Savings Plans: User Guide
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What is a Savings Plan?

Savings Plans is a flexible pricing model that helps you save up to 72 percent on Amazon EC2, AWS Fargate, and AWS Lambda usage. Savings Plans provides you lower prices for your Amazon EC2 usage, Fargate, and Lambda in exchange for a commitment to a consistent usage amount (measured in $/hour) for a one or three year term. You can purchase Savings Plans from any account, payer or linked. The Savings Plans will first apply to usage in the account that owns the plan, and then apply to usage in other accounts in the AWS Organization.

Every type of compute usage has an On-Demand rate and a Savings Plans rate. For example, if you commit to $10/hour of compute usage, your usage is charged at your Savings Plans rate up to $10. Any usage beyond your Savings Plans commitment is charged at your regular On-Demand rates.

When you sign up for Savings Plans, the prices you'll pay for compute usage stays the same through the plan term. You can pay for your commitment using All Upfront, Partial upfront, or No upfront payment options.

To get started, use AWS Cost Explorer to view your recommended Savings Plans commitment, purchase Savings Plans, manage your Savings Plans, and view your historical AWS usage. These recommendations make it easy for you to know the optimal Savings Plans commitment level for you. You can customize the recommendation to meet your needs and then purchase your Savings Plan. To see a full list of AWS services that are eligible for Savings Plans, see Working with supported services (p. 5).

Contents

• Plan types (p. 1)
• Savings Plans and RIs (p. 2)

Plan types

• Compute Savings Plans provide the most flexibility and prices that are up to 66 percent off of On-Demand rates. These plans automatically apply to your EC2 instance usage, regardless of instance family (for example, M5, C5, etc.), instance sizes (for example, c5.large, c5.xlarge, etc.), Region (for example, us-east-1, us-east-2, etc.), operating system (for example, Windows, Linux, etc.), or tenancy (for example, Dedicated, default, dedicated host). They also apply to your Fargate and Lambda usage. With a Compute Savings Plans, you can move a workload from C5 to M5, shift your usage from EU (Ireland) to EU (London), or migrate your application from Amazon EC2 to Amazon ECS using Fargate at any time. You can continue to benefit from the low prices provided by Compute Savings Plans as you make these changes.

• EC2 Instance Savings Plans provide savings up to 72 percent off On-Demand, in exchange for a commitment to a specific instance family in a chosen AWS Region (for example, M5 in Virginia). These plans automatically apply to usage regardless of size (for example, m5.xlarge, m5.2xlarge, etc.), OS (for example, Windows, Linux, etc.), and tenancy (Host, Dedicated, Default) within the specified family in a region.

With an EC2 Instance Savings Plan, you can change your instance size within the instance family (for example, from c5.xlarge to c5.2xlarge) or the operating system (for example, from Windows to Linux), or move from Dedicated tenancy to Default and continue to receive the discounted rate provided by your EC2 Instance Savings Plan.

Note
Savings Plans provides low prices in exchange for commitment. The terms of the commitment can't be changed after purchase. As your usage changes, you can sign up for additional Savings Plans.
Dedicated instances are charged $2/hour in every Region you have at least one Dedicated instance running. These dedicated fees are not discounted by Savings Plans. Both plan types apply to EC2 instances that are a part of Amazon EMR, Amazon EKS, and Amazon ECS clusters. Amazon EKS charges will not be covered by Savings Plans, but the underlying EC2 instances will be.

## Savings Plans and RIs

Savings Plans are a flexible pricing model that offers low prices, just like Amazon EC2 RIs, but with added flexibility. With Savings Plans you can reduce your bill by committing to a consistent amount of compute usage (measured in $/hour), instead of specific instance configurations. Savings Plans provides you the flexibility to use the compute option that best suits your needs at low prices, without having to perform exchanges or modifications.

Compute Savings Plans provide savings up to 66 percent off On-Demand, similar to Convertible RIs. Compute Savings Plans automatically reduce your cost on EC2 Instance usage, Fargate, and Lambda. EC2 Instance Savings Plans offer savings up to 72 percent off On-Demand, similar to Standard RIs, and automatically saves you money on any instance usage within a given EC2 Instance family in a Region of choice. For more information, see Plan types (p. 1).

### Comparing Savings Plans and RIs

<table>
<thead>
<tr>
<th></th>
<th>Compute Savings Plans</th>
<th>EC2 Instance Savings Plans</th>
<th>Convertible RIs*</th>
<th>Standard RIs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Savings over On-Demand</td>
<td>Up to 66 percent</td>
<td>Up to 72 percent</td>
<td>Up to 66 percent</td>
<td>Up to 72 percent</td>
</tr>
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<td>Lower price in exchange for monetary commitment</td>
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<td>✓</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Automatically applies pricing to any instance family</td>
<td>✓</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Automatically applies pricing to any instance size</td>
<td>✓</td>
<td>✓</td>
<td>—**</td>
<td>—**</td>
</tr>
<tr>
<td>Automatically applies pricing to any Tenancy or OS</td>
<td>✓</td>
<td>✓</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Automatically applies to Amazon ECS using Fargate</td>
<td>✓</td>
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<td>—</td>
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<tr>
<td>Automatically applies to Lambda</td>
<td>✓</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Automatically applies pricing across AWS Regions</td>
<td>✓</td>
<td>—</td>
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</tbody>
</table>
**Savings Plans User Guide**

**Savings Plans and RIs**

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<th>Compute Savings Plans</th>
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</thead>
<tbody>
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<td>Term length options</td>
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<td>✓</td>
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<tr>
<td>of 1 or 3 years</td>
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</tbody>
</table>

* Convertible RIs can be changed across instance families, sizes, OS, and tenancy, but requires you to manually perform exchanges.

