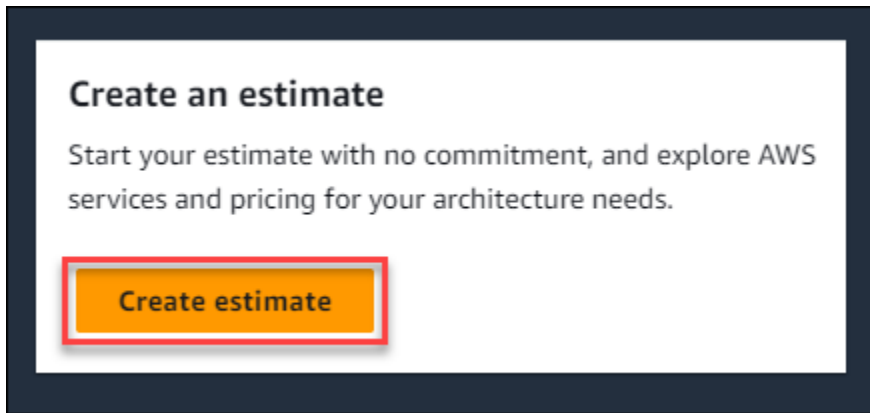
Create and configure an estimate

When you generate an estimate, you can either add services directly to your estimate or create a group and add the services to your group. This section shows how to set up a group with an Amazon EC2 instance that you can use to perform tasks such as run a small program or host a website. To get started, create your estimate using the following steps.

Create an estimate

To create your estimate

1. Open AWS Pricing Calculator at <https://calculator.aws/#/>.
2. Choose **Create estimate**.



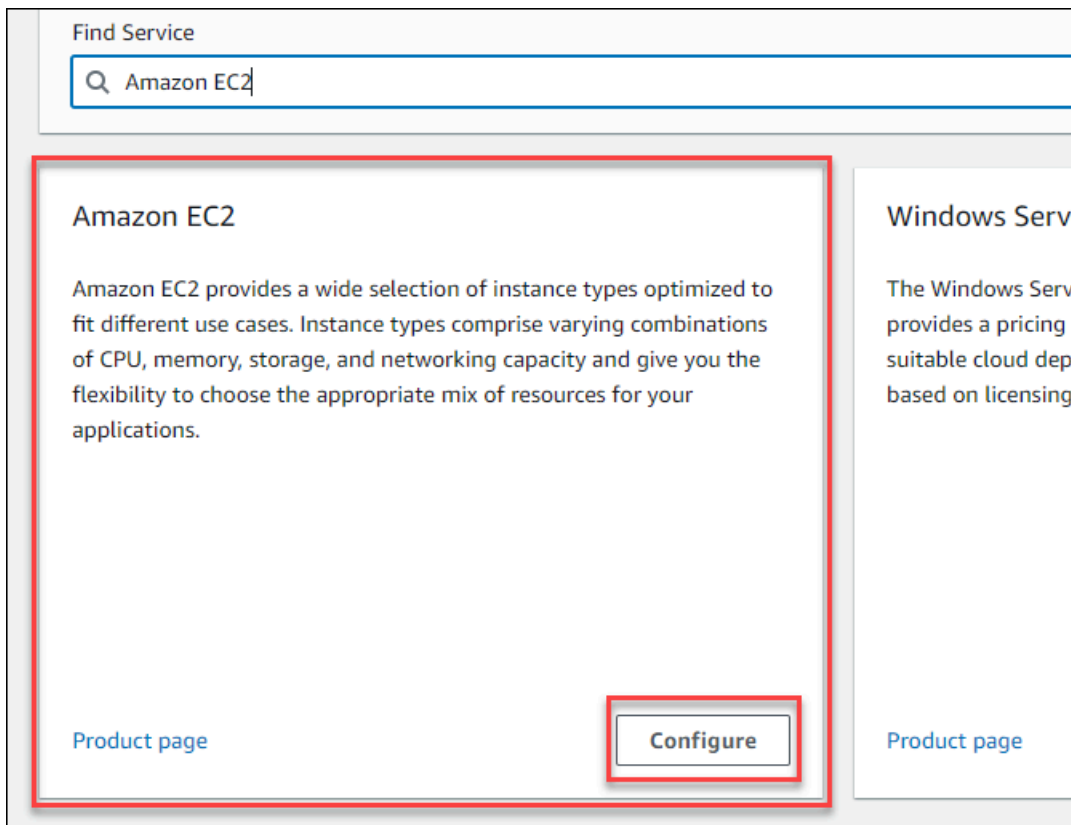
3. On the **Add service** page, find the service that you want. Then, choose **Configure**. For more information, see [Configure a service](#).
4. Add a **Description** for the estimated service.
5. Select a **Region**.
6. Enter your service specifications.
7. Choose **Save and add service**.
8. To view the estimate you created, choose **View summary**.

Configure a service

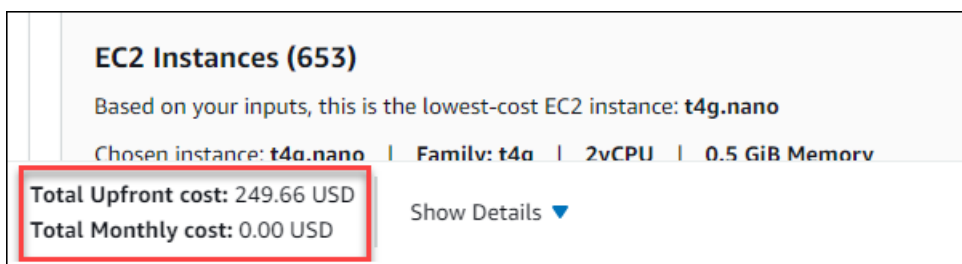
This section shows how to configure a service you're creating an estimate for. In this example, we're adding Amazon EC2 using the Amazon EC2 **Quick estimate** option.

To configure a service for your estimate

1. Open the **Add service** page at <https://calculator.aws/#/addService> .
2. Enter **Amazon EC2** in the search bar and choose **Configure**.



3. In the **Description** field, enter a description for your estimate.
4. Choose a **Region**.
5. In the EC2 specifications section, update the parameters based on your use case requirements.
6. At this stage you can view the total upfront and monthly costs. These costs are based on the current EC2 parameters you selected.



7. (Optional) Choose **Show calculations** to view the breakeven analysis and utilization summary of your estimate.
8. (Optional) In the **Amazon EBS** section, choose the storage for each Amazon EC2 instance, and enter the storage amount.

Note

If you aren't adding Amazon EBS volumes, enter **0**.

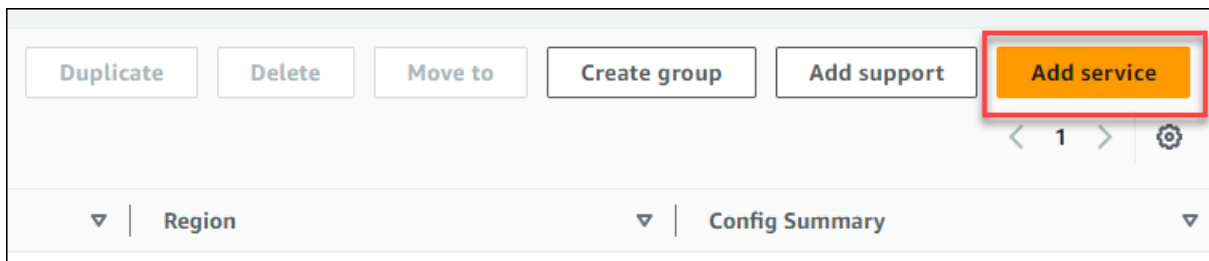
9. Choose **Save and add service**.

Add more services

You can add more services to your estimate based on your use case requirements. For process examples and tutorials that show estimates for specific services, see [Estimate examples for services](#).

To add more services to your estimate

1. Open the **My estimate** page at <https://calculator.aws/#/estimate> .
2. Choose **Add Service**.



3. Search for a service and choose **Configure**.
4. Enter the service parameters. Then, choose **Save and add service**.
5. Repeat this process as needed.

Edit your inputs

You can edit the inputs for a service added to your estimate.

To edit the inputs for a service

1. Open the **My Estimate** page at <https://calculator.aws/#/estimate> .
2. In the **My Estimate** section, locate the service you want to update. Then, choose the **Edit** icon.

My Estimate

Find resources

<input type="checkbox"/>	Service Name	Status	Upfront cost
<input type="checkbox"/>	Amazon EC2	-	299.59 USD

3. Edit your service inputs. Then, choose **Save** to return to your **My Estimate** page.

Best practice for generating estimates

This chapter outlines some best practices for generating your AWS Pricing Calculator estimates.

To get the most out of your estimates, make sure you have a good understanding of your base requirements. For example, if you want to try Amazon Elastic Compute Cloud (Amazon EC2), we recommended that you know the type of operating system you need, your memory requirements, and how much I/O you need.

Additionally, you should determine whether you need storage. For example, decide if you want to run a database and for how long you intend to use the servers you need. You can use the AWS Pricing Calculator service configuration and parameters to see which option meets your specific use case and budget.

When you generate your estimates, it's recommended you consider the following:

- How do you want to organize your estimates?
- Do you want to add an AWS Support plan?
- Will you need to access your estimates at a later time?

Topics

- [Using groups to organize your estimates](#)
- [Add AWS Support costs to your estimates](#)
- [Sharing your estimate](#)
- [Exporting your estimates](#)
- [Migrating from Simple Monthly Calculator estimates to the AWS Pricing Calculator](#)

Using groups to organize your estimates

You can organize your AWS estimates by defining groups. A group can reflect how your company is organized, such as by providing estimates for each cost center.

