Cost Center

User Guide

Issue 01

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HUAWEI

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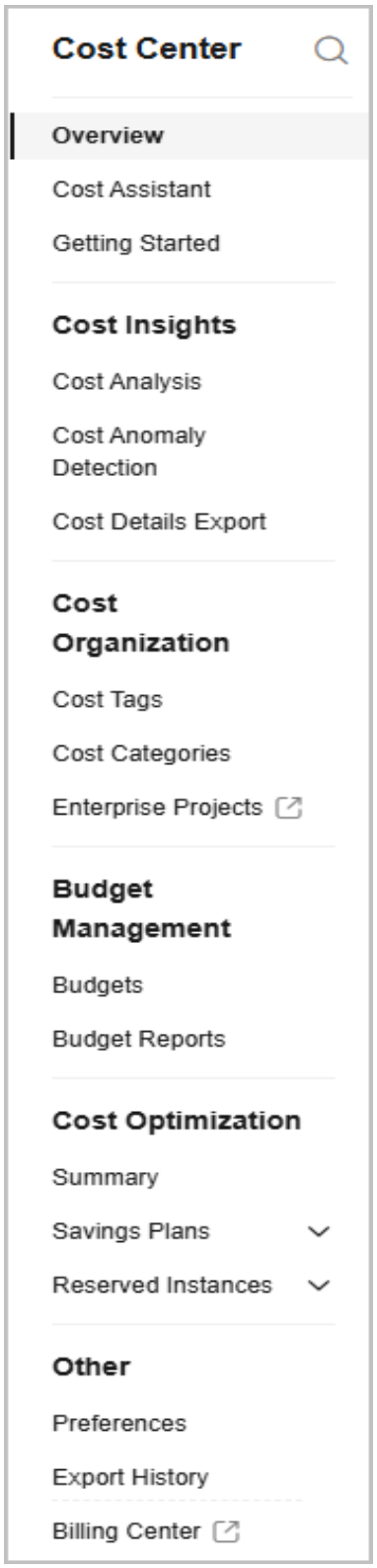
https://www.huawei.com/en/psirt/vul-response-process
For vulnerability information, enterprise customers can visit the following web page:
https://securitybulletin.huawei.com/enterprise/en/security-advisory

Contents

1 Upgrade Description

Easier Navigation

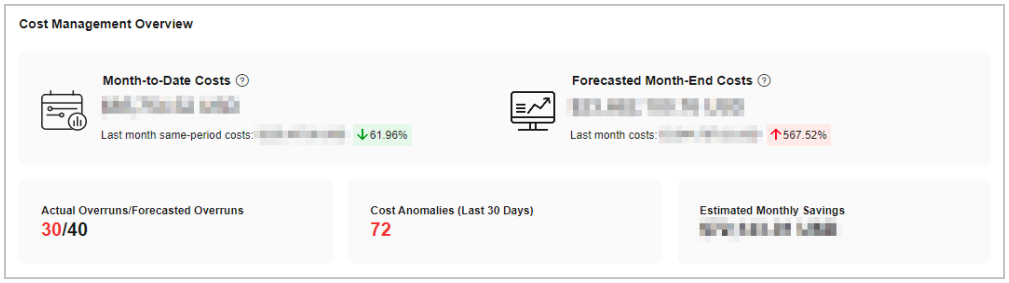
Navigation menus have been reorganized to streamline your cloud cost management experience. The new navigation provides clear direction on where to find **Cost Assistant**, **Cost Insights**, **Cost Organization**, **Budget Management**, and **Cost Optimization.**



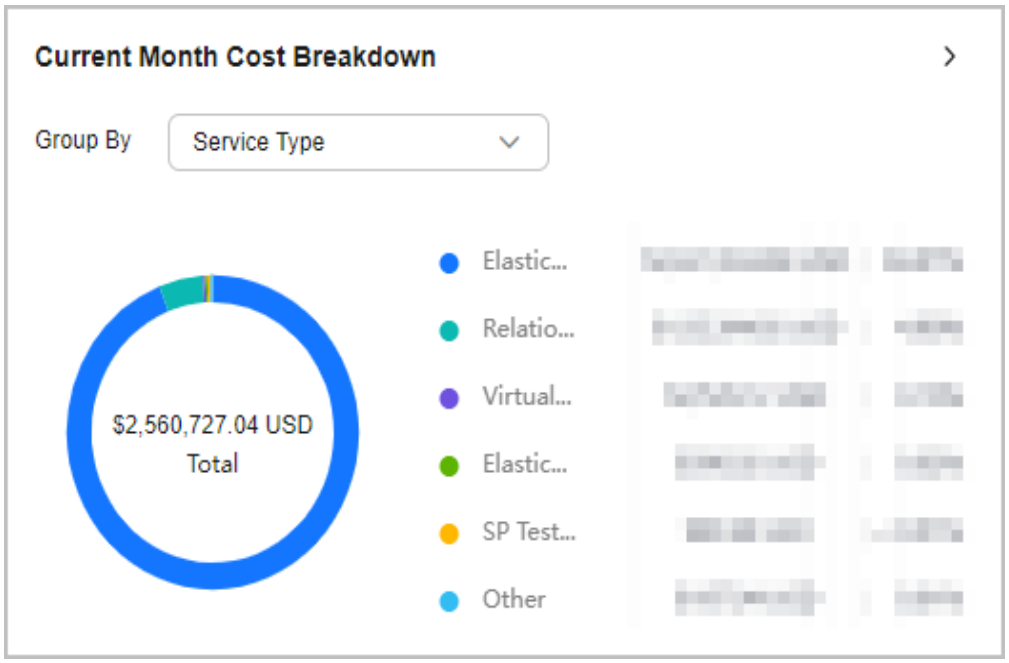
Comprehensive Cost Overview

1. The layout of **Cost Management Overview** has been optimized to give you a quick convenient view of your costs, including month-to-date costs, forecasted

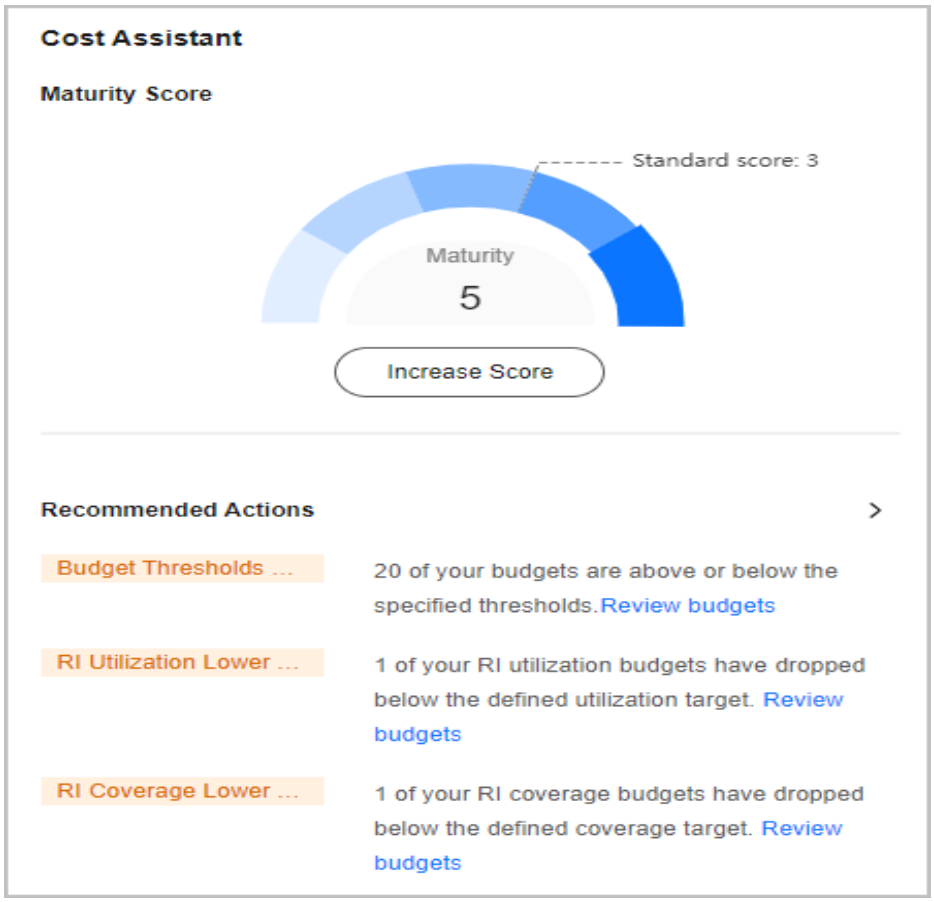
month-end costs, actual budget overruns/forecasted budget overruns, cost anomalies from the last 30 days, and estimated monthly savings.



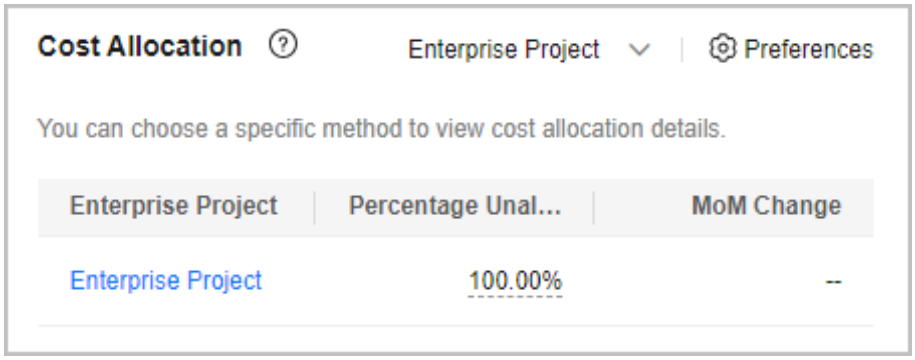
2. The breakdown of current month costs has been added. You can now view your current month costs in multiple dimensions, for example, by service type, enterprise project, cost tag, cost category, linked account, and region.



3. Cost Assistant, an all-new feature, has been rolled out. It offers maturity scores and insight recommendations to help you manage costs better.

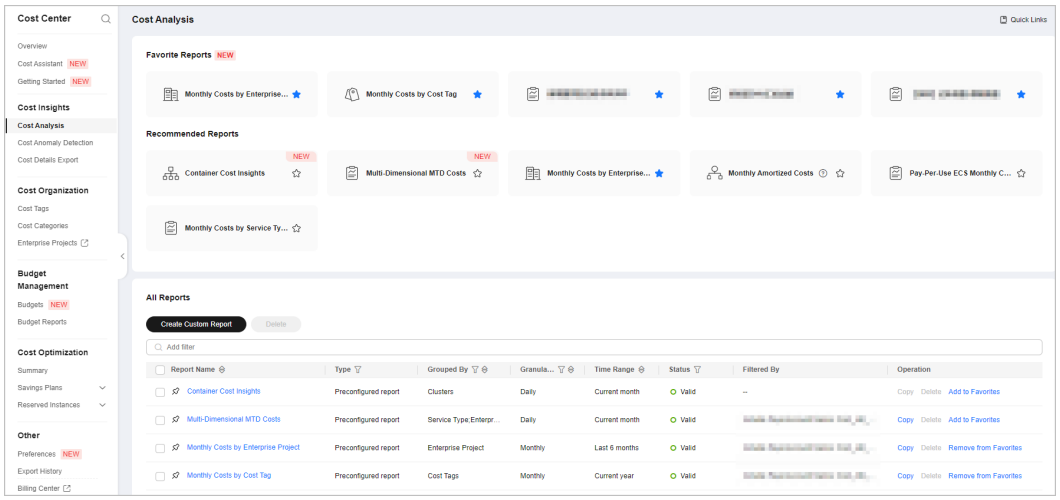


4. Cost allocation details have been added. You can now choose a specific method to view cost allocation details from a particular service respective.

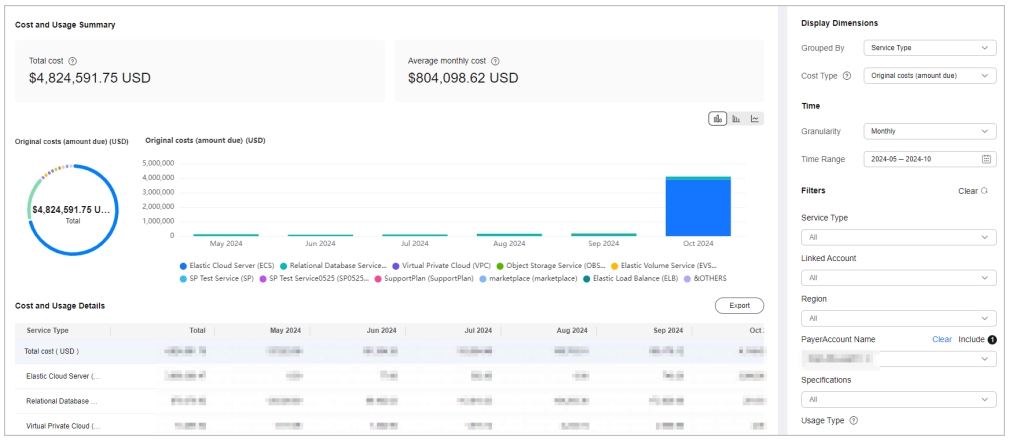


Scenario-specific Cost Analysis

1. You can now check a variety of reports recommended for typical cost analysis scenarios, and you can add reports to your favorites for faster cost analysis.

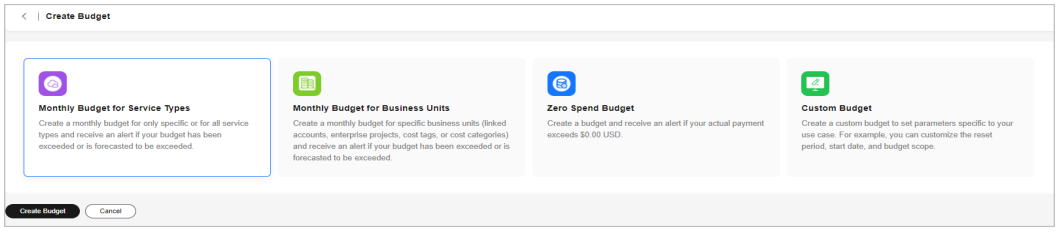


2. On cost analysis pages, browsing views are now distinguished from action views. Specifically, **Cost and Usage Summary** illustrates key cost data and breakdown, and available actions are sorted by operation type on the right, giving you a better experience.



Simpler Budget Creation

There is a wide range of budget templates available for common scenarios to make budget creation simpler.



Diverse Functions

The following table describes major functions in the new edition of Cost Center. Getting Started aims to help you understand how to use the functions of Cost Center to achieve your work goals and effectively address business challenges. For details, see **Getting Started**.

Table 1-1 Function description

Module		Function	Reference
-	Overview	Gives you quick access to common functions in Cost Center.	**Overview**
	Cost Assistant	Offers maturity scores and insight recommendations to help you manage costs better.	**Cost Assistant**
	Getting Started	Presents best practices for cloud financial management in common scenarios.	**Getting Started**
Cost Insights	Cost Analysis	Analyzes costs with preconfigured or custom reports, shows cost breakdowns and trends, and forecasts your costs.	**Cost Analysis**
	Cost Anomaly Detection	Identifies any unexpected cost spikes and sends you alerts.	**Cost Anomaly Detection**
	Cost Details Export	Allows you to export original costs, amortized costs, and usage details to OBS (in OBT).	**Exporting Cost Details**
Cost Organization	Cost Tags	Identifies and manages your resources by tag. Tags can be activated to become cost tags. The cost tags can then be used to group costs for cost analysis and budget management.	**Cost Tags** **Activating Cost Tags**
	Cost Categories	Allows you to create custom rules to map costs to Huawei Cloud cost allocation methods (linked accounts, enterprise projects, cost tags, and cost categories), helping you manage costs from your own service perspective.	**Overview of a Cost Category**
Budget Management	Budgets	Enables you to quickly create budgets for service types or business units, zero spend budgets, or create custom budgets with parameters specific to your use case. You can configure alerts to warn you if your budget has been exceeded or is forecasted to be exceeded.	**Budgets**

Module			Function	Reference
	Budget Reports		Allows you to create daily, weekly, and monthly budget reports so you can track the performance of your budgets.	**Budget Reports**
Cost Optimization	Summary		Identifies the opportunities for optimizing resources and changing billing modes to save costs.	**Cost Optimization**
	Savings Plans	Summary	Helps you review savings plans-saved costs and optimization opportunities and view your inventory of all savings plans.	**What Are Savings Plans?**
		Utilization & Coverage Analysis	Analyzes how savings plans are applied to your usage to help you determine whether they are fully utilized. You can also check how much of your pay-per-use usage is covered by savings plans to determine whether they are enough.	**Viewing the Usage of Savings Plans**
		Purchase Recommendations	Generates recommendations for purchasing savings plans based on your historical pay-per-use usage.	**Following Cost Optimization Recommendations**
	Reserved Instances	Utilization & Coverage Analysis	Analyzes how reserved instances are applied to your usage to help you determine whether they are fully utilized. You can also check how much of your pay-per-use usage is covered by reserved instances to determine whether they are enough.	**Viewing RI Analysis**
		Utilization & Coverage Analysis Reports	You can create a utilization & coverage analysis report to periodically track your RI usage.	**Creating RI Utilization & Coverage Analysis Reports**
Preferences	Cost Amortization		Allows you to split some of CDN, WSA, and Live traffic costs by domain name.	**Enabling Cost Splitting**

Module		Function	Reference
	Pay-per-Use to Yearly/Monthly	Identifies cost optimization opportunities by analyzing your historical pay-per-use expenditures.	**Changing Pay-per-Use to Yearly/Monthly**
	Hourly Cost Analysis	Presents original costs by the hour from the last 14 days.	**Viewing Cost Analyses**
	Monthly Multi-Year Cost Analysis	Presents monthly analysis of cost data going back as far as the last 38 months.	**Viewing Cost Analyses**
Other	IAM	Implements fine-grained permissions management to isolate permissions of different employees.	**Permissions**
	Bill	Presents the overview or details of your Huawei Cloud expenditures. It records your expenditure history and can be used for reconciliation.	**Bills**

2 About Cost Center

2.1 Functions

Cost Center is a free cloud financial management service provided by Huawei Cloud. It offers a suite of tools to help you track, analyze, and explore your Huawei Cloud costs and usage. It also helps you detect cost anomalies to reduce unexpected expenditure spikes and find cost-saving opportunities.

The following table describes the functions offered by Cost Center.

Module		Function	Reference
-	Overview	Gives you quick access to common functions in Cost Center.	**Overview**
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	Getting Started	Presents best practices for cloud financial management in common scenarios.	**Getting Started**
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	Cost Anomaly Detection	Identifies any unexpected cost spikes and sends you alerts.	**Cost Anomaly Detection**
	Cost Details Export	Allows you to export original costs, amortized costs, and usage details to OBS (in OBT).	**Exporting Cost Details**

Module			Function	Reference
Cost Organization	Cost Tags		Identifies and manages your resources by tag. Tags can be activated to become cost tags. The cost tags can then be used to group costs for cost analysis and budget management.	**Cost Tags** **Activating Cost Tags**
	Cost Categories		Allows you to create custom rules to map costs to Huawei Cloud cost allocation methods (linked accounts, enterprise projects, cost tags, and cost categories), helping you manage costs from your own service perspective.	**Overview of a Cost Category**
Budget Management	Budgets		Quickly create budgets for service types or business units, zero spend budgets, or create custom budgets with parameters specific to your use case. You can configure alerts to warn you if your budget has been exceeded or is forecasted to be exceeded.	**Budgets**
	Budget Reports		Allows you to create daily, weekly, and monthly budget reports so you can track the performance of your budgets.	**Budget Reports**
Cost Optimization	Summary		Identifies the opportunities for optimizing resources and changing billing modes to save costs.	**Cost Optimization**
	Savings Plans	Summary	Helps you review savings plans-saved costs and optimization opportunities and view your inventory of all savings plans.	**What Are Savings Plans?**
		Utilization & Coverage Analysis	Analyzes how savings plans are applied to your usage to help you determine whether they are fully utilized. You can also check how much of your pay-per-use usage is covered by savings plans to determine whether they are enough.	**Viewing the Usage of Savings Plans**

Module			Function	Reference
		Purchase Recommendations	Generates recommendations for purchasing savings plans based on your historical pay-per-use usage.	**Following Cost Optimization Recommendations**
	Reserved Instances	Utilization & Coverage Analysis	Analyzes how reserved instances are applied to your usage to help you determine whether they are fully utilized. You can also check how much of your pay-per-use usage is covered by reserved instances to determine whether they are enough.	**Viewing RI Analysis**
		Utilization & Coverage Analysis Reports	You can create a utilization & coverage analysis report to periodically track your RI usage.	**Creating RI Utilization & Coverage Analysis Reports**
Preferences	Cost Amortization		Allows you to split some of CDN, WSA, and Live traffic costs by domain name.	**Enabling Cost Splitting**
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Other	IAM		Implements fine-grained permissions management to isolate permissions of different employees.	**Permissions**
	Bills		Presents the overview or details of your Huawei Cloud expenditures. It records your expenditure history and can be used for reconciliation.	**Bills**

2.2 Data Scope

NOTE

The cost and usage data in Cost Center is only for your reference during the cost analysis and budget management.

By default, Cost Center prepares your cost and usage data for the last 18 months. If you enable **Monthly Multi-Year Cost Analysis** on the **Preferences** page, Cost Center will prepare your cost and usage data for the last 38 months.

- If you are using an individual account, Cost Center provides you with Huawei Cloud cost and usage data.
- If you are using an enterprise master account but have not enabled unified accounting management, you can access the following data in Cost Center:
  - Your own cost and usage data
  - Cost and usage data of your member accounts during the payment association period
  - Cost and usage data of your member accounts who have authorized you to view their expenditure data
- If you are using an enterprise master account and have enabled unified accounting management, you can access the following data in Cost Center:
  - Your own cost and usage data
  - Cost and usage data of your member accounts associated for unified accounting
- If you are using a member account associated with the master account for unified accounting, Cost Center displays the cost and usage data from the association period. If you are disassociated from the master account and are using an individual account, Cost Center provides the cost and usage data from the disassociation period by default. However, you can switch the payer account to view the data from the association period.
- If you are using a member account (non-unified accounting management), you can view your cost and usage data in the same manner as you are using an individual account.
- If you are using a reseller account, Cost Center provides you with Huawei Cloud cost and usage data. During the period you are associated with your partner, your cost analyses are made based on the Huawei Cloud list price and are for your reference only.

Currently, Cost Center cannot be used to manage the costs of solution partners (including PSP resellers).

NOTE

If your amortized costs increase unexpectedly, see **Why Does the Amortized Cost for the Latest Day in the Current Month Increase Unexpectedly?**

2.3 Cost Types

Cost Center provides you with two types of costs.

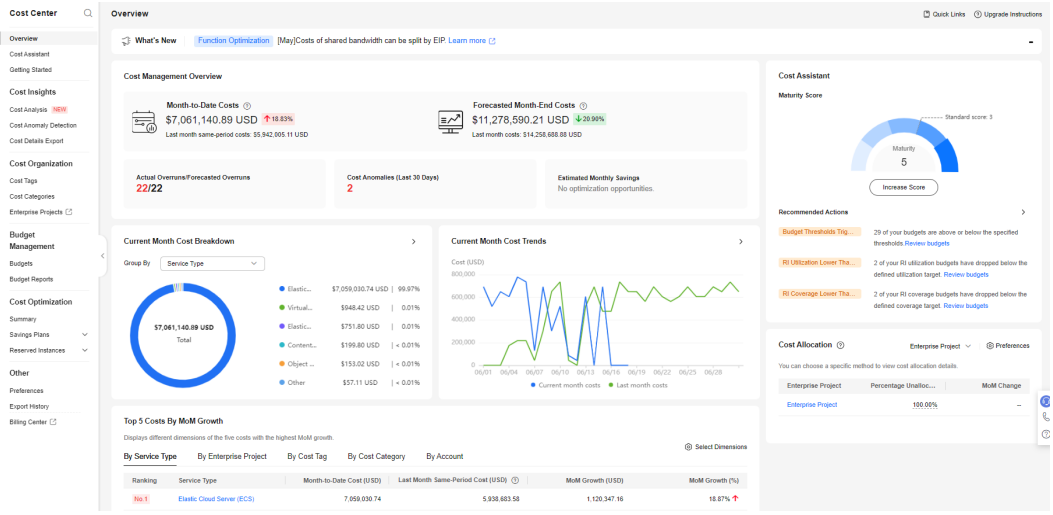
- **Original cost**: reflects the original usage and purchase. The cost is calculated based on the list price with discounts (not cash coupons) applied. To view the expenditures after both discounts and cash coupons are applied, see the net original cost.
- **Amortized cost**: reflects the amounts prepaid for yearly/monthly subscriptions, and reserved instances, which are amortized on a daily basis. For example, if you purchase a one-year cloud service at $365 USD, the amortized cost per day is $1 USD. For details about how to calculate amortized costs, see **Overview of Amortization Rules**. Cash coupons are not considered when the cost is amortized. To learn about the amortized cost after cash coupons are applied, see the net amortized cost.

2.4 Data Precision

- Original costs and billed amounts are calculated with the same precision.
- Amortized costs are rounded off, with a slight precision difference:
  - The amounts displayed on the Cost Center pages are rounded off to the 2nd decimal place.
  - The amounts included in exported cost details are calculated to the 8th decimal place.
- The costs for the following orders need to be amortized:
  - Yearly/Monthly subscriptions
  - Reserved instances
  - Monthly-settled CDN services (if enabled)

3 Overview

You can learn about frequently used Cost Center functions on the **Overview** page.



Cost Management Overview

This area displays the following dimensions of cost management data:

- **Month-to-Date Costs**: month-to-date original costs (amount due).
- **Forecasted Month-End Costs**: original costs (amount due) forecasted from the beginning to the end of the current month. Cost forecasts are produced based on your historical costs.
- **Actual Overruns**: the number of actual cost and usage budgets that have overrun in the current reset period.

  Forecast Overruns: the number of cost and usage budgets that are forecasted to overrun in the current reset period.
- **Cost Anomalies (Last 30 Days)**: the number of cost anomalies in the last 30 days.
- **Estimated Monthly Savings**: the total estimated monthly cost savings of all resources that can be optimized.

Current Month Breakdown

This area displays the cost breakdowns of the current month by service type, enterprise project, cost tag, cost category, linked account, and region.

- **Service Type**: type of a cloud service
- **Enterprise Project**: the enterprise project that cloud resources belong to.
- **Cost Tag**: used to track costs of resources associated with each other in an enterprise.

  If you are using a member account associated for unified accounting, you can only use the cost tags activated by the master account.
- **Cost Category**: used to automatically group your costs based on the rules you configured.

  If you are using a member account associated for unified accounting, you can only use the cost categories created by the master account.
- **Linked Account**: the Huawei Cloud account that the cloud resources belong to.

  If you are using a master account, you can select your associated member accounts to view their cost data.
- **Region**: a cloud service region that provides public cloud service resources independently and serves a large geographical area.

Current Month Trends

The line chart on the page displays the following dimensions of current month costs:

- **Last month costs**: original costs generated for the last month
- **Current month costs**: original costs already generated for the current month
- **Forecasted costs**: total original costs that may be generated in the current month. Such costs are forecasted based on the costs for historical months, regardless of the impact of current month costs.

Top 5 Costs By MoM Growth

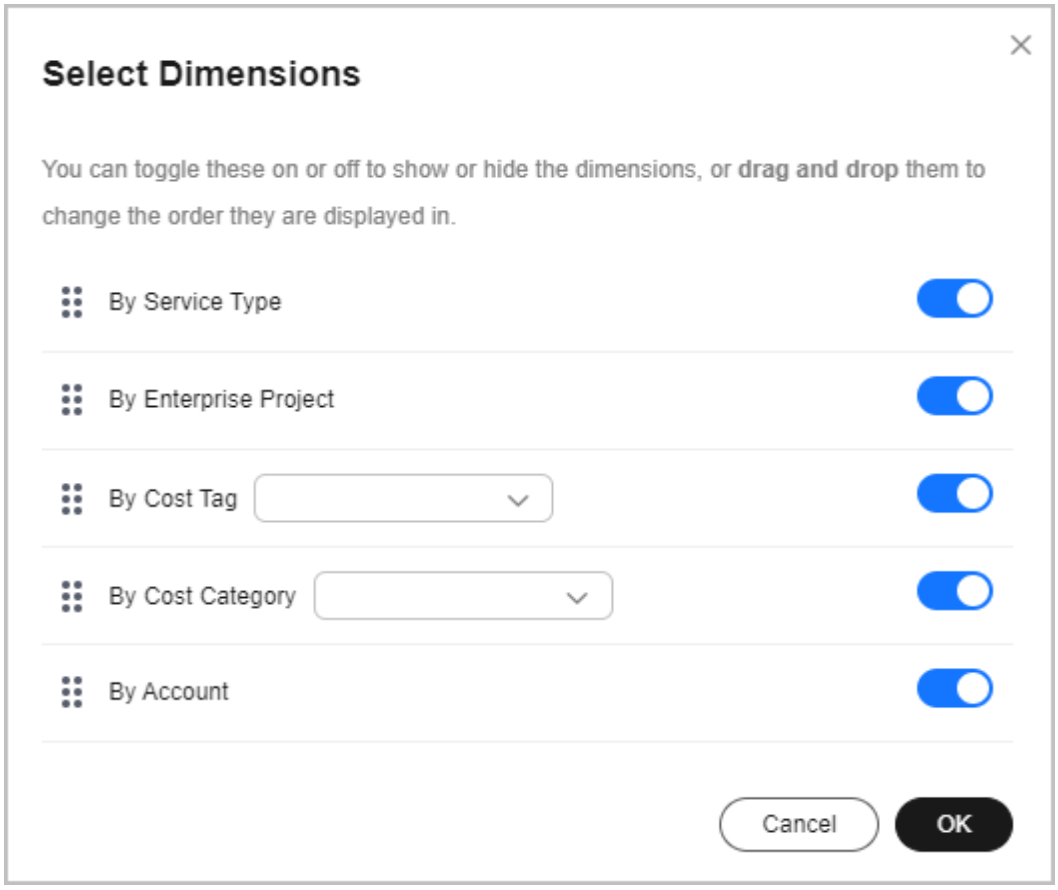
This area displays the top 5 costs by MoM growth ($). The data can be displayed by service type, enterprise project, cost tag, cost category, or linked account.

- **MoM Growth ($)**: MoM growth = Month-to-date costs – Last month costs for the same period
- **MoM Growth (%)**: The MoM growth (%) is calculated as follows:

$$\text{MoM growth (\%)} = \frac{\text{Month-to-date costs} - \text{Last month same-period costs}}{|\text{Last month same-period costs}|} \times 100\%$$

- **Month-to-Date Cost (USD)**: original costs generated from the beginning to the current date of the month
- **Last Month Same-Period Cost (USD)**: original costs generated in the same period of the last month

You can toggle the provided switches on or off to show or hide specific dimensions, and drag and drop them to change the order they are displayed in. In addition, you can give default values for cost tags and cost categories.