** Regional convertible RIs and Regional standard RIs provide instance size flexibility.

**Note**
Savings Plans don't provide capacity reservations, but you can allocate On-Demand Capacity Reservation (ODCR) for your needs and your Savings Plans will apply.
Savings Plans prices for instances running SLES are different compared to the corresponding RI price.
Savings Plans are currently not available for China and Asia Pacific (Osaka-Local) Regions.
Savings Plans prices do not change based on the amount of hourly commitment.
Getting started with Savings Plans

To get started with Savings Plans, you'll need to enable Cost Explorer. Cost Explorer helps you optimize your costs with Savings Plans. In Cost Explorer, you can access customized purchase recommendations based on your past AWS usage, purchase Savings Plans, and easily manage your purchased Savings Plans.

Start by enabling your settings and permissions in Cost Explorer before using the AWS Billing and Cost Management console to view, analyze, and manage your Savings Plans.

**Prerequisites**

- **Enable Cost Explorer.** You can manage access to your Savings Plans by first enabling your Cost Explorer access. It can take up to 24 hours for the data required to create recommendations to become available. For more information, see Controlling Access for Cost Explorer in the *AWS Billing and Cost Management User Guide*.

- **Enable purchases using APIs.** Managing IAM permissions for Savings Plan APIs are found in *Savings Plans API Reference*. 
Working with supported services

You can learn more about the services that are eligible to receive Savings Plans benefits in this topic.

**Topics**
- Amazon EC2 (p. 5)
- AWS Fargate (p. 5)
- AWS Lambda (p. 5)

**Amazon EC2**

Amazon Elastic Compute Cloud (Amazon EC2) provides scalable computing capacity in the Amazon Web Services, Inc. (AWS) cloud. Using Amazon EC2 eliminates your need to invest in hardware up front, so you can develop and deploy applications faster. You can use Amazon EC2 to launch as many or as few virtual servers as you need, configure security and networking, and manage storage. Amazon EC2 enables you to scale up or down to handle changes in requirements or spikes in popularity, reducing your need to forecast traffic.

For more information about Amazon EC2, see *What Is Amazon EC2?* in the *Amazon EC2 Getting Started Guide*.

**AWS Fargate**

AWS Fargate is a technology that you can use with Amazon ECS to run containers without having to manage servers or clusters of Amazon ECS instances. With Fargate, you no longer have to provision, configure, or scale clusters of virtual machines to run containers. This removes the need to choose server types, decide when to scale your clusters, or optimize cluster packing.

Fargate is eligible for Compute Savings Plans.

For more information about Fargate, see *Savings Plans and AWS Fargate* in the *Amazon Elastic Container Service User Guide for AWS Fargate*.

**AWS Lambda**

AWS Lambda is a compute service that lets you run code without provisioning or managing servers. AWS Lambda executes your code only when needed and scales automatically, from a few requests per day to thousands per second. You pay only for the compute time you consume - there is no charge when your code is not running. With AWS Lambda, you can run code for virtually any type of application or backend service - all with zero administration. AWS Lambda runs your code on a high-availability compute infrastructure and performs all of the administration of the compute resources, including server and operating system maintenance, capacity provisioning and automatic scaling, code monitoring and logging.

Lambda is eligible for Compute Savings Plans.

For more information about Lambda, see *What Is AWS Lambda?* in the *AWS Lambda Developer Guide*. 
Understanding your Savings Plans recommendations

To help you save money, AWS provides customized Savings Plans recommendations based on your past usage. You can use these recommendations to understand what you can save, how the commitment will be used, and more.

Topics
- Viewing your Savings Plans recommendations (p. 6)
- Understanding your recommendation calculations (p. 6)
- Customizing your Savings Plans recommendations (p. 7)
- Downloading your Savings Plans recommendations (p. 8)

Viewing your Savings Plans recommendations

You can view the recommendations for your AWS account. If you're using AWS Organizations, you can view recommendations from the payer or linked account level. You can access your recommendations to see the following summary metrics.

- Monthly On-Demand Spend – The estimated On-Demand spend based on your usage over the selected time period. This includes all active Savings Plans that you own at the time of computation. This value represents what your On-Demand spend would be on a monthly basis, based on your past usage and current Savings Plan commitments.
- Estimated Monthly Spend – The projected spend based on the recommended Savings Plans commitments. This value consists of the recommended commitment and any usage projected to remain on On-Demand due to hour-to-hour variations in usage.
- Estimated Monthly Savings – The monthly net savings amount based on the usage over the selected time period, if you purchased the recommended Savings Plans.

To access your Savings Plans recommendations

2. On the navigation pane, choose Savings Plans.
3. On the left pane, choose Recommendations.

The Recommended Savings Plans table shows a detailed breakdown of your Savings Plans selection.

You can also receive your Savings Plans recommendations via the AWS Cost Explorer API.

Understanding your recommendation calculations

Savings Plans recommendations examine the usage over your selected time period. Based on the usage, we calculate what your bill could have been if you purchased an additional Savings Plan commitment for that time period. We identify and recommend the commitment value that we estimate will result in the largest savings.
Important

- The recommendations don’t forecast your usage. Recommendations are based on your historical usage over the selected time period. Be sure to select a time period that reflects your future usage.