A group can reflect other organization methods, such as by product stack or product architecture. For example, if you want to price out different ways to build your AWS setup, you can use different

groups for each variation of your setup and compare the estimates. You can generate one estimate to view the costs of running a website. Then, you can generate another estimate to view the costs of running a machine learning process. You can then view the combined estimate for your AWS usage.

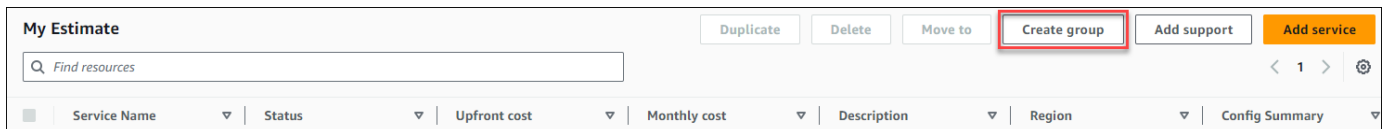
Groups are also useful to compare AWS Regions. If you create a group for each Region, you can compare the cost to run servers in two different locations. For example, you can generate an estimate for US East (N. Virginia) in one group and Asia Pacific (Seoul) for another. Then, you can compare your two estimates to meet your specific use case and budget.

Create a group

Use groups to organize services together. You can add one or more services to each group. You can also use groups to organize your estimate in different ways. For example, you can organize your estimate by cost center, service stack, product architecture, or client.

To add a group to your estimate

1. Open the **My estimate** page at <https://calculator.aws/#/estimate> .
2. Choose **Create group**.



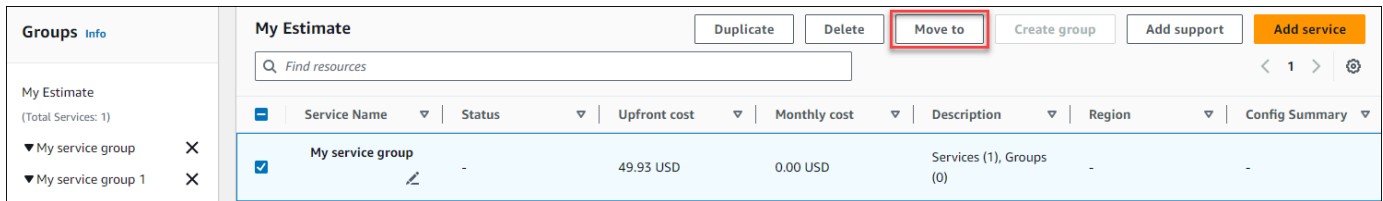
3. In the prompt that appears, enter a group name.
4. Choose **Create group**.

Moving groups

You can move your groups and services to organize your estimate. All sub-groups and services are moved as a part of your action. You can move single or multiple groups using this process.

To move a group

1. Open the **My estimate** page at <https://calculator.aws/#/estimate> .
2. Select the check box of the groups and services you want to move.
3. Choose **Move to**.



My Estimate [Duplicate] [Delete] [Move to] [Create group] [Add support] [Add service]

Find resources

Service Name	Status	Upfront cost	Monthly cost	Description	Region	Config Summary
My service group	-	49.93 USD	0.00 USD	Services (1), Groups (0)	-	-

- Choose the destination group from the dropdown.
- Choose **Move**.

Note

You can't move AWS Support calculator into a group because estimates for your chosen support plans aren't specific to a group.

Add AWS Support costs to your estimates

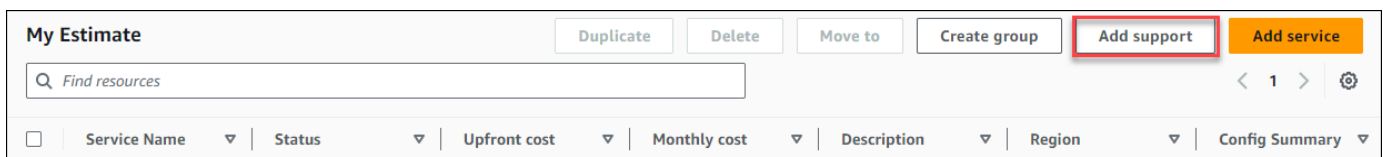
You can add AWS Support costs to your estimates using the AWS Pricing Calculator. You can either directly choose your preferred support plan, or complete the recommendations that match your usage needs. You can change your AWS Support within the calculator at any time.

Generating AWS Support estimates

You can use the provided questions to narrow your AWS Support plan to match your needs.

To generate AWS Support estimates

- Open AWS Pricing Calculator at <https://calculator.aws/#/>.
- Choose **Create estimate**.
- Add a service to your estimate. For more information, see [Create an estimate](#)
- In your **My Estimate** page, choose **Add support**.



My Estimate [Duplicate] [Delete] [Move to] [Create group] [Add support] [Add service]

Find resources

Service Name	Status	Upfront cost	Monthly cost	Description	Region	Config Summary
--------------	--------	--------------	--------------	-------------	--------	----------------

- (Optional) Enter a description for your support plan estimate.
- (Optional) Choose an **Enhanced technical support** level from the dropdown list that appears.

- (Optional) Choose a **High severity response** time from the dropdown list that appears..

Note

Some of the Support recommendation options might not be available. This depends on the **Enhanced technical support** level and **High severity response** times you selected.

- Choose a **Support recommendation** option.
- If you chose a **Business support plan** or **Enterprise support plan**, choose the range of how much your business or enterprise spends on average for AWS services each month.

Support recommendation

We've selected the lowest plan available that matches your needs to support your success.

Support recommendation options

<input type="radio"/> Basic support plan Included for Free	<input type="radio"/> Developer support plan Starting at 29 USD/mo	<input checked="" type="radio"/> Business support plan Starting at 100 USD/mo
<input type="radio"/> Enterprise On-Ramp Starting at 5,500 USD/mo	<input type="radio"/> Enterprise support plan Starting at 15,000 USD/mo	

Business support plan

We recommend the Business support plan if you have workloads in AWS, and you require 24/7 phone and email access with Support Engineers for unlimited contacts, with response time of less than 1 hour.

Business spend

How much does your business spend on average for AWS services each month?

Support plan

I don't have business support

- (Optional) Choose **Show calculations** to review the calculations behind the estimates.
- Choose **Add to my estimate**.
- If you chose a **Business support plan** or **Enterprise support plan**, choose **Confirm** in the prompt that appears. Then, choose **Add to my estimate**.

Sharing your estimate

You can create a unique, public link for each estimate that you create. Use this link to share the estimate with stakeholders or access the estimate again at a later time. Estimates are saved to AWS public servers.

Any changes you make to an estimate requires you to save again. AWS Pricing Calculator doesn't automatically save to the same link to prevent unwanted overwrites. Alternatively, you can use the shared link as a template for common use cases, and use it as a starting point to build complex estimates.

Note

- Make sure that you save your estimate links because your estimates can't be accessed without them.
- Estimates that are exported as a PDF or JSON file contain a share link to your estimate.
- Estimate links aren't auto-saved with updates. If you make changes to an estimate, generate a new estimate link.
- Estimate links created on or after May 31, 2023, remain valid for one year. Estimate links created before this date remain valid for three years.

Topics

- [Creating an estimate link](#)
- [Updating an existing estimate](#)

Creating an estimate link

To create an estimate and generate a public share link

1. Open AWS Pricing Calculator at <https://calculator.aws/#/>.
2. Create an estimate by adding one or more services. For more information, see [Create an estimate](#).
3. Open the **My Estimate** page at <https://calculator.aws/#/estimate> .
4. Choose **Share**.
5. Read the **Public server acknowledgment** and choose **Agree and Continue**.

(Optional) You can select **Don't show me this again** for future visits.
6. Choose **Copy public link** to copy your generated link.

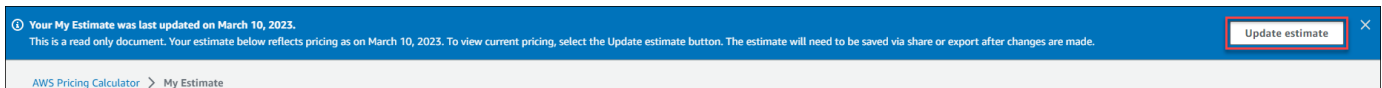
We recommend you document your shared links with a brief description of the estimate.

Updating an existing estimate

The total cost of your previously saved estimates can become out of date over time. This is because of pricing changes or updates to services within the AWS Pricing Calculator. You can update your estimates to reflect the latest costs and keep them updated.

To update a previously saved estimate

1. Open your saved estimate in AWS Pricing Calculator. To do this, copy your unique link into your browser's navigation bar.
2. In the banner that shows when your estimate was last updated, choose **Update estimate**.



3. In the **My Estimate** section, check the **Status** column for updates. There are four types of status values:
 - **Required inputs** — an update was made to a service within the estimate. This means that your current estimate is out of date and requires action. If you have services with a **Required inputs** status, skip to step 4.
 - **Cost updated** — a pricing model or a cost calculation change occurred to a service that impacts your estimate total. No action is required because Pricing Calculator automatically updates your estimate with these changes.
 - **Read-only** — an update was made to a service within the estimate. However, direct updates to that service estimate isn't supported. To view an up-to-date estimate that contains the latest service changes, re-create the service estimate. For more information about how to create a new estimate, see [Creating an estimate link](#).
 - **Check for updates** — an update was made to a service within a group. Your current estimate is out of date and requires action. If you have groups with a **Check for updates** status, select the group name to view the service impacted. Then, skip to step 4.