What's New

This area displays the latest information about function releases and optimizations in Cost Center. You can click **Learn more** to view the list of all function updates in Cost Center.

Cost Assistant

- **Maturity Score**: The maturity score of cost management is rated based on how thoroughly your costs are allocated. A higher percentage unallocated indicates a lower maturity score.
- **Recommended Actions**: This area provides recommendations for better cost management based on background data. The recommendations cover cost analysis, budget management, cost anomaly detection, and cost optimization.

Cost Allocation

Cost allocation shows you the percentage of costs that are not allocated when you use a particular cost allocation method. These costs cannot be allocated to specific applications, teams, or other meaningful groups. A lower percentage means your costs are allocated more completely. It means costs are being well managed in your organization.

NOTE

The percentages unallocated are displayed for up to five cost allocation methods.

If you have more than five cost tags or cost categories, you can click **Preferences** to select particular ones as needed.

- **Percentage Unallocated**: You can allocate your costs by enterprise project, cost tag, and cost category.
  a. Enterprise project: When you choose this cost allocation method, **Percentage Unallocated** shows you the percentage of month-to-date (MTD) costs that are not assigned to any specific enterprise projects but are allocated to the default enterprise project or are grouped as **Not categorized**.
  b. Cost category: When you choose this cost allocation method, **Percentage Unallocated** shows you the percentage of MTD costs that do not adhere to any cost category rules but are grouped as **Unallocated Costs** and **Not categorized**.
  c. Cost tag: When you choose this cost allocation method, **Percentage Unallocated** shows you the percentage of MTD costs that do not match any cost tags but are grouped as **Not categorized**.
- **MoM Change**: MoM change = (Percentage of MTD costs that are not allocated – Percentage of last month costs that are not allocated)/Percentage of last month costs that are not allocated

  NOTE

  It may take 24 to 48 hours for **Percentage Unallocated** to be displayed. The percentage unallocated of the 1st and 2nd in the current month is calculated based on the last month's data.

4 Cost Assistant

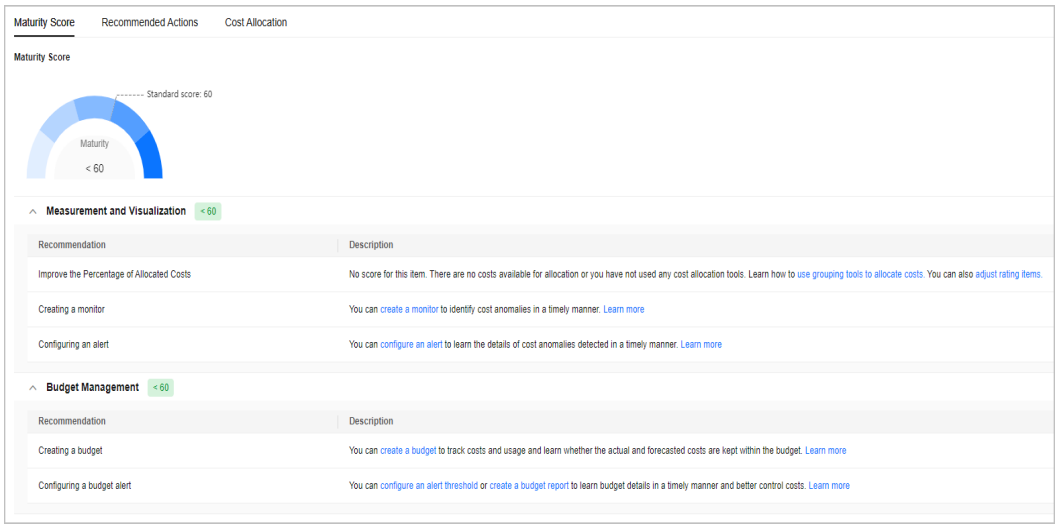
Cost Management Maturity Score

The cost management maturity score is calculated based on how thoroughly your costs are allocated. More capabilities are coming soon.

NOTE

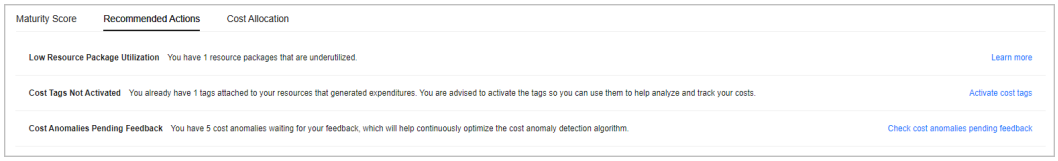
A higher percentage unallocated indicates a lower maturity score.

Cost Center analyzes your cost allocation by enterprise project and cost tag, and rates the cost management maturity based on the optimal allocation method.



Recommended Actions

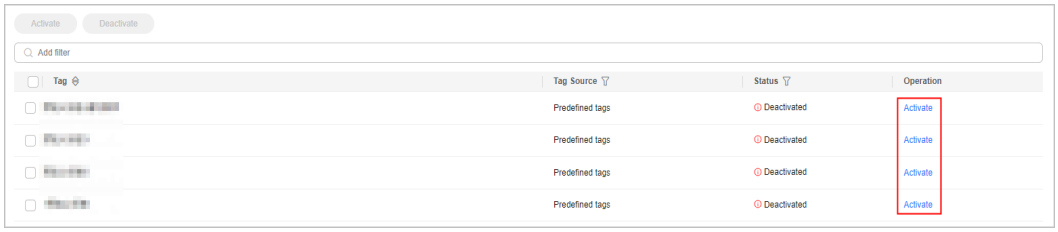
Cost Center provides recommendations for better cost management based on background data. The recommendations cover cost analysis, budget management, cost anomaly detection, and cost optimization.



Example Recommendations

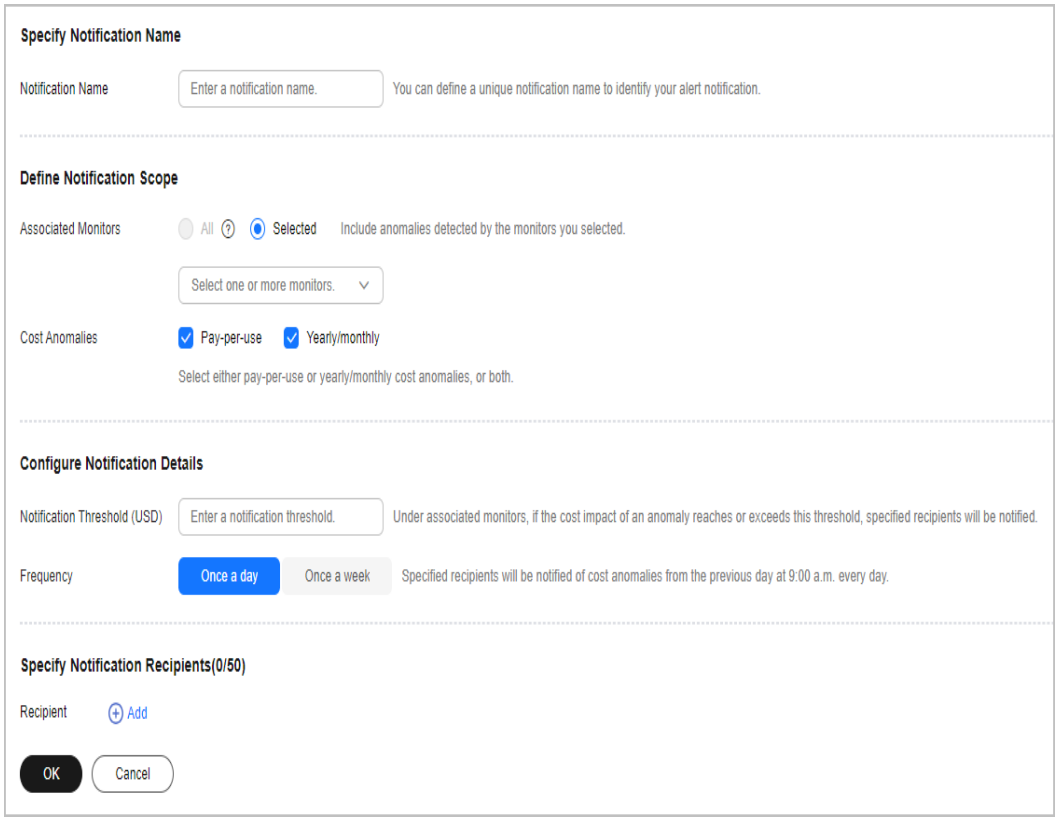
- **Example of cost allocation**

Cost Tags Not Activated: This is displayed if you already have tags attached to your resources but you have not activated them. In this case, you are advised to activate the tags useful for cost allocation to help you analyze and group your costs.



- **Example of cost anomaly detection**

No Alert Notifications: This is displayed if you have cost anomalies detected recently, but you have not configured any alerts for them. In this case, you are advised to configure alerts to help you identify anomalies in a timely manner.



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NOTE

It may take 24 to 48 hours for **Percentage Unallocated** to be displayed. The percentage unallocated of the 1st and 2nd in the current month is calculated based on the last month's data.

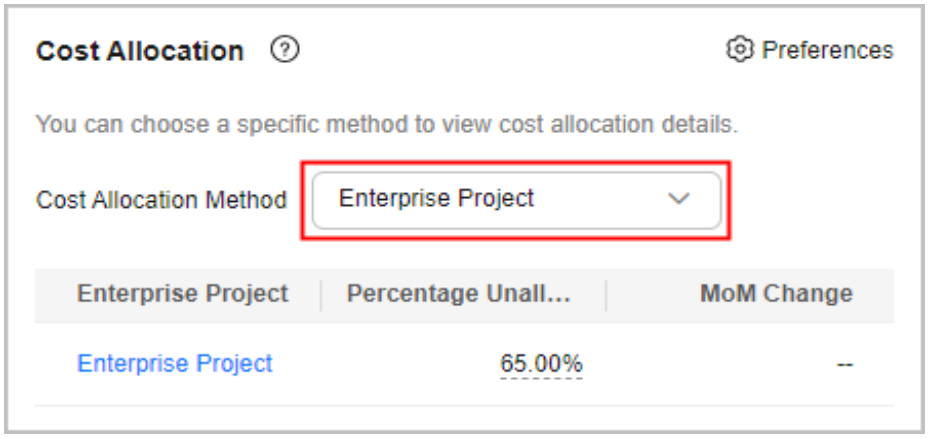
Increasing the Percentage Allocated via Cost Assistant

You use perform the following procedure to improve the percentage of costs that are allocated by enterprise project (as an example). You can use other cost allocation methods as required.

Step 1 Access the **Overview** page.

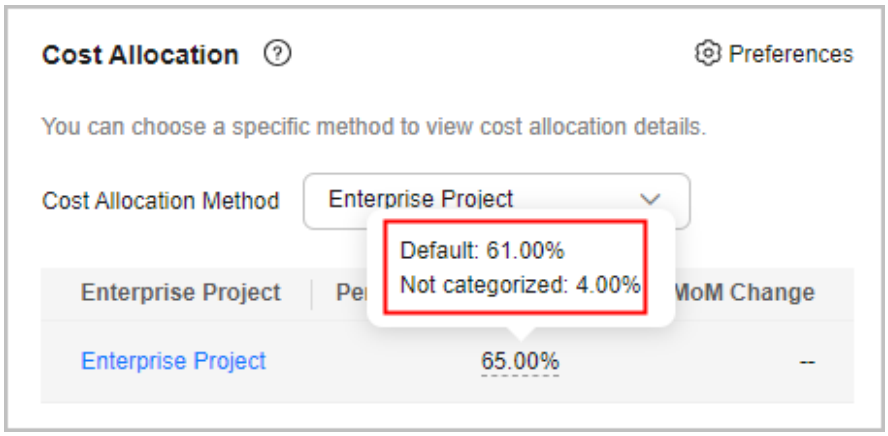
Step 2 Select a specific method from **Cost Allocation Method**.

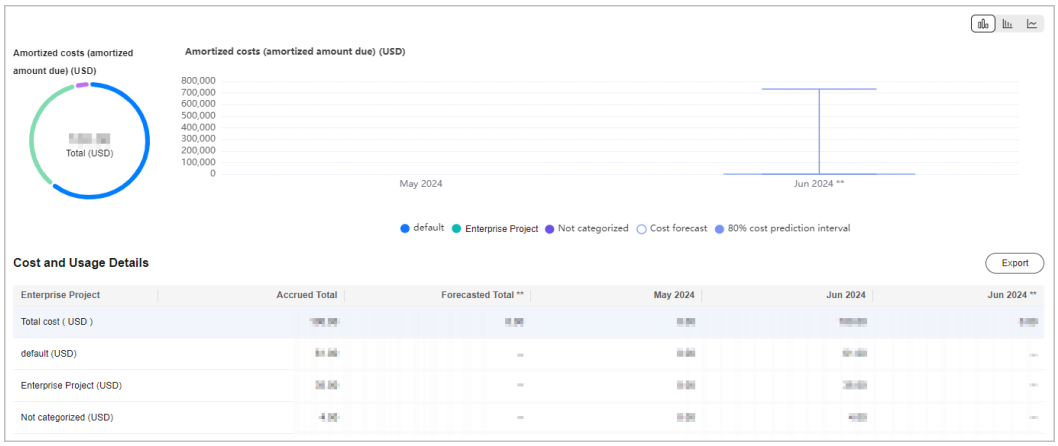
In the **Cost Allocation** area, set **Cost Allocation Method** to **Enterprise Project**.



Step 3 View cost allocation.

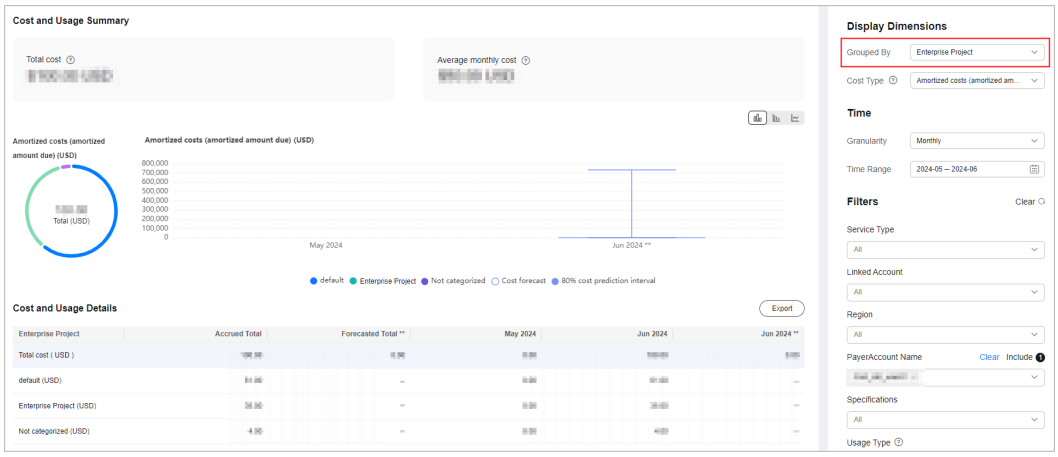
The cost allocation shows how costs are allocated by enterprise project. When you hover on the percentage unallocated, you will see the unallocated costs assigned to the "default" enterprise project and those not categorized (those cannot be assigned to any enterprise project). You can click the enterprise project link to access the **Cost Analysis** page, where you can view the details of cost analysis.





Step 4 Go to **Cost Analysis** to view details.

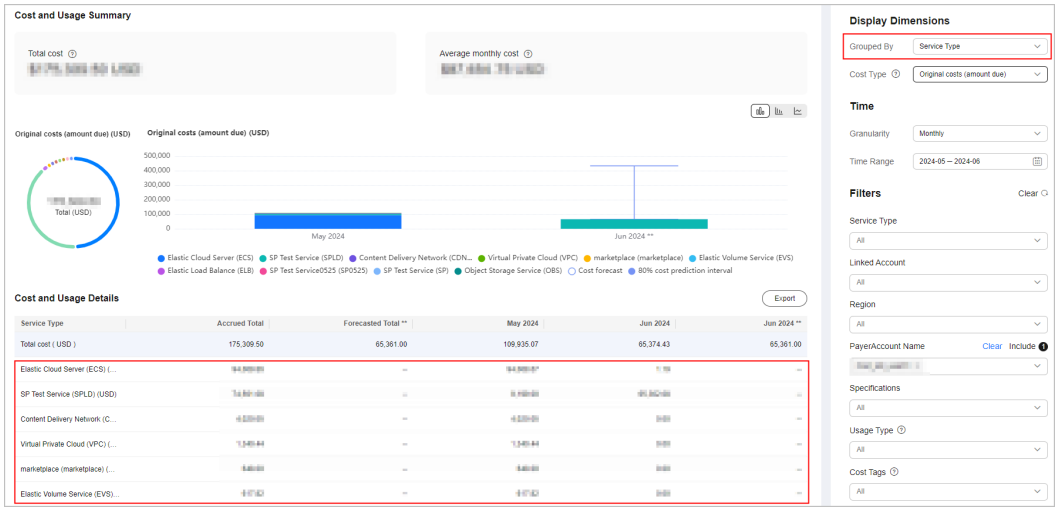
- Since you set **Cost Allocation Method** to **Enterprise Project**, **Group By** is automatically **Enterprise Project**.
- You can view the allocation of your total costs by enterprise project.
- **Not categorized** indicates that certain costs cannot be allocated to any enterprise projects. **default** represents the default enterprise project.



Generally, both **Not categorized** and **default** indicate that you are not governing resources by enterprise project. If you select **Enterprise Project** as your cost allocation method, you are advised to govern resources by enterprise project. Proper planning and organization are the prerequisites for cost allocation. For details, see **Confirming Your Cost Allocation Method**.

If your unallocated costs are shared costs, you are advised to split the shared costs in cost categories and select **Cost Categories** as your cost allocation method. For details, see **Mapping Cost Allocation Methods to Cost Category Rules**.

Step 5 Set **Grouped By** to **Service Type** to view the costs of each cloud service, and make plans to govern unallocated costs.



NOTE

You can log in to the console of a specific cloud service to change its enterprise project. Then, go back to Cost Center to allocate the costs of that service to the newly selected enterprise project. This way, the percentage of costs allocated to the default enterprise project will be reduced.

----End

5 Getting Started

Getting Started provides four core scenarios that guide you through your cloud financial management journey. It helps you learn how to use tools to achieve your work goals in each scenario. You can view guidelines, click specific functions, and access documents to learn more information. The core scenarios involve:

- **Cost Insights**: Presents cost breakdowns and trends and identifies cost anomalies in a timely manner.
- **Cost Organization**: Organizes your costs across meaningful business semantics, such as teams, projects, and applications.
- **Budget Management**: Allows you to create budgets, receive overrun alerts, and track your budgets.
- **Cost Optimization**: Offers appropriate billing modes and identifies idle resources to help lower your costs.

Table 5-1 Description

Scenario	Work Goal	Description	Reference
Cost Insights	Analyzing costs	Analyze your costs with preconfigured or custom reports, learn how your costs are broken down, review cost trends, and forecast your costs.	**Cost Analysis**
	Detecting cost anomalies	Identify any unexpected cost spikes and receive alerts.	**Cost Anomaly Detection**
	Obtaining cost details	Export original costs, amortized costs, and usage details to OBS (in OBT).	**Cost Details Export**
	Analyzing costs for longer term and at finer granularity	Enable hourly cost analysis and monthly multi-year cost analysis.	**Preferences**

Scenario	Work Goal	Description	Reference
	Analyzing CCE cluster costs	Learn about the cost breakdowns and trends of CCE clusters by namespace or workload.	**Cost Analysis**
	Splitting shared costs of certain services	Enable cost splitting. Only some of CDN, WSA, and Live traffic costs can be split by domain name.	**Viewing Split CDN Costs**
	Analyzing effective cost in a given billing cycle	Amortize costs of prepaid resources, such as those in yearly/monthly subscriptions and resource packages, on a daily basis to display the effective costs over the selected time range.	**What Are Amortized Costs?**
Cost Organization	Allocating costs by cost identifier	Use cost tags or enterprise projects to identify resources and allocate costs.	**Confirming Your Cost Allocation Method**
	Creating cost mapping rules	Use cost categories to create custom rules to map costs to Huawei Cloud cost allocation methods (linked accounts, enterprise projects, cost tags, and cost categories), helping you manage costs from your own service perspective.	**Allocating Costs By Cost Category**
	Splitting shared costs	Proportionally allocate shared costs (such as shared resources, platform services, and untagged costs) across an organization.	**Defining Shared Costs and Allocating Them to Enterprise Projects**
	Analyzing costs by allocation method	Understand your costs and usage by allocation method, for example, by linked account, enterprise project, cost tag, or cost category.	**Cost Analysis**
Budget Management	Creating and tracking budgets	Quickly create budgets for service types or business units, zero spend budgets, or create custom budgets with parameters specific to your use case. You can configure alerts to warn you if your budget has been exceeded or is forecasted to be exceeded.	**Budgets**

Scenario	Work Goal	Description	Reference
	Monitoring budget performance	Create and receive daily, weekly, and monthly reports to monitor the performance of your budgets.	**Budget Reports**
	Tracking utilization and coverage	Set a utilization or coverage target for savings plans and reserved instances. You can configure alerts to warn you if the actual utilization or coverage is below the target.	**Budgets**
Cost Optimization	Identifying cost optimization opportunities	Identify the opportunities for optimizing resources and changing billing modes to save costs.	**Cost Optimization**
	Getting savings plans purchase recommendations	Get recommendations for purchasing savings plans based on your historical pay-per-use usage.	**Following Cost Optimization Recommendations**
	Analyzing reserved instance utilization	Analyze how reserved instances are applied to your usage to help you determine whether they are fully utilized.	**Analyzing RIs**
	Analyzing reserved instance coverage	Check how much of your pay-per-use usage is covered by reserved instances to determine whether they are enough.	**Analyzing RIs**
	Viewing savings plans summary	Review savings plans-saved costs and optimization opportunities, and view your inventory of all savings plans.	**What Are Savings Plans?**
	Analyzing savings plans utilization	Analyze how savings plans are applied to your usage to help you determine whether they are fully utilized.	**Viewing the Usage of Savings Plans**
	Analyzing savings plans coverage	Check how much of your pay-per-use usage is covered by savings plans to determine whether they are enough.	**Viewing the Usage of Savings Plans**

6 Cost Analysis

6.1 Viewing Cost Analyses

On the **Cost Analysis** page, you can view the analyses of original costs and amortized costs. You can also specify a time range and view cost analyses at daily-, monthly-, or hourly-granularity if enabled on the **Preferences** page. In addition, you can select different dimensions or filters to dig deeper into cost data. For the scope of cost data you can analyze, see **Data Scope**.

API Reference

For details about how to use APIs to view cost analyses, see **Querying Cost Data**.

Preconfigured Reports

Cost Center comes preconfigured with some reports for typical cost analysis scenarios. You can also create custom reports to meet your own requirements. You can add the frequently used reports to your favorites for faster cost analysis.

NOTE

Preconfigured reports cannot be deleted, but you can copy or add them to your favorites.

Table 6-1 Preconfigured reports

Report Name	Description
Multi-Dimensional MTD Costs	Shows your MTD original costs grouped in various different ways, helping you learn about your cost breakdowns and flows. For details, see **Viewing Multi-Dimensional Cost Breakdowns**.
Monthly Costs by Service Type	Shows the monthly costs by service type. You can learn which types of services have had the highest original costs over the last six months.

Report Name	Description
Monthly Amortized Costs	Shows the monthly costs amortized over the last six months.
Daily Costs	Shows the daily original costs over the last three months and in the following one month.
Monthly Costs by Linked Account	Shows the monthly costs by linked account. You can learn the linked accounts with the highest original costs over the last six months.
Monthly Costs by Enterprise Project	Shows the monthly original costs for each enterprise project over the last six months.
Monthly Costs by Cost Tag	Shows the monthly original costs by cost tags you selected over the last six months.
Monthly Costs by Cost Category	Shows the monthly original costs by cost categories you selected over the last six months.
Monthly Costs by Region	Shows the monthly original costs for each region over the last six months.
Pay-Per-Use ECS Monthly Costs and Usage	Shows the monthly original costs and usage of pay-per-use ECSs over the last six months.
Container Cost Insights	Shows the cost breakdowns and trends of CCE clusters by namespace or workload. For details, see **Viewing Container Cost Breakdowns**.

Cost Analysis View

You can set the cost type, time, and filters to view your cost data. If needed, you can also modify advanced settings to meet your specific requirements. In addition, you can export the desired cost and usage details for downloading and viewing.

Display Dimensions

By default, Cost Center provides you with the analysis of original costs (amount due).

Cost Type

- **Original costs (amount due)**: the costs of cloud services purchased at the list price with available discounts applied. Before the billing date, this is an estimated amount.
- **Net original costs (actual payments)**: the original costs after cash coupons are applied. Before the billing date, this is the estimated amount without any cash coupons applied.
- **Amortized costs (amortized amount due)**: the effective costs after the original costs are amortized on a daily basis. For details about cost

amortization rules, see **Overview of Amortization Rules**. Before the billing date, this is an estimated amount.

- **Net amortized costs (amortized actual payments)**: amortized costs after cash coupons are applied. Before the billing date, this is the estimated amount without any cash coupons applied.

Dimensions/Filters

You can use different dimensions to identify the resource types, regions, or linked accounts that have incurred the highest costs.

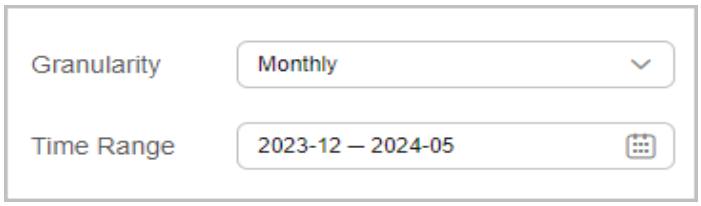
You can use the dimensions listed below for cost analysis.

Dimension	Description
Service Type	Type of a cloud service. Example: Elastic Cloud Server (ECS)
Resource Type	The type of the resources of a cloud service. Example: Cloud servers
Linked Account	The Huawei Cloud account that the cloud resources belong to. If you are using a master account, you can select your associated member accounts to view their cost data.
PayerAccount Name	The account used to pay for Huawei Cloud resources. • Generally, resources are used by this account. • For member accounts that are associated with a master account for unified accounting, **PayerAccount Name** is the enterprise master account. The master account can change the value of **PayerAccount Name** to view the cost data of the member accounts that are not associated for unified accounting.
Region	A cloud service region that provides public cloud service resources independently and serves a large geographical area.
AZ	A physically isolated zone where resources have their own independent power supply and internal networks. One region can have multiple AZs, and if one AZ becomes faulty, the other AZs in the same region can still provide services. AZs in the same region can access each other as they are on the same intranet.

Dimension	Description
Enterprise Project	The enterprise project selected when you purchase a cloud service. If you have not organized your resources by enterprise project, the following may occur: • A default enterprise project named **default** is assigned to cloud services, and the costs of these services are categorized as part of the **default** enterprise project by default. • Cloud services do not support cost allocation by enterprise project, and the costs of those services will be displayed as **Not categorized**. **NOTE** An enterprise master account can select enterprise projects by linked account, except the default enterprise project and those not categorized.
Specifications	Specifications of cloud services.
Billing Mode	Billing modes include yearly/monthly, pay-per-use, and reserved instance.
Usage Type	The way a pay-per-use cloud service is billed.
Bill Type	The bill type of an item, for example, expenditure-purchase and expenditure-hourly billing.
Business Entity	The business entity that a cloud service belongs to. Example: Huawei Cloud
Cost Tags	Used to track costs of resources associated with each other in an enterprise. For more information, see **Activating Cost Tags**. If you are using a member account associated for unified accounting, you can only use the cost tags activated by the master account.
Resource Name/ID	The name or unique ID of a cloud service resource.
Cost Categories	A tool used to automatically group your costs based on the defined rules. For details, see **Overview of a Cost Category**. If you are using a member account associated for unified accounting, you can only use the cost categories created by the master account.

Specifying a Time Range

You can view your cost data at a specific granularity within a given time range.



Granularity

- **Daily**: View cost data by the day. You are provided with daily analysis of cost data going back as far as the last six months.
- **Monthly**: View cost data by the month.

  NOTE

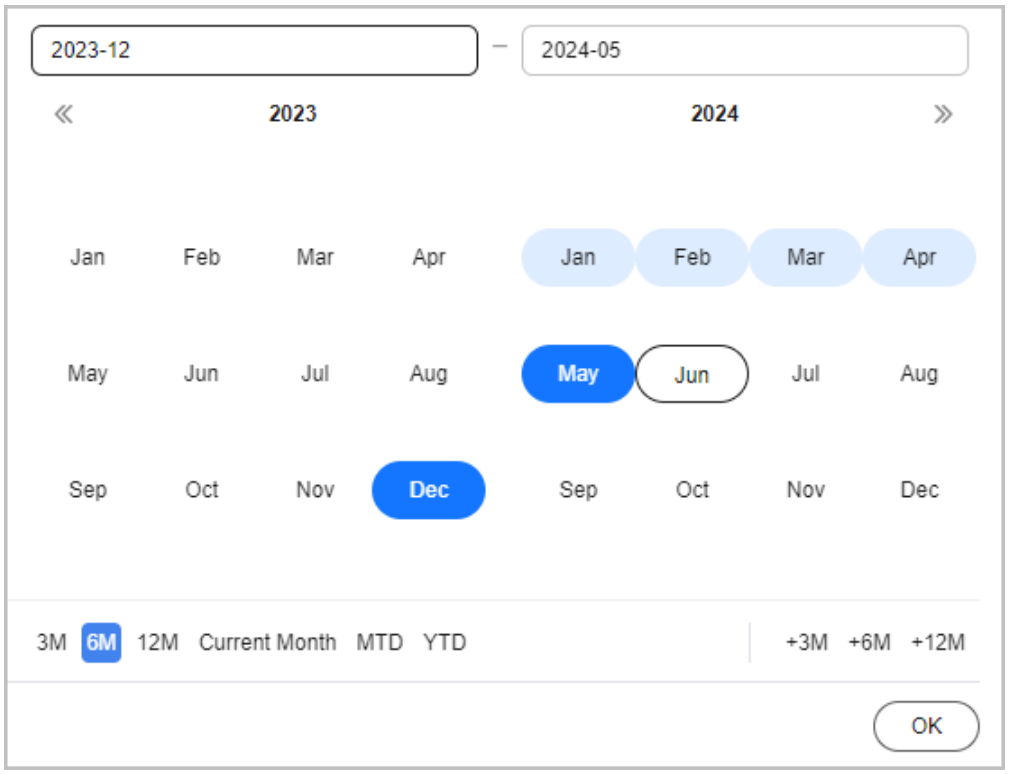
  On the **Preferences** page, if you toggle on the **Monthly Multi-Year Cost Analysis** option, Cost Center will present monthly analysis of cost data going back as far as the last 38 months.
- **Hourly**: View cost data by the hour.