Recommendations are calculated based on your **RI and Savings Plans discount sharing** preferences. To view or change your preferences, see **Turning Off Reserved Instances and Savings Plans Discount Sharing** in the **AWS Billing and Cost Management User Guide**.

- Recommendations at the payer account level are calculated considering usage across all of the accounts in your AWS organization that have RI or Savings Plans discount sharing enabled, to recommend a commitment that maximizes savings across accounts. Linked account recommendations are calculated at the individual account level, to maximize savings for each isolated account.

- Recommendations are generated for customers that have an average On-Demand spend of $0.10/hour during the lookback period (7, 30, or 60 days). If you recently purchased a Savings Plan, or if your Savings Plans recently expired, it might not be reflected in your **Recommendations** for up to 24 hours.

- Compute and EC2 Instance Savings Plans Recommendations are created using the same set of usage. You can purchase both Compute Savings Plans and EC2 Instance Savings Plans to cover your usage, but the two sets of recommendations are not meant to be taken together simultaneously.

- Recommendations are calculated using Savings Plans rates referenced in **Pricing with Savings Plans**.

Customizing your Savings Plans recommendations

You can customize your Savings Plans recommendations using parameters shown on your **Purchase Recommendations** page.

Customization options

You can customize your recommendations by changing your selections in the **Recommendation Options** section. You can use the following sections for your parameters.

- **Savings Plan Type** – The type of Savings Plan. Choose **Compute** or **Amazon EC2 Instance**.
- **Savings Plan term** – Your term commitment in years. Choose **1-year** or **3-years**.
- **Payment option** – Your payment option for your Savings Plans recommendations. Choose **All-Upfront**, **Partial upfront**, or **No upfront**.
- **Based on the past** – The lookback period and associated usage that recommendations will be used to calculate your savings.
- **Filter by** – The option to view which linked accounts you see the recommendations for. You can view recommendations for all linked account IDs from the payer account level. If you’re a linked account, you can only see your own account ID.

To customize your Savings Plans recommendations

2. On the navigation pane, choose **Savings Plans**.
3. On the left pane, choose **Recommendations**.
4. Next to **Savings Plan type**, choose either **EC2 Instance** or **Compute**.
5. Choose a Savings Plan term.
6. Choose a Payment option.
7. Enter the number of days for Based on the past.
8. (Payer account level only) Choose the Linked Accounts tab, and select the account IDs you want the recommendations for.
9. (Optional) To purchase the plans, select the check box next to your desired plans, and choose Add Savings Plans to cart.

Your recommendations change as you customize your selections. You'll see the most optimal option presented to you in the Our recommendation section.

Downloading your Savings Plans recommendations

You can download your Savings Plans recommendations in CSV format. CSV formats are useful to review or share recommendations.

To download your Savings Plans recommendations
2. On the navigation pane, choose Savings Plans.
3. On the left pane, choose Recommendations.
4. In the Recommended Savings Plans section, choose Download CSV.

CSV field details

- **Account ID** – The unique identifier for a linked account.
- **Offering ID** – The unique identifier for the Savings Plans prices used to generate the recommendations.
- **Hourly commitment to purchase** – The recommended Savings Plan hourly commitment, based on your selected parameters.
- **Estimated Savings Plans cost** – The estimated total cost of your recommended Savings Plans after purchase, over the selected time period (7, 30, or 60 days).
- **Estimated On-Demand cost** – The estimated total On-Demand cost after the purchase of the recommended Savings Plans, over the select time period (7, 30, or 60 days).
- **Current average hourly On-Demand spend** – The average hourly On-Demand spend observed over the selected time period.
- **Current minimum hourly On-Demand spend** – The minimum hourly On-Demand spend observed over the selected time period.
- **Current maximum hourly On-Demand spend** – The maximum hourly On-Demand spend observed over the selected time period.
- **Estimated average utilization** – The expected utilization percentage of the recommended Savings Plan, based on your current eligible On-Demand costs.
- **Estimated monthly savings amount** – The estimated savings that will result from your Savings Plans purchase, based on your past usage and the Savings Plans you already own.
- **Estimated savings percentage** – The amount your Savings Plan commitment will save you from your current, Savings Plans-eligible On-Demand costs.
• **Estimated ROI** – The estimated return on investment of the Savings Plan. This is calculated by taking your estimated savings and dividing it by the cost of the Savings Plan.
Purchasing Savings Plans

You can purchase Savings Plans in the AWS Billing and Cost Management console, or directly launching the AWS Cost Explorer. You can add your selection to your Savings Plans cart from the Recommendations page or from the Purchase Savings Plans page. We suggest you use the Recommendations page to see customized Savings Plans recommendations based on your past usage.

Topics
- Purchasing a Savings Plans from Your Recommendations Page (p. 10)
- Purchasing a Savings Plans from the Purchase Savings Plans Page (p. 10)

Purchasing a Savings Plans from Your Recommendations Page

You can visit your Recommendations page to see the Savings Plans recommended to you by AWS, to help you save on eligible usage. These recommendations are automatically calculated to make it easy for you to purchase the optimal Savings Plans that helps you save. You can directly add Savings Plans recommended for your account to your cart. For more information about how to view your Recommendations page or learn how recommendations are calculated, see Understanding your Savings Plans recommendations (p. 6)

To purchase Savings Plans from the Recommendations page
2. On the navigation pane, choose Savings Plans.
3. On the left pane, choose Recommendations.
4. In the Recommendation Options section, choose your preferred Savings Plan type, Savings Plans term, Payment option, and lookback period.
5. In the Recommended Savings Plan table, choose the checkboxes next to the Savings Plans you want to purchase.
   