My Estimate							
Service Name	Status	Upfront cost	Monthly cost	Description	Region		
Amazon EC2	-	49.93 USD	0.00 USD	-	US East (Ohio)		
Group 1	-	0.00 USD	69,294.59 USD	Services (2), Groups (0)	-		
group 2	ⓘ Check for updates	0.00 USD	319.14 USD	Services (1), Groups (1)	-		

4. If you have services with a **Required inputs** status or you want to modify a specific service, select the edit icon beside the service name.
5. Make your changes to the service. Then, choose **Update**.
6. Choose **Share** to save your changes.

Note

- When you save your estimate, a new estimate link is generated. The updates aren't saved to the original shared link.
- For more information about updates to services in AWS Pricing Calculator, see [Service Updates](#).

Exporting your estimates

You can export your AWS Pricing Calculator estimate as a PDF or a CSV file. By doing this, you can save the parameters that AWS Pricing Calculator used to create your estimate so that you can revisit them if you set up AWS services in the console.

Note

Your PDF contains a share link to your estimate.

To export an AWS Pricing Calculator estimate

1. Open AWS Pricing Calculator at <https://calculator.aws/#/>.
2. Create an estimate by adding one or more services. For more information, see [Create an estimate](#).
3. Open the **My estimate** page at <https://calculator.aws/#/estimate>
4. Use the **Export** dropdown and choose CSV or PDF.
5. Read the acknowledgement and choose **OK**.
6. In the dialog box, choose **Save File** and choose **OK**.

Migrating from Simple Monthly Calculator estimates to the AWS Pricing Calculator

Important

Simple Monthly Calculator (SMC) is no longer supported. You can convert your saved SMC estimates to AWS Pricing Calculator using the steps outlined in this section. This conversion feature closes on December 31, 2023 at 11.59PM PST.

If you have existing SMC estimates, we recommend that you migrate to the AWS Pricing Calculator using the conversion feature at your earliest convenience. If you don't need access to your saved SMC estimates, no action is needed.

To convert your SMC estimate to an estimate compatible with AWS Pricing Calculator

1. Copy and paste your unique SMC estimate link into your browser. This link redirects you to the AWS Pricing Calculator website where you can view the status of your estimate conversion.
2. Generate an AWS Pricing Calculator migrated estimate link for your records. To do this, choose **Share**.

Note

If your SMC estimate failed to generate in AWS Pricing Calculator, choose **errors** to see the reasons why the conversion failed.

Differences between Simple Monthly Calculator and AWS Pricing Calculator estimates

There are several reasons why your SMC estimate and your AWS Pricing Calculator estimates don't match in total costs.

- **AWS Free Tier pricing:** The AWS Pricing Calculator doesn't account for Free Tier pricing in cost calculations.

- **Time period:** The AWS Pricing Calculator calculates using 730 hours in a month for cost calculations. This is based on the calculation, 365 days a year x 24 hours a day for 12 months a year.

Services and features not supported by AWS Pricing Calculator

You might have Simple Monthly Calculator estimates saved previously that won't successfully migrate to AWS Pricing Calculator. This is because some services and features aren't supported in AWS Pricing Calculator at this time. The following table outlines what is currently not supported in AWS Pricing Calculator.

Service name	Pricing feature not supported in AWS Pricing Calculator
Amazon EC2	Additional T2/T3/T4g Unlimited vCpu Hours Legacy Amazon EC2 instances and instance families
Amazon S3	Transfer acceleration Glacier select Cross region replication
Amazon CloudFront	HTTP requests Invalidation requests SSL certificates
Amazon RDS	RDS Aurora Global Database
Amazon DynamoDB	Global tables
Amazon CloudWatch	Archived logs Metric streams
Amazon Redshift	Previous generation node type

Service name	Pricing feature not supported in AWS Pricing Calculator
Amazon S3 Glacier	Glacier select
Amazon CloudSearch	Entire service
Amazon SimpleDB	Entire service
AWS Key Management Service	Customer managed keys (CMK) - multi Region

Note

You must generate new AWS Pricing Calculator sharable links if you make changes to your estimate. For more information, see [Sharing your estimate](#).

Estimate examples for services

This section provides examples and tutorials that show how you can use AWS Pricing Calculator to generate estimates for certain services.

Topics

- [Generating Amazon Elastic Compute Cloud \(Amazon EC2\) estimates](#)
- [Generating Windows Server and SQL Server on Amazon EC2 estimates](#)
- [Generating Windows Server and SQL Server estimates on Amazon EC2 Dedicated Hosts](#)
- [Generating Microsoft workload estimates with AWS Modernization Calculator](#)

Generating Amazon Elastic Compute Cloud (Amazon EC2) estimates

You can use the Amazon EC2 pricing calculator to estimate costs for Amazon EC2 instances and dedicated hosts.

To start an Amazon EC2 estimate

1. Open the **Amazon EC2 estimate** page at <https://calculator.aws/#/createCalculator/ec2-enhancement>.
2. Enter the description for your Amazon EC2 estimate.
3. Choose the **Location type** and **Region** from the dropdown.

The calculator view is preloaded with default values so you can see a starting estimate without adding or changing any information. You can change any of the values for the following parameters. Otherwise, you can also keep the defaults when they're applicable.

The Amazon EC2 instance estimate path has the following sections and parameters:

Topics

- [Amazon EC2 instance specifications](#)
- [Pricing options](#)
- [Adding an Amazon EBS estimate](#)

- [Adding detailed monitoring costs](#)
- [Adding data transfer estimates](#)
- [Adding Elastic IP costs](#)
- [Adding additional costs](#)

Note

For a tutorial on how to generate an Amazon EC2 estimate, see [Getting started](#).

Amazon EC2 instance specifications

These settings determine the Amazon EC2 instance that AWS Pricing Calculator uses to generate an estimate for you.

Select your tenancy

The default value for tenancy is Shared Instances.

Select your operating system

The operating system on an Amazon EC2 instance. AWS Pricing Calculator generates your estimate using Amazon Machine Images (AMIs) that match the OS you choose. Choose the operating system (OS) that best matches your needs. The default value for the OS is Linux.

Choose your instance type

AWS Pricing Calculator lists all available instance types. Use the search bar to filter the instances.

Search for an instance type by name

If you know the instance family or instance size that you want, it's efficient to search for the instance name. For example, you can search for a `t2.medium` instance.

Search for an instance type based on minimum requirements

Minimum requirements are most useful when you know the specifications of the instances that you want. For example, you can search either for an instance with a minimum of four vCPUs and 16 GB of memory for any network performance.

For information about the available Amazon EC2 instance families, see [Amazon EC2 Instance Types](#).

Number of EC2 instances

The default value is one. AWS Pricing Calculator uses this default because it's the minimum number that you might need.

Workloads

Workloads are the usage patterns that match your Amazon EC2 usage. Choosing the workload that most closely matches what you use reduces the number of On-Demand and unused RI hours that you might purchase. It does this by covering your usage with the most appropriate combination of RIs and On-Demand Instances for you. You can define more than one workload for your estimate.

Constant usage

This workload is suitable for use cases that have a constant, predictable load. This includes use cases such as logging traffic to a website or running processes in the background.

Daily spike

This workload is best for usage patterns that peak once a day. This is suitable for scenarios where, for example, you need to run several jobs at midnight or have a morning news spike.

Weekly spike

This workload is best for patterns that peak once a week. This is suitable for scenarios such as blogs that post once a week and weekly television shows.

Monthly spike

This workload is best for traffic that spikes once a month, such as monthly invoices, payroll, or other monthly reports.

Pricing options

These settings determine the pricing strategy that AWS Pricing Calculator uses to generate your estimate.

Pricing model

The pricing model determines whether you're searching for a pay-as-you-use instance or an instance that you can reserve in advance. Reserving an instance isn't the same as paying for the use of an instance.

Reservation terms

When you reserve a Reserved Instance (RI), you purchase a reservation for the period of your contract. Contracts can be for either one or three years.

The default value is one year. AWS Pricing Calculator uses this default because it's the least costly option for trying out AWS.

Payment options

For RIs, payment options determine when you pay for your reservation. You can pay for the entire reservation upfront, which is a hefty single-time payment but you have no monthly payments. You can pay for the RI with a partial upfront payment and a monthly payment. This gives you a smaller upfront cost but accrues monthly costs. You can also pay with no upfront payment. This means you pay only on a monthly basis. All upfront gives you the best discount, but no upfront and partial upfront spread your costs out over a greater period of time.

The default value for the payment options is No Upfront. AWS Pricing Calculator uses this default because it gives you the least expensive start-up price.

Expected utilization of EC2 instances

Enter the expected usage of Amazon EC2 instances. The feature is only applicable when you select the On-Demand pricing strategy.

Spot

The calculator shows the historical average discount percentage for the instance chosen. You can enter a percentage discount for creating estimates.

Adding an Amazon EBS estimate

These settings determine the Amazon EBS settings that AWS Pricing Calculator uses to generate an estimate for you. Amazon Elastic Block Store (Amazon EBS) is a type of storage that you can connect to your Amazon EC2 instance. You can use it to do things such as backing up your instance,

creating a boot volume, or running a database on your instance. For more information about Amazon EBS, see the [Amazon Elastic Block Store documentation](#).