  NOTE

  On the **Preferences** page, if you toggle on the **Hourly Cost Analysis** option, Cost Center will present original costs by the hour from the last 14 days.

Time Range

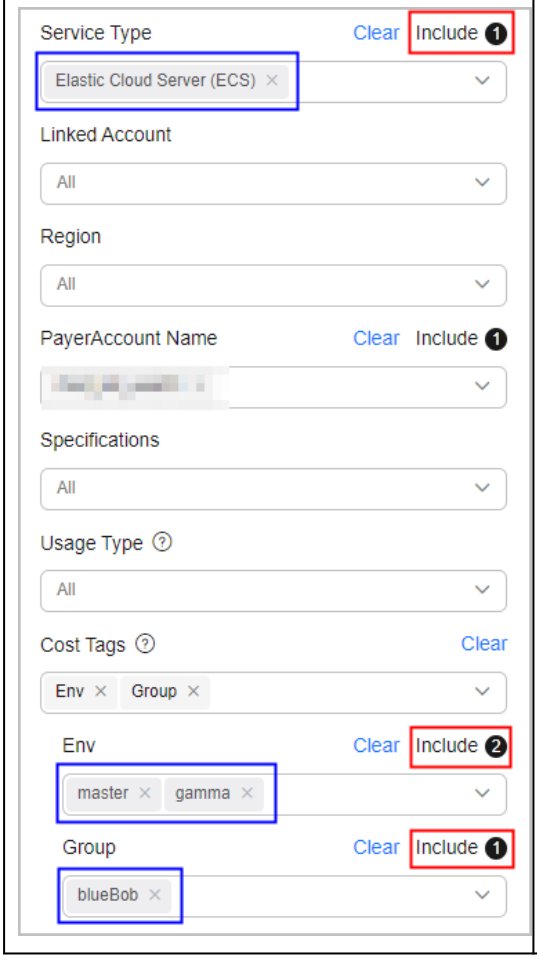
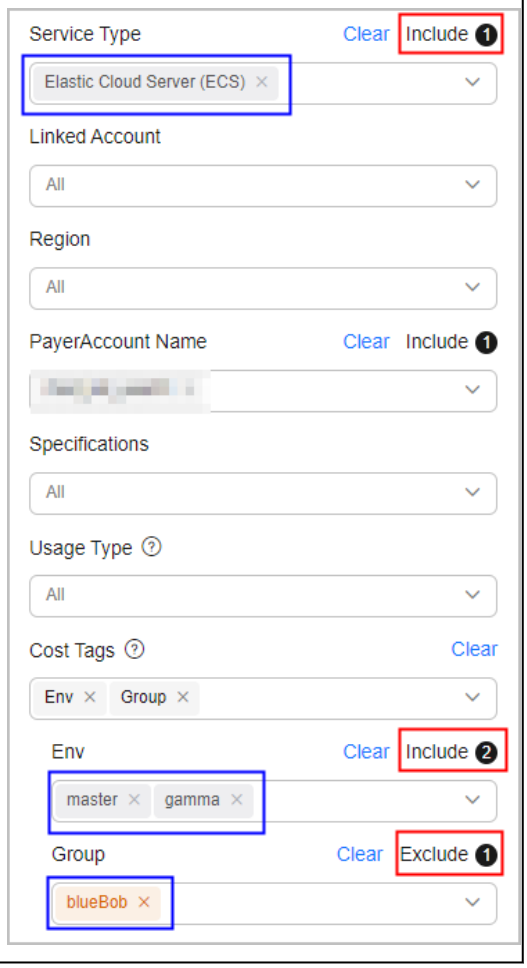
- **7D**: the cost data for the last 7 days (excluding the current day)
- **14D**: the cost data for the last 14 days (excluding the current day)
- **30D**: the cost data for the last 30 days (excluding the current day)
- **MTD**: the month-to-date cost data
- **3M**: the cost data for the last 3 months (excluding the current month)
- **6M**: the cost data for the last 6 months (excluding the current month)
- **12M**: the cost data for the last 12 months (excluding the current month)
- **YTD**: the year-to-date cost data
- **Current Month**: If there is sufficient historical cost data, Cost Center will display the cost data generated in the past days of the month and the forecasted cost data in the coming days of the month.
- **+1M**: If there is sufficient historical data, the forecasted cost data of the next month will be displayed.
- **+3M**: If there is sufficient historical data, the forecasted cost data of the next 3 months will be displayed.
- **+6M**: If there is sufficient historical data, the forecasted cost data of the next 6 months will be displayed.
- **+12M**: If there is sufficient historical data, the forecasted cost data of the next 12 months will be displayed.
- Custom: You can select a specific time range for data query.



Setting Filters

You can select any combination of filters to control which datasets are displayed.

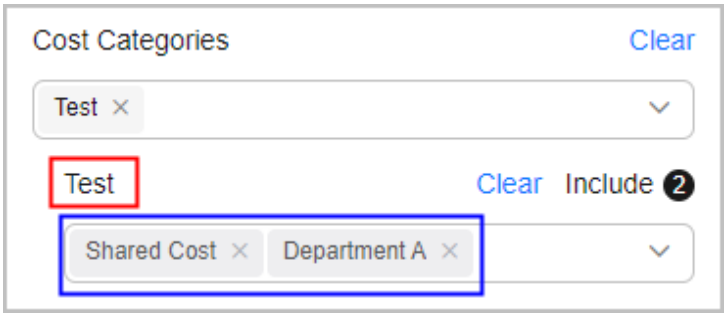
If you select multiple filters, only results meeting all filtering criteria will be displayed. However, if you select multiple items for any given filter, results meeting any of the items selected will be displayed.

Example 1	Example 2
When you filter data based on the filter criteria below, the cost data meeting all these requirements will be displayed. 1. The service type is **Elastic Cloud Server (ECS)**. 2. The value of the tag key **Env** is **master** or **gamma**. 3. The value of the tag key **Group** is **blueBob**. 	When you filter data based on the filter criteria below, the cost data meeting all these requirements will be displayed. 1. The service type is **Elastic Cloud Server (ECS)**. 2. The value of the tag key **Env** is **master** or **gamma**. 3. The tag key **Group** has any value except for **blueBob**. 

NOTE

You can select up to 50 items for each filter. Under the **Cost Category** or **Cost Tag** filter, you can select up to 20 items for a level-1 option and up to 50 items for a level-2 option at a time.

As shown in the following figure, the option marked with the red box is considered a level-1 option, and the options marked with the blue box are considered level-2 options.



You can use the filters listed below for cost analysis.

Filter	Description
Service Type	Type of a cloud service. Example: Elastic Cloud Server (ECS)
Resource Type	The type of the resources of a cloud service. Example: Cloud servers
Linked Account	The Huawei Cloud account that the cloud resources belong to. If you are using a master account, you can select your associated member accounts to view their cost data.
Region	A cloud service region that provides public cloud service resources independently and serves a large geographical area.
PayerAccount Name	The account used to pay for Huawei Cloud resources. • Generally, resources are used by this account. • For member accounts that are associated with a master account for unified accounting, **PayerAccount Name** is the enterprise master account. The master account can change the value of **PayerAccount Name** to view the cost data of the member accounts that are not associated for unified accounting.
AZ	A physically isolated zone where resources have their own independent power supply and internal networks. One region can have multiple AZs, and if one AZ becomes faulty, the other AZs in the same region can still provide services. AZs in the same region can access each other as they are on the same intranet.

Filter	Description
Enterprise Project	The enterprise project selected when you purchase a cloud service. If you have not organized your resources by enterprise project, the following may occur: • A default enterprise project named **default** is assigned to cloud services, and the costs of these services are categorized as part of the **default** enterprise project by default. • Cloud services do not support cost allocation by enterprise project, and the costs of those services will be displayed as **Not categorized**. **NOTE** An enterprise master account can select enterprise projects by linked account, except the default enterprise project and those not categorized.
Specifications	Specifications of cloud services.
Billing Mode	Billing modes include yearly/monthly, pay-per-use, and reserved instance.
Usage Type	The way a pay-per-use cloud service is billed.
Bill Type	The bill type of an item, for example, expenditure-purchase and expenditure-hourly billing.
Business Entity	The business entity that a cloud service belongs to. Example: Huawei Cloud
PayerAccount Name	The account used to pay for Huawei Cloud resources. • Generally, resources are used by this account. • For member accounts that are associated with a master account for unified accounting, **PayerAccount Name** is the enterprise master account. The master account can switch the value of **PayerAccount Name** to view the cost data of the member accounts that are not associated for unified accounting management.
Cost Tags	Used to track costs of resources associated with each other in an enterprise. For more information, see **Activating Cost Tags**. If you are using a member account associated for unified accounting, you can only use the cost tags activated by the master account.
Resource Name/ID	The name or unique ID of a cloud service resource.
Cost Categories	A tool used to automatically group your costs based on the defined rules. For details, see **Overview of a Cost Category**. If you are using a member account associated for unified accounting, you can only use the cost categories created by the master account.

Advanced Settings

Costs

When **Cost Type** is set to **Original costs (amount due)**, you can select or deselect **Include discount**. If you select this option, discounts and truncated amounts will be included, and the cost is equal to the list price.

Show PoP cost/growth

- PoP cost = Total cost of the current period – Total cost of the previous period
- PoP growth is calculated as follows:

$$\text{PoP growth for total cost} = \frac{\text{Total cost of the current period} - \text{Total cost of the previous period}}{|\text{Total cost of the previous period}|} \times 100\%$$

You can select **Show PoP cost/growth** to see the details.

Show list price

The list price is the price of a product without any discounts applied. If you select this option, the list price will be displayed only for analysis of original costs in stacked charts.

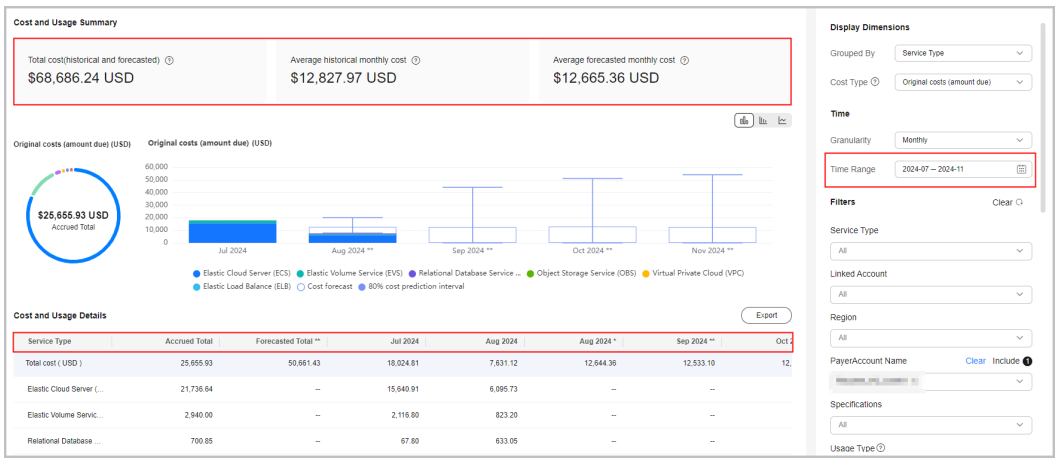
Cost and Usage Summary

Total cost: total cost in each day or month. If the time range you selected includes a point in time in the future, the total cost includes the forecasted cost. If the time range does not include any point in time in the future, the total cost does not include the forecasted cost.

Average historical monthly cost: the average of historical cost per month

Average forecasted monthly cost: the average of forecasted cost per month

For details, see **Table 6-2**.



NOTE

If the time range you selected covers both historical and future points of time, the cost data in the chart on the **Cost Analysis** page will be marked with an asterisk (*).

- No "*": historical costs
- *: the forecasted cost for the current day or month
- **: the forecasted cost for the future days or months

Table 6-2 Summary data

Time Range	Field	Description	Example
Historical time range	Total cost	The total cost in the historical time range	Suppose the current day is August 1. In the last three months, the cost for May was $60 USD, the cost for June was $100 USD, and the cost for July was $50 USD. In this case, the total cost is $210 USD, and the average monthly cost is $70 USD.
	Average daily/ monthly/ hourly cost	The average daily/ monthly/hourly cost of the total historical cost Average daily/monthly/ hourly cost = Historical total cost/Number of historical days, months, or hours	
Forecasted time range	Total cost	The total cost in the forecasted time range	Suppose the current day is August 1. In the next three months, the forecasted cost for September is $105 USD, the forecasted cost for October is $100 USD, and the forecasted cost for November is $95 USD. In this case, the total forecasted cost is $300 USD, and the average forecasted monthly cost is $100 USD.
	Average forecasted daily/ monthly cost	The average daily/ monthly cost of the total cost Average forecasted daily/monthly cost = Total forecasted cost/ Number of forecasted days or months **NOTE** Hourly costs cannot be forecasted.	

Time Range	Field	Description	Example
Historical and forecasted time range	Total cost	The total cost in the selected time range At the minimum time granularity, if the selected time range covers both the days or months with historical costs and other days or months with the forecasted cost, the total cost is equivalent to the forecasted cost.	Suppose the current day is July 17. The historical cost of June was $100 USD, the month-to-date cost for July is $50 USD, the forecasted cost for July is $120 USD, the forecasted cost for August is $150 USD, and the forecasted cost for September is $180 USD. • If you select the time range from June to August, the total cost is $370, the average historical monthly cost is $75 USD, and the average forecasted monthly cost is $135 USD. • If you select the time range covering only July, the total cost is $120, the average historical monthly cost is $50 USD, and the average forecasted monthly cost is $120 USD.
	Average historical daily/ monthly cost	The average daily/ monthly cost of the total historical cost Average historical daily/ monthly cost = Accrued total/Number of historical days or months **NOTE** Number of days or months include the current day or month with both historical and forecasted costs.	
	Average forecasted daily/ monthly cost	The average daily/ monthly cost of the total forecasted cost. Average forecasted daily/monthly cost = Total forecasted cost/ Number of forecasted days or months **NOTE** Number of days or months include the current day or month with both historical and forecasted costs.	

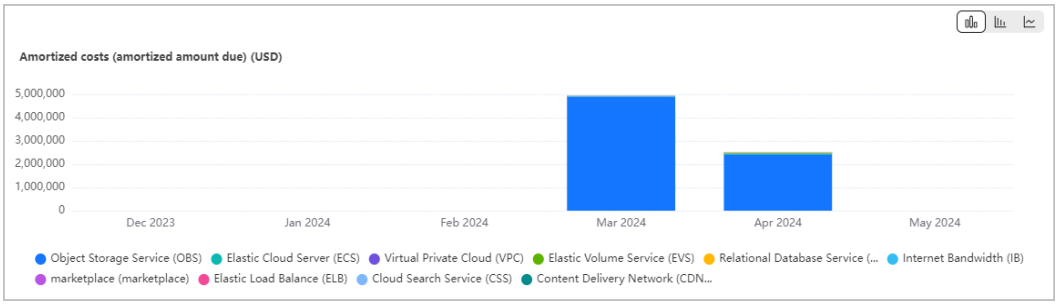
In Cost Center, you can also view cost data in stacked charts, bar charts, and line charts.

NOTE

A maximum of 11 data records can be displayed in a chart. If you select 11 or more data records, the top 10 data records and **Other** are displayed by default. **Other** indicates the total number of the remaining data records.

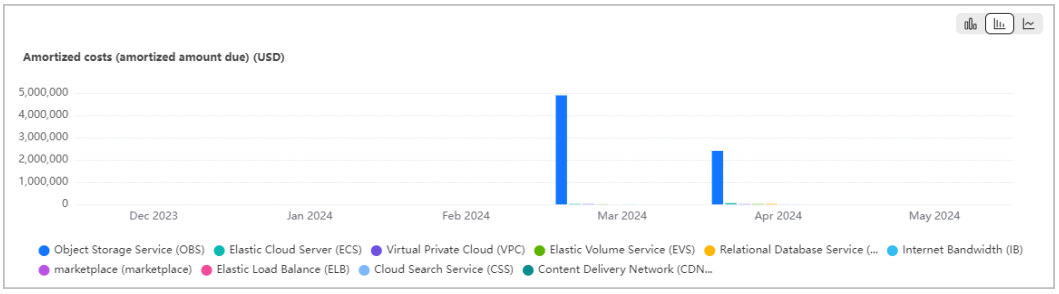
- Stacked chart

Figure 6-1 Stacked chart



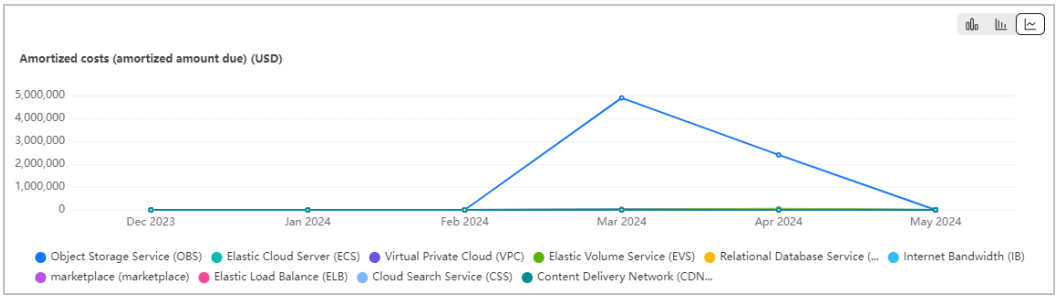
- Bar chart

Figure 6-2 Bar chart



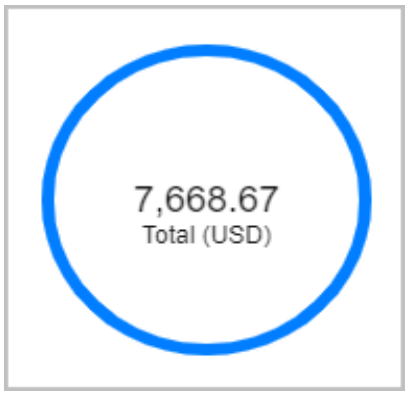
- Line chart

Figure 6-3 Line chart



- Donut chart

Figure 6-4 Donut chart



Creating a Custom Report

Step 1 Access the **Cost Analysis** page.

Step 2 Click **Start Custom Analysis**.

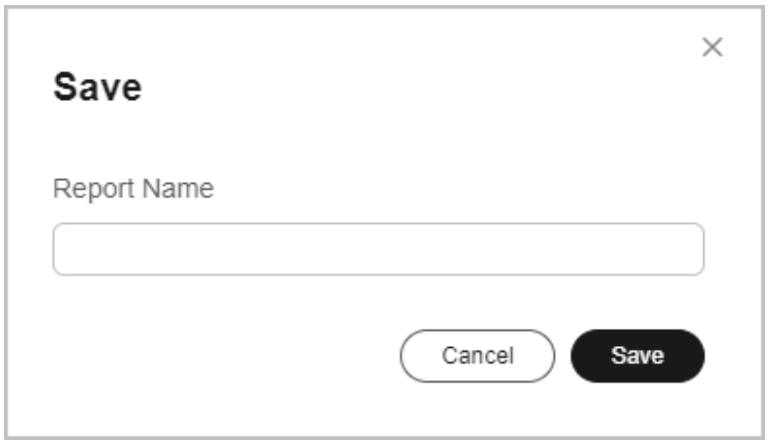
Step 3 Configure filters in the displayed page.

NOTE

For details about the filters, see **Setting Filters**.

Step 4 Click **Save** on the upper right corner.

Step 5 Specify a name for the report, and click **Save**.

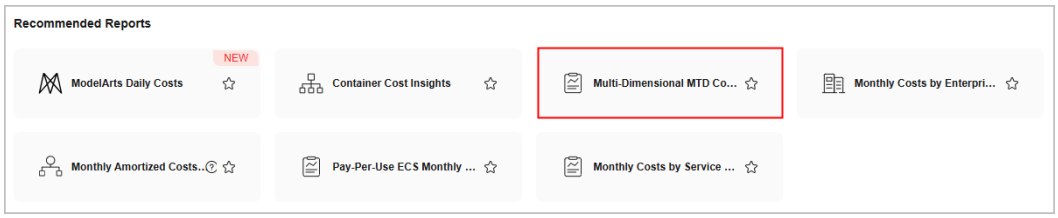


----End

Viewing Multi-Dimensional Cost Breakdowns

Step 1 Access the **Cost Analysis** page.

Step 2 Select the preconfigured report **Multi-Dimensional MTD Costs**.



NOTE

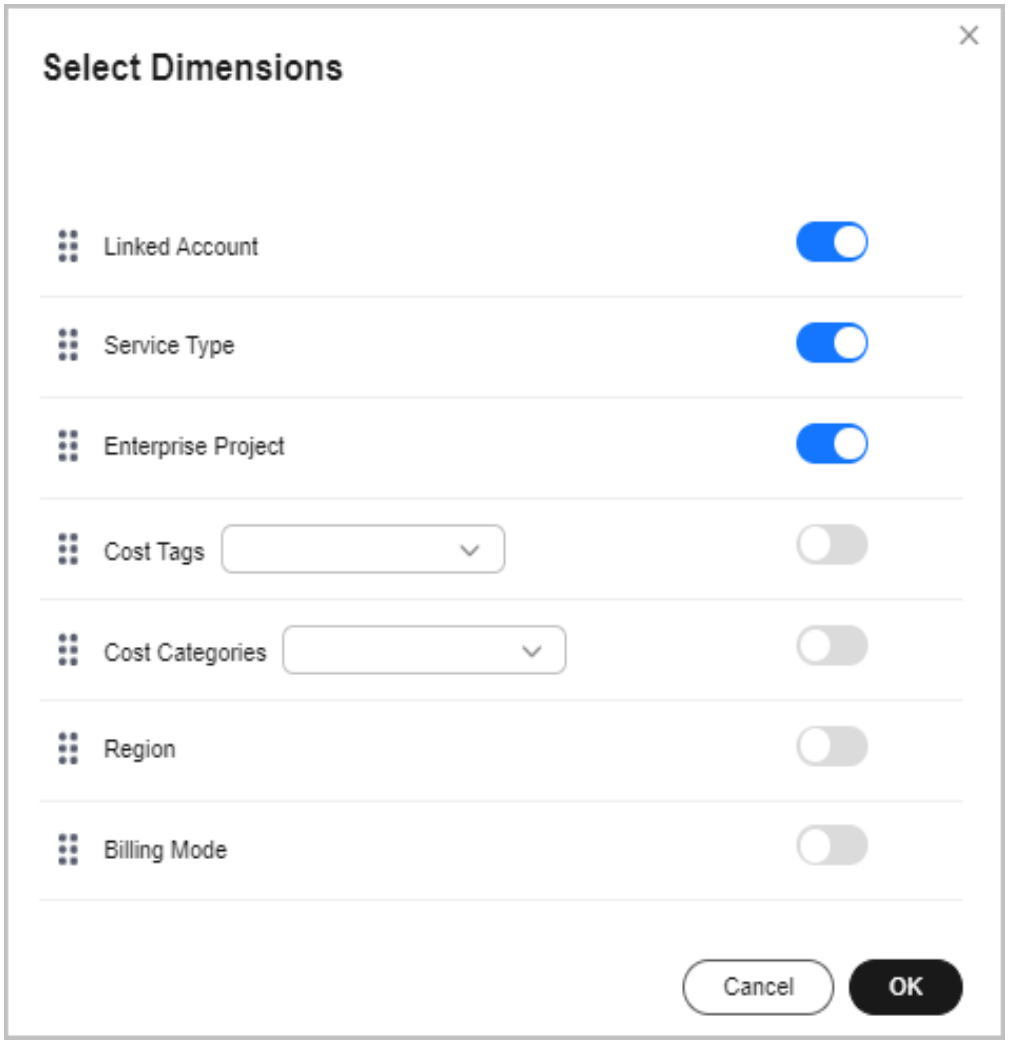
- The **Multi-Dimensional MTD Costs** report does not include forecasted costs.

Step 3 On the **Cost Analysis** page, select your query criteria. The cost data within the selected time range will be displayed in the specified dimension.

1. Change the display dimensions.

   Click **Edit** and select up to three dimensions.

   The following display dimensions are available: **Linked Account**, **Service Type**, **Enterprise Project**, **Cost Tags**, **Cost Categories**, **Region**, and **Billing Mode**.



NOTE

- The default display dimensions for multiple accounts are **Linked Account**, **Service Type**, and **Enterprise Project**.
- The default display dimensions for a single account are **Service Type**, **Enterprise Project**, and **Region**.

2. View the cost Sankey diagram.
   a. By default, the MTD original costs are displayed. You can change the time range. This analysis report does not include forecasted costs.
   b. In the Sankey diagram, you can view your cost breakdowns and flows.
      - The branch width of each display dimension is equal to that of the total cost. Each branch represents the cost breakdown in a particular dimension.
      - The width of each branch represents costs incurred. The wider the branch, the higher the costs.
      - The flow of each branch reflects the cost breakdown in each display dimension.

      NOTE

      Up to 10 cost branches can be displayed for each dimension. The 10th branch and later branches are all displayed as **Other**.
3. View cost data in the table.
   a. Click  in the table to expand multi-dimensional cost data.
   b. Click **Export** to export multi-dimensional cost data.
4. Switch cost analysis views.

   You can select another analysis view from the drop-down list. For example, you can switch among **Favorite Reports**, **Recommended Reports**, and **Recent Reports**.

Step 4 Click **Save As** in the right upper corner of the page to save the analyses as reports so that you can easily view cost analyses with the same filters.

----End

Viewing Cost Analyses

Step 1 Access the **Cost Analysis** page.

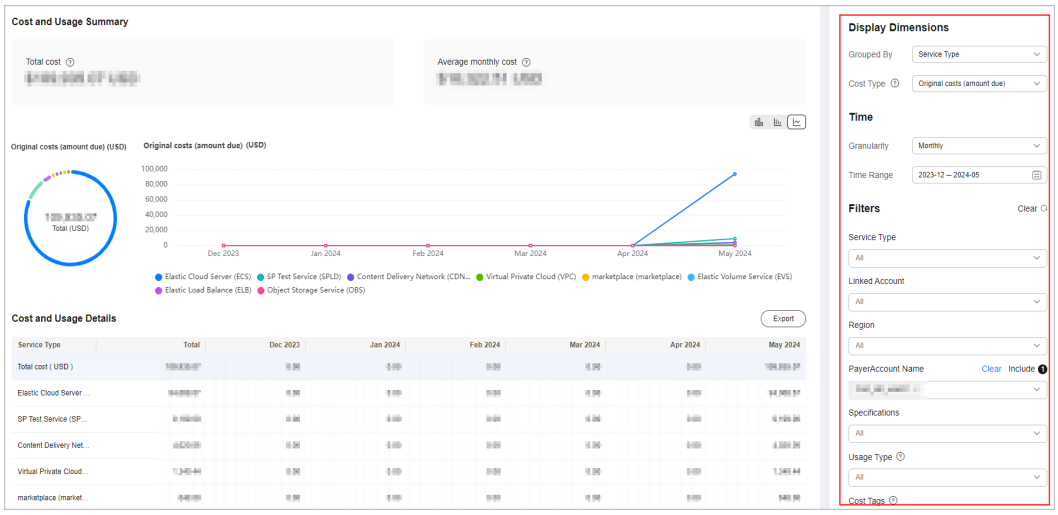
Step 2 Select a recommended report or a custom report.

NOTE

Huawei Cloud provides recommended reports for quick cost analysis.

You can save your cost analyses as custom reports if needed.

Step 3 Set search criteria to view desired cost data.



- If you set **Cost Type** to **Original costs (amount due)** or **Net original costs (actual payments)**, the data displayed on the page is nearly real-time.
- If you set **Cost Type** to **Amortized costs (amortized amount due)** or **Net amortized costs (amortized actual payments)**, it may take 24 to 48 hours before the most recent data is displayed.
- You can click **Export** to access the **Export History** page and download the **Cost Analysis - Overview** file.

Step 4 Click **Save** in the right upper corner of the page to save the analyses as reports so that you can easily view cost analyses with the same filters. When you view a saved report later, Cost Center displays the same type of report, but updated with the most recent data.

----End

Viewing Usage Analyses

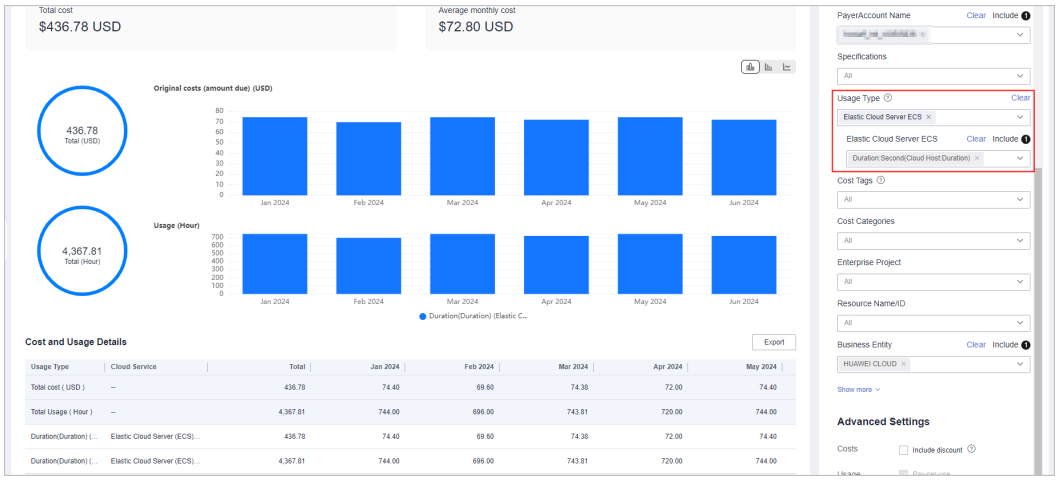
Step 1 Access the **Cost Analysis** page.

Step 2 Select the preconfigured report **Pay-Per-Use ECS Monthly Costs and Usage**.

Step 3 In the report view, Cost Center by default displays the cost data with **Service Type** set to **Elastic Cloud Server (ECS)** and **Usage Type** set to **Elastic Cloud Server ECS - Duration**.

NOTE

You can only set a single usage type to analyze usage.



- You can switch the display dimension to view the ECS usage data from another perspective. For example, if you want to view ECS usage analysis data by resource name/ID, you can set **Grouped By** to **Resource Name/ID**.

NOTE

By default, the current month's data is displayed, but you can choose to view monthly costs by **Resource Name/ID** from up to the last three months.