   **Note**
   The recommended commitment is the Savings Plans rate, and not the On-Demand spend.
6. Choose Add selected Savings Plan(s) to cart.
   
   **Note**
   Only the linked account owner can add Savings Plans recommendations to the cart and proceed to purchase recommendations at the linked account level.
7. To complete your purchase, choose View cart.
8. In the Cart page, review your order and choose Submit order.

Purchasing a Savings Plans from the Purchase Savings Plans Page

You can directly purchase Savings Plans from the Purchase Savings Plans page.
To purchase an EC2 Instance Savings Plan

2. On the navigation pane, choose Savings Plans.
3. On the left pane, choose Purchase Savings Plans.
4. Under Savings Plans type, choose EC2 Instance.
5. Choose Term, choose Region, and then choose Instance Family.
6. In Hourly commitment, enter an amount.

   Note
   The Hourly commitment is the Savings Plans rate, and not the On-demand spend.
7. Choose Payment option.
8. If you chose Partial Upfront payment in the previous step, enter the Partial Upfront payment amount.
9. Choose Add to cart.
10. In the Cart page, review your order and then choose Submit order.

To purchase a Compute Savings Plan type

2. On the navigation pane, choose Savings Plans.
3. On the left pane, choose Purchase Savings Plans.
4. Under Savings Plan type, choose Compute.
5. Choose Term.
6. In Hourly commitment, enter an amount.

   Note
   The Hourly commitment is the Savings Plans rate, and not the On-demand spend.
7. Choose Payment option.
8. If you chose Partial Upfront payment, enter the Partial Upfront payment amount.
9. Choose Add to cart.
10. On the Cart page, review your order as follows:

   - Savings Plan type: The type of Savings Plan. Choose Compute or EC2 Instance. For more information, see Plan types (p. 1).
   - Term: Your term commitment in years. Choose a term of 1-year or 3-years.
   - Instance family: The instance family (for example, M5, C5, R5, C5d, etc.) that you are committing to (only applicable to EC2 Instance Savings Plans).
   - Hourly commitment: The hourly commitment associated with your Savings Plan and term at the Savings Plan rate.
   - Upfront payment: The upfront portion of the payment you will be charged at checkout, in accordance with your selected payment option.
   - Monthly payment: The monthly charge amount for your Savings Plans. This amount will be billed each month over the plan's term.
   - Total cost: The total commitment for the Savings Plans over the selected term. This includes the upfront payment and recurring monthly payments over the length of your term.
11. Choose Submit order.
If you encounter any error messages or unsuccessful attempts when you're completing your purchase, contact AWS Support. For details about how to contact, see Contacting Customer Support About Your Bill in the AWS Billing and Cost Management User Guide.
Understanding your Savings Plans overview

You can use the **Overview** page to see any Savings Plans you own, in addition to potential savings opportunities.

If you currently don't own any Savings Plans, the **Overview** page shows a summary of how Savings Plans work, along with recommended Savings Plans purchases based on your past usage.

**Topics**
- Savings opportunities (p. 13)
- Savings Plans details (p. 13)

**To access the Savings Plans overview**
2. On the navigation pane, choose Savings Plans.

**Savings opportunities**

Your savings opportunities are shown under **Additional savings opportunities** or **Savings opportunities**, depending on whether you've made past Savings Plans purchases or not.

You can view your detailed recommendations by choosing **View recommended savings plans**. To learn more about how your Savings Plans recommendations are calculated, see **Understanding your Savings Plans recommendations** (p. 6).

**Savings Plans details**

After you've purchased Savings Plans, you'll see a **Savings Plans details** section in your **Overview** page. The **Savings Plans details** section shows the following metrics related to your purchased Savings Plans:

- Type
- Month to date (MTD) commitment amount
- MTD utilization
- MTD savings

You can see details of the Savings Plans you own by choosing **View all** in the **Savings Plans details** section, or **Inventory** in the left navigation pane.
Monitoring your Savings Plans

Monitoring is an important part of your Savings Plans usage. Understanding the Savings Plan that you own, how they are applying to your usage, and what usage is being covered is an important part of optimizing your costs with Savings Plans. You can monitor your usage in multiple forms.

**Topics**
- Using the inventory (p. 14)
- Using the utilization report (p. 15)
- Using your coverage report (p. 16)
- Using budgets (p. 17)

**Using the inventory**

The Savings Plans **Inventory** page shows a detailed overview of the Savings Plans you own.

If you’re a user in a linked account of an AWS Organizations, you can view the Savings Plans owned by your specific linked account. If you’re a user in the payer account of an organization, you can either view Savings Plans owned only by the payer account, or you can view Savings Plans owned by all accounts in the organization. You can change views by choosing **View your organization’s Savings Plans** or **View your account’s Savings Plans**.

**Note**
You can see your recently purchased Savings Plans in your account view of the **Inventory** shortly after purchase. It might take longer for Savings Plans to appear in your organizational view.