Storage volume

The storage volume determines what kind of storage that Amazon EBS assigns to your instance. Different types have different capabilities. For example, you can choose better I/O and faster calculations, or slower, less expensive options for your specific use cases such as boot volumes and backups.

Storage amount

The storage amount determines how much storage your Amazon EBS volume has.

The default value is 30 GB. You can enter 0 GB if you don't attach Amazon EBS volumes to your Amazon EC2 instance. You can also estimate additional Amazon EBS volumes by configuring and adding a standalone Amazon EBS calculator into your estimate at <https://calculator.aws/#/createCalculator/EBS>.

Adding detailed monitoring costs

Your instances are turned on for basic monitoring by default. You can optionally turn on detailed monitoring. Once detailed monitoring is turned on, the Amazon EC2 console shows monitoring graphs with a one minute period for the instance. For more information, see [Detailed monitoring](#).

Adding data transfer estimates

You can accrue additional costs by transferring data in and out of Amazon EC2. If you know how much data you can expect to upload or download in a month, you can add these costs to your estimate. For more information, see the [Data transfer](#) section on the *On-Demand Pricing* page.

Adding Elastic IP costs

You can have one Elastic IP (EIP) address associated with a running instance at no charge. If you associate additional EIPs with that instance, you will be charged for each additional EIP associated with that instance per hour on a pro rata basis. A small hourly charge applies when EIPs are not associated with a running instance or when they are associated with a stopped instance or unattached network interface. For more information, see [Elastic IP Addresses](#) section on the *On-Demand Pricing* page.

Adding additional costs

You can add a custom cost to your Amazon EC2 pricing estimates. You can use this to add any placeholder costs you'd like to include in your estimates.

Generating Windows Server and SQL Server on Amazon EC2 estimates

You can use the workload calculator in AWS Pricing Calculator to guide you on AWS tenancy qualifications for Microsoft Windows Server and SQL Server on Amazon Elastic Compute Cloud (Amazon EC2). You can use the workload calculator to estimate AWS cost using minimal information and parameters. You can generate an estimate even if you don't know the details for each parameter. This is because each parameter includes a default setting.

For options for using Microsoft software licenses on the AWS Cloud, see [Microsoft Licensing on AWS](#).

To generate an estimate for Windows Server and SQL Server on Amazon EC2

1. Open AWS Pricing Calculator at <https://calculator.aws/#/>.
2. Choose **Create estimate**.
3. Under **Windows Server and SQL Server on Amazon EC2**, choose **Configure**.
4. On the **Configure Windows Server and SQL Server on Amazon EC2** page, choose your customized settings.
 - For information about your tenancy choices, see [Licensing and tenancy recommendations](#).
 - For information about how to choose your machine specifications, see [Configuring machine specifications](#).
 - For information about how to choose your pricing strategy, see [Pricing strategy](#).
 - For information about how to choose your cost details, see [Cost details](#).
5. Choose **Add to my estimate**.

For a step-by-step example shows how to generate an estimate for Windows Server and SQL Server on Amazon EC2, see [Tutorial: Using Windows Server and SQL Server on Amazon EC2 calculator](#).

Topics

- [Tutorial: Using Windows Server and SQL Server on Amazon EC2 calculator](#)
- [Licensing and tenancy recommendations](#)
- [Configuring machine specifications](#)
- [Pricing strategy](#)
- [Cost details](#)

Tutorial: Using Windows Server and SQL Server on Amazon EC2 calculator

This tutorial shows you how to use the Microsoft Windows Server and Microsoft SQL Server on the Amazon EC2 calculator to generate a pricing estimate.

To start pricing your workload, open the [AWS Pricing Calculator console](#), and navigate to **Configure Windows Server and SQL Server on Amazon EC2**.

What are your license options?

AWS offers flexible cost optimizations so you have options that's suitable for your needs. The following three types of licenses are offered:

- Flexible pay-as-you-go with License Included (LI)
- Bring your Microsoft License Mobility benefits to AWS (BYOL)
- Dedicated options for products without Microsoft License Mobility

Example scenario table

Example

This example uses the following workload scenario to show several capabilities in the AWS Pricing Calculator.

Host description	vCPUs	Ram	Storage (GB)	IOPS	Software	Optimize vCPUs	Quantity	Passive node count
Server 1	16	800	5000	60000	SQL Enterprise	16	10	5

Host description	vCPUs	Ram	Storage (GB)	IOPS	Software	Optimize vCPUs	Quantity	Passive node count
					e Edition			
Server 2	16	64	3000	15000	SQL Standard Edition	16	8	4
Server 3	8	16	1000		SQL Web Edition	8	10	0
Server 4	4	32	500		Windows	N/A	8	N/A

Begin your estimate by naming your estimate and selecting your Region.

- Description: `Workload_SQL_BYOL`
- Region: US East (Ohio)

This is the AWS Region that you choose. All AWS resources are priced based on the Region you choose.

Topics

- [Step 1: Choose your licensing and tenancy recommendation](#)
- [Step 2: Configure your machine specifications](#)
- [Step 3: Choose a pricing strategy](#)
- [Step 4: Show calculation and cost details](#)
- [Step 5: View and add a Windows Server and SQL Server on Amazon EC2 estimate](#)

Step 1: Choose your licensing and tenancy recommendation

The AWS Pricing Calculator includes a licensing and tenancy recommendations section. This section of the calculator simplifies the complex Windows Server and SQL Server licensing rules into several inputs. It also recommends an AWS tenancy for your workload. In this section, you enter your license details to determine your cost-optimized tenancy qualifications. For more information, see [Licensing and tenancy recommendations](#).

Some variables include the following:

- Whether your Windows Server license was purchased before or after October 1, 2019
- Whether your SQL Server license was purchased before or after October 1, 2019
- Whether you want to bring your own license (BYOL), or you have active Software Assurance for SQL Server licenses

If you don't choose a preference for Windows Server or SQL Server, the calculator assumes the Licence Included (LI) scenario that doesn't utilize the existing licenses for cost savings.

Determine your licensing and tenancy recommendation
Specify your licensing scenario to determine your tenancy qualifications. The tenancy determines if compute resources are shared or in physical isolation in AWS.

Licensing and tenancy recommendation [Info](#)

Windows Server

I want to know if I can bring my own licenses (BYOL) to AWS.
Select to determine if you can bring your own license (BYOL) for Windows Server and estimate the costs.

Licenses purchase date

The licenses were purchased prior to October 1, 2019 or purchased as a true-up under an active enterprise agreement effective before October 1, 2019.

The licenses were purchased on or after October 1, 2019.

I don't know when the licenses were purchased.

SQL Server

I want to know if I can bring my own licenses (BYOL) to AWS.
Select to determine if you can bring your own license (BYOL) for SQL Server and estimate the costs.

I have active Software Assurance for SQL Server licenses.
Deselect if you do not have Software Assurance for SQL Server. [Learn more](#)

Licenses purchase date

The licenses were purchased prior to October 1, 2019 or purchased as a true-up under an active enterprise agreement effective before October 1, 2019 (and have not been upgraded to SQL Server 2019).

The licenses were purchased on or after October 1, 2019.

I don't know when the licenses were purchased.

Licensing and tenancy recommendation

Amazon EC2 Dedicated Hosts
Amazon EC2 Dedicated Hosts are required for Windows Server licenses. Without Software Assurance, Amazon EC2 Dedicated Hosts are required to bring SQL Server licenses. Both licenses must also be purchased before October 1, 2019. Based on your selection, costs will be calculated as BYOL running on Amazon EC2 Dedicated Hosts. [Learn more](#)

Example Example

This example uses the following options:

- Microsoft Windows Server License Included
- Microsoft SQL Server BYOL

For SQL Server BYOL, you must have active Microsoft Software Assurance associated with it.

To determine your licensing and tenancy recommendations for this example

1. In the [AWS Pricing Calculator console](#), clear the **Windows Server** check box.
2. Under **SQL Server**, select both options (the estimate for Windows LI and SQL BYOL licensing model).
3. Keep the default selection of the shared tenancy.

You will notice that the recommended tenancy options are **Shared** and **Dedicated Hosts**. You can use the [Amazon EC2 Dedicated Hosts calculator](#) to estimate Dedicated Host tenancy.

Licensing and tenancy recommendation [Info](#)

Windows Server

I want to know if I can bring my own licenses (BYOL) to AWS.
Select to determine if you can bring your own license (BYOL) for Windows Server and estimate the costs.

SQL Server

I want to know if I can bring my own licenses (BYOL) to AWS.
Select to determine if you can bring your own license (BYOL) for SQL Server and estimate the costs.

I have active Software Assurance for SQL Server licenses.
Deselect if you do not have Software Assurance for SQL Server. [Learn more](#)

Licensing and tenancy recommendation

You qualify to run SQL Server on either Amazon EC2 shared tenancy or Amazon EC2 Dedicated Host. Choose the tenancy you would like to calculate.

Amazon EC2 shared tenancy
Select to calculate costs for running Linux or Windows Server (AWS license included) and SQL Server (BYOL) on Amazon EC2 shared tenancy. [Learn more](#)

Amazon EC2 Dedicated Hosts
Select to calculate costs for running Linux or Windows Server (AWS license included) and SQL Server (BYOL) on Amazon EC2 Dedicated Hosts. [Learn more](#)

Step 2: Configure your machine specifications

In this step, you provide machine specifications from the [Example scenario table](#) to configure your specifications in AWS Pricing Calculator. You enter the machine specs under **Configure machine specifications**.