----End

Viewing Cost Amortization Details of Resource Packages

Step 1 Access the **Cost Analysis** page.

Step 2 On the **Cost Analysis** page, set search criteria. The resource package amortization data is displayed by cost type, bill type, display dimension, or service type.

1. Set the cost type.

   In this example, you can select **Amortized costs (amortized amount due)** or **Amortized net cost (amortized actual payments)** to view the amortized costs over the time range you selected.

2. Set the bill type.

   In this example, if you select **Expenditure-resource packages used**, the expenditures paid by using resource packages will be analyzed; if you select

Expenditure-resource packages unused, the expenditures not paid by using resource packages will be analyzed.

3. Set the summary dimension.

   You can select a specific summary dimension like enterprise project, tag, or resource ID, to apply the cost amortization results.

4. Switch the service type.

   In this example, select Object Storage Service (OBS) as the service type to analyze its resource packages.

   NOTE

   If your amortized costs increase unexpectedly, see **Why Does the Amortized Cost for the Latest Day in the Current Month Increase Unexpectedly?**

----End

Viewing Cost Amortization Details of Reserved Instances

Step 1 Access the **Cost Analysis** page.

Step 2 On the **Cost Analysis** page, set search criteria. The cost amortization data of reserved instances is displayed by bill type.

1. Set the cost type.

   In this example, you can select **Amortized costs (amortized amount due)** or **Amortized net cost (amortized actual payments)** to view the amortized costs over the time range you selected.

2. Set the bill type.

   In this example, if you select **Expenditure-reserved instances used**, the expenditures paid by using reserved instances will be analyzed; if you select **Expenditure-reserved instances unused**, the expenditures not paid by using reserved instances will be analyzed.

3. Set the summary dimension.

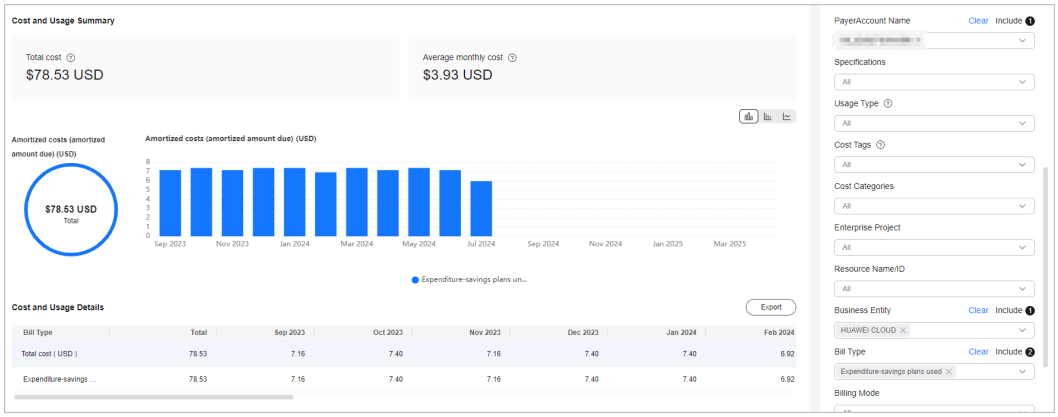
   You can set the summary dimension to **Bill Type** to apply the cost amortization to reserved instances.

----End

Viewing Cost Amortization Details of Savings Plans

Step 1 Access the **Cost Analysis** page.

Step 2 On the **Cost Analysis** page, set search criteria. The cost amortization data of savings plans is displayed by bill type.



1. Set the cost type.

   In this example, you can select **Amortized costs (amortized amount due)** or **Amortized net cost (amortized actual payments)** to view the amortized costs over the time range you selected.

2. Set the bill type.

   In this example, if you select **Expenditure-savings plans used**, the expenditures paid by using savings plans will be analyzed; if you select **Expenditure-savings plans unused**, the expenditures not paid by using savings plans will be analyzed.

3. Set the summary dimension.

   You can set the summary dimension to **Bill Type** to apply the cost amortization to savings plans.

----End

Viewing Monthly CDN Costs by Domain Name

Step 1 Access the **Cost Analysis** page.

Step 2 Select the preconfigured report **Monthly CDN Costs by Domain Name**.

NOTE

- Cost Center supports the analysis of CDN costs by domain name. If you have not enabled the shared cost splitting function, go to the **Preferences** page to enable it.
- The shared cost splitting function is free of charge, but cannot be disabled once enabled. When you enable this function, you can go to the **Cost Analysis** page to view the splitting results of amortized costs after 12:00:00 p.m. on the 4th day of the following month. For details, see **Enabling Cost Splitting**.

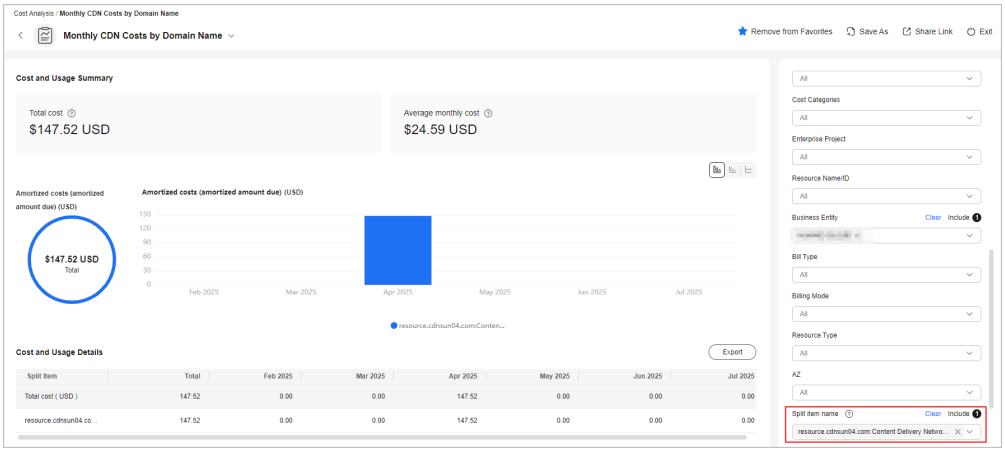
Step 3 View the costs, with **Service Type** being **Content Delivery Network (CDN)** and **Grouped By** set to **Split Item**.

Table 3 lists the default parameters for the report.

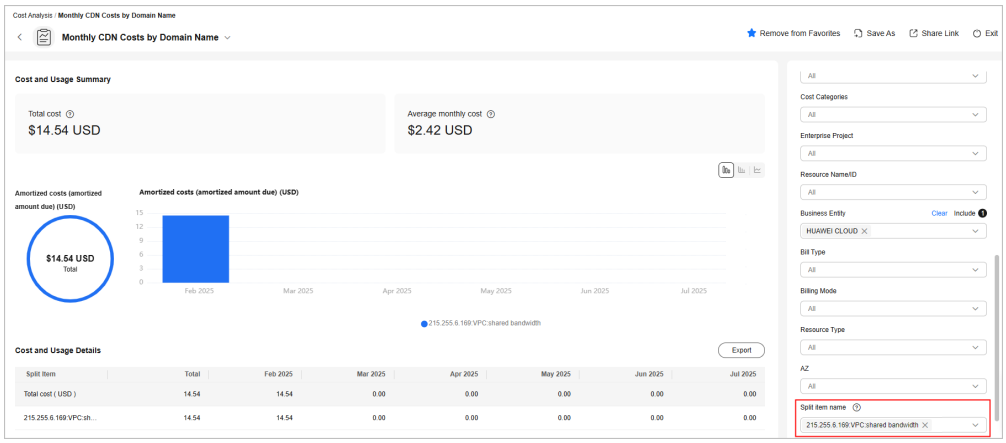
Table 6-3 Preset parameters for the report Monthly CDN Costs by Domain Name

Parameter	Default Value
Grouped By	Split Item
Cost Type	Amortized costs (amortized amount due)
Granularity	Monthly
Time Range	Last six months (by default)
Service Type	Content Delivery Network (CDN)

- To filter CDN costs by domain name, you can select the specified domain name in **Split Item** in the **Filters** area. For example, you can set **Service Type** to **Content Delivery Network (CDN)** and **Split Item** to **resource.cdnsun04.com: Content Delivery Network: CDN11**.



- To view the cost breakdown data of other cloud services, you can change the value of **Service Type**. For example, to view the cost breakdown data of shared bandwidth by IP address, you can set **Service Type** to **Virtual Private Cloud (VPC)** and **Split Item** to **215.255.6.169: VPC: shared bandwidth**.



----End

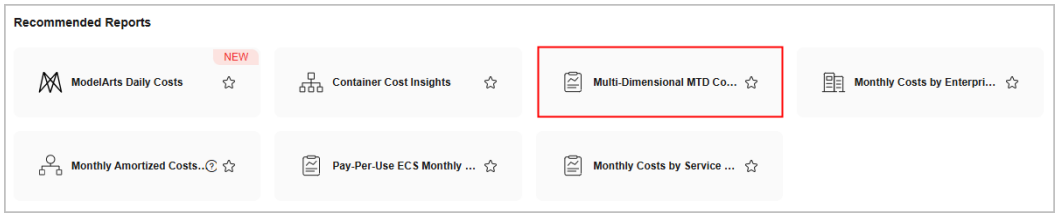
6.2 Common Scenarios

6.2.1 Viewing Multi-Dimensional Cost Breakdowns

Procedure

Step 1 Access the **Cost Analysis** page.

Step 2 Select the preconfigured report **Multi-Dimensional MTD Costs**.



NOTE

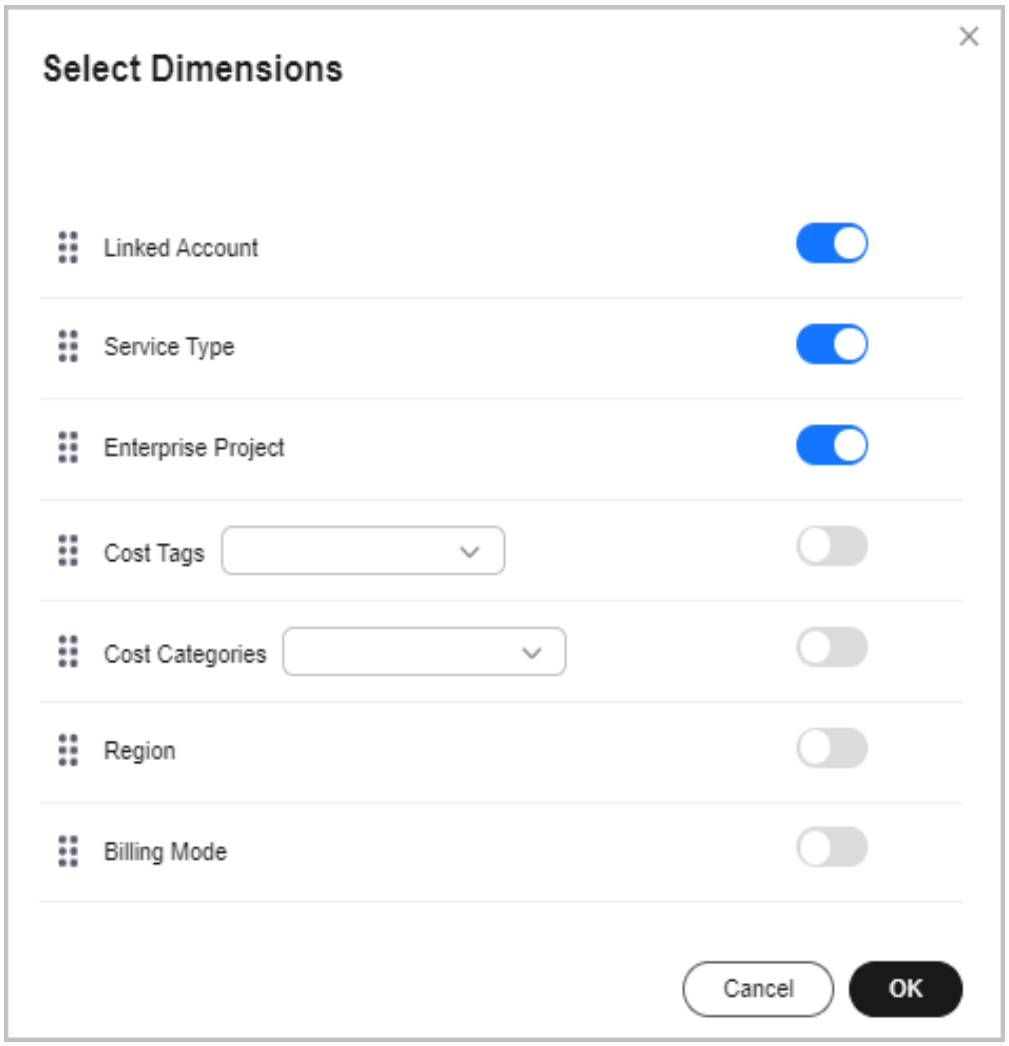
- The **Multi-Dimensional MTD Costs** report does not include forecasted costs.

Step 3 On the **Cost Analysis** page, select your query criteria. The cost data within the selected time range will be displayed in the specified dimension.

1. Change the display dimensions.

   Click **Edit** and select up to three dimensions.

   The following display dimensions are available: **Linked Account**, **Service Type**, **Enterprise Project**, **Cost Tags**, **Cost Categories**, **Region**, and **Billing Mode**.



NOTE

- The default display dimensions for multiple accounts are **Linked Account**, **Service Type**, and **Enterprise Project**.
- The default display dimensions for a single account are **Service Type**, **Enterprise Project**, and **Region**.

2. View the cost Sankey diagram.
   a. By default, the MTD original costs are displayed. You can change the time range. This analysis report does not include forecasted costs.
   b. In the Sankey diagram, you can view your cost breakdowns and flows.
      - The branch width of each display dimension is equal to that of the total cost. Each branch represents the cost breakdown in a particular dimension.
      - The width of each branch represents costs incurred. The wider the branch, the higher the costs.
      - The flow of each branch reflects the cost breakdown in each display dimension.

NOTE

Up to 10 cost branches can be displayed for each dimension. The 10th branch and later branches are all displayed as **Other**.

3. View cost data in the table.

   a. Click  in the table to expand multi-dimensional cost data.

   b. Click **Export** to export multi-dimensional cost data.

4. Switch cost analysis views.

   You can select another analysis view from the drop-down list. For example, you can switch among **Favorite Reports**, **Recommended Reports**, and **Recent Reports**.

Step 4 Click **Save As** in the right upper corner of the page to save the analyses as reports so that you can easily view cost analyses with the same filters.

----End

6.2.2 Viewing Container Cost Breakdowns

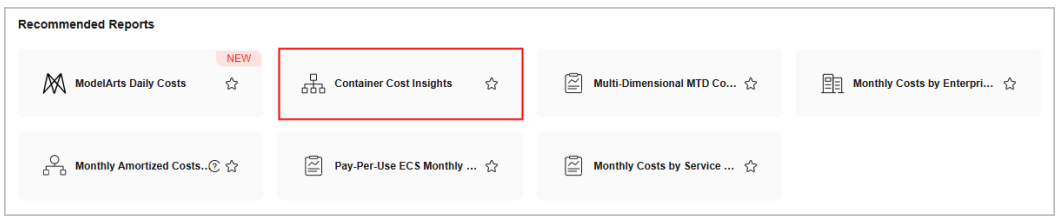
Constraints on Container Cost Data

- You can use container cost data as a reference for cost management but not for settlement and reconciliation with Huawei Cloud.
- You need to enable CCE cost sights by referring to **Enabling Cost Insights**. After three days, the CCE cost data will be displayed in Cost Center.
- Container cost data can only be analyzed as of July 1, 2024 (GMT+08:00).
- Container cost data comes from CCE. If the costs are split inappropriately, for example, if costs are not split to any namespace or workload, you need to access the CCE service to find possible causes. For details about service dependencies, see **Enabling Cost Insights**.

Procedure

Step 1 Access the **Cost Analysis** page.

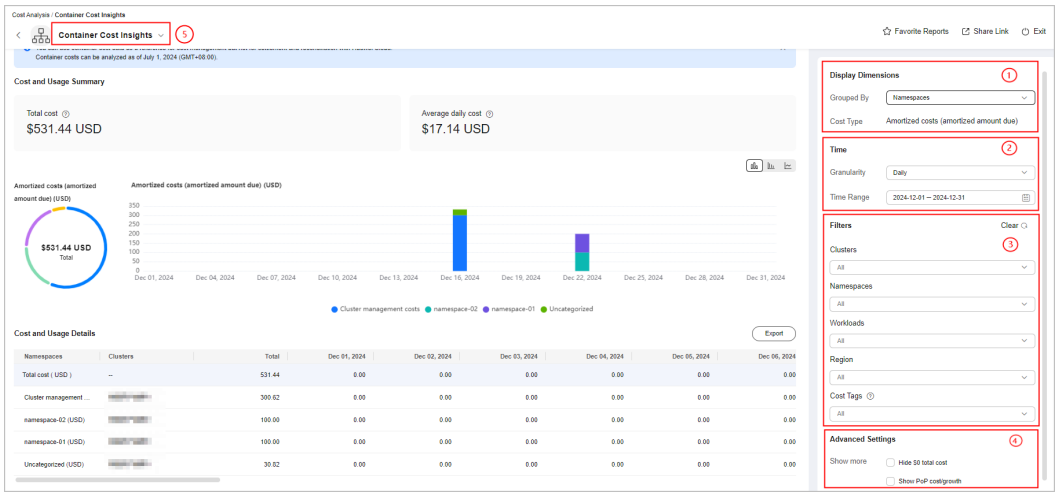
Step 2 Select the preconfigured **Container Cost Insights** report.



NOTE

- **Container Cost Insights** reports do not support cost forecasting.

Step 3 On the **Cost Analysis** page, select your query criteria. The container cost data within the selected time range will be displayed in the specified dimension.



1. You can view your container costs by cluster, namespace, workload, region, and cost tag.

   NOTE

   By default, amortized costs (amortized amount due) are presented and the cost type cannot be changed.

2. You can choose to view costs by the day or month.

   a. **Daily**: You can view the month-to-date costs, and also the costs from the last 7 days, 14 days, 30 days, or 3 months.

   b. **Monthly**: You can view the costs from the last 3, 6, or 12 months.

   NOTE

   - Future dates cannot be included in the time range.
   - Costs cannot be displayed by the hour.

3. You can select any combination of filters to control which datasets are displayed.

Table 6-4 Filter items for container cost insights

Item	Description
Cluster	An open-source container orchestration engine for automated deployment, scaling, and management of containerized applications.
Namespace	A collection of resources and objects. Multiple namespaces can be created in a single cluster with the data isolated from each other.
Workload	An application running on Kubernetes. No matter how many components are there in your workload, you can run it in a group of Kubernetes pods.
Region	A cloud service region that provides public cloud service resources independently and serves a large geographical area.

Item	Description
Cost Tag	Used to track costs of resources associated with each other in an enterprise. For more information, see **Activating Cost Tags**. If you are using a member account associated for unified accounting, you can only use the cost tags activated by the master account.

4. You can select **Hide $0 USD total cost** and **Show PoP cost/growth** under **Advanced Settings** to fit your use cases.
   a. **Hide $0 USD total cost**
      If you select **Hide $0 USD total cost**, **$0 USD** will not be displayed in the chart, so you can focus on your desired cost data.
   b. **Show PoP cost/growth**
      i. PoP cost = Total cost of the current period – Total cost of the previous period
      ii. PoP growth is calculated as follows:

$$\text{PoP growth for total cost} = \frac{\text{Total cost of the current period} - \text{Total cost of the previous period}}{|\text{Total cost of the previous period}|} \times 100\%$$

      If you select **Show PoP cost/growth**, the PoP cost/growth will be displayed in the chart.
5. You can switch cost analysis views.
   You can select another analysis view from the drop-down list. For example, you can switch among **Favorite Reports**, **Recommended Reports**, and **Recent Reports**.

Step 4 View the cost data in the table, and click **Export** on the right to export the data.

----End

6.2.3 Viewing Cost Analyses

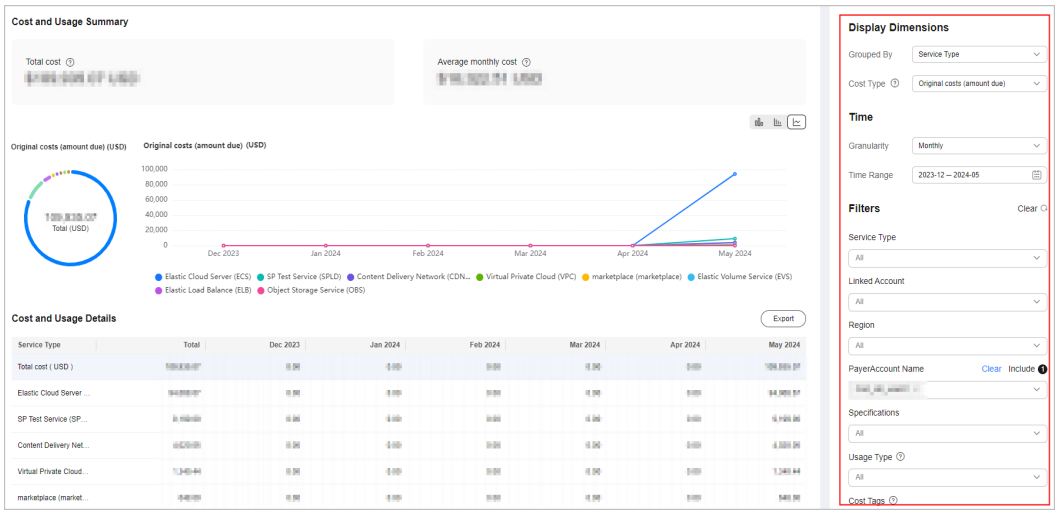
Step 1 Access the **Cost Analysis** page.

Step 2 Select a recommended report or a custom report.

NOTE

Huawei Cloud provides recommended reports for quick cost analysis.
You can save your cost analyses as custom reports if needed.

Step 3 Set search criteria to view desired cost data.



- If you set **Cost Type** to **Original costs (amount due)** or **Net original costs (actual payments)**, the data displayed on the page is nearly real-time.
- If you set **Cost Type** to **Amortized costs (amortized amount due)** or **Net amortized costs (amortized actual payments)**, it may take 24 to 48 hours before the most recent data is displayed.
- You can click **Export** to access the **Export History** page and download the **Cost Analysis - Overview** file.

Step 4 Click **Save** in the right upper corner of the page to save the analyses as reports so that you can easily view cost analyses with the same filters. When you view a saved report later, Cost Center displays the same type of report, but updated with the most recent data.

----End

6.2.4 Viewing Usage Analyses

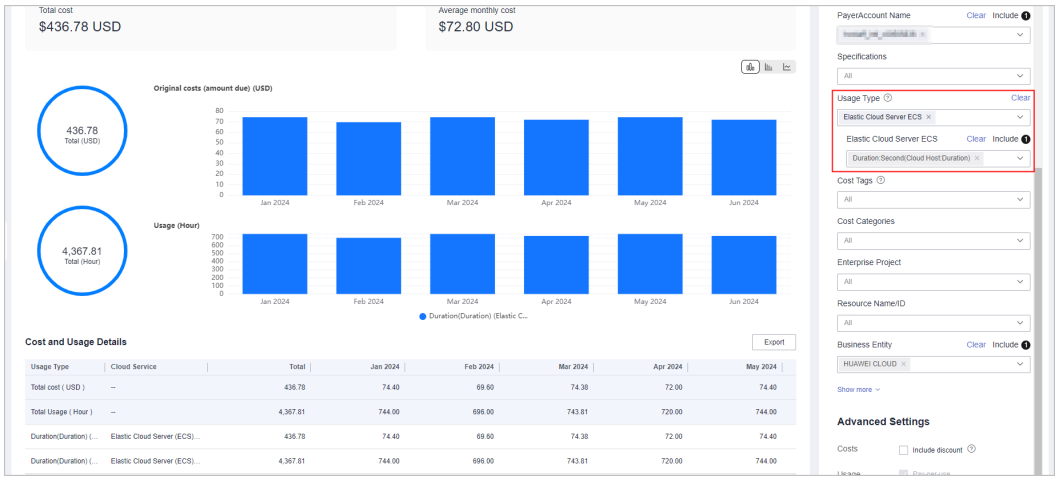
Step 1 Access the **Cost Analysis** page.

Step 2 Select the preconfigured report **Pay-Per-Use ECS Monthly Costs and Usage**.

Step 3 In the report view, Cost Center by default displays the cost data with **Service Type** set to **Elastic Cloud Server (ECS)** and **Usage Type** set to **Elastic Cloud Server ECS - Duration**.

NOTE

You can only set a single usage type to analyze usage.



- You can switch the display dimension to view the ECS usage data from another perspective. For example, if you want to view ECS usage analysis data by resource name/ID, you can set **Grouped By** to **Resource Name/ID**.

NOTE

By default, the current month's data is displayed, but you can choose to view monthly costs by **Resource Name/ID** from up to the last three months.

----End

6.2.5 Viewing Cost Amortization Details of Resource Packages

Step 1 Access the **Cost Analysis** page.

Step 2 On the **Cost Analysis** page, set search criteria. The resource package amortization data is displayed by cost type, bill type, display dimension, or service type.

1. Set the cost type.

   In this example, you can select **Amortized costs (amortized amount due)** or **Amortized net cost (amortized actual payments)** to view the amortized costs over the time range you selected.

2. Set the bill type.

   In this example, if you select **Expenditure-resource packages used**, the expenditures paid by using resource packages will be analyzed; if you select

Expenditure-resource packages unused, the expenditures not paid by using resource packages will be analyzed.

3. Set the summary dimension.

   You can select a specific summary dimension like enterprise project, tag, or resource ID, to apply the cost amortization results.

4. Switch the service type.

   In this example, select Object Storage Service (OBS) as the service type to analyze its resource packages.

   NOTE

   If your amortized costs increase unexpectedly, see **Why Does the Amortized Cost for the Latest Day in the Current Month Increase Unexpectedly?**

----End

6.2.6 Viewing Cost Amortization Details of Reserved Instances

Step 1 Access the **Cost Analysis** page.

Step 2 On the **Cost Analysis** page, set search criteria. The cost amortization data of reserved instances is displayed by bill type.

1. Set the cost type.

   In this example, you can select **Amortized costs (amortized amount due)** or **Amortized net cost (amortized actual payments)** to view the amortized costs over the time range you selected.

2. Set the bill type.

   In this example, if you select **Expenditure-reserved instances used**, the expenditures paid by using reserved instances will be analyzed; if you select **Expenditure-reserved instances unused**, the expenditures not paid by using reserved instances will be analyzed.

3. Set the summary dimension.

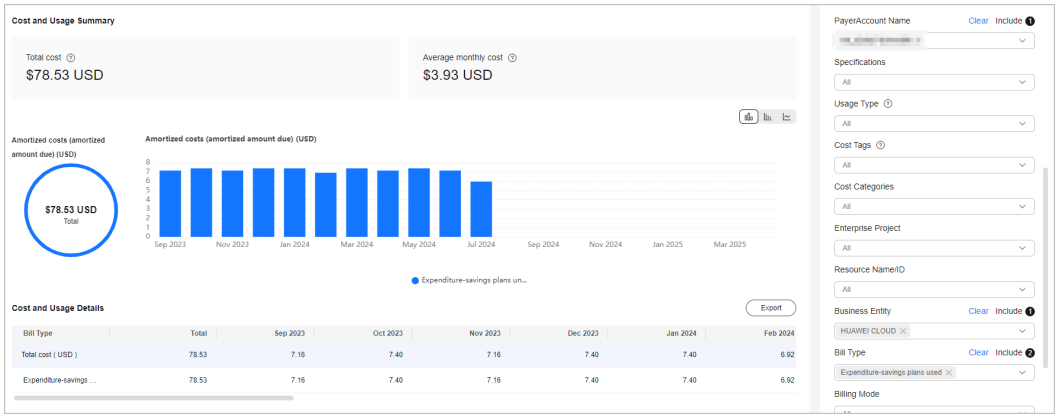
   You can set the summary dimension to **Bill Type** to apply the cost amortization to reserved instances.

----End

6.2.7 Viewing Cost Amortization Details of Savings Plans

Step 1 Access the **Cost Analysis** page.

Step 2 On the **Cost Analysis** page, set search criteria. The cost amortization data of savings plans is displayed by bill type.



1. Set the cost type.

   In this example, you can select **Amortized costs (amortized amount due)** or **Amortized net cost (amortized actual payments)** to view the amortized costs over the time range you selected.

2. Set the bill type.

   In this example, if you select **Expenditure-savings plans used**, the expenditures paid by using savings plans will be analyzed; if you select **Expenditure-savings plans unused**, the expenditures not paid by using savings plans will be analyzed.

3. Set the summary dimension.

   You can set the summary dimension to **Bill Type** to apply the cost amortization to savings plans.

----End

6.2.8 Viewing Monthly CDN Costs by Domain Name

Step 1 Access the **Cost Analysis** page.

Step 2 Select the preconfigured report **Monthly CDN Costs by Domain Name**.

NOTE

- Cost Center supports the analysis of CDN costs by domain name. If you have not enabled the shared cost splitting function, go to the **Preferences** page to enable it.
- The shared cost splitting function is free of charge, but cannot be disabled once enabled. When you enable this function, you can go to the **Cost Analysis** page to view the splitting results of amortized costs after 12:00:00 p.m. on the 4th day of the following month. For details, see **Enabling Cost Splitting**.

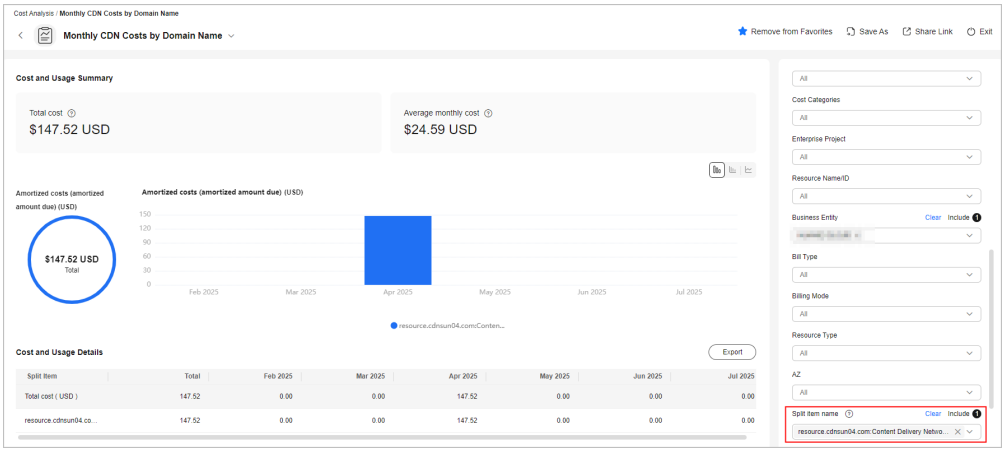
Step 3 View the costs, with **Service Type** being **Content Delivery Network (CDN)** and **Grouped By** set to **Split Item**.