The Savings Plans table shows the following information for your purchased Savings Plans:

- **Savings Plan ID** – The unique identifier for each individual Savings Plan.
- **Account ID** – The account ID that owns the particular Savings Plan. This column only appears in the Organization view.
- **Type** – The type of Savings Plan. For example, Compute or EC2 Instance.
- **Instance Family** – The instance family your spend is committed to. This only applies to EC2 Instance Savings Plans type.
- **Region** – The AWS Region your spend is committed to. This only applies to EC2 Instance Savings Plans type.
- **Hourly commitment** – The hourly committed spend for the particular Savings Plan.
- **MTD Net Savings** – The actual savings amount compared to On-Demand, based on the usage the particular Savings Plan commitment. This column only appears in the Organization view.
- **Status** – The status of each Savings Plan. For example, active or expired.
- **Start Date** – The date when the Savings Plan commitment started.
- **End Date** – The date when the Savings Plan commitment ends.

**Downloading your Savings Plans rates**

You can download a CSV file with detailed information for each Savings Plan you own. The file may take longer to download for Compute Savings Plans.
To download your Savings Plans rates file
2. On the navigation pane, choose Savings Plans.
3. On the left pane, choose Inventory.
4. In the Savings Plans section, choose Savings Plans ID.
5. In the pop-up window, choose Download Savings Plans Rates.

Downloading your Savings Plans inventory

You can download a CSV file with all of the detailed information for Savings Plans in your Savings Plans table.

To download your Savings Plans inventory file
2. On the navigation pane, choose Savings Plans.
3. On the left pane, choose Inventory.
4. In the Savings Plans section, choose download CSV.

Viewing your utilization report

You can see your Savings Plan Utilization Report to understand how your Savings Plans applied to your usage over the configured time period. For more information about how to understand your report, see Using the utilization report (p. 15).

To view your utilization report
2. On the navigation pane, choose Savings Plans.
3. On the left pane, choose Inventory.
4. In the Savings Plans section, choose the relevant Savings Plan ID.
5. In the pop-up window, choose View utilization report.

Using the utilization report

Savings Plans utilization shows you the percentage of your Savings Plans commitment you’re utilizing across your compute usage. You can see your Savings Plans utilization report to visually understand how your Savings Plans apply to your usage over the configured time period. Along with a visualized graph, the report shows high-level metrics based on your selected Savings Plan, filters, and lookback periods. Utilization is calculated based on how your Savings Plans applied to your usage over the lookback period.

For example, if you have a $10/hour commitment and your usage billed with Savings Plans rates totals to $9.80 for the hour, your utilization for that hour is 98 percent.

Topics
- Understanding your metrics (p. 16)
Understanding your metrics

You can find high-level metrics in the Utilization report section.

- On-Demand Spend Equivalent – The amount you would have spent on the same usage if you didn’t commit to Savings Plans. This amount is the equivalent On-Demand cost based on current On-Demand rates.
- Savings Plans spend – Your Savings Plans commitment spend over the lookback period.
- Total Net Savings – The amount you saved using Savings Plans commitments over the selected time period, compared to the On-Demand cost estimate.

Analyzing your utilization report calculations

You can see your Savings Plans utilization at a daily or monthly granularity, based on your lookback period. You can customize your filters by Savings Plans type, Linked Account, Region, and Instance Family in the Filters section.

If you’re a user in a payer account, you’ll see the aggregated utilization for the entire Consolidated Billing family.

Downloading your utilization report

You can download a CSV file of your Savings Plans utilization report data.

To download your utilization report

2. On the navigation pane, choose Savings Plans.
3. On the left pane, choose Utilization report.
4. Choose Download CSV.
5. Choose either chart data or table data.

Using your coverage report

The Savings Plans Coverage Report shows how much of your eligible spend was covered by your Savings Plans, based on the selected time period.

Topics

- understanding your metrics (p. 16)
- Analyzing your coverage report calculations (p. 17)
- Download your coverage report (p. 17)

understanding your metrics

You can find the following high-level metrics in the Coverage report section:
Analyzing your coverage report calculations

Coverage is calculated as:

\[ \frac{\text{(On-Demand equivalent of usage covered by your Savings Plans)}}{\text{(On-Demand equivalent usage covered by your Savings Plans + Savings Plans eligible amount that was billed at On-Demand rates)}} \]

For example, if you are running 10 identical instances with an On-Demand price of $1.00/hour, and 9 of the 10 instances you are running are covered by your Savings Plans commitment, your coverage would be 90 percent.

\[ \frac{(9 \text{ Savings Plans covered instance} \times \$1.00/\text{hour OD rate})}{\text{9 Savings Plans covered instances} \times \$1.00/\text{hour OD rate} + 1 \text{ On Demand Instance} \times \$1.00/\text{hour OD rate}} \]

You can see your usage at a daily or monthly granularity. Usage is calculated using your selected lookback period. You can customize your filters by Linked Account, Region, Instance Family, and Service in the Filters section.

If you’re a user in the payer account, you’ll see the aggregated coverage for the entire Consolidated Billing family.

Download your coverage report

You can download a CSV file of your Savings Plans coverage report data.

To download your coverage report

2. On the navigation pane, choose Savings Plans.
3. On the left pane, choose Coverage report.
4. Choose Download CSV.
5. Choose either chart data or table data.

Using budgets

You can use AWS Budgets to set Budgets for your Savings Plan utilization, coverage, and costs. You can track your costs as you continue to optimize through AWS.
Creating a Savings Plans budget

Use this procedure to create a budget for Savings Plans utilization or Savings Plans coverage.