To specify your machine specifications for this example

1. In the [AWS Pricing Calculator console](#), for **Machine description**, keep the name as **Server 1**.
2. For **Operating system**, choose **Windows Server**.
3. For **SQL Server edition (BYOL)**, choose **SQL Server Enterprise**.

- Under **Storage volumes per specifications**, enter the storage amount (GiB) as **5000**, and **IOPS** as **60000**. For more information, see [Machine specifications details](#).
- For **Amazon EC2 instance type**, choose the AWS instance recommendation. For more information, see [Amazon EC2 instance type details](#).
- For **Optimize vCPU**, keep the optimize CPU value as 16. For more information, see [Benefits of Optimize vCPUs](#).
- For **Quantity**, enter **10**.
- For number of passive instances, choose **5**.
- Choose **Add machine** to add more machine specification types. For this example, add the remaining three workloads from the [Example scenario table](#).

Machine specifications details

If you enter the storage size (GB) only, the calculator provides you with the most cost-effective Amazon Elastic Block Store (Amazon EBS) storage option. If you enter a value between **16000** and **64000** for IOPS, the AWS Pricing Calculator recommends the io2 EBS volume type. Anything value beyond that range, AWS Pricing Calculator recommends io2 Block Express with tiered pricing. For more information, see [Amazon EBS volume types](#).

▼ Machine specification 1

[Remove machine specification](#)

Machine description

Server 1
Max 256 characters

Operating system
Based on your licensing selections, Windows Server will be calculated as license included.

Windows Server ▼

SQL Server edition (BYOL)
Based on your licensing selections, SQL Server will be calculated as BYOL on shared tenancy

SQL Server Enterprise ▼

Storage volumes per specification - *optional* [Info](#)

Storage amount (GB)	IOPS	Throughput (MiB/s)	Volume type	
<input type="text" value="5000"/>	<input type="text" value="60000"/>	<input type="text" value="Enter throughput - optional"/>	<input type="text" value="Provisioned IOPS SSD (io2)"/> ▼	Remove

[Add new volume](#)

Amazon EC2 instance type details

You can choose **Obtain an Amazon EC2 instance type recommendation** for the server type specifications. AWS recommendations always default to the latest, cost-optimized instances for Windows Server and SQL Server workloads.

Amazon EC2 instance type [Info](#)
 Select an Amazon EC2 instance type. You can choose to obtain a recommended instance type or search for a specific Amazon EC2 instance.

Obtain an Amazon EC2 instance type recommendation
 Enter machine details, and Windows Server and SQL Server on Amazon EC2 calculator will recommend the lowest cost instance type.

Search for an Amazon EC2 instance type
 Search all available Amazon EC2 instances.

Number of vCPUs [Info](#)
 Enter the number of virtual machine CPUs for your machine.

16

Memory (GiB)
 Enter your memory size requirement to find the lowest cost instance for your needs.

800

Recommended Instance type
 Based on your inputs, this is the recommended EC2 instance. [Search for an EC2 instance type](#) to choose a different instance.

x1e.8xlarge

On-Demand hourly cost 8.144	vCPUs 32	GPUs 91
1YR Std reserved hourly cost 5.584	Memory (GiB) 976	Network performance Up to 10 Gigabit
Instance category Memory optimized		

You can also choose **Search** for an Amazon EC2 instance type if you want the ability to filter the instance types. You can filter by instance category, memory, CPU, and other options.

Amazon EC2 instance type [Info](#)
 Select an Amazon EC2 instance type. You can choose to obtain a recommended instance type or search for a specific Amazon EC2 instance.

Obtain an Amazon EC2 instance type recommendation
 Enter machine details, and Windows Server and SQL Server on Amazon EC2 calculator will recommend the lowest cost instance type.

Search for an Amazon EC2 instance type
 Search all available Amazon EC2 instances.

EC2 Instances (70)
 Selected Instance: **r5.xlarge**

vCPUs: Any vCPUs |
 Memory (GiB): 32 GiB |
 Network performance: Any Network Performance |
 Instance category: Memory optimized

Show only current generation instances.

Instance name	Memory	vCPUs	Network Perf...	Storage	On-Demand Hourly Cost
<input type="radio"/> r5a.xlarge	32 GiB	4	Up to 10 Gigabit	EBS only	0.41
<input checked="" type="radio"/> r5.xlarge	32 GiB	4	Up to 10 Gigabit	EBS only	0.436
<input type="radio"/> r5ad.xlarge	32 GiB	4	Up to 10 Gigabit	1 x 150 NVMe SSD	0.446
<input type="radio"/> r5d.xlarge	32 GiB	4	Up to 10 Gigabit	1 x 150 NVMe SSD	0.472
<input type="radio"/> r5b.xlarge	32 GiB	4	Up to 10 Gigabit	EBS only	0.482
<input type="radio"/> r5n.xlarge	32 GiB	4	Up to 25 Gigabit	EBS only	0.482
<input type="radio"/> r5dn.xlarge	32 GiB	4	Up to 25 Gigabit	1 x 150 NVMe SSD	0.518
<input type="radio"/> z1d.xlarge	32 GiB	4	Up to 10 Gigabit	1 x 150 NVMe SSD	0.556
<input type="radio"/> r5a.2xlarge	64 GiB	8	Up to 10 Gigabit	EBS only	0.82
<input type="radio"/> r5.2xlarge	64 GiB	8	Up to 10 Gigabit	EBS only	0.872

Benefits of Optimize vCPUs

You have the flexibility to specify a custom number of vCPUs while using the same memory, storage, and bandwidth of a full-sized instance. This means that BYOL customers can optimize vCPU-based licensing costs.

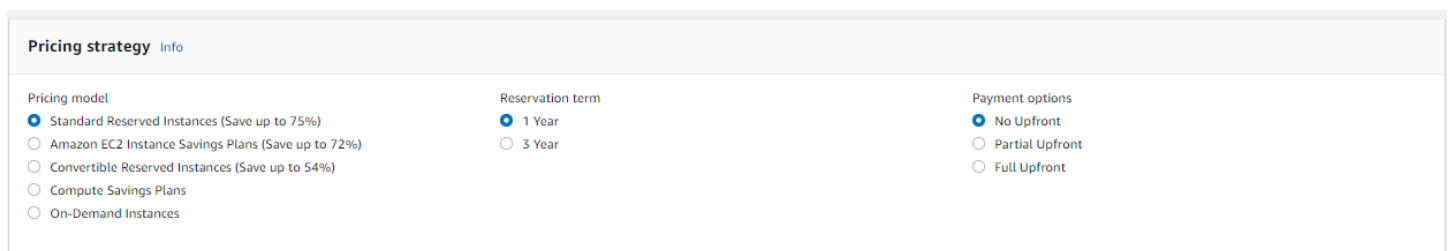
Even though the CPU optimized instance has the same price as the instance that's not optimized for CPU, it offers flexibility to choose the CPU count, so you can bring the right SQL Server license to avoid extra costs. For example, an `x1e.8xlarge` instance has 32 vCPUs by default. But you can specify `x1e.8xlarge` with Optimize CPU value to 16, 14, or 12.

The passive SQL Server nodes allow for additional cost optimization. A passive SQL Server node doesn't serve SQL Server data or run active SQL Server workloads. If you bring SQL Server to AWS with Software Assurance, you aren't required to license SQL Server on a passive node.

Step 3: Choose a pricing strategy

In this step, you use the pricing strategy section in AWS Pricing Calculator to choose a pricing model.

1. In the [AWS Pricing Calculator console](#), under **Pricing model**, choose **Standard Reserved Instance**.
2. Under **Reservation term**, choose **1 year**.
3. Under **Payment options**, choose **No Upfront**.



Pricing strategy Info		
Pricing model	Reservation term	Payment options
<input checked="" type="radio"/> Standard Reserved Instances (Save up to 75%)	<input checked="" type="radio"/> 1 Year	<input checked="" type="radio"/> No Upfront
<input type="radio"/> Amazon EC2 Instance Savings Plans (Save up to 72%)	<input type="radio"/> 3 Year	<input type="radio"/> Partial Upfront
<input type="radio"/> Convertible Reserved Instances (Save up to 54%)		<input type="radio"/> Full Upfront
<input type="radio"/> Compute Savings Plans		
<input type="radio"/> On-Demand Instances		

This is a default pricing strategy that offers up to 75 percent savings over On-Demand pricing. For more information, see [Amazon EC2 pricing](#).

Step 4: Show calculation and cost details

At this stage in the tutorial, you see the results for your cost estimates.

In the [AWS Pricing Calculator console](#), choose the arrow next to **Show calculations** to expand the section.

▼ Show calculations

Instance costs

Machine specification 1
x1e.8xlarge
Pricing calculations
EC2 Standard Reserved unit instance rate for x1e.8xlarge in the US East (Ohio) is 4076.32 USD (monthly reserved cost)
10 instances x 5.584 USD x 730 hours in a month = 40,763.20 USD (monthly reserved cost)

Machine specification 2
m5.4xlarge
Pricing calculations
EC2 Standard Reserved unit instance rate for m5.4xlarge in the US East (Ohio) is 890.60 USD (monthly reserved cost)
8 instances x 1.22 USD x 730 hours in a month = 7,124.80 USD (monthly reserved cost)

Machine specification 3
c5.2xlarge
Pricing calculations
EC2 Standard Reserved unit instance rate for c5.2xlarge in the US East (Ohio) is 424.86 USD (monthly reserved cost)
10 instances x 0.582 USD x 730 hours in a month = 4,248.60 USD (monthly reserved cost)

Machine specification 4
r5.xlarge
Pricing calculations
EC2 Standard Reserved unit instance rate for r5.xlarge in the US East (Ohio) is 250.39 USD (monthly reserved cost)
8 instances x 0.343 USD x 730 hours in a month = 2,003.12 USD (monthly reserved cost)

Amazon EC2 Reserved instances (monthly): 54,139.72 USD

Storage costs

Machine specification 1
Provisioned IOPS SSD (io2)
Volume 1:
5,000 GB x 0.125 USD x 1 volumes x 10 instances = 6,250.00 USD (EBS Storage Cost)
32,000 iops x 0.065 USD x 1 volumes x 10 instances = 20,800.00 USD (EBS IOPS Cost)
28,000 iops x 0.0455 USD x 1 volumes x 10 instances = 12,740.00 USD (EBS IOPS Cost)
6,250.00 USD + 20,800.00 USD + 12,740.00 USD = 39,790.00 USD (Total EBS Storage Cost)

Expand the **Cost details** section to see the EC2 instance, storage, and BYOL SQL license details.