Table 3 lists the default parameters for the report.

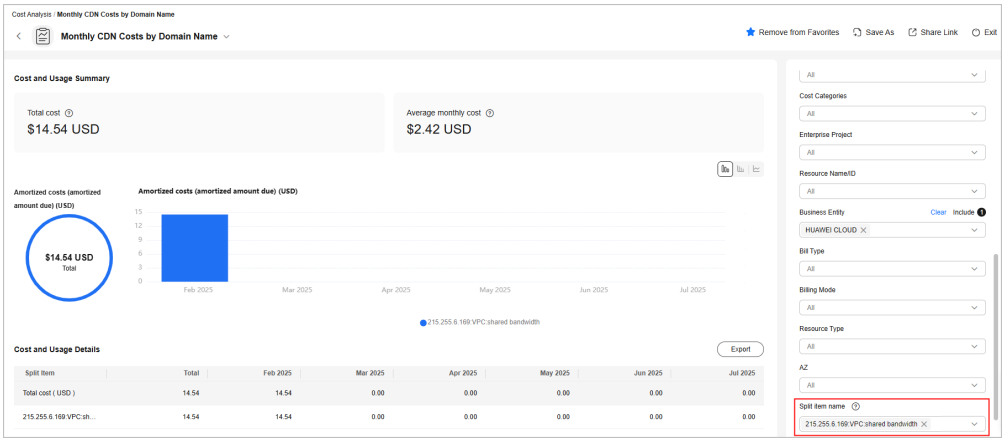
Table 6-5 Preset parameters for the report Monthly CDN Costs by Domain Name

Parameter	Default Value
Grouped By	Split Item
Cost Type	Amortized costs (amortized amount due)
Granularity	Monthly
Time Range	Last six months (by default)
Service Type	Content Delivery Network (CDN)

- To filter CDN costs by domain name, you can select the specified domain name in **Split Item** in the **Filters** area. For example, you can set **Service Type** to **Content Delivery Network (CDN)** and **Split Item** to **resource.cdnsun04.com: Content Delivery Network: CDN11**.



- To view the cost breakdown data of other cloud services, you can change the value of **Service Type**. For example, to view the cost breakdown data of shared bandwidth by IP address, you can set **Service Type** to **Virtual Private Cloud (VPC)** and **Split Item** to **215.255.6.169: VPC: shared bandwidth**.



----End

6.3 Contributory Factors

Data Precision

- Original costs and billed amounts are calculated with the same precision.
- Amortized costs may have slight precision differences. They need to be rounded off as required:
  - The amounts displayed on the Cost Center pages are rounded off to the 2nd decimal place.
  - The amounts included in exported cost details are calculated to the 8th decimal place.
- The costs for the following orders need to be amortized:
  - Yearly/Monthly subscriptions
  - Reserved instances
  - Monthly-settled CDN services (if enabled)

Data Delay

Original costs: There is an appropriately one-hour delay before data from Billing Center shows up as original costs for the current month in Cost Center. To view the exact amounts, see the final bill. You are advised to view or export the original costs after 12:00:00 noon on the 4th day of the following month.

Amortized costs: They are not calculated in real time. Cost Center refreshes your amortized costs once every 24 hours, and it may take longer than 24 to 48 hours for some data to be displayed. The current month costs of monthly-settlement cloud services, such as CDN and VPC, are available for viewing or export after 12:00:00 noon on the 4th day of the following month.

Forecasted Data

- On the **Cost Analysis** page, daily/monthly forecasts marked with ** are only estimates. Forecasts are produced based on the historical data you specified. Daily forecasts currently do not take into account periodicity and differ from the actual data in the forecast period covered. They are for reference only.

- Forecasted costs are estimated based on your historical expenditures over at least the last three months. If there is not enough historical data, forecasts cannot be produced.
- For details about cost forecasting, visit **Forecasting**.

6.4 Cost Amortization Rules

6.4.1 Understanding Cost Amortization Rules

Background

Huawei Cloud provides various billing modes. In accrual-based accounting, you need to summarize and analyze the costs of yearly/monthly resources based on the actual daily costs within the specified time range. In this context, "amortized costs" are introduced.

Essence of Amortized Costs

Amortized costs reflect the effective costs of your upfront resources amortized to the actual users over the usage time. Cost amortization is intended for historical expenditures and cannot be used for future expenditures. If the ownership of a resource changes, the resource ownership of the historically amortized costs remains unchanged.

Generally, the amortized pay-per-use cost is the same as your original amount due. However, the amortization rules of yearly/monthly subscriptions are complex. The calculation formular is as follows:

- Daily amortized cost for a yearly/monthly subscription = Order amount/ Number of days over the order effective term (number of days from the effective time to the expiration time)

Costs are amortized based on your actual usage. Pay attention to the following special cases:

- If the cost tag of a resource is changed, the amortized cost generated is historical data and the resource has been used by its owner. Therefore, this cost is attributed to the historical resource owner (historical cost tag or enterprise project). The new cost tag only applies to the future amortized costs.

  NOTE

  If the enterprise project of a resource changes, you need to enable related functions to amortize costs by the latest enterprise project.

- If a resource is refunded, the unamortized costs will be amortized on the unsubscription day. For details, see **Why Are My Costs Negative?**

NOTE

For details about cost amortization rules, see **Overview of Cost Amortization Rules**.

6.4.2 Overview of Cost Amortization Rules

Amortized costs and net amortized costs reflect the amortization of original costs on a daily basis. This section details the rules for cost amortization.

Bill Amount and Amortized Amount

For details, see **What Are the Differences Between Bill Amount and Amortized Amount?**

Cost Amortization Methods

The following cost amortization methods are supported:

- **Pay-per-use cost amortization**: Pay-per-use costs are amortized based on the actual resource usage duration and amount. For details, see **Amortization Rules for Pay-per-Use Resources**.
- **Yearly/Monthly cost amortization**: Yearly/monthly costs are amortized linearly based on the subscription term. For details, see **Amortization Rules for Yearly/Monthly Subscriptions**.
- **Reserved instance cost amortization**: Reserved instance costs are amortized based on the actual usage. For details, see **Amortization Rules for Reserved Instances**.
- **Resource package cost amortization**: Resource package costs are amortized based on the actual usage. For details, see **Amortization Rules for Resource Packages**.
- **Savings plans cost amortization**: Savings plans costs are amortized based on the actual usage. For details, see **Amortization Rules for Savings Plans**.
- **Container cost amortization**: Container costs are split by cluster, namespace, workload, region, and cost tag. For details, see **Cost Insights Overview**.
- **Splitting of shared costs**: After shared cost splitting is enabled, you can split costs to specific domain names or IP addresses, and can view and analyze them by cost tag or enterprise project for domain names or IP addresses. For details, see **Enabling Cost Splitting**.

Enterprise Projects and Tags for Amortized Costs

Yearly/Monthly Subscriptions

- Enterprise project: By default, the enterprise project selected for the order is used for amortized costs of your yearly/monthly subscription.
- Tags: Starting from June 01, 2021, the resource tags used when the amortized costs are calculated are applied to the daily amortized costs of your yearly/monthly subscriptions. Tags for costs amortized before June 01, 2021 do not change even if the tags for their resources change.

Pay-per-Use Resources

The enterprise project and cost tags used when pay-per-use resources are settled are used for your amortized costs.

6.4.3 Amortization Rules for Pay-per-Use Resources

Before June 01, 2021, pay-per-use expenditures were not amortized. Instead, they were recorded for the transaction day.

Pay-per-use expenditures generated as of June 01, 2021 are amortized based on the usage.

- If the time when a pay-per-use resource started being used (the first time expenditures were generated) and the transaction time (when the amount due was paid) are in the same billing cycle, the amortized cost is recorded for the day when it started being used.
  - **Example scenario**: Suppose you used a pay-per-use resource from June 10, 2021 23:00:00 to June 10, 2021 23:59:59, the transaction time was June 11, 2021 00:53:30, and the amount due was $2 USD.

    Cost amortization: As the time when expenditures were generated (June 10, 2021 23:00:00) and the transaction time (June 11, 2021 00:53:30) were in the same billing cycle, the amount due ($2 USD) was recorded as the amortized cost for June 10, 2021.
- If the time when a pay-per-use resource started being used (the first time expenditures were generated) and the transaction time (when the amount due was paid) are not in the same billing cycle, the amortized cost is recorded for the transaction day.
  - **Example scenario**: Suppose you used a pay-per-use resource from June 30, 2021 23:00:00 to June 30, 2021 23:59:59, the transaction time was July 01, 2021 00:53:30, and the amount due was $2 USD.

    Cost amortization: As the time when expenditures were generated (June 30, 2021 23:00:00) and the transaction time (July 01, 2021 00:53:30) were not in the same billing cycle, the amount due ($2 USD) was recorded as the amortized cost for July 01, 2021.

Pay-per-use expenditures generated as of September 01, 2024 are amortized based on the following rules:

- If the period from a pay-per-use resource started being used to the resource stopped being used (the period from the billing was started to the billing was ended) and the transaction time are in the same billing cycle, the amortized cost is recorded for the day that includes the time one second before resource expiration.
  - **Example scenario**: Suppose you used a pay-per-use resource from September 10, 2024 23:10:01 to September 12, 2024 00:00:00, the transaction time was September 12, 2024 00:53:30, and the amount due was $2 USD.

    Cost amortization: As the resource expired at September 12, 2024 00:00:00 and one second before the expiration was September 11, 2024 23:59:59, the amount due $2 USD was recorded as the amortized cost for September 11, 2024.
- If the period from a pay-per-use resource started being used to the resource stopped being used (the period from the billing was started to the billing was ended) and the transaction time are not in the same billing cycle, there are two cases to consider: If the transaction time is earlier than October 01, 2024 23:59:59, the amortized cost is recorded for the day that includes the time one

second before resource expiration. If the transaction time is later than October 01, 2024 23:59:59, the amortized cost is recorded for the billing cycle covering the transaction time.

- **Example scenario A**: Suppose you used a pay-per-use resource from September 30, 2024 23:10:01 to September 30, 2024 23:59:59, the transaction time was October 01, 2024 00:53:30, and the amount due was $2 USD.

  Cost amortization A: As the transaction time (October 01, 2024 00:53:30) is earlier than October 01, 2024 23:59:59, the amount due ($2 USD) is recorded as the amortized cost for September 30, 2024.
- **Example scenario B**: Suppose you used a pay-per-use resource from September 30, 2024 23:10:01 to September 30, 2024 23:59:59, the transaction time was October 02, 2024 00:53:30, and the amount due was $2 USD.

  Cost amortization B: As the transaction time (October 02, 2024 00:53:30) is later than October 01, 2024 23:59:59, the amount due ($2 USD) is recorded as the amortized cost for October 02, 2024.

Note:

- The amortized costs of pay-per-use resources involving account adjustments will be recorded for the historical billing cycle where account adjustments occurred.
- The costs of monthly-settled CDN (billed by traffic) can be amortized by domain name.
- For pay-per-use resources settled on a monthly basis (for example, CDN billed by 95th percentile bandwidth), the amortized cost is recorded when the bills are settled. This explains why there may be a peak in the middle of a month.

6.4.4 Amortization Rules for Yearly/Monthly Subscriptions

NOTE

Starting from August 01, 2020 00:00:00, the following cost amortization rules apply to new expenditures:

Expenditures

Expenditures involve the following bill types: **Expenditure-purchase**, **Expenditure-renewal**, and **Expenditure-change**.

- Daily amortized cost = Order amount/Number of days from the effective time to the expiration time
- If the resources in an order are not enabled, their costs will not be amortized. Amortized costs do not include the cost of order subscription and the cost of the orders that were automatically unsubscribed from when resources could not be enabled.
- If the order takes effect and expires on the same day, its costs will not be amortized. Instead, they will be recorded for that day.
- If a subscription is renewed but the order effective time has elapsed, the historical costs will still be amortized over the period the order was effective.

Refunds

NOTE

The following cost amortization rules only apply to refunds generated since February 01, 2023. For orders unsubscribed from before February 01, 2023 and their associated historical orders, the unallocated expenditures were recorded as amortized costs for February 01, 2023.

For refunds generated before February 01, 2023, if the effective time has passed, the cost incurred during the elapsed days is recorded as amortized cost for the unsubscription day, and the unallocated expenditures will be amortized on a daily basis in the remaining days.

Refunds involve unsubscription from resources, unsubscription from renewal periods, and specification downgrade.

- Unsubscription from resources: After a resource is unsubscribed from, refunds and unallocated expenditures for all historical orders are recorded as amortized costs for the unsubscription day.

  Example: Suppose you purchase a 1-month subscription (from the 1st day to the 30th day) at the price of $60 USD, and the daily amortized cost is $2 USD. However, you request a refund of $56 USD on the 3rd day of the subscription month.

  Cost amortization: As the cost amortized over the first two days was $2 USD each day, the cost for the third day is $-56 USD, and no amount will be amortized for the remaining days from the 4th to the 30th.

Order Line	1st Day	2nd Day	3rd Day	4th Day	5th Day	6th Day	...	30th Day
Amortized cost for subscriptions	2	2	56	-	-	-	...	-
Amortized cost for unsubscriptions	-	-	-56	-	-	-	...	-

- Unsubscription from renewal periods: Refund and unallocated expenditures for associated renewal orders are recorded as amortized costs for the unsubscription day.

  Example: Suppose you purchased a 1-month subscription (from January 01 to January 30) at $60 USD, renewed it for one month at $60 USD on January 05, and unsubscribed from the renewal period for $-60 USD on January 28.

  Cost amortization example:

Order Line	1st Day	2nd Day	3rd Day	4th Day	5th Day	6th Day	...	28th Day	29th Day	30th Day
Amortized cost for subscriptions	2	2	2	2	2	2	...	2	2	2
Amortized cost for renewals	-	-	-	-	-	-	-	60	-	-
Amortized cost for unsubscriptions from renewal periods	-	-	-	-	-	-	-	-60	-	-

- Specification downgrade: The expenditure generated before specification downgrade is recorded as amortized cost for the specification downgrade day, and the unallocated expenditures will be amortized for each day in the remaining days. Daily amortized cost = Refund of the specification downgrade order line/Number of days from the effective time to the expiration time

  Example: Suppose you purchase a 1-month subscription (from January 01 to January 30) at the price of $60 USD. On the 3rd day, $30 USD needs to be refunded for specification downgrade.

  Cost amortization example:

Order Line	January 01	January 02	January 03	January 04	January 05	January 06	...	January 28	January 29	January 30
Amortized cost for subscriptions	2	2	2	2	2	2	...	2	2	2
Amortized cost for specification downgrade	-	-	-3	-1	-1	-1	...	-1	-1	-1

Account Adjustment

Any cost amortization that involves account adjustments will change the historical data.

Suppose you purchase a 1-month subscription (from the 1st day to the 30th day) at $60 USD. On the 3rd day, due to an error, Huawei Cloud needs to refund the order amount of $60 USD and you need to pay $66 USD.

In this case, as Huawei Cloud needs to return $60 USD first, the daily amortized cost is $2 USD; as you need to pay $66 USD, the daily amortized cost is $2.2 USD.

Order Line	1st Day	2nd Day	3rd Day	4th Day	5th Day	6th Day	...	30th Day
Amortized cost for subscriptions	2	2	2	2	2	2	...	2

Order Line	1st Day	2nd Day	3rd Day	4th Day	5th Day	6th Day	...	30th Day
Amortized cost for account adjustment (refund)	-2	-2	-2	-2	-2	-2	...	-2
Amortized cost for account adjustment (payment)	2.2	2.2	2.2	2.2	2.2	2.2	...	2.2

Example Scenarios

If you purchased a yearly/monthly subscription (valid from January 01, 2021 to February 01, 2021) at the price of $3.5 USD, and then unsubscribed from it on January 13, 2021 and paid a handling fee of $0.35 USD, the total cost would be $3.5 USD, the validity period would be 32 days, and the daily amortized cost would be $0.109375 USD (3.5/32 = 0.109375).

You will see two amortized cost records for January 2021.

- One for the total cost of $3.390625 USD to be amortized over the period from January 01, 2021 to January 31, 2021.
- The other for the cost to be amortized for the remaining days after unsubscription ($-1.7385 USD). The total cost from January 01, 2021 to January 13, 2021 (the unsubscription day) is $1.32 USD, the handling fee is $0.35 USD, and the actual refund amount is $1.83 USD (3.5 – 1.32 – 0.35 = 1.83). The amortized cost for the remaining days after unsubscription in January is $1.7385 USD (1.83/20 x 19 = 1.7385).

6.4.5 Amortization Rules for Resource Packages

Resource Package Cost Amortization

Starting June 23, 2025, the costs of certain newly purchased or renewed resource packages will be amortized based on actual usage. For resource packages that took effect before June 23, 2025, linear amortization will continue to apply.

For cost amortization based on actual usage, the amortized amount is calculated based on the proportion of usage deducted from resource packages to the total resource package usage. The formula is as follows: Amortized amount = (Usage deducted from resource packages/Total resource package usage) x Resource package fee

There are two types of costs: amortized costs deducted from resource packages (bill type: **Expenditure-resource packages used**) and amortized costs not deducted from resource packages (bill type: **Expenditure-resource packages unused**).

NOTE

1. When costs are amortized based on actual usage, the amortized amount corresponding to the resource package used on a given day is recorded under the bill type **Expenditure-resource packages used**. The portion for the remaining package usage within the same reset period is recorded under the bill type **Expenditure-resource packages unused**.

   Suppose you purchased a resource package for $3,500 USD, valid from March 20, 2024 to August 20, 2024. If the package remained unused from March through July, the amortized cost for that period would be $0 USD, and the full cost of $3,500 USD would be amortized on August 20, 2024.

After resource package costs are amortized based on actual usage, you can allocate the costs to specific tags and enterprise projects.

Analysis of Resource Package Cost Amortization

On the **Cost Analysis** page, you can analyze cost amortization of resource packages. For details, see **Viewing Cost Analyses**.

Supported Cloud Services

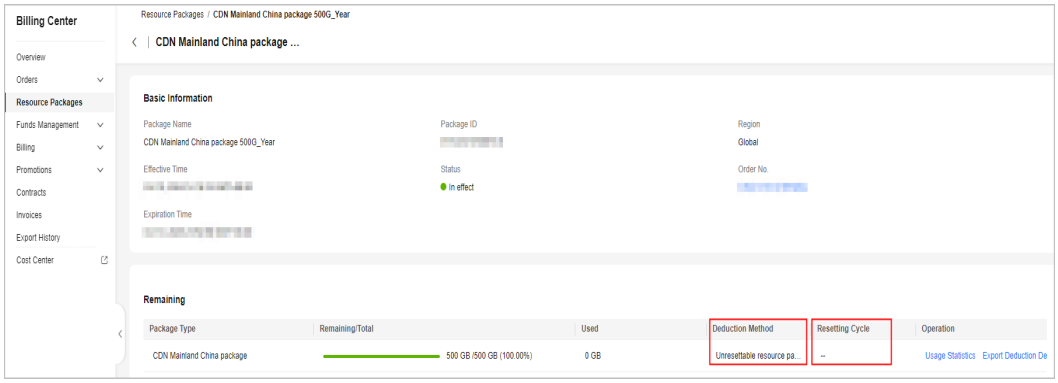
Service Name	Abbreviation
Optical Character Recognition	OCR
Content Delivery Network	CDN
Application Performance Management	APM
Object Storage Service	OBS
Virtual Private Cloud	VPC
Scalable File Service	SFS
ROMA Connect	ROMA Connect

NOTE

1. Usage-based cost amortization is not supported for resource packages that include multiple usage types, even if the services involved are supported as listed above, **except for newly purchased or renewed OBS packages**. Instead, linear cost amortization continues to apply. For example, the costs of a CCI package (**V100_16G/month**), which includes CPU, memory, and GPU resources, cannot be amortized based on actual usage. Instead, the costs of standalone CPU or memory packages can be amortized.

Resettable Packages

The capacity of a resettable resource package decreases linearly and is cleared at the end of each reset period. It is then fully restored at the beginning of the next reset period until the package expires.



Cost amortization rules

Amortized amount of costs deducted from a resource package = (Usage deducted from the resource package/Total package usage within the reset period) x Amortized amount within the reset period

Amortized amount of costs not deducted from a resource package within the reset period = Amortized amount within the reset period – Sum of amortized amounts of costs deducted from the resource package within all the reset periods

Cost amortization example

Suppose you purchased a yearly 100 GB OBS outbound Internet traffic package at a total price of $480 USD, valid from January 01, 2024 to December 31, 2024. Within the validity period, you would receive 100 GB traffic each month. This package is valid for 12 months, and the amortized amount per reset period is $40 USD (480/12).

The following table illustrates the package usage in January 2024.

Used On	Used Traffic	Remaining Usage
2024.01.02	5 GB	95 GB
2024.01.10	10 GB	85 GB
2024.01.13	8 GB	77 GB
2024.01.15	20 GB	57 GB

Used On	Used Traffic	Remaining Usage
2024.01.31	15 GB	42 GB

The following table details cost amortization in January 2024 based on actual usage.

Used On	Used Traffic	Amortized Amount	Bill Type
2024.01.02	5 GB	5 GB/100 GB x $40 USD = $2 USD	Expenditure-resource packages used
2024.01.10	10 GB	10 GB/100 GB x $40 USD = $4 USD	Expenditure-resource packages used
2024.01.13	8 GB	80 GB/100 GB x $40 USD = $3.2 USD	Expenditure-resource packages used
2024.01.15	20 GB	20 GB/100 GB x $40 USD = $8 USD	Expenditure-resource packages used
2024.01.31	15 GB	15 GB/100 GB x $40 USD = $6 USD	Expenditure-resource packages used
2024.01.31	-	$40 USD – $23.2 USD = $16.8 USD	Expenditure-resource packages unused

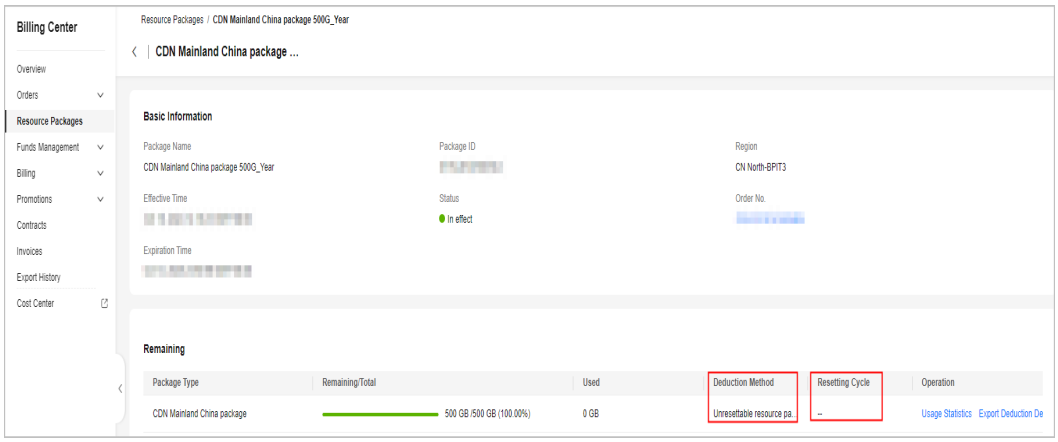
NOTE

When the specifications of a resource package have been upgraded, a new resource package is generated. After the original resource package expires, no further usage will be deducted from it. Instead, its remaining usage will be transferred to the new resource package for amortization.

In the example above, $40 USD has been amortized for January 2024, and $440 USD (480 – 40) is left. On February 01, 2024, suppose you upgraded the resource package from 100 GB/year to 500 GB/year, and you paid $550 USD for the upgrade order. In this case, the amortized cost for the original resource package would be $0 USD from February 01, 2024 to December 31, 2024, and the total amortizable cost for the new resource package would be $990 USD (550 + 440). Given that 11 reset periods remain, the amortized cost per reset period would be $90 USD (990/11).

Non-Resettable Resource Packages

The capacity of a non-resettable resource package decreases linearly, and pay-per-use usage is continuously deducted from the package over time.



Cost amortization rules

Amortized amount of costs deducted from a resource package = (Usage deducted from the resource package/Total resource package usage) x Total amount of the resource package

Amortized amount of costs not deducted from a resource package = Total amount of the resource package – Sum of amortized amounts of costs deducted from the resource package

NOTE

The amortized cost of unused resource package capacity (bill type: **Expenditure-resource packages unused**) is displayed in both the billing cycle during which the package expires and the current billing cycle. This allows you to identify the remaining usage of the resource package based on the displayed amortized amount.

For example, suppose the current month is August and a non-resettable resource package is valid from January 01, 2024 to December 31, 2024. Since January to July are historical billing cycles, only amortized costs for used capacity are recorded. In August, the current billing cycle, the amortized costs of both used and unused capacity are displayed, allowing you to check the reaming usage of the package.

Cost amortization example

Suppose you purchased a resource package **OCR (10000 API calls/year)** at the total price of $520 USD. It is valid from January 01, 2024 to December 31, 2024, and the total number of API calls is 10,000.

The following table illustrates the package usage.

Used On	Number of Used API Calls	Remaining Usage
2024.01.02	50	9,950
2024.01.10	30	9,920
2024.01.13	30	9,890
2024.01.15	60	9,830
2024.01.31	20	9,810
...	-	-

Used On	Number of Used API Calls	Remaining Usage
2024.12.30	30	120
2024.12.31	50	70

The following table details cost amortization in January 2024 based on actual usage.

Used On	Number of Used API Calls	Amortized Amount	Bill Type
2024.01.02	50	50/10,000 x $520 USD = $2.60 USD	Expenditure-resource packages used
2024.01.10	30	30/10,000 x $520 USD = $1.56 USD	Expenditure-resource packages used
2024.01.13	30	30/10,000 x $520 USD = $1.56 USD	Expenditure-resource packages used
2024.01.15	60	60/10,000 x $520 USD = $3.12 USD	Expenditure-resource packages used
2024.01.31	20	20/10,000 x $520 USD = $1.04 USD	Expenditure-resource packages used

The following table details cost amortization in December 2024.

Used On	Number of Used API Calls	Amortized Amount	Bill Type
...	-	-	-
2024.12.30	30	30/10,000 x $520 USD = $1.56 USD	Expenditure-resource packages used
2024.12.31	50	50/10,000 x $520 USD = $2.60 USD	Expenditure-resource packages used
2024.12.31	-	70/10,000 x $520 USD = $3.64 USD	Expenditure-resource packages unused

6.4.6 Amortization Rules for Reserved Instances

RI Cost Amortization

As of July 01, 2024, the costs of reserved instances (RIs) are amortized based on the actual usage. The amortized amount is calculated based on the proportion of the usage deducted from RIs to the total RI usage. Amortized amount = (Usage deducted from RIs in the billing cycle/Total RI usage in the billing cycle) x Total amount of RIs in the billing cycle

There are two types of costs involved: amortized costs deducted from RIs and amortized costs not deducted from RIs.

NOTE

- **Amortized costs deducted from RIs**: Added the new bill type **Expenditure-reserved instances used**.
- **Amortized costs not deducted from RIs**: Added the new bill type **Expenditure-reserved instances unused**.

After reserved instance costs are amortized based on the actual usage, you can allocate the costs to specific tags and enterprise projects.

Analysis of RI Cost Amortization

On the **Cost Analysis** page, you can analyze the amortized costs of RIs by bill type. For details, see **Viewing Cost Amortization Details of Reserved Instances**.

Cost amortization rules

The amortization rules for costs deducted from RIs are different from those for costs not deducted from RIs.

- Amortized amount of costs deducted from RIs = (Usage deducted from RIs in the billing cycle/Total RI usage in the billing cycle) x Total amount of RIs in the billing cycle
- Amortized amount of costs not deducted from RIs = Total amount of RIs in the billing cycle – Amortized amount of costs deducted from RIs in the billing cycle

Cost amortization example

Suppose you purchased a 1-year c3.xlarge.2 RI at $0.1 USD/hour. In February 2025, the RI amount is $67.2 USD [$0.1 USD/hour x (28 days x 24) hours], and the total RI usage is 672 hours (28 days x 24).

The following uses a Linux c3.xlarge.2 pay-per-use instance as an example to describe how the RI is amortized in February 2025.

Table 6-6 RI usage

Used On	Used RI Hours
2025.02.01	23 hours (82,800 seconds)
2025.02.10	24 hours (86,400 seconds)

Used On	Used RI Hours
2025.02.13	15 hours (54,000 seconds)
2025.02.15	18 hours (64,800 seconds)
2025.02.18	24 hours (86,400 seconds)

Table 6-7 Cost amortization details

Used On	Used RI Hours	Amortized Amount	Bill Type	Billing Mode
2025.02.01	23 hours (82,800 seconds)	23 hours/672 hours x $67.2 USD = $2.3 USD	Expenditure-reserved instances used	Reserved Instances
2025.02.10	24 hours (86,400 seconds)	24 hours/672 hours x $67.2 USD = $2.4 USD	Expenditure-reserved instances used	Reserved Instances
2025.02.13	15 hours (54,000 seconds)	15 hours/672 hours x $67.2 USD = $1.5 USD	Expenditure-reserved instances used	Reserved Instances
2025.02.15	18 hours (64,800 seconds)	18 hours/672 hours x $67.2 USD=$1.8 USD	Expenditure-reserved instances used	Reserved Instances
2025.02.18	24 hours (86,400 seconds)	24 hours/672 hours x $67.2 USD = $2.4 USD	Expenditure-reserved instances used	Reserved Instances
2025.02.28	-	$67.2 USD - $(2.3 + 2.4 + 1.5 + 1.8 + 2.4) USD = $56.8 USD	Expenditure-reserved instances unused	Reserved Instances

NOTE

This example assumes that the specifications of the pay-per-use instance are the same as those of the reserved instance. For details about the differences in normalization factor conversion, see **Reserved Instance Overview**.

6.4.7 Amortization Rules for Savings Plans

Savings Plans Cost Amortization

Savings Plans costs are amortized based on the actual usage. The amortized amount is determined by the portion of the amount deducted from Savings Plans to the total amount of Savings Plans.

There are two types of costs involved: amortized costs deducted from Savings Plans and amortized costs not deducted from Savings Plans.

NOTE

- **Amortized costs not deducted from Savings Plans**: Added the new bill type **Expenditure-savings plans unused**.

After savings plans costs are amortized based on the actual usage, you can allocate the costs to specific tags and enterprise projects.

Analysis of Savings Plans Cost Amortization

On the **Cost Analysis** page, you can analyze the amortized costs of Savings Plans by bill type. For details, see **Viewing Cost Analyses**.