To create a Savings Plans budget

1. For **Select budget type**, choose **Savings Plans budget**.
2. Choose **Set up your budget**.
3. For **Name**, enter the name of your budget. Your budget name must be unique within your account and can use A-Z, a-z, spaces, and the following characters:

   _ . : / = + - % @

4. For **Period**, choose how often you want the budget to reset the actual and forecasted spend. Choose **Daily** for every day, **Monthly** for every month, **Quarterly** for every three months, or **Annually** for every year. All budget times are in UTC.
5. For **Savings Plans budget type**, choose what you want the budget to track.

   - **Savings Plans Utilization** is how much of your Savings Plans you've used.
   - **Savings Plans Coverage** is how much of your usage a Savings Plan covers.

6. For **Utilization threshold**, enter the utilization percentage that you want AWS to notify you at. For example, for a utilization budget where you want to stay above 90% Savings Plans utilization, enter 90, and the budget notifies you when your overall Savings Plans utilization goes below 90%.
7. For **Coverage threshold**, enter the coverage percentage that you want AWS to notify you at. For example, for a coverage budget where you want to stay above 80%, enter 80. Budget notifies you when your overall coverage goes below 80%.
8. (Optional) Under **Budget parameters (optional)**, for **Filtering**, choose one or more of the available filters. Your choice of budget type determines the set of filters that is displayed on the console.
9. Choose **Configure alerts**. You can configure one alert only for a Savings Plans budget.
10. (Optional) For **Email contacts**, enter the email addresses that you want the notifications to be sent to and choose **Add email contact**. Separate multiple email addresses with a comma. A notification can have up to 10 email addresses.

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

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

   For a sample policy and instructions on granting your budget permissions, see **Creating an Amazon SNS Topic for Budget Notifications**. A notification can be subscribed to only one Amazon SNS topic.
12. Choose **Confirm budget**.
Understanding how Savings Plans apply to your AWS usage

If you have active Savings Plans, they apply automatically to your eligible AWS usage to reduce your bill.

Calculating bills with Savings Plans

Savings Plans apply to your usage after the Amazon EC2 Reserved Instances (RI) are applied.

Your current Savings Plans are grouped together and applied to the eligible usage. **EC2 Instance Savings Plans** are applied before Compute Savings Plans because Compute Savings Plans have broader applicability.

In a Consolidated Billing Family, Savings Plans are applied first to the owner account’s usage, and then to other accounts’ usage. This occurs only if you have sharing enabled.

We calculate your potential savings percentages of each combination of eligible usage. This percentage compares the Savings Plans rates with your current On-Demand rates. Your Savings Plans are applied to your highest savings percentage first. If there are multiple usages with equal savings percentages, Savings Plans are applied to the first usage with the lowest Savings Plans rate. Savings Plans continue to apply until there are no more remaining usages, or your commitment is exhausted. Any remaining usage is charged at the On-Demand rates.

Savings Plans example

The rates in these examples are illustrative only. In this example, you have the following usage in a single hour:

- 4x r5.4xlarge Linux, shared tenancy instances in us-east-1, running for the duration of a full hour
- 1x m5.24xlarge Windows, dedicated tenancy instance in us-east-1, running for the duration of a full hour
- 400 vCPU and 1,600 GB of Fargate usage in us-west-1
- 1 million requests for 512 MB (0.5 GB) memory of AWS Lambda usage in us-east-2, lasting for 3 seconds each

Pricing example

<table>
<thead>
<tr>
<th></th>
<th>On-Demand rate</th>
<th>Compute Savings Plans rate</th>
<th>Savings percentage (off On-Demand)</th>
<th>EC2 Instance Savings Plans rate</th>
<th>Savings percentage (off On-Demand)</th>
</tr>
</thead>
<tbody>
<tr>
<td>r5.4xlarge Linux</td>
<td>$1.00</td>
<td>$0.70</td>
<td>30%</td>
<td>$0.60</td>
<td>40%</td>
</tr>
<tr>
<td>Fargate vCPU</td>
<td>$0.04</td>
<td>$0.03</td>
<td>25%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Fargate GB</td>
<td>$0.004</td>
<td>$0.003</td>
<td>25%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
### Scenario 1: Savings Plans apply to all usage

<table>
<thead>
<tr>
<th></th>
<th>On-Demand rate</th>
<th>Compute Savings Plans rate</th>
<th>Savings percentage (off On-Demand)</th>
<th>EC2 Instance Savings Plans rate</th>
<th>Savings percentage (off On-Demand)</th>
</tr>
</thead>
<tbody>
<tr>
<td>m5.24xlarge Windows</td>
<td>$10.00</td>
<td>$8.20</td>
<td>18%</td>
<td>$7.80</td>
<td>22%</td>
</tr>
<tr>
<td>Lambda duration (per GB/sec)</td>
<td>$0.000015</td>
<td>$0.00001275</td>
<td>15%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Lambda requests (per 1M requests)</td>
<td>$0.20</td>
<td>$0.20</td>
<td>0%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

This example assumes one-year duration, partial upfront Savings Plans matching the configuration of your usage. Rates and discount percentages are hypothetical for simplification.

**Example scenarios**

- Scenario 1: Savings Plans apply to all usage (p. 20)
- Scenario 2: Savings Plans apply to some usage (p. 20)
- Scenario 3: Savings Plans apply to some usage, across products (p. 20)
- Scenario 4: Savings Plans and EC2 reserved instances apply to the usage (p. 21)
- Scenario 5: Multiple Savings Plans apply to the usage (p. 21)

### Scenario 1: Savings Plans apply to all usage

You purchase a one-year, partial upfront Compute Savings Plan with a $50.00/hour commitment.