▼ Cost details
A breakdown of your cost details.

EC2 Instance costs
Region: US East (Ohio) < 1 > Ⓞ

Machine specification	Hourly cost (USD)	Monthly cost (USD)	First 12 months (USD)
1: Server 1	55.84	40763.20	489158.40
2: Server 2	9.76	7124.80	85497.60
3: Server 3	5.82	4248.60	50983.20
4: Server 4	2.744	2003.12	24037.44

Amazon Elastic Block Storage (EBS) costs
Region: US East (Ohio) < 1 > Ⓞ

Machine specification	Storage volume type	Monthly cost per unit (USD)	Monthly cost (USD)	First 12 months (USD)
1: Server 1	Provisioned IOPS SSD (io2)	3979.00	39790.00	477480.00
2: Server 2	General Purpose SSD (gp3)	300.00	2400.00	28800.00
3: Server 3	General Purpose SSD (gp3)	80.00	800.00	9600.00
4: Server 4	General Purpose SSD (gp3)	40.00	320.00	3840.00

SQL Server bring your own license summary
The number of cores for your BYOL SQL Server licenses.

SQL Server Standard (cores) 64	SQL Server Enterprise (cores) 80	SQL Server Web (cores) 80
-----------------------------------	-------------------------------------	------------------------------

Step 5: View and add a Windows Server and SQL Server on Amazon EC2 estimate

In this step of the tutorial, you see a total monthly cost for all four workloads.

In the [AWS Pricing Calculator console](#), choose **Add to my estimate** to be directed to your **My estimate** page. On your **My estimate** page, you can view your annual total. Here, you have the option to choose **Save and share** to generate a public URL for your estimate.

At this point, you successfully estimated workload costs for Windows Server License Included (LI) and SQL Server Bring Your Own License (BYOL) licensing. You can clone your existing estimate to generate an estimate for the LI option for SQL Server.

1. In the **My Estimate** section, select the check box of the service you want to duplicate. Then, choose **Duplicate**.
2. Choose the **Edit** icon on the duplicate version of the estimate.
3. For the **Estimate details** description, enter **Workload_LI**.
4. Keep the **Region** as is.
5. In the **Licensing and tenancy recommendation** section, keep the **Windows Server** and **SQL Server** check boxes cleared.

Description

Workload_LI

Region [Info](#)
It is a physical location around the world where AWS clusters data centers.

US East (Ohio) ▼

Determine your licensing and tenancy recommendation
Specify your licensing scenario to determine your tenancy qualifications. The tenancy determines if compute resources are shared or in physical isolation in AWS.

Licensing and tenancy recommendation [Info](#)

Windows Server

I want to know if I can bring my own licenses (BYOL) to AWS.
Select to determine if you can bring your own license (BYOL) for Windows Server and estimate the costs.

SQL Server

I want to know if I can bring my own licenses (BYOL) to AWS.
Select to determine if you can bring your own license (BYOL) for SQL Server and estimate the costs.

Licensing and tenancy recommendation

Amazon EC2 shared tenancy
Based on your selection, all costs will be calculated as AWS license included on Amazon EC2 shared tenancy. [Learn more](#)

You may save costs by bringing your own licenses (BYOL). [Learn more](#)

6. For the SQL Server section, review and adjust the machine specifications.
7. Review the new monthly cost estimate and aggregated monthly costs.
8. Choose **Save**.

On the **My Estimate** page, you can now compare the price under both the licensing options. In this example, the shared tenancy with Windows LI and SQL Server BYOL option is approximately half of the cost of shared tenancy with Windows LI and SQL Server LI.

We offer several cost saving programs that can lower the price of running your Windows workloads on Amazon Web Services. For more information, choose **Learn more**.

You now completed the tutorial for using the Microsoft Windows Server and Microsoft SQL Server to generate a pricing estimate.

Licensing and tenancy recommendations

You can determine your AWS licensing and tenancy options for your workload through your choices for Windows Server and SQL Server licensing inputs. The licensing options include AWS provided licenses with License Included (LI) offerings, and your existing licenses with Bring Your Own License (BYOL) offerings for optimal cost savings. You can identify the most suitable cloud tenancy, for example, Shared tenancy or Dedicated Hosts.

AWS licensing and tenancy scenarios supported by AWS Pricing Calculator

Windows Server	SQL Server	AWS tenancy
LI	LI	Shared tenancy
LI	BYOL	Shared tenancy or Dedicated Hosts
BYOL	BYOL	Dedicated Hosts
BYOL	LI	Not supported

Configuring machine specifications

Based on your choice of machine specification, we recommend the Amazon EC2 instance that AWS Pricing Calculator uses to generate an estimate for your cost. You can also select different instances than the one recommended, or add multiple machine specifications for a workload.

This section defines the terms mentioned in the **Configure machine specifications** section.

Machine description

A description for the machine. This is generally a hostname identifier. If unknown, you can specify unique software components running on this machine—for example, `WebApp DB1` or `Webserver 1`.

Operating system

You can choose an operating system with a licensing option, depending on your tenancy qualification. The default value is `Windows`.

SQL Server edition

You can choose a SQL Server with licensing option, depending on your tenancy qualification. The default value is `SQL Standard`.

Storage volumes per specification

You can specify the storage needs in this section. If you don't know storage needs upfront, you can remove it from the estimate using **Remove**. This section is optional.

Instances can have either none or one or more storage volumes associated. Choose **Add new volume** to add multiple volumes to an instance.

You can use different volume types for each volume. The calculator recommends the appropriate Amazon EBS storage type based on the optional inputs such as **IOPS** and **Throughput**.

Storage amount

You can specify your storage amount needs. The default value is 1000 GB. If only storage amount is specified, the default recommended Amazon EBS storage type is `General Purpose SSD (gp3)`.

IOPs

IOPS (input/output operations per second) is the standard unit of measurement for the maximum number of reads and writes to non-contiguous storage locations. IOPS describes performance in solid state drives (SSD), hard disk drives (HDD), and storage area networks.

You can specify IOPs for I/O intensive workloads. AWS uses this value to potentially recommend `io2` Amazon EBS storage types.

`io2` delivers a consistent baseline performance of up to 500 IOPS/GB to a maximum of 64,000 IOPS,. It provides up to 1,000 MB/s of throughput per volume.

Throughput

Throughput measures how many units of information a system can process in a period of time. It can refer to the number of I/O operations per second, but is typically measured in bytes per second.

You can specify this input for throughput-intensive workloads.

`st1` is backed by hard disk drives. It's ideal for frequently accessed, throughput-intensive workloads with large datasets and large I/O sizes. Examples include MapReduce, Kafka, and log processing.

EC2 instance type

Obtain an EC2 instance type recommendation

This is the default choice. Choose the number of vCPUs and memory inputs to generate an EC2 instance recommendation. Only x86 architecture instances are considered. The default vCPU value is 4, and memory is 16 GB.

Search for an EC2 instance type

You can use this option to choose different instance types than the recommended instance.

To find an instance, search by minimum requirements or by name. Minimum requirements are the most useful when you know the specification of the instances you prefer. Instance names are useful when you know the instance family or size of the instance you prefer. For example, you can search for an instance with a minimum of 4 vCPUs and 16 GB memory, or for an `m5` instance name.

You can also search instances by using filters such as *instance category*. We recommend memory-optimized instances for database workload. You can search for them faster by using the instance category filter.

Optimize CPU

You have the flexibility of specifying a custom number of vCPUs while using the same memory, storage, and bandwidth of a full sized instance. The default value is the same as the vCPU input specified for the machine specification.

For example, a x1e.4xlarge instance currently offers 16 vCPU, by default. However, you can specify x1e.4xlarge with 4, 5, 6, 7, 8, 9,10, 12,14 Optimized vCPUs. This means BYOL customers can optimize vCPU-based licensing costs. The CPU optimized instance has the same price as the instance that isn't optimized for CPU.

Quantity

The default value is 1. This is the minimum number required.

SQL passive node

A passive SQL Server node is one that's not serving SQL Server data to clients or running active SQL Server workloads. If you select this check box and you bring SQL Server 2014 and later versions to AWS with Software Assurance, you aren't required to license SQL Server on a passive node.

Pricing strategy

Your choices in the **pricing strategy** section determine the pricing strategy AWS Pricing Calculator uses to generate your estimate.

Pricing model

The pricing model determines whether you're searching for a pay-as-you-use instance or an instance that you can reserve in advance. For Reserved Instance (RI) payment options, see **payment options**.

The default value is Standard Reserved Instances. This is because it's the most common Amazon EC2 purchase, and it offers the flexibility with highest discount for most use cases.