Cost amortization rules

The amortization rules for **Expenditure-savings plans used** are different from those for **Expenditure-savings plans unused**.

- Amortized amount for the bill type **Expenditure-savings plans used** = **Amount Deducted from Savings Plan** for the bill type **Expenditure-savings plans used**
- Amortized amount for **Expenditure-savings plans unused** = Total amount of Savings Plans in the billing cycle – Amortized amount of costs deducted from Savings Plans in the billing cycle

Cost amortization example

Suppose you purchased a 1-year c3_2 savings plan with a commitment of $1 USD/hour and the total amount of $8,760 USD, within the effective period from January 01, 2025 to December 31, 2025.

Take the billing cycle of February 2025 as an example. The total amount of the savings plan is $672 USD [$1 USD/hour x (28 days x 24) hours].

Table 6-8 Savings Plans usage

Used On	Amount Deducted from Savings Plan
2025.02.01	$20 USD
2025.02.10	$24 USD
2025.02.13	$21 USD
2025.02.15	$22 USD
2025.02.18	$18 USD

Table 6-9 Cost amortization details

Used On	Amortized Amount	Bill Type	Billing Mode
2025.02.01	$20 USD	Expenditure-savings plans used	Savings Plans
2025.02.10	$24 USD	Expenditure-savings plans used	Savings Plans
2025.02.13	$21 USD	Expenditure-savings plans used	Savings Plans
2025.02.15	$22 USD	Expenditure-savings plans used	Savings Plans
2025.02.18	$18 USD	Expenditure-savings plans used	Savings Plans
2025.02.28	672 $ – $(20 + 24 + 21 + 22 + 18) USD = $567 USD	Expenditure-savings plans unused	Savings Plans

6.5 Enabling Cost Splitting

For cloud services that are used by multiple items (such as domain names and IP addresses), you can enable cost splitting to split the costs by cost tag or enterprise project for a specific domain name or IP address.

Important Notes

1. For cloud services involved in shared cost splitting, cost tags can only be activated starting from the 4th day of the following month after the tags are created and expenditures are generated. If you do not tag resources at the beginning, the cost data grouped by tag will be incomplete, and some costs are classified as "notagkey". For details, see **What Costs Are Marked with noTagKey?** You are advised to plan and manage tags in advance.
2. The domain name-specific usage of CDN and WSA traffic is provided for data analysis only after cost splitting is enabled. In the month you enabled cost splitting, the split usage only reflects the usage starting after the day cost splitting was enabled, so the results may not be accurate for that month.
3. Huawei Cloud helps you split costs after the bill is generated. The split costs are included in amortized costs. You can view or export the amortized costs for each month after 12:00:00 PM on the 4th day of the following month to obtain the splitting results or details.

Only the shared costs for the following cloud services can be split:

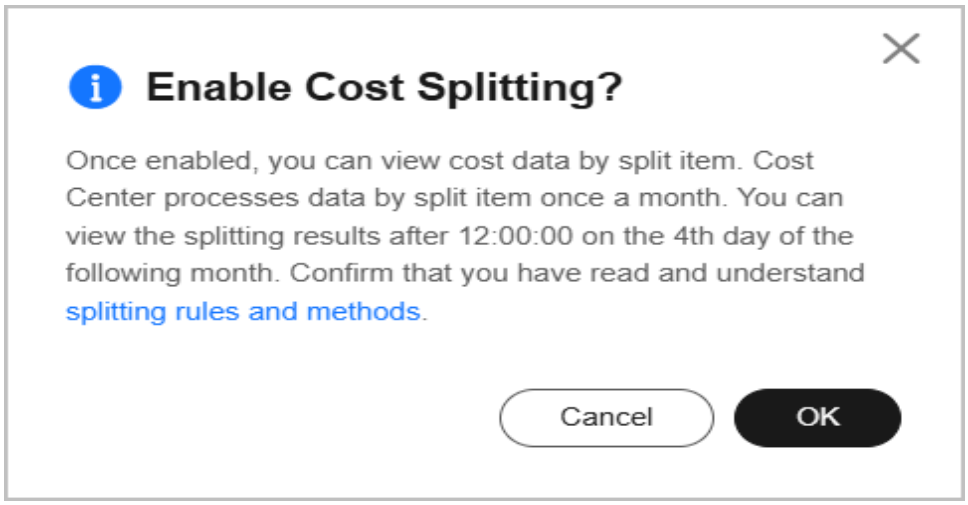
Table 6-10 Cloud service parameters

Name Abbreviation	Cloud Service Name	Split Item	Usage Type	Description
CDN	Content Delivery Network	Domain name	By traffic (using 1024-based notation only)	CDN costs can be split by domain name. As of May 2023, the costs are displayed by both cost tags and enterprise projects of domain names in the cost splitting results.
			By 95th percentile bandwidth	
			By average daily peak bandwidth	
WSA	Whole Site Acceleration	Domain name	By traffic	As of September 2023, the cost of WSA basic services and the cost of value-added services billed by request can be split by domain name. In the cost splitting results, the costs are displayed by both cost tags and enterprise projects of domain names.
			By 95th percentile bandwidth	
			By average daily peak bandwidth	
VPC	Virtual Private Cloud	EIP	By traffic	Costs of VPC shared bandwidth can be split by EIP. In the cost splitting results, the costs are displayed by both cost tags and enterprise projects of EIPs.
			By 95th percentile bandwidth	

Procedure

Step 1 Access the **Preferences** page.

Step 2 Turn on the toggle for cost splitting.



CAUTION

- Once enabled, cost splitting cannot be disabled.
- When you enable cost splitting, you can go to the **Cost Analysis** page to view the splitting results of amortized costs after 12:00:00 p.m. on the 4th day of the following month.

----End

Splitting Rules

Rules

- When you split costs by domain name, the following formula applies: Split costs for each domain name = Usage for each domain name/Total usage for all domain names x Total expenditure
- When you split costs by enterprise project or tag, monthly-settled costs are split to the most recently associated enterprise project or tag, while real-time costs are split to the enterprise project or tag retrieved in real time.
- You can split the costs of shared bandwidth to the EIPs billed by traffic or billed by 95th percentile bandwidth.

Examples

- CDN

  In your bill, CDN expenditures billed by traffic, 95th percentile bandwidth, or daily average peak bandwidth are split by domain name, enterprise project, or cost tag. The split costs are included in amortized costs.

  Example 1: Take CDN expenditures billed by 95th percentile bandwidth as an example. Suppose you have three domain names (1, 2, and 3), each with its own bandwidth (1, 2, and 3). The amortized cost for domain name 1 is calculated as follows:

  Amortized cost = Bandwidth 1/(Bandwidth 1 + Bandwidth 2 + Bandwidth 3) x CDN monthly-settled expenditure

Example 2: Take CDN expenditures billed by traffic as an example. Suppose you have three domain names (1, 2, and 3), each with its own traffic (1, 2, and 3) on a given day. The amortized cost on the current day for domain name 1 is calculated as follows:

Amortized cost = Traffic 1/(Traffic 1 + Traffic 2 + Traffic 3) x CDN traffic expenditure on the current day

Example 3: Suppose you changed the tag value of CDN resources from **N** to **M** on April 09, 2023. If you want to split costs on May 04, 2023, the amortized costs for April 2023 would be attributed to tag **M**.

- WSA

  In your bill, WSA expenditures billed by traffic, 95th percentile bandwidth, daily average peak bandwidth, or the number of requests are split by domain name, enterprise project, or cost tag. The split costs are included in amortized costs.

  Example: Take WSA expenditures billed by the number of requests as an example. Suppose you have three domain names (1, 2, and 3), each with its own number of requests (number 1, number 2, and number 3) on a given day. The amortized cost for domain name 1 is calculated as follows:

  Amortized cost = Number 1/(Number 1 + Number 2 + Number 3) x WSA expenditure on the current day

- VPC: As of June 2025, VPC expenditures of shared bandwidth in your bill can be split by EIP traffic or 95th percentile bandwidth. The split costs are included in amortized costs.

  Example 1: Take EIP expenditures billed by 95th percentile bandwidth as an example. Suppose you have three IP addresses (1, 2, and 3), each with its own bandwidth (1, 2, and 3). The amortized cost for IP address 1 is calculated as follows: Amortized cost = Bandwidth 1/(Bandwidth 1 + Bandwidth 2 + Bandwidth 3) x EIP monthly-settled expenditure

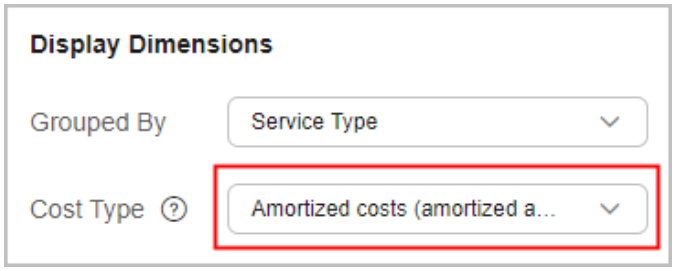
  Example 2: Take EIP expenditures billed by traffic as an example. Suppose you have three IP addresses (1, 2, and 3), each with its own traffic (1, 2, and 3) on a given day. The amortized cost on the current day for IP address 1 is calculated as follows: Amortized cost = Traffic 1/(Traffic 1 + Traffic 2 + Traffic 3) x EIP traffic expenditure on the current day

Viewing CDN Costs Split by Domain Name

Step 1 Access the **Cost Analysis** page.

Step 2 Click **Create Custom Report** under **All Reports**.

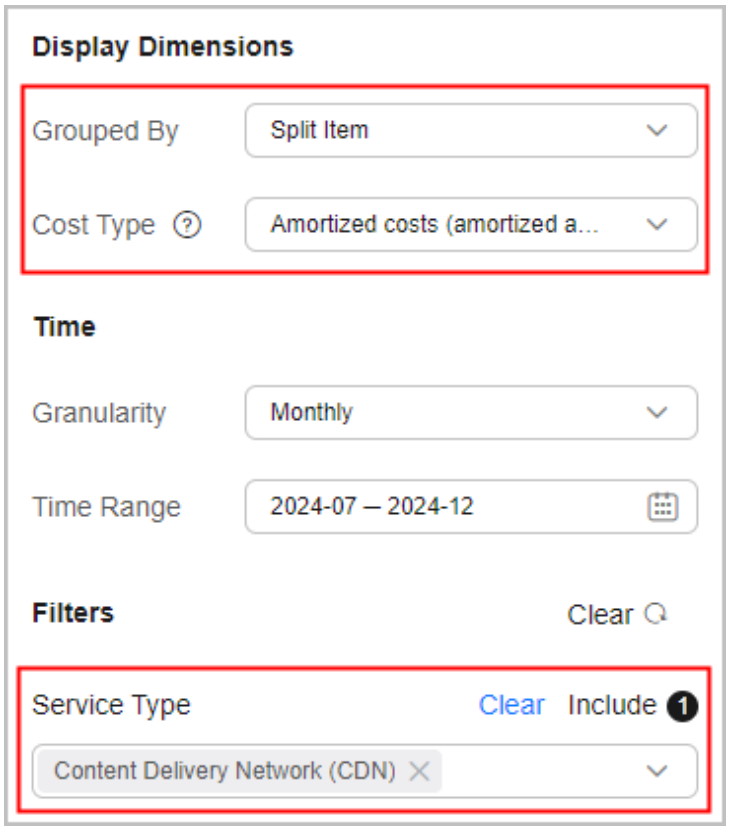
Step 3 Set **Cost Type** to **Amortized costs (amortized amount due)** or **Net amortized costs (amortized actual payments)**.



Step 4 View cost data by domain name.

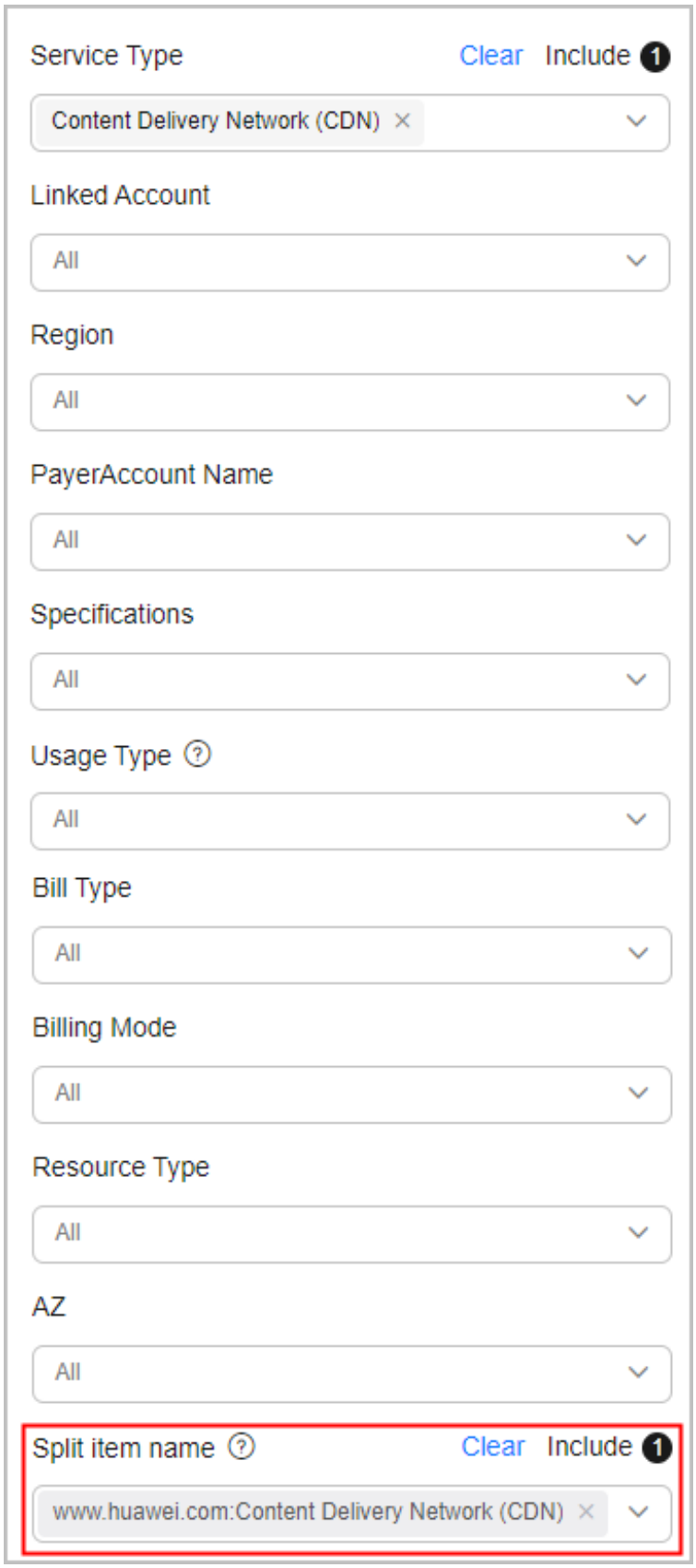
- Group cost data by domain name.

  Select **Split Item** from the **Grouped By** drop-down list and set the filter **Service Type** to **Content Delivery Network (CDN)**. Amortized CDN costs split by domain name will be displayed.



- Filter cost data by domain name.

  Select a service type (**CDN** as an example) and a split item (domain name **www.huawei.com** as an example).



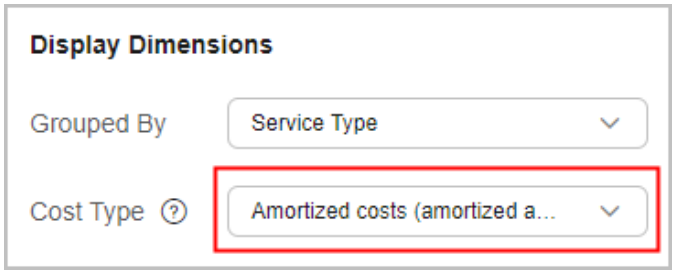
----End

Viewing Costs Split by Enterprise Project or Cost Tag

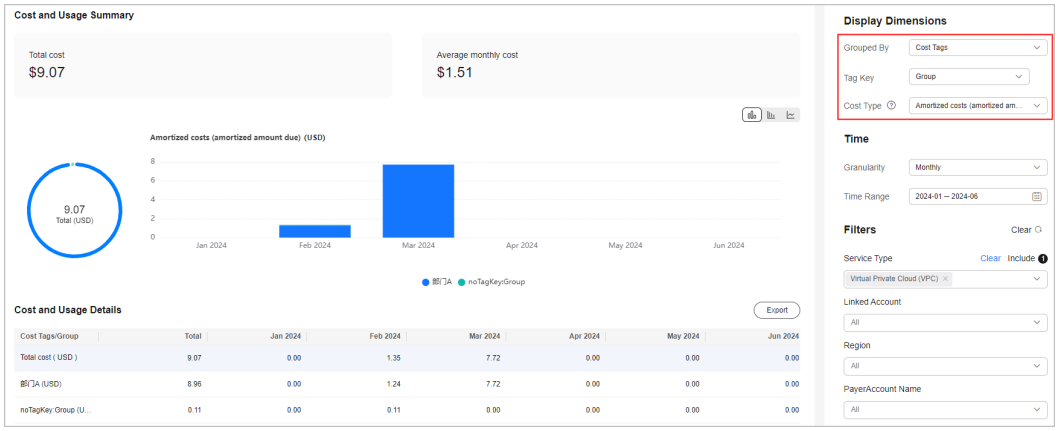
Step 1 Access the **Cost Analysis** page.

Step 2 Click **Create Custom Report** under **All Reports**.

Step 3 Set **Cost Type** to **Amortized costs (amortized amount due)** or **Net amortized costs (amortized actual payments)**.



Step 4 Set **Grouped By** to **Enterprise Project** or **Cost Tag**.



----End

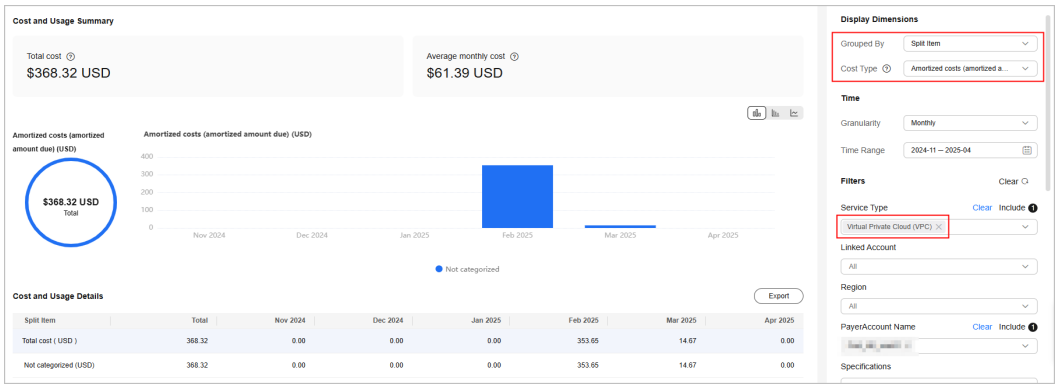
Viewing VPC Costs Split by EIP

Step 1 Access the **Cost Analysis** page.

Step 2 Click **Create Custom Report** under **All Reports**.

Step 3 Set **Cost Type** to **Amortized costs (amortized amount due)** or **Net amortized costs (amortized actual payments)**.

Step 4 Select **Split Item** from the **Grouped By** drop-down list and set the filter **Service Type** to **Virtual Private Cloud (VPC)**. Amortized VPC costs split by EIP will be displayed.



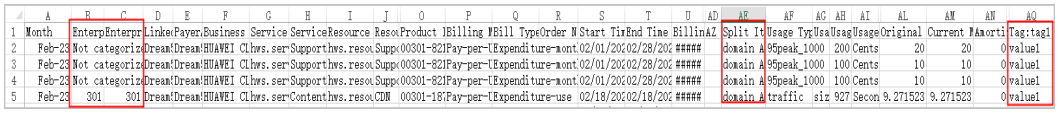
----End

Viewing Cost Splitting Details

Step 1 Access the **Cost Details Export** page.

Step 2 Click the **Export to Local Directory** tab. On the displayed page, set **Cost Type** to **Amortized costs** and specify the period and scope, and click **Export** to export cost details.

Step 3 Filter cost details by split item in the exported file. Also you can view the cost details by domain name and then zoom in to see the enterprise project and tag associated with each domain name.



	A	B	C	D	E	F	G	H	I	J	O	P	Q	R	S	T	U	AD	AF	AF	AG	AH	AI	AL	AM	AN	AQ
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----End

7 Cost and Usage Forecasting

7.1 Forecasting

Forecasting Accuracy

Forecasting is based on your historical costs and usage on Huawei Cloud. To monitor your budgets, you can enable forecasting to estimate your future costs and usage, and then configure budget alerts based on the forecasts produced. As forecasts are only a best guess estimate of future costs, the forecasted billing amounts may differ from your actual expenditures for each billing cycle.

Forecasts can vary in accuracy. Different ranges of accuracy have different prediction intervals. Huawei Cloud Cost Center provides a prediction interval of 80% for cost forecasts, indicating that 80% of your actual costs should fall within the prediction interval. The prediction interval depends on the volatility or fluctuation of your historical expenditures. The more consistent and predictable the historical expenditures, the narrower the prediction interval.

Forecasting Methods

Huawei Cloud provides different forecasting methods for different cost types and billing modes.

- Amortized costs of yearly/monthly subscriptions and pay-per-use resources, and original costs of pay-per-use resources: An AI algorithm is used to forecast the costs based on the historical expenditures. If there is not enough historical data, forecasts cannot be produced.
  - Cost data can be forecasted by the day or month only if you have at least 30 days of cost data from the last six months.
  - Costs cannot be forecasted by the hour.
- Original costs of yearly/monthly subscriptions: Only the costs of active yearly/monthly subscriptions or those within the grace period can be forecasted. If the subscriptions expire, forecasts cannot be produced. The forecasting is based on the following assumptions:
  - You did not choose **Non-Renewal Upon Expiration** or **Change to Pay-per-Use Upon Expiration**, and resources will be renewed upon expiration.

  - Auto-renewal is enabled, and expenditures should be paid seven days before resource expiration.
  - Auto-renewal is not enabled, and resources will be renewed within the grace period.
  - The discount for the latest purchase or renewal will be applied to subsequent resource renewals.

Constraints

- Only the total cost can be forecasted. Costs grouped by summary dimension cannot be forecasted. If you want to forecast the costs of a specific range, set filters to define the range.
- Forecasts do not take into account any future changes due to refunds, account adjustments, or master-member account association or disassociation.
- If the grace period of yearly/monthly subscriptions ends, forecasts will not be produced for these subscriptions.
- Forecasts are produced based on the historical data you specified. Daily forecasts currently do not take into account periodicity (such as renewals) and may differ from the actual data over the forecast period you selected. They are for reference only.
- Forecasts are produced based on historical data. If the offering price or commercial discount has changed, the forecasted cost data may differ from the actual data over the forecast period you selected. In this case, forecasts are for reference only.
- If you select a specific summary dimension, no forecast data will be displayed in bar charts and line charts. The forecasted total cost will only be displayed in the table.

7.2 When to Use Cost Forecasting

When cost forecasting is enabled, you can view forecasted costs and usage in the cost analyses, and configure budget alerts based on the forecasts produced.

Viewing Forecasts

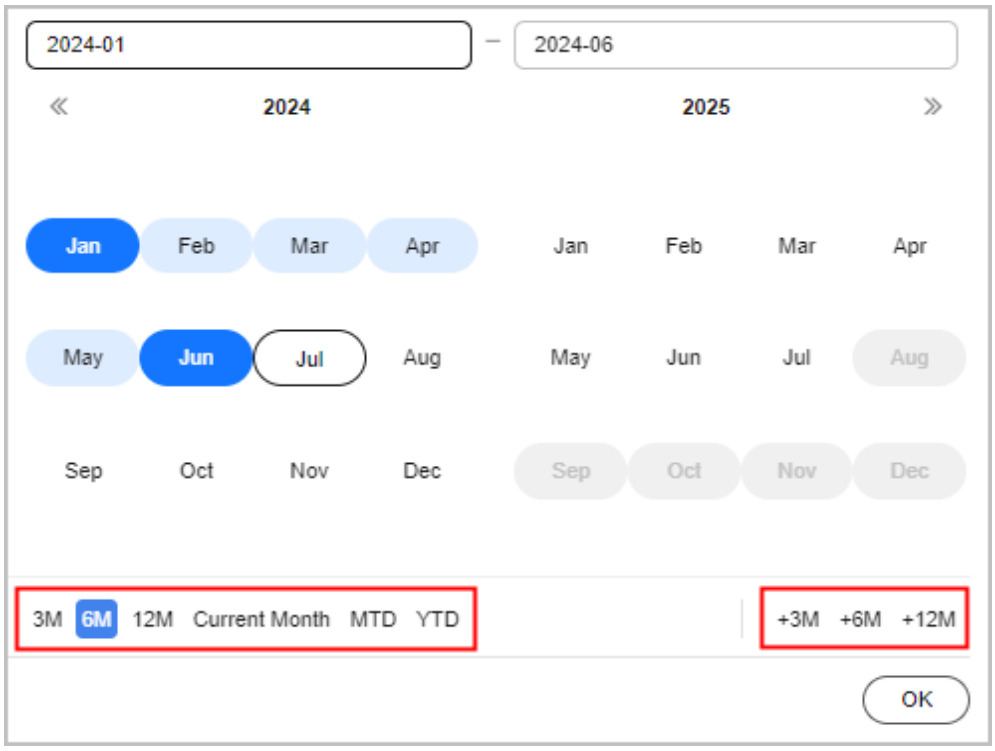
Step 1 Access the **Cost Analysis** page.

Step 2 Click **Create Custom Report** under **All Reports**.

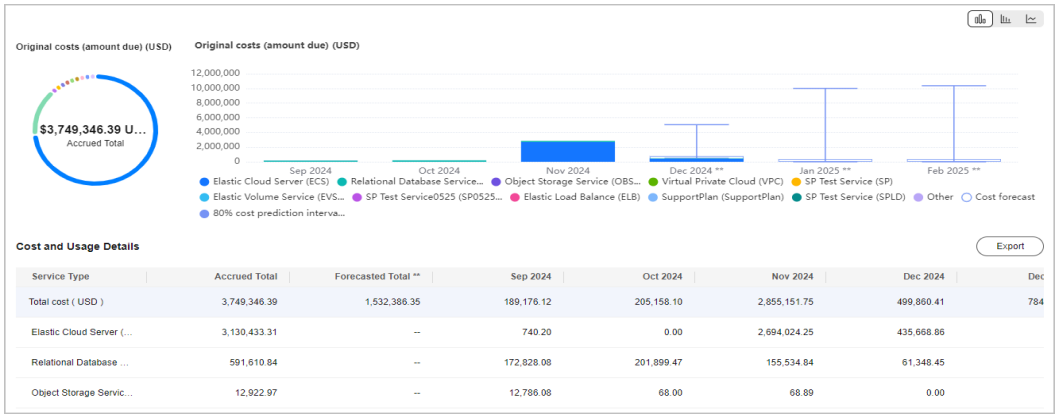
Step 3 Specify the period.

- If you want to view the forecasts by the month, the following periods are available: **Current Month**, **+3M**, **+6M**, and **+12M**.
- If you want to view the forecasts by the day, the following periods are available: **Current Month**, **+1M**, and **+3M**.

In this example, suppose you have chosen to view the cost and usage data over the last three months and the forecast for the next three months.



Step 4 Click **OK**. The following page is displayed:



- The blue bars represent the cost data generated in the past few months (including the current month).
- The white bars represent the forecasted cost data for the next few months (including the current month).

Table 7-1 Parameter description

Parameter	Description
Cost forecast	Cost data forecasted by the month or the day.
80% cost prediction interval	80% of your actual costs should fall within the prediction interval.

Parameter	Description
Accrued Total	Total costs in the past and current months during the statistical period. You can configure **Grouped By** to summarize the costs.
Forecast Total	Forecasted total costs in the current and future months during the statistical period. Costs cannot be summarized by **Grouped By**.
Total Cost	Total cost in each day or month.

----End

Creating a Forecasting-based Budget

Step 1 Access the **Budgets** page.

Step 2 Click **Create Budget**.

Step 3 Select **Custom Budget** and click **Create Budget**.

Step 4 Select **Cost budget** or **Usage budget** as needed, and click **Next**.

Step 5 Configure the budget name, details, and scope, and click **Next**.

NOTE

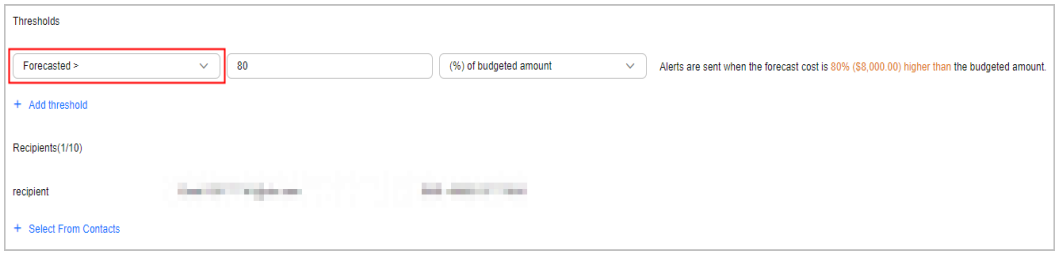
If you select **Daily** for **Reset Period** when creating a budget, the following functions are not available:

- Periodic budgeting
- Forecast-based budget alerts
- Cost categories used as filters in **Budget Scope**

Step 6 Under **Alert Thresholds**, configure **Thresholds** and **Recipients** and click **Next**.

Set **Thresholds** to **Forecast >**.

In this example, suppose you have chosen to receive an alert when the forecasted amount is greater than 80% of the budgeted amount.



Step 7 Confirm budget details and click **Save**.

----End

Scope of Forecasting-based Cost Analysis

Cost types: original costs (amount due), net original costs (actual payments), amortized costs (amortized amount due), and net amortized costs (amortized actual payments)

Usage types: pay-per-use usage, usage from packages, and usage from RIs

Data periods: daily and monthly

Scope of Forecasting-based Budgets

Budget types: cost budgets and usage budgets

Reset periods: monthly, quarterly, and yearly

Cost types: original costs (amount due), net original costs (actual payments), amortized costs (amortized amount due), and net amortized costs (amortized actual payments)

Usage types: pay-per-use usage, usage from packages, and usage from RIs

8 Budget Management

8.1 Dynamic Budgeting

When creating a budget, if you set the reset period to monthly or quarterly, you can configure a dynamic budget plan. Because your dynamic budget depends on your cost or usage data generated based on the configured budget plan, your upcoming budget amounts can fluctuate as your costs or usage changes. Cost Center will notify all alert recipients of the newly adjusted budgeted amounts on the 5th day in each month or quarter.