Your Savings Plan covers all of your usage because multiplying each of your usages by the equivalent Compute Savings Plans is $47.13. This is still less than the $50.00/hour commitment.

Without Savings Plans, you would be charged at On-Demand rates in the amount of $59.10.

### Scenario 2: Savings Plans apply to some usage

You purchase a one-year, partial upfront Compute Savings Plan with a $2.00/hour commitment.

In any hour, your Savings Plans apply to your usage starting with the highest discount percentage (30 percent).

Your $2.00/hour commitment is used to cover approximately 2.9 units of this usage. The remaining 1.1 units are charged at On-Demand rates, resulting in $1.14 of On-Demand charges for r 5.

The Fargate m5.24xlarge and Lambda usage are also charged at On-Demand rates, resulting in $55.10 of On-Demand charges. The total On-Demand charges for this usage are $56.24.

### Scenario 3: Savings Plans apply to some usage, across products

You purchase a one-year, partial upfront Compute Savings Plan with a $19.60/hour commitment.
Your Savings Plans are first applied to the r5.4xlarge because it has the highest discount percentage (30 percent).

Savings Plans apply to the Fargate usage next because it has the next highest discount percentage (25 percent). Savings Plans apply to memory (GB) before compute (vCPU) because it has the lower Savings Plans rate. The hourly commitment of $19.60 is met, and the remaining usage is charged at On-Demand rates.

The m5.24xlarge and Lambda usage on On-Demand charges are $32.70.

**Scenario 4: Savings Plans and EC2 reserved instances apply to the usage**

You purchase a one-year, partial upfront Compute Savings Plan with an $18.20/hour commitment. You have two EC2 Reserved Instances (RI) for r5.4xlarge Linux shared tenancy in us-east-1.

First, the RI covers two of the r5.4xlarge instances. Then, the Savings Plans rate is applied to the remaining r5.4xlarge and the Fargate usage, which exhausts the hourly commitment of $18.20.

The m5.24xlarge and Lambda usage On-Demand charges are $32.70.

**Scenario 5: Multiple Savings Plans apply to the usage**

You purchase a one-year, partial upfront EC2 Instance Family Savings Plan for the r5 family in us-east-1 with a $3.00/hour commitment. You also have a one-year, partial upfront Compute Savings Plan with a $16.80/hour commitment.

Your EC2 Instance Family Savings Plan (r5, us-east-1) covers all of the r5.4xlarge usage because multiplying the usage by the EC2 Instance Family Savings Plan rate is $2.40. This is less than the $3.00/hour commitment.

Next, the Compute Savings Plan is applied to the Fargate usage because it has the highest discount percentage (25 percent) of the remaining usage. Savings Plans apply to memory (GB) before compute (vCPU) because memory has the lower Savings Plans rate. The hourly commitment of $16.80 is met, and the remaining usage is charged at On-Demand rates.

The m5.24xlarge and Lambda usage On-Demand charges are $32.70.

For more information, see [Understanding Consolidated Bills](https://aws.amazon.com/billing/guides/consolidated-billing/) in the **AWS Billing and Cost Management User Guide**.
Identity and Access Management for Savings Plans

AWS Identity and Access Management (IAM) is an AWS service that helps an administrator securely control access to AWS resources. IAM administrators control who can be authenticated (signed in) and authorized (have permissions) to use AWS resources. IAM enables you to create users and groups under your AWS account. You control the permissions that users have to perform tasks using AWS resources. You can use IAM for no additional charge.

By default, IAM users don't have permissions for Savings Plans resources and operations. To allow IAM users to manage Savings Plans resources, you must create an IAM policy that explicitly grants them permissions, and attach the policy to the IAM users or groups that require those permissions.

When you attach a policy to a user or group of users, it allows or denies the users permission to perform the specified tasks on the specified resources. For more information, see Policies and Permissions in the IAM User Guide guide.

Policy structure

An IAM policy is a JSON document that consists of one or more statements. Each statement is structured as follows.

```json
{
  "Statement": [{
    "Effect": "effect",
    "Action": "action",
    "Resource": "arn",
    "Condition": {
      "condition": {
        "key": "value"
      }
    }
  }
}
```

There are various elements that make up a statement:

- **Effect**: The *effect* can be *Allow* or *Deny*. By default, IAM users don't have permission to use resources and API actions, so all requests are denied. An explicit allow overrides the default. An explicit deny overrides any allows.

- **Action**: The *action* is the specific API action for which you are granting or denying permission.

- **Resource**: The resource that’s affected by the action. Some Amazon EC2 API actions allow you to include specific resources in your policy that can be created or modified by the action. To specify a resource in the statement, you need to use its Amazon Resource Name (ARN). For more information, see Actions Defined by Savings Plans.

- **Condition**: Conditions are optional. They can be used to control when your policy is in effect. For more information, see Condition Keys for Savings Plans.
AWS managed policies

The managed policies created by AWS grant the required permissions for common use cases. You can attach these policies to your IAM user, based on the access that they need. Each policy grants access to all or some of the API actions for Savings Plans.

The following are the AWS managed policies for Savings Plans:

- **AWSSavingsPlansFullAccess**—Grants full access to Savings Plans.
- **AWSSavingsPlansReadOnlyAccess**—Grants read-only access to Savings Plans.