Reservation term

You purchase a reservation for the period of your contract when you reserve an RI. Choose either 1 or 3 years for your term. The default is set to 1 year. This is to save no costs.

Payment options

Payment options determine when you pay for your RI reservation.

Full upfront - You pay for the entire reservation upfront, resulting in a single payment but no monthly, recurring payments. This option provides the best discount.

Partial upfront - You pay for a smaller, partial upfront fee along with monthly payments.

No upfront - You only pay on a monthly basis.

The default value is **No upfront**. It gives you the least costly start-up price.

Cost details

The cost details section provides details for your workload.

EC2 Instance costs

A summary of the itemized breakdown for an EC2 instance. Pause on each row to show additional information, such as instance type, operating system, SQL version, vCPU, memory, quantity, optimize CPU, and SQL passive node.

Amazon EBS costs

The itemized cost breakdown for Amazon EBS.

SQL bring your own license summary

A summary to clarify the number of cores for your BYOL SQL Server licenses.

Generating Windows Server and SQL Server estimates on Amazon EC2 Dedicated Hosts

You can use the workload calculator in AWS Pricing Calculator as a guide to the AWS tenancy qualifications for Microsoft Windows Server and SQL Server on Amazon Elastic Compute

Cloud (Amazon EC2). You can use the workload calculator to estimate AWS cost using minimal information or generate a rough estimate.

For options for using Microsoft software licenses on the AWS Cloud, see [Microsoft Licensing on AWS](#).

To generate an estimate for Windows Server and SQL Server on Amazon EC2

1. Open AWS Pricing Calculator at <https://calculator.aws/#/>.
2. Choose **Create estimate**.
3. Do one of the following:
 - Under **Windows Server and SQL Server on Amazon EC2**, choose **Configure**.
 - Search for **Windows Server and SQL Server on Amazon EC2** from the **Find service** search bar.
4. On the **Configure Windows Server and SQL Server on Amazon EC2** page, choose your customized settings.
 - For information about your tenancy choices, see [Licensing and tenancy recommendations](#).
 - For instructions on how to choose your machine specifications, see [Configuring machine specifications](#).
 - For instructions on how to choose your pricing strategy, see [Pricing strategy](#).
 - For instructions on how to choose your cost details, see [Cost details](#).
5. Choose **Save and add service** or **Save and view summary**.

Topics

- [Licensing and tenancy recommendations](#)
- [Input using bulk upload](#)
- [Configuring machine specifications](#)
- [Review dedicated hosts](#)
- [Pricing strategy](#)

Licensing and tenancy recommendations

You can determine your AWS licensing and tenancy options for your workload through your choices for Windows Server and SQL Server licensing inputs. The licensing options include AWS provided

licenses with License Included (LI) offerings. They also include your existing licenses with Bring Your Own License (BYOL) offerings for optimal cost savings. You can identify which is the most suitable cloud tenancy.

AWS licensing and tenancy scenarios supported by AWS Pricing Calculator

Windows Server	SQL Server	AWS tenancy
LI	LI	Shared tenancy
LI	BYOL	Shared tenancy or Dedicated Hosts
BYOL	BYOL	Dedicated Hosts
BYOL	LI	Not supported

Input using bulk upload

You can use bulk upload to upload your machine configuration, operating system, SQL server edition, quantity, vCPU, and memory in an excel file. Batch upload uploads this excel file to the AWS Pricing Calculator. To do this, use the provided excel template worksheet.

To download the excel worksheet template

1. Open AWS Pricing Calculator at <https://calculator.aws/#/>.
2. Choose **Create estimate**.
3. Do one of the following:
 - Under **Windows Server and SQL Server on Amazon EC2**, choose **Configure**.
 - Search for **Windows Server and SQL Server on Amazon EC2** from the **Find service** search bar.
4. On the **Configure Windows Server and SQL Server on Amazon EC2** page under the **Bulk upload instructions** sections, choose **Download template**.

For more information, see [Configuring machine specifications](#).

5. Navigate to the downloaded file on your local machine.

⚠ Important

- Don't remove any columns from the template.
- Don't add any columns to the template.
- Don't change the position of the template worksheet.

ℹ Tip

You can refer to the **Example** worksheet in the spreadsheet for an example data.

6. Choose **Upload file**.
7. Under the **Machine specifications** table, see the **Status** column to confirm if your template was uploaded correctly.
 - **Accepted** - The data that you entered is in the correct format. The data can be used for providing recommendations.
 - **Declined** - The data format isn't valid. You can see the upload fail reason from the same column. After you correct your file, upload again using the previous steps.

If the declined fail reasons aren't addressed, these rows aren't included for recommendations on dedicated Hosts in the **Review dedicated hosts** table.
8. Use the Review dedicated hosts section to see details such as host family, host description, instances, license count, and used capacity. For more information, see [Review dedicated hosts](#).
9. Use the Dedicated Host costs section to see details for your workload.

The costs table provides an itemized breakdown of the dedicated hosts with hourly cost, monthly cost per unit, and cost for the first twelve months included. All costs are shown in USD currency.
10. Use the **License(s) summary** section to clarify the list of licenses that you need to bring to AWS for the recommended dedicated hosts.
11. Choose **Save and add service** to save your estimate prices, and add additional services to the AWS Pricing Calculator.

Configuring machine specifications

Based on your choice of machine specification, we recommend that you select the Amazon EC2 instance that AWS Pricing Calculator uses to generate an estimate for your cost. You can also select another instance or instances of your choosing or add multiple machine specifications for a workload.

This section defines the terms that are mentioned in the **Configure machine specifications** section.

Machine description

A description for the machine. This is generally a hostname identifier. If you don't know the hostname identifier, specify unique software components that run on this machine—for example, `WebApp DB1` or `Webserver 1`.

Operating system

Depending on your tenancy qualification, you can choose an operating system with a licensing option. The default value is `Windows`.

SQL Server edition

Depending on your tenancy qualification, you can choose a SQL Server with licensing option. The default value is `SQL Standard`.

vCPU, Memory

Enter the number of vCPUs and memory inputs for your machine configuration. For example, `4vCPU` and `8GB` of memory.

Quantity

The default value is `1`. This is the minimum number that's required.

Review dedicated hosts

The **Review dedicated hosts** table shows your recommended dedicated hosts instance family based on your inputs. You can see details such as host family and description, instances, license count, and used capacity (virtual cores). List count shows the license needed for a specific dedicated host.

Choose the instances to see the machines that are optimally packed within a single dedicated host.

By choosing **Download CSV**, you can download the dedicated host, instance, and license information.

Pricing strategy

Your choices in the **pricing strategy** section determine the pricing strategy that AWS Pricing Calculator uses to generate your estimate.

Pricing model

The pricing model determines whether you're searching for a pay-as-you-use instance or an instance that you can reserve in advance. For Reserved Instance (RI) payment options, see **payment options**.

The default value is `Standard Reserved Instances`. This is because it's the most common Amazon EC2 purchase, and it offers the flexibility with highest discount for most use cases.

Reservation term

When you reserve an RI, you purchase a reservation for the period of your contract. For your contract term, choose 1 year or 3 years. By default, a term is 1 year. This is to save costs.

Payment options

Payment options determine when you pay for your RI reservation.

Full upfront - You pay for the entire reservation upfront, resulting in a single payment but no monthly, recurring payments. This option provides the best discount.

Partial upfront - You pay for a smaller, partial upfront fee along with monthly payments.

No upfront - You only pay on a monthly basis.

The default value is **No upfront**. It gives you the least costly start-up price.

Generating Microsoft workload estimates with AWS Modernization Calculator

AWS Modernization Calculator for Microsoft workloads provides a pricing estimate for modernizing your Microsoft workloads using open source and AWS cloud-native services deployed on AWS.

The calculator creates an estimate total cost of ownership for transforming your Windows and SQL server applications into a modern architecture. To use the calculator, you don't need an AWS account.

AWS Modernization Calculator for Microsoft workloads recommends modernized architecture for application patterns such as multi-tier, batch processing, CI/CD, or containerization. These recommendations are based on commonly adopted architectures by the AWS customer community. The calculator offers a reliable way to get modernization cost estimates without in-depth assessments. Using this information, you can conduct an in-depth assessment with Migration Hub Strategy Recommendations. For more information, see [What is Migration Hub Strategy Recommendations?](#)

You can create an estimate with AWS Modernization Calculator for Microsoft workloads at <https://modernization.calculator.aws/microsoft/workload>.

To save, export, and share your estimate, make selections and provide inputs in the four steps.

Topics

- [Step 1: Select current architecture pattern](#)
- [Step 2: Select an architecture size](#)
- [Step 3: Select modernized architecture pattern](#)
- [Step 4: Edit service configuration](#)
- [My Estimate](#)

Step 1: Select current architecture pattern

Provide details about the current architecture of your application in this step, and start creating your estimate.

New estimate

Add a description for this estimate (for example, *App1 modernization*).

Current application/workload location

To specify the current location of where your application is deployed, select from AWS, on-premises, or other cloud.

Architecture category

Specify the architecture category of your application by choosing from architecture pattern, use case or custom. The category selection provides further options to analyze your application.