NOTE

Dynamic budgeting can only be configured for cost budgets and usage budgets.

Baseline Time Ranges for Monthly Budgets

Baseline Time Range	Description
Last month actual	The actual cost of the last month is directly used as the budgeted amount. Example: If the actual cost of the last month is $100 USD, the budgeted amount of the current month is $100 USD.
Current month forecast	The forecasted cost of the current month is used to calculate your budgeted amount. For details about the forecasting function, see **When to Use Cost Forecasting**. Example: If the forecasted cost of the current month is $100 USD, the budgeted amount of the current month is $100 USD. **NOTE** If your historical data is insufficient, this option cannot be used to calculate your budgeted amount.

Baseline Time Range	Description
Last several months average	The average value of actual costs in the last several months is used to calculate your budgeted amount. The average value of the actual costs in the last 1 to 12 months can be used. Example: Set **Baseline Time Range** to **Last several months average** > **Last 3 months**. The actual costs for last three months are $90 USD, $120 USD, and $150 USD, respectively. Last three months average = (90 + 120 + 150)/3 = 120. The budgeted amount for the current month is $120 USD.
Last several months compound growth rate	The compound growth rate of the last several months is used to calculate the budgeted amount. The average value of the actual costs in the last 2 to 12 months can be used. The formulas are as follows: • Compound growth rate = $\sqrt[n-1]{\lvert v_n \rvert / \lvert v_1 \rvert} - 1$ • Budgeted amount = v_n x (1 + Compound growth rate) • v_n is the actual cost of the final month in the last *n* months, and v_1 is the actual cost of the first month in the last *n* months. Example: Set **Baseline Time Range** to **Last several months compound growth rate** > **Last 3 months**. The actual costs for the last three months are $100 USD, $120 USD, and $200 USD, respectively. Last three months compound growth rate = $\sqrt{\frac{200}{100}} - 1 = 0.41$. Budgeted amount for the current month = 200 x (1 + 0.41) = $282 USD

Baseline Time Ranges for Quarterly Budgets

Baseline Time Range	Description
Last quarter actual	The actual cost of the last quarter is directly used as the budgeted amount. Example: If the actual cost of the last quarter is $100 USD, the budgeted amount of the current quarter is $100 USD.

Baseline Time Range	Description
Current quarter forecast	The forecasted cost of the current quarter is used to calculate your budgeted amount. For details about the forecasting function, see **When to Use Cost Forecasting**. Example: If the forecasted cost of the current quarter is $100 USD, the budgeted amount of the current quarter is $100 USD. **NOTE** If your historical data is insufficient, this option cannot be used to calculate your budgeted amount.
Last several quarters average	The average value of actual costs in the last several quarters is used to calculate your budgeted amount. The average value of the actual costs in the last 1 to 4 quarters can be used. Example: Set **Baseline Time Range** to **Last several quarters average** > **Last 2 quarters**. The actual costs for last two quarters are $90 USD and $120 USD, respectively. Last two quarters average = (90 + 120)/2 = 105. The budgeted amount for the current quarter is $105 USD.
Last several quarters compound growth rate	The compound growth rate of the last several quarters is used to calculate the budgeted amount. The average value of the actual costs in the last 2 to 4 quarters can be used. The formulas are as follows: • Compound growth rate = $\sqrt[n-1]{\lvert v_n \rvert / \lvert v_1 \rvert} - 1$ • Budgeted amount = v_n x (1 + Compound growth rate) • v_n is the actual cost of the final quarter in the last *n* quarters, and v_1 is the actual cost of the first quarter in the last *n* quarters. Example: Set **Baseline Time Range** to **Last several quarters compound growth rate** > **Last 3 quarters**. The actual costs for the last three quarters are $100 USD, $120 USD, and $200 USD, respectively. Last three quarters compound growth rate = $\sqrt{\frac{200}{100}} - 1 = 0.41$. Budgeted amount for the current quarter = 200 x (1 + 0.41) = $282 USD

8.2 Budgets

Cost Center supports you with **budget templates** and **custom budgets**. You can use templates to quickly create budgets, or you can create custom budgets if your use case is complex and involves a lot of different details.

Budget Templates

By using a budget template, you can create a budget more simply and quickly. There are templates for monthly budgets for service types, monthly budgets for business units, and zero spend monthly budgets.

Creating a Monthly Budget for Service Types

You can create a monthly budget for only specific or for all service types, and you configure alerts to warn you if your budget has been exceeded or is forecasted to be exceeded.

Step 1 Access the **Budgets** page.

Step 2 Click **Create Budget**.

Step 3 Select **Monthly Budget for Service Types** and click **Create Budget**.

Step 4 Configure **Budget Name**, **Budget Scope**, and **Budgeted Amount**, select recipients, and click **Save**.

Table 8-1 Parameters for creating a monthly budget for service types

Parameter	Description
Custom parameters: You can customize the following parameters, in which the budget name and alert recipients have been preset as those for common scenarios.	
Budget Name	Enter a unique budget name.
Budget Scope	Specify the service types for your budget. **NOTE** After you specify the budget scope, Cost Center will track your costs on a monthly basis.
Budgeted Amount	Net original costs (actual payments) after cash coupons are applied. Before the billing date, this is the estimated amount without any cash coupons applied.
Recipients	The contacts who will receive alerts. The account contact is the default recipient. Up to 10 recipients can be added for each budget. If you want to add or modify recipient information, go to the **Recipient Management** page in the Message Center. **NOTE** Recipients will receive an alert when: 1. The actual cost exceeds 85% of the budgeted amount. 2. The actual cost exceeds 100% of the budgeted amount. 3. The forecasted cost exceeds 100% of the budgeted amount.

Parameter	Description
Preset parameters: Common budget parameters have been preset so that you can create a budget more simply. If you need to modify the budget, go to the budget list, locate the budget, and click **Edit** in the **Operation** column.	
Budget Type	The type of the budget you created
Reset Period	Monthly
Budget Duration	Recurring
Start Time	The month when you created the budget
Allocation	Fixed
Cost Type	Net original costs (actual payments)
Thresholds	Alerts will be sent when the actual cost exceeds 85% or 100% of the budgeted amount, or the forecasted cost exceeds 100% of the budgeted amount.

Step 5 If needed, you can locate a budget and click **Edit** in the **Operation** column to modify the budget details and scope. For details about budget parameters, see **Creating a Custom Budget**.

Step 6 Confirm budget details and click **Save**.

----End

Creating a Monthly Budget for Business Units

You can create a monthly budget for specific business units (linked accounts, enterprise projects, cost tags, or cost categories) and configure alerts to warn you if your budget has been exceeded or is forecasted to be exceeded.

Step 1 Access the **Budgets** page.

Step 2 Click **Create Budget**.

Step 3 Select **Monthly Budget for Business Units** and click **Create Budget**.

Step 4 Configure **Budget Name**, **Budget Scope**, and **Budgeted Amount**, select recipients, and click **Save**.

Table 8-2 Parameters for creating a monthly budget for business units

Parameter	Description
Custom parameters: You can customize the following parameters, in which the budget name and alert recipients have been preset as those for common scenarios.	
Budget Name	Enter a unique budget name.
Budget Scope	Specify the business units (linked accounts, enterprise projects, cost tags, and cost categories) for your budget. **NOTE** When you select **Linked Account**: • If you are using a master account and want to create a budget for your member accounts, select these member accounts from **Linked Account**. • If you are not using a master account, you can only create a budget for the account you are using. When you select **Enterprise Projects**: • If you are using a master account, you can select enterprise projects by linked account, except the default enterprise project and those not categorized. • If you are not using a master account, you can only create a budget for enterprise projects in the account you are using.
Budgeted Amount	Net original costs (actual payments) after cash coupons are applied. Before the billing date, this is the estimated amount without any cash coupons applied.
Recipients	The contacts who will receive alerts. The account contact is the default recipient. Up to 10 recipients can be added for each budget. If you want to add or modify recipient information, go to the **Recipient Management** page in the Message Center. **NOTE** Recipients will receive an alert when: 1. The actual cost exceeds 85% of the budgeted amount. 2. The actual cost exceeds 100% of the budgeted amount. 3. The forecasted cost exceeds 100% of the budgeted amount.
Preset parameters: Common budget parameters have been preset so that you can create a budget more simply. If you need to modify the budget, go to the budget list, locate the budget, and click **Edit** in the **Operation** column.	
Budget Type	The type of the budget you created
Reset Period	Monthly

Parameter	Description
Budget Duration	Recurring
Start Time	The month when you created the budget
Allocation	Fixed
Cost Type	Net original costs (actual payments)
Thresholds	Alerts will be sent when the actual cost exceeds 85% or 100% of the budgeted amount, or the forecasted cost exceeds 100% of the budgeted amount.

Step 5 If needed, you can locate a budget and click **Edit** in the **Operation** column to modify the budget details and scope. For details about budget parameters, see **Creating a Custom Budget**.

Step 6 Confirm budget details and click **Save**.

----End

Creating a Zero Spend Monthly Budget

You can create a budget and configure alerts to warn you if your actual payment exceeds $0 USD. This template is suitable for scenarios such as proof of concept (POC) tests and trial uses of cash coupons.

Step 1 Access the **Budgets** page.

Step 2 Click **Create Budget**.

Step 3 Select **Zero Spend Monthly Budget** and click **Create Budget**.

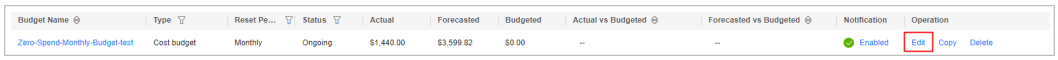
Step 4 Configure **Budget Name**, **Budget Scope,** and **Budgeted Amount** (the default value is **0** and cannot be changed), select recipients, and click **Save**.

Table 8-3 Parameters for creating a zero spend monthly budget

Parameter	Description
Custom parameters: You can customize the following parameters, in which the budget name and alert recipients have been preset as those for common scenarios.	
Budget Name	Enter a unique budget name.
Budget Scope	Select all costs, service types, or business units (linked accounts, enterprise projects, cost tags, and cost categories).

Parameter	Description
Budgeted Amount	The default value is **0** and cannot be changed.
Recipients	The contacts who will receive alerts. The account contact is the default recipient. Up to 10 recipients can be added for each budget. If you want to add or modify recipient information, go to the **Recipient Management** page in the Message Center. **NOTE** Recipients will receive a budget alert if the actual payment exceeds $0 USD.
Preset parameters: Common budget parameters have been preset so that you can create a budget more simply. If you need to modify the budget, go to the budget list, locate the budget, and click **Edit** in the **Operation** column.	
Budget Type	The type of the budget you created
Reset Period	Monthly
Budget Duration	Recurring
Start Time	The month when you created the budget
Allocation	Fixed
Budgeted Amount	0
Cost Type	Net original costs (actual payments)
Thresholds	Alerts will be sent when the actual payment exceeds $0 USD.

Step 5 If needed, you can locate a budget and click **Edit** in the **Operation** column to modify the budget details and scope. For details about budget parameters, see **Creating a Custom Budget**.



Step 6 Confirm budget details and click **Save**.

----End

Custom Budgets

When creating a budget, if you set the reset period to monthly or quarterly, you can configure a dynamic budget plan. Because your dynamic budget depends on your cost or usage data generated based on the configured budget plan, your upcoming budget amounts can fluctuate as your costs or usage changes. Cost Center will notify all alert recipients of the newly adjusted budgeted amount on the 5th day in each month or quarter.

- You can create a custom budget to set parameters specific to your use case. For example, you can customize the reset period, start date, and budget scope.

NOTE

Dynamic budgeting can only be configured for cost budgets and usage budgets.

There are four options. For details, see **Dynamic Budgeting**.

- Last quarter/month actual
- Current quarter/month forecast
- Last several quarters/months average
- Last several quarters/months compound growth rate

Important Notes

Alerts are not supported for the current month for certain monthly-settled cloud services, such as CDN billed by 95th percentile bandwidth, because their usages for the current month will not be billed until the following month.

You can create up to 1,000 budgets.

Each recipient can receive up to 100 alerts per day.

As each budget is monitored every hour, your actual costs or usage may have already exceeded the budget when you receive an alert.

If you are using a master account but have not enabled unified accounting management, you will not be able to create budgets for your member accounts.

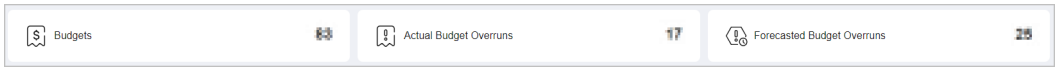
Prerequisites

Before you enable budget alerts, configure notification methods for **Cost Management** in **Message Center**. For details, see **Configuring Message Receiving Methods**.

Viewing Budget Summary

Access the **Budgets** page. You can view the budget summary information.

- **Budgets**: the total number of budgets that have been created
- **Actual Budget Overruns**: the total number of budgets that have exceeded the budgets in the current period
- **Forecasted Budget Overruns**: the total number of budgets that are predicted to exceed the budgets in the current period



Creating a Cost Budget

You can create a cost budget and specify an alert threshold:

Step 1 Access the **Budgets** page.

Step 2 Click **Create Budget**.

Step 3 Select **Custom Budget** and click **Create Budget**.

Step 4 Select **Cost budget** and click **Next**.

Step 5 Configure the budget name, details, and scope, and click **Next**.

Table 8-4 Parameters for creating a cost budget

Category	Parameter	Description
Specify Budget Name	Budget Name	Enter a unique budget name.
Configure Budget Details	Reset Period	The reset period for a budget. It can be: • **Daily**: Budget evaluation begins at 00:00:00 GMT+08:00 on the start date and will be reset to zero at 00:00:00 GMT+08:00 on each day moving forward. • **Monthly**: Budget evaluation begins at 00:00:00 GMT+08:00 on the 1st day of the start month and will be reset to zero at 00:00:00 GMT+08:00 on the 1st day of each month moving forward. • **Quarterly**: Budget evaluation begins at 00:00:00 GMT+08:00 on the 1st day of the start quarter and will be reset to zero at 00:00:00 GMT+08:00 on the 1st day of each quarter moving forward. • **Yearly**: Budget evaluation begins at 00:00:00 GMT+08:00 on the start date and will be reset to zero at 00:00:00 GMT+08:00 on January 01 of each year moving forward.
	Budget Duration	**Recurring**: You select a start date on which the recurring budgets will begin renewing. **Expiring**: You set a time range, outside which expiring budgets will not renew.
	Allocation	**Fixed**: The budgeted amount is fixed for each reset period. **Monthly**/**Quarterly**: The amount is budgeted on a monthly or quarterly basis. **Dynamic**: The amount is automatically budgeted based on the configured baseline time range.

Category	Parameter	Description
	Baseline Time Range	There are four options. For details, see **Dynamic Budgeting**. • Last quarter/month actual • Current quarter/month forecast • Last several quarters/months average • Last several quarters/months compound growth rate
	Budgeted Amount	• If **Allocation** is **Fixed**, you just set the budget amount to a fixed value. • If **Reset Period** is **Daily** or **Yearly**, you just set the budget amount to a fixed value. • If **Allocation** is **Monthly** or **Quarterly**, you need to set the budgeted amounts one by one. If the budgeted amount is not set for a period, the amount most recently configured will be applied. For example, if the budgeted amount was not set for May 2021, the budgeted amount of April 2021 would be used for May 2021. • If you set **Allocation** to **Dynamic**, you do not need to set budgeted amount manually. Because your dynamic budget depends on your cost data, your upcoming budget amounts can fluctuate as your costs change. Cost Center will notify all alert recipients of the newly adjusted budgeted amount on the 5th day in each month or quarter.
Define Budget Scope	Define Budget Scope	Define a budget scope as required. You can use filters such as service type, enterprise project, and region. You will see cost budgets for the last 12 months in the pane on the right. **NOTE** If you are using a master account and want to create a budget for your member accounts, select these member accounts from **Linked Account**.
	Business Entity	Select the business entity that a cloud service belongs to. Example: Huawei Cloud
	Split Item	This parameter is only valid when you set **Cost Type** to **Amortized costs (amortized amount due)**. If you have enabled cost splitting, you can view the cost data of the specified cloud service by split item. For details, see **Enabling Cost Splitting**.

Category	Parameter	Description
	Cost Type	• **Original costs (amount due)**: the costs of cloud services purchased at the list price with available discounts applied. Original costs are equivalent to the amount due in the bill. Before the billing date, this is an estimated amount. • **Amortized costs (amortized amount due)**: the effective costs of the prepaid amounts amortized on a daily basis. It may take about 24 to 48 hours before amortized costs are displayed. Before the billing date, amortized costs are only estimates. When you set **Cost Type** to **Original costs (amount due)**, you can toggle on **Include discount** to include both discount and truncated amount. In this case, the original cost is equivalent to the list price.

Step 6 Under **Alert Thresholds**, configure **Thresholds** and **Recipients** and click **Next**.

Table 8-5 Parameters for creating alerts for a cost budget

Parameter	Description
Thresholds	A maximum of five thresholds can be set for each budget. The following alerting conditions are supported: • **Actual >**: If the actual cost reaches a certain amount or a certain percentage of a budgeted amount, an alert will be reported. • **Forecasted >**: If the forecasted cost reaches a certain amount or a certain percentage of a budgeted amount, an alert will be reported. For details about how to create a forecast-based budget, see **Creating a Forecasting-based Budget**. The threshold can be a certain amount or a certain percentage of the budgeted amount. • **Amount (USD)**: If the actual cost reaches a certain amount, an alert will be reported. • **(%) of budgeted amount**: If the actual cost reaches a certain percentage of a budgeted amount, an alert will be reported.
Recipients	The contacts who will receive alerts. The account contact is the default recipient. Up to 10 recipients can be added for each budget. If you want to add or modify recipient information, go to the **Recipient Management** page in the Message Center.

Step 7 Confirm budget details and click **Save**.

----End

Creating a Usage Budget

You can create a usage budget and configure alerts to warn you if the threshold you defined is reached:

Step 1 Access the **Budgets** page.

Step 2 Click **Create Budget**.

Step 3 Select **Custom Budget** and click **Create Budget**.

Step 4 Select **Usage budget** and click **Next**.

Step 5 Configure the budget name, details, and scope, and click **Next**.

Table 8-6 Parameters for creating a usage budget

Category	Parameter	Description
Specify Budget Name	Budget Name	Enter a unique budget name.
Configure Budget Details	Usage Type	The way a pay-per-use cloud service is billed. Select the usage type you want to budget against.
	Reset Period	The reset period for a budget. It can be: • **Daily**: Budget evaluation begins at 00:00:00 GMT+08:00 on the start date and will be reset to zero at 00:00:00 GMT+08:00 on each day moving forward. • **Monthly**: Budget evaluation begins at 00:00:00 GMT+08:00 on the 1st day of the start month and will be reset to zero at 00:00:00 GMT+08:00 on the 1st day of each month moving forward. • **Quarterly**: Budget evaluation begins at 00:00:00 GMT+08:00 on the 1st day of the start quarter and will be reset to zero at 00:00:00 GMT+08:00 on the 1st day of each quarter moving forward. • **Yearly**: Budget evaluation begins at 00:00:00 GMT+08:00 on the start date and will be reset to zero at 00:00:00 GMT+08:00 on January 01 of each year moving forward.

Category	Parameter	Description
	Budget Duration	**Recurring**: You select a start date on which the recurring budgets will begin renewing. **Expiring**: You set a time range, outside which expiring budgets will not renew.
	Allocation	**Fixed**: The budgeted amount is fixed for each reset period. **Monthly**/**Quarterly**: The amount is budgeted on a monthly or quarterly basis. **Dynamic**: The amount is automatically budgeted based on the configured baseline time range.
	Baseline Time Range	There are four options. For details, see **Dynamic Budgeting**. • Last quarter/month actual • Current quarter/month forecast • Last several quarters/months average • Last several quarters/months compound growth rate
	Budgeted Usage	• If **Allocation** is **Fixed**, you just set the budget amount to a fixed value. • If **Reset Period** is **Daily** or **Yearly**, you just set the budget amount to a fixed value. • If **Allocation** is **Monthly** or **Quarterly**, you need to set the budgeted amounts one by one. If the budgeted amount is not set for a period, the amount most recently configured will be applied. For example, if the budgeted amount was not set for May 2021, the budgeted amount of April 2021 would be used for May 2021. • If you set **Allocation** to **Dynamic**, you do not need to set budgeted amount manually. Because your dynamic budget depends on your cost data, your upcoming budget amounts can fluctuate as your costs change. Cost Center will notify all alert recipients of the newly adjusted budgeted amount on the 5th day in each month or quarter.

Category	Parameter	Description
Define Budget Scope	Define Budget Scope	Define a budget scope as required. You can use filters such as enterprise project, linked account, and region. You will see usage budgets for the last 12 months in the pane on the right. **NOTE** If you are using a master account and want to create a budget for your member accounts, select these member accounts from **Linked Account**.
	Usage	• Pay-per-use • Packages • RIs By default, **Pay-per-use** is selected.

Step 6 Under **Alert Thresholds**, configure **Thresholds** and **Recipients** and click **Next**.

Table 8-7 Parameters for creating alerts for a usage budget

Parameter	Description
Thresholds	A maximum of five thresholds can be set for each budget. The following alerting conditions are supported: • **Actual >**: If the actual usage reaches a certain usage or a certain percentage of a budgeted usage, an alert will be reported. • **Forecasted >**: If the forecasted usage reaches a certain usage or a certain percentage of a budgeted usage, an alert will be reported. For details about how to create a forecast-based budget, see **Creating a Forecasting-based Budget**. The threshold can be a certain usage or a certain percentage of the budgeted usage. • **Usage (Byte)**: If the actual usage reaches this value, an alert will be reported. • **(%) of budgeted usage**: If the actual usage reaches a certain percentage of budgeted usage, an alert will be reported.
Recipients	The contacts who will receive alerts. The account contact is the default recipient. Up to 10 recipients can be added for each budget. If you want to add or modify recipient information, go to the **Recipient Management** page in the Message Center.

Step 7 Confirm budget details and click **Save**.

----End

Creating an RI Utilization/Coverage Budget

You can create an RI-utilization/coverage budget to track the utilization or coverage of specified RIs. You can configure alerts to warn you if the utilization or coverage is lower than the budget threshold you defined.

Step 1 Access the **Budgets** page.

Step 2 Click **Create Budget**.

Step 3 Select **Custom Budget** and click **Create Budget**.

Step 4 Select **RI utilization budget** or **RI coverage budget**. Then, click **Next**.

Step 5 Configure the budget name, details, and scope, and click **Next**.

Table 8-8 Parameters for creating an RI utilization/coverage budget

Category	Parameter	Description
Specify Budget Name	Budget Name	Enter a unique budget name.
Configure Budget Details	Reset Period	The reset period for a budget. It can be: • **Daily**: Budget evaluation begins at 00:00:00 GMT+08:00 on the start date and will be reset to zero at 00:00:00 GMT+08:00 on each day moving forward. • **Monthly**: Budget evaluation begins at 00:00:00 GMT+08:00 on the 1st day of the start month and will be reset to zero at 00:00:00 GMT+08:00 on the 1st day of each month moving forward. • **Quarterly**: Budget evaluation begins at 00:00:00 GMT+08:00 on the 1st day of the start quarter and will be reset to zero at 00:00:00 GMT+08:00 on the 1st day of each quarter moving forward. • **Yearly**: Budget evaluation begins at 00:00:00 GMT+08:00 on the start date and will be reset to zero at 00:00:00 GMT+08:00 on January 01 of each year moving forward.
	Budget Duration	**Recurring**: You select a start date on which the recurring budgets will begin renewing. **Expiring**: You set a time range, outside which expiring budgets will not renew.
	Allocation	**Fixed**: You can allocate a fixed value for each budget.

Category	Parameter	Description
	Budgeted Utilization (%)	The budgeted utilization of RIs in the reset period. Example: If you set the monthly budgeted utilization to 80% for ECSs, you can configure alerts (for example, via SMS or email) to warn you when the actual monthly RI utilization (RI hours used/RI hours purchased x 100%) is lower than 80%.
	Budgeted Coverage (%)	The budgeted coverage of RIs in the reset period. Example: If you set the monthly budgeted coverage to 80% for ECSs, you can configure alerts (for example, via SMS or email) to warn you when the actual monthly RI coverage (RI covered hours/Total resource running hours x 100%) is lower than 80%.
Define Budget Scope	Define Budget Scope	Define a budget scope as required. Specifically, you can set filters such as **Linked Account**, **Region**, and **AZ** on the left pane, and you will see the RI utilization or coverage from the last 12 months in the pane on the right. **NOTE** If you are using a master account and want to create a budget for your member accounts, select these member accounts from **Linked Account**.

Step 6 Under **Alert Thresholds**, configure **Thresholds** and **Recipients** and click **Next**.

Table 8-9 Parameters for creating alerts for an RI utilization/coverage budget

Parameter	Description
Thresholds	If the actual usage reaches the value of **Budgeted Utilization** or **Budgeted Coverage**, an alert will be sent.
Recipients	The contacts who will receive alerts. The account contact is the default recipient. Up to 10 recipients can be added for each budget. If you want to add or modify contact information, go to **Recipient Management** in the Message Center.

Step 7 Confirm budget details and click **Save**.

----End

Creating a Savings Plan Utilization/Coverage Budget

You can create a savings plan budget to track the utilization or coverage of specified savings plans. You can configure alerts to warn you if the utilization or coverage is lower than the budget threshold you defined.

Step 1 Access the **Budgets** page.

Step 2 Click **Create Budget**.

Step 3 Select **Custom Budget** and click **Create Budget**.

Step 4 Select **Savings plan utilization budget** or **Savings plan coverage budget**. Then, click **Next**.

Step 5 Configure the budget name, details, and scope, and click **Next**.

Category	Parameter	Description
Specify Budget Name	Budget Name	Enter a unique budget name.
Configure Budget Details	Reset Period	The reset period for a budget. It can be: • **Daily**: Budget evaluation begins at 00:00:00 GMT+08:00 on the start date and will be reset to zero at 00:00:00 GMT+08:00 on each day moving forward. • **Monthly**: Budget evaluation begins at 00:00:00 GMT+08:00 on the 1st day of the start month and will be reset to zero at 00:00:00 GMT+08:00 on the 1st day of each month moving forward. • **Quarterly**: Budget evaluation begins at 00:00:00 GMT+08:00 on the 1st day of the start quarter and will be reset to zero at 00:00:00 GMT+08:00 on the 1st day of each quarter moving forward. • **Yearly**: Budget evaluation begins at 00:00:00 GMT+08:00 on the start date and will be reset to zero at 00:00:00 GMT+08:00 on January 01 of each year moving forward.
	Budget Duration	**Recurring**: You select a start date on which the recurring budgets will begin renewing. **Expiring**: You set a time range, outside which expiring budgets will not renew.
	Allocation	**Fixed**: You can allocate a fixed value for each budget.

Category	Parameter	Description
	Budgeted Utilization (%)	The budgeted utilization of savings plans in the reset period. Example: If you set the monthly budgeted utilization to 80% for a savings plan, you can configure alerts (for example, via SMS or email) to warn you when the actual monthly savings plan utilization is lower than 80%. Savings plan utilization = Amount deducted from the savings plan/Total amount saved by using the savings plan x 100%
	Budgeted Coverage (%)	The budgeted coverage of savings plans in the reset period. Example: If you set the monthly budgeted coverage to 80% for a savings plan, you can configure alerts (for example, via SMS or email) to warn you when the actual monthly savings plan coverage is lower than 80%. Savings plan coverage = Amount deducted from the savings plan/(Amount deducted from the savings plan + Cost of eligible usage not covered by the savings plan) x 100%
Define Budget Scope	Define Budget Scope	Define a budget scope as required. You can click **Modify** to use filters such as linked account, region, and specifications. You will see the budgets of savings plans for the last 12 months in the pane on the right. **NOTE** If you are using a master account and want to create a budget for your member accounts, select these member accounts from **Linked Account**.

Step 6 Under **Alert Thresholds**, configure **Thresholds** and **Recipients** and click **Next**.

Table 8-10 Parameters for creating alerts for a savings plan utilization/coverage budget

Parameter	Description
Thresholds	If the actual usage reaches the value of **Budgeted Utilization** or **Budgeted Coverage**, an alert will be sent.
Recipients	The contacts who will receive alerts. The account contact is the default recipient. Up to 10 recipients can be added for each budget. If you want to add or modify contact information, go to **Recipient Management** in the Message Center.

Step 7 Confirm budget details and click **Save**.

----End

Alerts

- If the actual cost, usage, utilization, or coverage reaches the configured threshold, specified recipients will receive alerts via the notification methods you configured.
- If the actual cost or usage reaches the configured threshold, the recipients will receive the alerts within one hour. Each recipient can receive a maximum of 100 budget alerts a day. Plan your budget appropriately.
- Within a budget monitoring period, the alert is sent only once, even if more than one configured thresholds are reached.

  Suppose you set the budgeted amount to $100 USD and thresholds to 60%, 70%, and 80%. If the actual cost is $85 USD (85% of the budgeted amount), Huawei Cloud will send only one alert, informing recipients that the current cost exceeds 80% of the budgeted amount.
- An alert is sent only once for each threshold in a reset period.

  Suppose you set **Reset Period** to **Monthly**, budgeted amount to $100 USD, and threshold to 80%. If the actual cost of the current month reaches $80 USD (80% of the budgeted amount), Huawei Cloud will report an alert.

  If the threshold of the current month is changed to 90%, the system will check costs based on the new threshold. If the actual cost of the current month reaches $90 USD (90% of the budgeted amount), Huawei Cloud will report another alert.

8.3 Budget Reports

You can create reports for your budgets, and Huawei Cloud will send you the budget reports on a specified day.

Important Notes

- Budget reports are delivered at approximately 02:00 (GMT+08:00) on the specified day.
- A maximum of 50 budget reports can be created for an account.

Creating a Budget Report

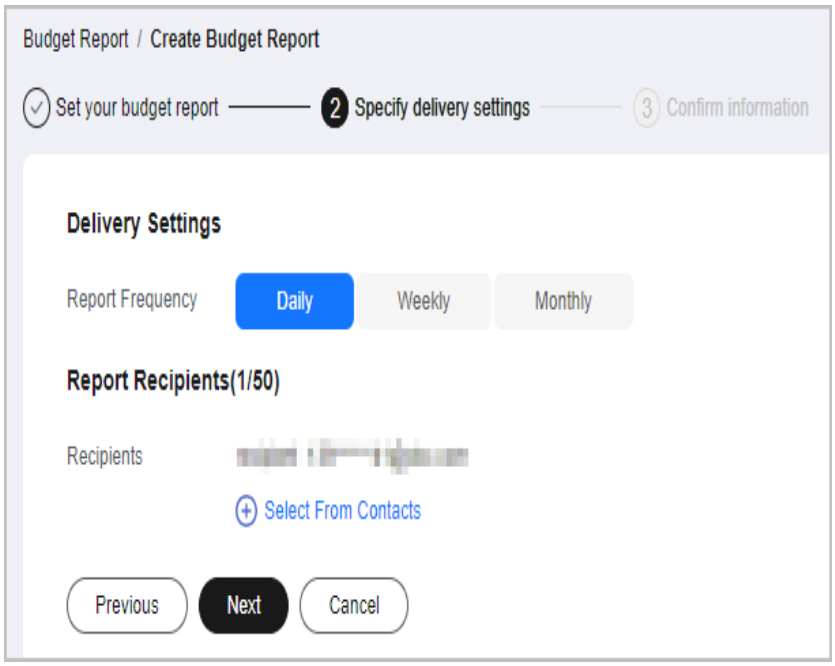
Step 1 Log in to Cost Center.