Example policies

In an IAM policy statement, you can specify any API action from any service that supports IAM. For Savings Plans, use the following prefix with the name of the API action: savingsplans:. For example:

- `savingsplans:CreateSavingsPlans`
- `savingsplans:DescribeSavingsPlans`

To specify multiple actions in a single statement, separate them with commas as follows:

```
"Action": ["savingsplans:action1", "savingsplans:action2"]
```

You can also specify multiple actions using wildcards. For example, you can specify all Savings Plans API actions whose name begins with the word "Describe" as follows:

```
"Action": "savingsplans:Describe*"
```

To specify all Savings Plans API actions, use the * wildcard as follows:

```
"Action": "savingsplans:*"
```
Logging Savings Plans API Calls with AWS CloudTrail

AWS Savings Plans is integrated with AWS CloudTrail, a service that provides a record of actions taken by a user, role, or an AWS service in Savings Plans. CloudTrail captures all API calls for Savings Plans as events. The calls captured include calls from the AWS Management Console and code calls to the Savings Plans API operations. If you create a trail, you can enable continuous delivery of CloudTrail events to an Amazon S3 bucket, including events for Savings Plans. If you don't configure a trail, you can still view the most recent events in the CloudTrail console in Event history. Using the information collected by CloudTrail, you can determine the request that was made to Savings Plans, the IP address from which the request was made, who made the request, when it was made, and additional details.

To learn more about CloudTrail, see the AWS CloudTrail User Guide.

Savings Plans Information in CloudTrail

CloudTrail is enabled on your AWS account when you create the account. When activity occurs in Savings Plans, that activity is recorded in a CloudTrail event along with other AWS service events in Event history. You can view, search, and download recent events in your AWS account. For more information, see Viewing Events with CloudTrail Event History.

For an ongoing record of events in your AWS account, including events for Savings Plans, create a trail. A trail enables CloudTrail to deliver log files to an Amazon S3 bucket. By default, when you create a trail in the console, the trail applies to all AWS Regions. The trail logs events from all Regions in the AWS partition and delivers the log files to the Amazon S3 bucket that you specify. Additionally, you can configure other AWS services to further analyze and act upon the event data collected in CloudTrail logs. For more information, see the following:

- Overview for Creating a Trail
- CloudTrail Supported Services and Integrations
- Configuring Amazon SNS Notifications for CloudTrail
- Receiving CloudTrail Log Files from Multiple Regions and Receiving CloudTrail Log Files from Multiple Accounts

All Savings Plans actions are logged by CloudTrail and are documented in the AWS Savings Plans API Reference. For example, calling the CreateSavingsPlan action generates an entry in the CloudTrail logs.

Every event or log entry contains information about who generated the request. The identity information helps you determine the following:

- Whether the request was made with root or AWS Identity and Access Management (IAM) user credentials.
- Whether the request was made with temporary security credentials for a role or federated user.
- Whether the request was made by another AWS service.

For more information, see the CloudTrail userIdentity Element.
Understanding Savings Plans Log File Entries

A trail is a configuration that enables delivery of events as log files to an Amazon S3 bucket that you specify. CloudTrail log files contain one or more log entries. An event represents a single request from any source and includes information about the requested action, the date and time of the action, request parameters, and so on. CloudTrail log files aren't an ordered stack trace of the public API calls, so they don't appear in any specific order.

The following is an example CloudTrail log entry for the CreateSavingsPlan action.

```json
{
  "eventVersion": "1.05",
  "userIdentity": {
    "type": "AssumedRole",
    "principalId": "[principalId]/[userName]",
    "arn": "arn:aws:sts::[accountId]:assumed-role/[userName]/",
    "accountId": "[accountId]",
    "accessKeyId": "[accessKeyId]",
    "sessionContext": {
      "attributes": {
        "mfaAuthenticated": "false",
        "creationDate": "2019-10-01T00:00:00Z"
      },
      "sessionIssuer": {
        "type": "Role",
        "principalId": "[principalId]",
        "arn": "arn:aws:iam::[accountId]:role/[userName]",
        "accountId": "[accountId]",
        "userName": "[userName]"
      }
    },
    "eventTime": "2019-10-01T00:00:00Z",
    "eventSource": "savingsplans.amazonaws.com",
    "eventName": "CreateSavingsPlan",
    "awsRegion": "us-east-1",
    "sourceIPAddress": "127.0.0.1",
    "userAgent": "[userAgent]",
    "requestParameters": {
      "commitment": "2.50",
      "savingsPlanOfferingId": "[savingsPlanOfferingId]",
      "clientToken": "[clientToken]",
      "tags": {
        "tag-key": "tag-value"
      }
    },
    "responseElements": {
      "savingsPlanId": "[savingsPlanId]"
    },
    "requestID": "[requestId]",
    "eventID": "[eventId]",
    "readOnly": false,
    "eventType": "AwsApiCall",
    "recipientAccountId": "[accountId]"
  }
}
```
Document History

The following table describes the releases for this service.

<table>
<thead>
<tr>
<th>update-history-change</th>
<th>update-history-description</th>
<th>update-history-date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lambda service onboarded (p. 26)</td>
<td>Lambda launched as a new service that is eligible for Savings Plans.</td>
<td>February 20, 2020</td>
</tr>
<tr>
<td>Initial release (p. 26)</td>
<td>This release introduces Savings Plans.</td>
<td>November 6, 2019</td>
</tr>
</tbody>
</table>