- **Architecture pattern** refers to a fundamental schema for software systems in an organization. It defines the structural composition of the program and the interactions between the elements. In most enterprises, some of the commonly found patterns include the following.
 - **Multi-tier** pattern has been a cornerstone architecture pattern for decades, and remains a popular pattern for user-facing applications. Multi-tier generally consists of a presentation tier, data tier, and logic tier. These three tiers can be hosted on the same or separate servers. This pattern provides a general framework to ensure decoupled and independently scalable application components can be separately developed, managed, and maintained.
 - **Batch processing** is the method computers periodically use to complete high-volume and repetitive data jobs. Certain data processing tasks, such as backups, filtering, and sorting, can be compute intensive and inefficient to run on individual data transactions. Instead, data systems process such tasks in batches. These tasks are processed during off-peak times such as the evening and overnight.
- **Use case** includes grouped architecture patterns. This grouping represents a collaboration by different teams on performing tasks. Use cases are further categorized into the following.
 - **Software development** involves several steps including creating, testing, staging, and deploying software. In an organization, multiple teams collaborate as a group to create software.
 - **Container** provides a standard way to package your application's code, configurations, and dependencies into a single object. Containers share an operating system that's installed on the server and run as resource-isolated processes. This ensures quick, reliable, and consistent deployments, regardless of the environment. Containers are lightweight and provide a consistent and portable software environment for applications to run and scale virtually anywhere. Building and deploying microservices, running batch jobs for machine learning applications, and moving existing applications into the cloud are some of common use cases.
- **Custom** category provides you with the option to build any custom architectures by selecting the relevant AWS services from the list. This is a suitable option if you're familiar with AWS services and their role in your application's architecture pattern.

Step 2: Select an architecture size

This step includes a short questionnaire about the specifics of your application's architecture. All questions are optional. The calculator provides a sizing recommendation based on your answers. The default recommendation is **Small**.

If you choose to answer the questions, the calculator recommends a size. You can proceed with the recommended size or select any size that meets your business requirements.

Step 3: Select modernized architecture pattern

In this step, the calculator provides modernized architecture pattern options based on your inputs in preceding steps. You can download the pattern diagram to learn more.

If you see more than one option, you can choose the recommended or another pattern. If you have one recommendation without options, choose the recommended pattern to proceed to the next step.

Step 4: Edit service configuration

You can see a summary of recommendations in this step. You can see a list of recommended AWS services. You can add or remove any service, and change the recommended settings of each service.

- **AWS Region** has a drop-down list that you can select the Region where you want to host your modernized application from. The pricing of AWS services can differ by Region.
- **Estimated cost** provides the total monthly cost of running a modernized application on AWS. The cost isn't intended as an actual price quote. It doesn't account for data transfer charges or any additional configurations offered by AWS services.
- **AWS services** lists the recommended services for your modernized application. You can add or delete any service from this list. You can expand each service card to modify size and parameters for that service. You can also see the breakdown of cost for each service by expanding *Show calculation*, which is located in each service card.
- Select **Save** to see a graphical presentation of estimate on **My Estimate** page.

My Estimate

This page provides the estimate for your modernized application. You can do the following with this page:

- Clone the same or add new workload to your estimate.
- Increase or decrease the number of applications in a workload.
- Change the recommended AWS services by editing a workload.
- Add the cost of accessing AWS Support to your estimate.
- Export to an excel file or share your estimate by using a unique URL.

If you retrieve and modify a shared estimate, you must save and share the modified version. The modifications aren't automatically added to your original estimate.

Security in AWS Pricing Calculator

Cloud security at AWS is the highest priority. As an AWS customer, you benefit from a data center and network architecture that is built to meet the requirements of the most security-sensitive organizations.

Security is a shared responsibility between AWS and you. The [shared responsibility model](#) describes this as security *of* the cloud and security *in* the cloud:

- **Security of the cloud** – AWS is responsible for protecting the infrastructure that runs AWS services in the AWS Cloud. AWS also provides you with services that you can use securely. Third-party auditors regularly test and verify the effectiveness of our security as part of the [AWS Compliance Programs](#). To learn about the compliance programs that apply to AWS Pricing Calculator, see [AWS Services in Scope by Compliance Program](#).
- **Security in the cloud** – Your responsibility is determined by the AWS service that you use. You are also responsible for other factors including the sensitivity of your data, your company's requirements, and applicable laws and regulations.

AWS Pricing Calculator is a public interface. The information you provide isn't stored, and AWS does not collect your input or associate your input with an AWS account.

Topics

- [Data protection in AWS Pricing Calculator](#)
- [Compliance validation for AWS Pricing Calculator](#)

Data protection in AWS Pricing Calculator

The AWS [shared responsibility model](#) applies to data protection in AWS Pricing Calculator. As described in this model, AWS is responsible for protecting the global infrastructure that runs all of the AWS Cloud. You are responsible for maintaining control over your content that is hosted on this infrastructure. This content includes the security configuration and management tasks for the AWS services that you use. For more information about data privacy, see the [Data Privacy FAQ](#). For information about data protection in Europe, see the [AWS Shared Responsibility Model and GDPR](#) blog post on the *AWS Security Blog*.

For data protection purposes, we recommend that you protect AWS account credentials and set up individual user accounts with AWS Identity and Access Management (IAM). That way each user is given only the permissions necessary to fulfill their job duties. We also recommend that you secure your data in the following ways:

- Use multi-factor authentication (MFA) with each account.
- Use SSL/TLS to communicate with AWS resources. We recommend TLS 1.2 or later.
- Set up API and user activity logging with AWS CloudTrail.
- Use AWS encryption solutions, along with all default security controls within AWS services.
- Use advanced managed security services such as Amazon Macie, which assists in discovering and securing personal data that is stored in Amazon S3.
- If you require FIPS 140-2 validated cryptographic modules when accessing AWS through a command line interface or an API, use a FIPS endpoint. For more information about the available FIPS endpoints, see [Federal Information Processing Standard \(FIPS\) 140-2](#).

We strongly recommend that you never put confidential or sensitive information, such as your customers' email addresses, into tags or free-form fields such as a **Name** field. This includes when you work with AWS Pricing Calculator or other AWS services using the console, API, AWS CLI, or AWS SDKs. Any data that you enter into tags or free-form fields used for names may be used for billing or diagnostic logs. If you provide a URL to an external server, we strongly recommend that you do not include credentials information in the URL to validate your request to that server.

Compliance validation for AWS Pricing Calculator

Third-party auditors assess the security and compliance of AWS Pricing Calculator as part of multiple AWS compliance programs. AWS Pricing Calculator is not in scope of any AWS compliance programs.

For a list of AWS services in scope of specific compliance programs, see [AWS Services in Scope by Compliance Program](#). For general information, see [AWS Compliance Programs](#).

Your compliance responsibility when using AWS Pricing Calculator is determined by the sensitivity of your data, your company's compliance objectives, and applicable laws and regulations. AWS provides the following resources to help with compliance:

- [Security and Compliance Quick Start Guides](#) – These deployment guides discuss architectural considerations and provide steps for deploying security- and compliance-focused baseline environments on AWS.
- [AWS Compliance Resources](#) – This collection of workbooks and guides might apply to your industry and location.
- [Evaluating Resources with Rules](#) in the *AWS Config Developer Guide* – The AWS Config service assesses how well your resource configurations comply with internal practices, industry guidelines, and regulations.
- [AWS Security Hub](#) – This AWS service provides a comprehensive view of your security state within AWS that helps you check your compliance with security industry standards and best practices.

Resources

The following related resources can help you as you work with this service.

Service-specific resources

Each AWS service has its own documentation that you can use to help understand the service.

- [AWS Pricing Calculator Frequently Asked Questions](#) – Explore the FAQs that are listed in the AWS Marketing pages
- [AWS Pricing Calculator pricing assumptions](#) – Understand the disclaimers for AWS Pricing Calculator prices.
- [AWS IQ](#) – Connect with AWS certified experts on AWS IQ to get help with your estimations.
- [Amazon Elastic Compute Cloud documentation](#) – Provides the documentation for using Amazon Elastic Compute Cloud (Amazon EC2).
- [Elastic Load Balancing documentation](#) – Provides the documentation for using Elastic Load Balancing.
- [Amazon Elastic Block Store documentation](#) – Provides the documentation for using Amazon Elastic Block Store.

General AWS resources

AWS provides several helpful guides, forums, contact info, and other resources for you.

- [AWS Developer Resource Center](#) – Provides a central starting point to find documentation, code samples, release notes, and other information to help you build innovative applications with AWS.
- [AWS Training and Courses](#) – Links to role-based and specialty courses and self-paced labs to help sharpen your AWS skills and gain practical experience.
- [AWS Developer Tools](#) – Links to developer tools and resources that provide documentation, code samples, release notes, and other information to help you build innovative applications with AWS.
- [AWS Support Center](#) – The hub where you can create and manage your AWS Support cases. It also includes links to other helpful resources, such as forums, technical FAQs, service health status, and AWS Trusted Advisor.

- [AWS Support](#) – The primary web page for information about AWS Support, a one-on-one, fast-response support channel to help you build and run applications in the cloud.
- [Contact Us](#) – A central contact point for inquiries that concern AWS billing, your account, events, abuse, and other issues.
- [AWS Site Terms](#) – Detailed information about our copyright and trademark; your account, license, and site access; and other topics.

Document history for User Guide

The following table describes the documentation for this release of AWS Pricing Calculator.

- **Latest documentation update:** Dec 16, 2019

Change	Description	Date
New save and share feature	Added the Saving and Sharing Your Estimate section.	December 16, 2019
UI update	Updated the UI to enable nested groups.	December 17, 2018
Initial launch	First publication of the documentation.	October 23, 2018

AWS Glossary

For the latest AWS terminology, see the [AWS glossary](#) in the *AWS Glossary Reference*.