Step 2 Choose **Budget Management** > **Budget Reports**.

Step 3 Click **Create Budget Report** in the upper right corner of the page.

Step 4 Set the report name, select budgets to be included, and click **Next**.

Step 5 Set the report frequency, select the report recipients, and click **Next**.



NOTE

You can add up to 50 recipients for each budget alert. If you want to add or modify recipient information, go to the **Recipient Management** page in the Message Center.

Step 6 Confirm your budget report information and click **Save**.

----End

8.4 Managing Budgets

Viewing a Budget

Step 1 Log in to Cost Center.

Step 2 Choose **Budget Management** > **Budgets**.

Step 3 View the list of your budgets.

Actual vs Budgeted: Displays the percentage of your actual costs or usage to the total budgeted amount within the selected period.

Forecasted vs Budgeted: Displays the percentage of your forecasted costs to the total budgeted amount within the selected period.

Step 4 Click a budget name to view the budget details.

----End

Editing a Budget

If you want to edit the information of a created budget, such as the budget duration and time range, perform the following operations:

Step 1 Log in to Cost Center.

Step 2 Choose **Budget Management** > **Budgets**.

Step 3 Select a budget and click **Edit** in the **Operation** column.

----End

Copying a Budget

If you want to quickly create a budget, perform the following operations:

Step 1 Log in to Cost Center.

Step 2 Choose **Budget Management** > **Budgets**.

Step 3 Select a budget and click **Copy** in the **Operation** column.

Step 4 Modify the copied budget.

Step 5 Click **Save**.

----End

Deleting a Budget

Step 1 Log in to Cost Center.

Step 2 Choose **Budget Management** > **Budgets**.

Step 3 Select a budget and click **Delete** in the **Operation** column.

----End

9 Cost Anomaly Detection

9.1 Overview of Cost Anomaly Detection

What Is Cost Anomaly Detection?

Cost Anomaly Detection uses machine learning to analyze your historical pay-per-use and yearly/monthly expenditures, establish a specific expenditure model for you, and identify root causes for cost surprises based on forecasted amounts. With simple steps, Cost Anomaly Detection helps you quickly take action based on detected cost anomalies to maintain your planned expenditures.

Cost Anomaly Detection helps you identify potential cost anomalies. If you have a budget, you are advised to use budget alerting instead to receive notifications as soon as possible.

NOTICE

Cost Anomaly Detection is a free function. Before using it, you must understand and agree that it uses algorithms to identify potential cost anomalies in the monitoring scope. For details, see **Rules for Cost Anomalies**.

Cost forecasts are estimates and may not be entirely accurate or stable. As a result, detection may be inaccurate or incomplete, and alert notifications may not always be timely. This function is not accountable for the underlying causes of anomalies or any associated losses.

9.2 Rules for Cost Anomalies

NOTE

- Cost Anomaly Detection identifies potential anomalies but does not take any actions to correct them. It is not accountable for the underlying causes of anomalies or any associated losses. Cost Anomaly Detection uses algorithms to forecast your costs based on your consumption model. The forecast is for reference only and may not be entirely accurate. For more information about forecasting, see **Forecasting**.
- Cost anomalies are not identified in real time. There is some delay. For details, see **Delay in Generating Cost Anomalies**.
- Cost Anomaly Detection has a specific monitoring scope. For details, see **Monitoring Scope of Cost Monitors**.
- The cost type for cost anomaly detection is the net original cost (actual payment), also referred to as the actual cost.

Delay in Generating Cost Anomalies

- Cost anomalies are not recorded in real time. Cost Center supports user-created cost monitors . The delay details are as follows:
  - User-created cost monitors: There is a T+1 delay for the latest identified anomaly to appear, where T represents the day an anomaly occurs. For example, if a cost anomaly occurs on April 08 and meets the detection rules, Cost Center will generate an anomaly record on the afternoon of April 09. Anomalies are identified one day after they occur.
- The delay in calculating the cost impact is consistent with that in generating cost anomalies. The details are as follows:
  - User-created cost monitors
    - Suppose you found a cost anomaly in pay-per-use resources. If the anomaly was identified on April 10 and persisted until April 14, the anomaly lasted for five days. The cost impact equals the sum of the differences between the actual costs and the maximum forecasted costs from April 09 to April 13.
    - Suppose you found a cost anomaly in yearly/monthly resources. If the anomaly was identified on April 10 and persisted until April 14, the anomaly lasted for five days. The cost impact equals the cost difference between April 01 to April 13 and March 01 to March 13.

Monitoring Scope of Cost Monitors

Cost Anomaly Detection applies to both pay-per-use and yearly/monthly costs.

- Monitoring scope for yearly/monthly costs: costs whose bill type is **Expenditure-new purchase**, **Expenditure-renewal**, **Expenditure-change**, **Expenditure-auto-renewal**, or **Expenditure-monthly payment**.
- Monitoring scope for pay-per-use costs: costs whose bill type is **Expenditure-use**.

NOTE

- Cost Anomaly Detection does not track cost anomalies in monthly-settled cloud services, such as CDN billed by 95th percentile bandwidth.

Rules for Detecting Cost Anomalies

Anomaly Cost Detection identifies anomalies in your pay-per-use and yearly/monthly costs.

- Detection rules for pay-per-use costs: AI algorithms are used to identify cost anomalies. If the actual cost is greater than the maximum forecasted cost and the difference is greater than $1 USD, a cost anomaly will be recorded.
- Detection rules for yearly/monthly cost: If the MoM growth rate of MTD costs is greater than the configured threshold (20% by default, which can be changed) and the difference is greater than $1 USD, a cost anomaly will be recorded.

Rules for Calculating Cost Impact

- Cost impact on pay-per-use resources

  Cost impact = Actual cost on the current day – Maximum forecasted cost

  If the cost anomaly persists, the impacts will accumulate. During the anomaly period, the cost impact equals the sum of the daily differences between the actual costs and the maximum forecasted costs.
- Cost impact on yearly/monthly resources

  Cost impact = Cost for the current month – Cost for the same period in the previous month

Severity of Cost Anomalies

There are three levels of severity for cost anomalies, depending on the cost impact percentage.

- Minor: > 0% and < 20%
- Major: ≥ 20% and < 50%
- Critical: ≥ 50%

NOTE

There are slight differences in how the impact percentages for pay-per-use and yearly/monthly resources are calculated.

- Impact percentage of pay-per-use cost anomalies = (Actual cost – Maximum forecasted cost)/Maximum forecasted cost
- MoM growth rate of yearly/monthly costs = (Cost for the current month – Cost for the same period in the previous month)/Cost for the same period in the previous month

9.3 Creating a Cost Monitor

Procedure

Step 1 Access the **Cost Anomaly Detection** page.

Step 2 Click **Create Monitor**.

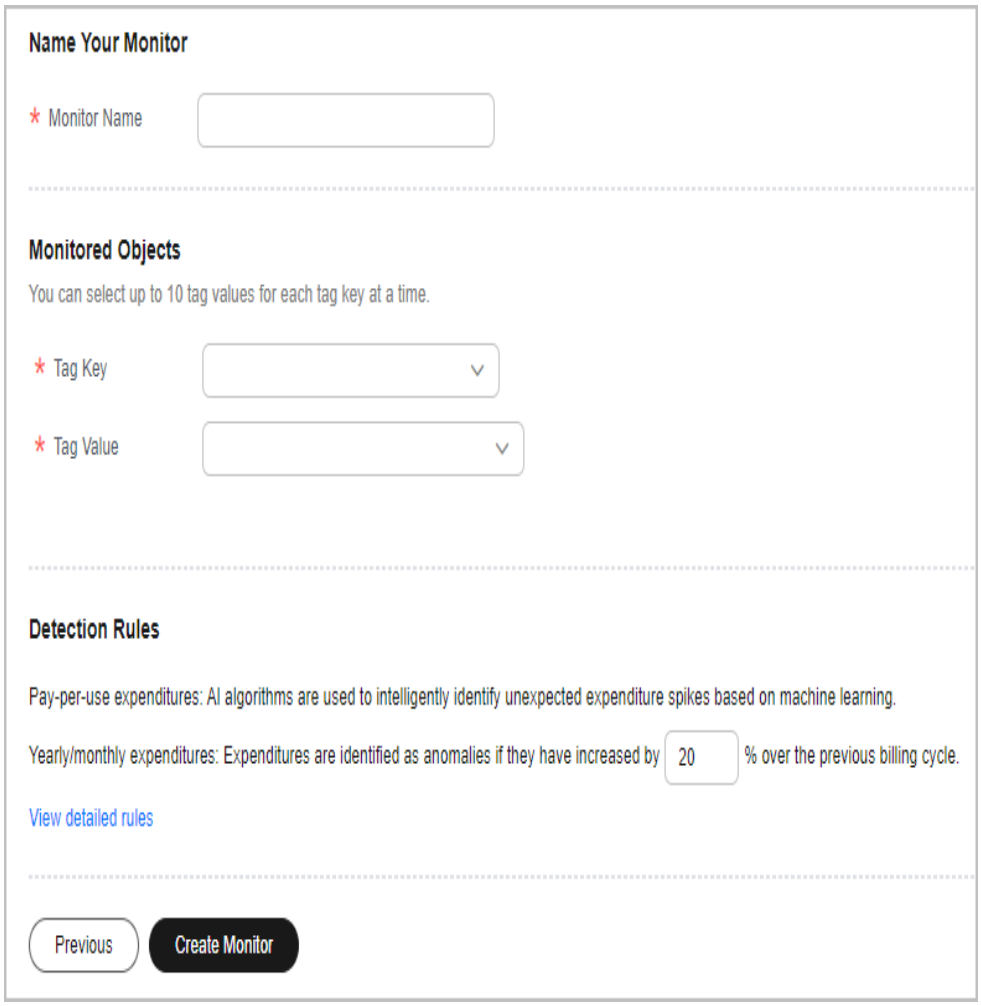
Step 3 Choose a monitor type and click **Next**.

You can create monitors for all services, for just linked accounts, or based on cost tags. Only one monitor type is recommended for an account. Otherwise, duplicate anomalies may be recorded.

- All services: This type of monitor tracks the expenditure anomalies for all your services. It is recommended if you do not need to group costs within your enterprise. Each account can only create one monitor of this type.
- Linked accounts: This type of monitor tracks the pay-per-use expenditure anomalies for an individual linked account. It can be useful if you are using a master account for unified accounting management and want to group costs by linked accounts. The master account can create only one monitor of this type for each linked account.
- Cost tags: This type of monitor tracks the expenditure anomalies for an individual cost tag key-value pair. It is recommended if you want to group costs by cost tags. Only one monitor of this type can be created for each cost tag value.
- Cost categories: This type of monitor tracks the expenditure anomalies for an individual cost category. It is recommended if you want to group costs by cost categories.
- Enterprise projects: This type of monitor tracks pay-per-use and yearly/monthly expenditure anomalies for the specified enterprise project. It is recommended if you want to group costs by enterprise project.

Step 4 Configure monitor details and click **Create Monitor**.

In this example, the **Cost tags** option is selected as the monitor type.



----End

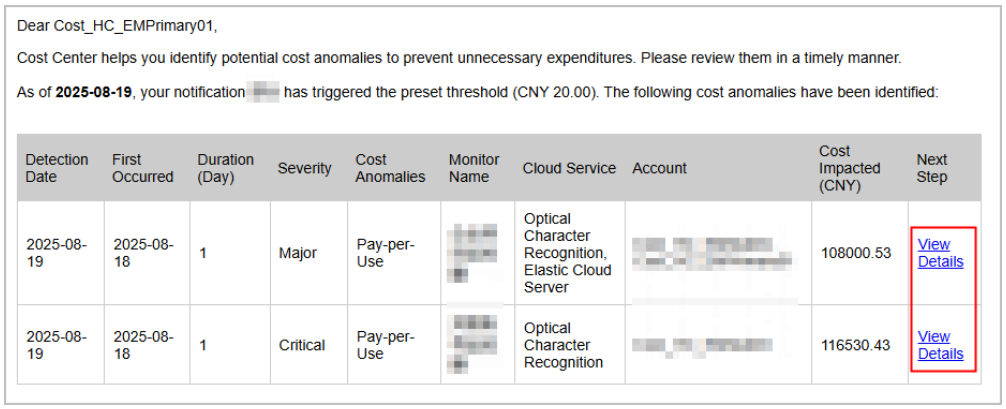
9.4 Analyzing Cost Anomalies

Checking Email for Cost Anomaly Notifications

Prerequisites: You will receive email notifications only if you have configured email alerts for cost anomalies.

Step 1 Check your email for cost anomaly notifications.

Step 2 In the email, click **View Details** in the **Operation** column. You will be redirected to the **Cost Anomaly Details** page in Cost Center.



Dear Cost_HC_EMPrimary01,

Cost Center helps you identify potential cost anomalies to prevent unnecessary expenditures. Please review them in a timely manner.

As of **2025-08-19**, your notification [redacted] has triggered the preset threshold (CNY 20.00). The following cost anomalies have been identified:

Detection Date	First Occurred	Duration (Day)	Severity	Cost Anomalies	Monitor Name	Cloud Service	Account	Cost Impacted (CNY)	Next Step
2025-08-19	2025-08-18	1	Major	Pay-per-Use	[redacted]	Optical Character Recognition, Elastic Cloud Server	[redacted]	108000.53	View Details
2025-08-19	2025-08-18	1	Critical	Pay-per-Use	[redacted]	Optical Character Recognition	[redacted]	116530.43	View Details

Table 9-1 Fields in an email notification of cost anomalies

Field	Description
Detection Date	Date when a cost anomaly is detected. **NOTE** Cost anomalies are not recorded in real time. Cost Center supports user-created cost monitors . For details about the delay, see **Delay in Generating Cost Anomalies**.
First Occurred	Date when a cost anomaly actually occurred. This date precedes the detection date by two days for system-created cost monitors and by one day for user-created ones. For details, see **Delay in Generating Cost Anomalies**.
Duration	The length of time a cost anomaly persists for. The anomaly might not be only temporary.
Severity	Severity of an anomaly. Low severity means the actual expenditure is only slightly higher than the maximum expected expenditure when the anomaly is detected, whereas high severity indicates a significant difference between the expected and actual expenditure. For details, see **Severity of Cost Anomalies**.
Cost Anomalies	Pay-per-use or yearly/monthly costs. For details, see **Monitoring Scope of Cost Monitors**.
Monitor	Name of the monitor that detects a cost anomaly.
Service Type	Name of the service where a cost anomaly is detected.
Account Name	Account that generates abnormal costs. This field only displays the enterprise master account and its member accounts associated for unified accounting management.

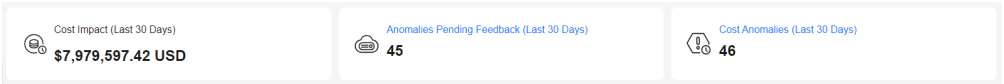
Field	Description
Cost Impact	• Total cost impact The sum of the daily cost impact over the anomaly monitoring period. • Cost impact Subject to the latest data of the day when you view the cost anomaly over the anomaly monitoring period. – Cost impact on pay-per-use resources = Actual cost on the current day – Maximum forecasted cost – Cost impact on yearly/monthly resources = Cost for the current month – Cost for the same period in the previous month For details, see **Rules for Calculating Cost Impact**. **Example:** Suppose you have a cost anomaly record from April 10 to April 12, the anomaly lasts for three days, the impact cost on April 10 is $100 USD, on April 11 is $200 USD, and on April 12 is $300 USD. In this case, the total cost impacted is $600 USD.
Next Step	Click **View Details** to go to the anomaly details page.

----End

Viewing Anomaly History

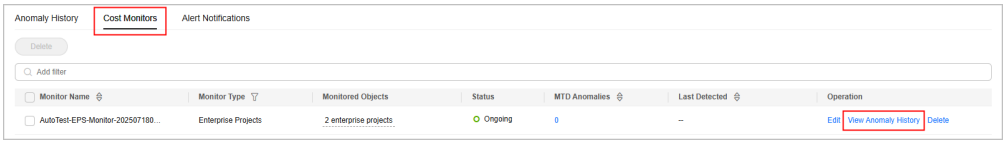
Step 1 Access the **Cost Anomaly Detection** page.

Step 2 View the cost anomalies of the last 30 days in the **Cost Anomaly Detection Summary** area.



- **Cost Impact (Last 30 Days)**: the cost of anomalies reported in the last 30 days
- **Anomalies Pending Feedback (Last 30 Days)**: the number of cost anomalies waiting for you to give feedback on in the last 30 days
- **Cost Anomalies (Last 30 Days)**: the number of cost anomalies reported in the last 30 days

Step 3 Click the **Cost Monitors** tab.



Step 4 Click **View Anomaly History** in the **Operation** column of the monitor.

All cost anomalies reported in the last 90 days are displayed.

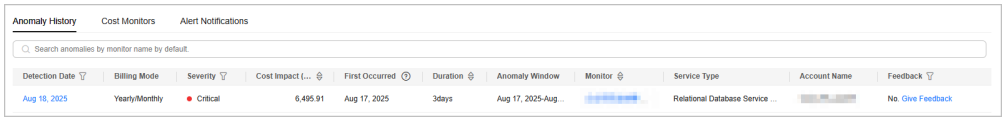


Table 9-2 Fields for anomaly history

Field	Description
Detection Date	Date when a cost anomaly is detected. **NOTE** Cost anomalies are not recorded in real time. Cost Center supports user-created cost monitors . For details about the delay, see **Delay in Generating Cost Anomalies**.
Billing Mode	How the resources with a cost anomaly are billed.
Severity	Severity of an anomaly. Low severity means the actual expenditure is only slightly higher than the maximum expected expenditure when the anomaly is detected, whereas high severity indicates a significant difference between the expected and actual expenditure. For details, see **Severity of Cost Anomalies**.
Cost Impact	• Pay-per-use expenditures The amount that a maximum forecasted cost in a given statistical period was exceeded by. Cost impact = Actual cost – Maximum forecasted cost For example, a cost impact of $20 USD means that the actual cost is $20 USD higher than the maximum forecasted cost in the statistical period. • Yearly/Monthly expenditures The amount that the cost for the same period in the previous billing cycle was exceeded by. Cost impact = Actual cost for the current month – Cost for the same period in the previous month For example, a cost impact of $20 USD means that the MTD cost (excluding the cost of the current day) is $20 USD higher than that for the previous month. For details, see **Rules for Calculating Cost Impact**.
First Occurred	Date when a cost anomaly actually occurred. This date precedes the detection date by two days for system-created cost monitors and by one day for user-created ones. For details, see **Delay in Generating Cost Anomalies**.
Duration	The length of time a cost anomaly persists for. The anomaly might not be only temporary.
Anomaly Window	The window of time during which a cost anomaly persists. This date precedes the detection date by two days for system-created cost monitors and by one day for user-created ones. For details, see **Delay in Generating Cost Anomalies**.

Field	Description
Monitor	Name of the monitor that detects a cost anomaly.
Service Type	Name of the service where a cost anomaly is detected.
Account Name	Account that generates abnormal costs.
Feedback	Feedback provided in **Providing Feedback**. • **Not provided**: No feedback is provided. • **Unforeseen anomaly**: The detection result is accurate, and the anomaly is unforeseen. • **False positive**: It is not an anomaly. • **Foreseen anomaly**: The detection result is accurate, and the anomaly is foreseen.

Step 5 Click the value of **Detection Date**. You can view the details about that anomaly.

----End

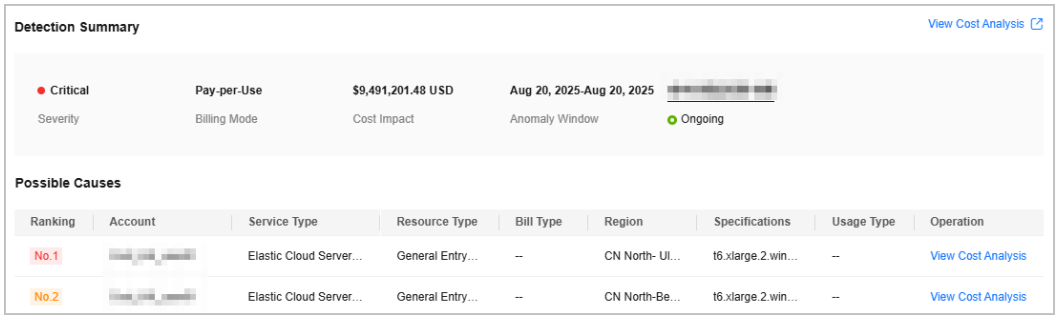
Analyzing Root Causes

Step 1 Access the **Cost Anomaly Detection** page.

Step 2 Click the **Anomaly History** tab.

Step 3 View all anomalies detected by a specified monitor.

Step 4 Click a particular detection date to view the possible causes of the anomaly.



Step 5 Click **View Cost Analysis** to view the analyses so as to identify the root causes more accurately.

----End

Providing Feedback

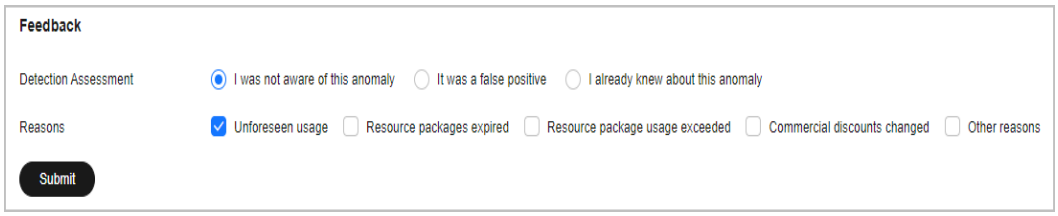
You can provide feedback on the accuracy of detected cost anomalies.

Step 1 Access the **Cost Anomaly Detection** page.

Step 2 Click the **Anomaly History** tab.

Step 3 Click **Give Feedback** in the **Operation** column.

Step 4 Provide your feedback on the anomaly detection result.



----End

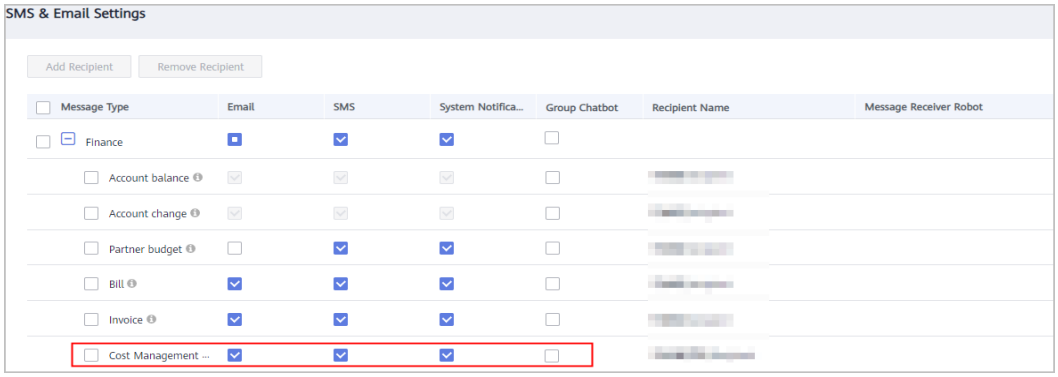
9.5 Configuring Alert Notifications

Background

With alert notifications enabled, if the impact of an anomaly on your costs exceeds the specified threshold, the designated recipients will be notified.

Prerequisites

Before you enable budget alerts, configure notification methods for **Cost Management** in **Message Center**. For details, see **Configuring Message Receiving Methods**.

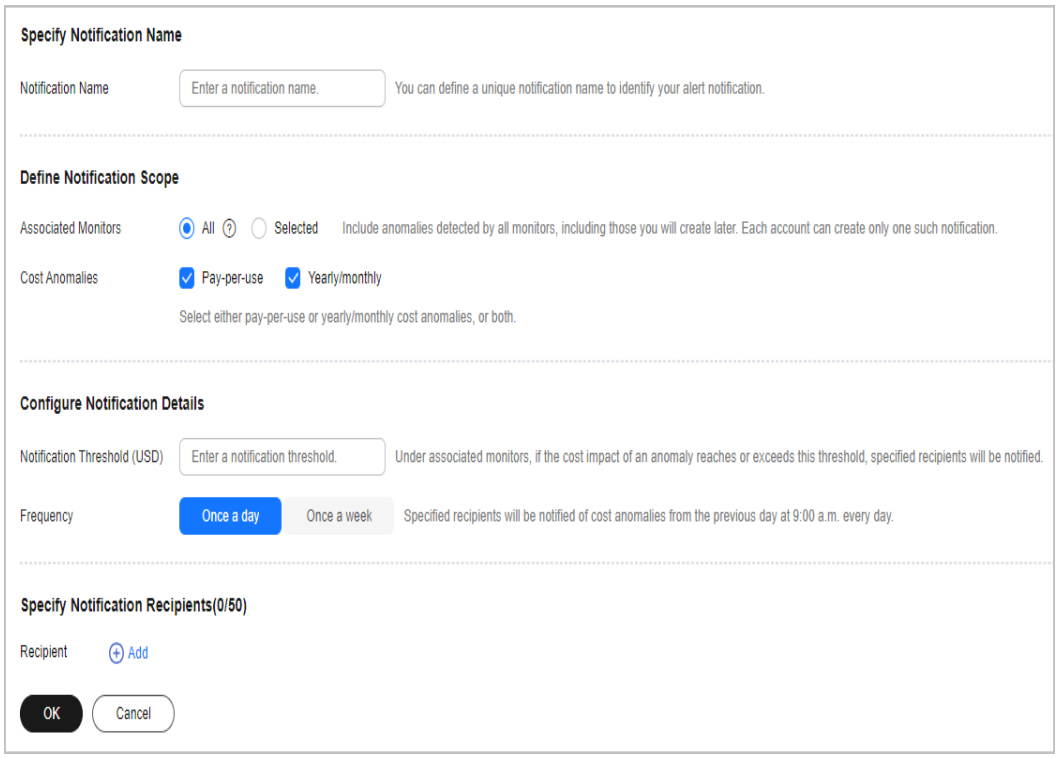


Enabling Alert Notifications

Step 1 Access the **Cost Anomaly Detection** page.

Step 2 Click **Create Notification**.

Step 3 Configure notification details and specify recipients.



Cost Anomaly Detection monitors your costs and usage to detect unexpected expenditure spikes. If the impact of an anomaly on your costs reaches the specified threshold, the recipients will be notified at the configured notification frequency. The anomalies that you have confirmed will not be included in the notification.

Parameter	Description
Notification Name	Name of an alert notification.
Associated Monitors	There are two options: • **All**: Include anomalies detected by all monitors, including those you will create later. Each account can create only one such notification. • **Selected**: Include anomalies detected by the monitors you selected.
Cost Anomalies	Select the cost type to be covered by anomalies involved in an alert notification. You can select either pay-per-use or yearly/monthly cost anomalies, or both.
Notification Threshold	Under associated monitors, if the cost impact of an anomaly reaches or exceeds this threshold, specified recipients will be notified.

Parameter	Description
Notification Frequency	There are two notification frequency options you can choose from: • **Once a day**: Specified recipients will be notified of cost anomalies from the previous day after 09:00 a.m. every day. • **Once a week**: Specified recipients will be notified of cost anomalies from the previous week after 09:00 a.m. every Monday.

----End

10 Cost Optimization

10.1 Overview of Cost Optimization

Cost Center provides you with a set of tools to optimize the usage of certain cloud resources to help you reduce costs.

NOTE

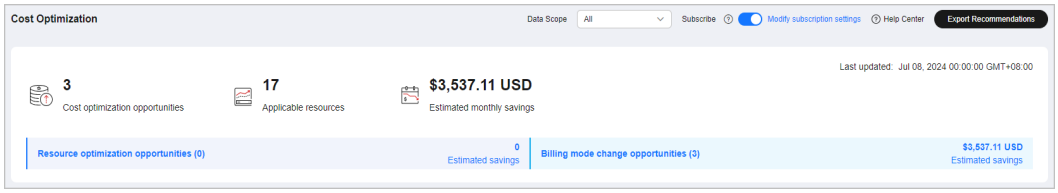
The estimated savings are for reference only. They are not a commercial commitment or a basis for reconciliation.

Viewing Cost Optimization Summary

You can view all cost optimization recommendations and follow them as needed.

Step 1 Access the **Summary** page.

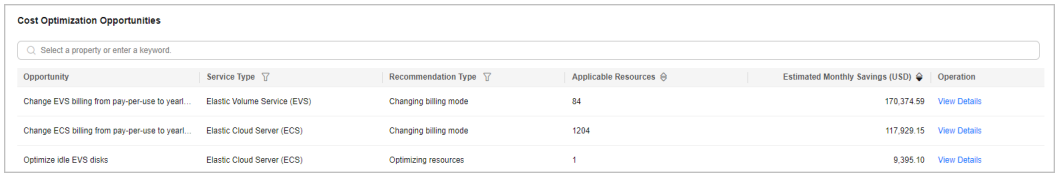
Step 2 View the summary of all cost optimization recommendations.



Field	Description
Data Scope	You can filter cost optimization recommendations by enterprise project or linked account. When unified accounting management is enabled, an enterprise master account can view the optimization recommendations for all its associated member accounts, but the member accounts can only view the recommendations for their own resources. **NOTE** An enterprise master account can select enterprise projects by linked account, except the default enterprise project and those not categorized.

Field	Description
Cost optimization opportunities	You can view the total number of opportunities, including those for resource optimization and billing mode changes. • Resource optimization consists of: – Optimizing idle EIPs – Optimizing idle EVS disks – Optimizing idle load balancers • Billing mode changes include: – Changing from pay-per-use to yearly/monthly for all cloud services – Purchasing ECS Savings Plans
Applicable resources	Total number of resources to be optimized.
Estimated monthly savings	Estimated costs that can be saved when all optimization recommendations are adopted.

Step 3 View the details about cost optimization in a list.



You can click **View Details** in the **Operation** column to view the details about resources identified in a specific cost optimization opportunity.

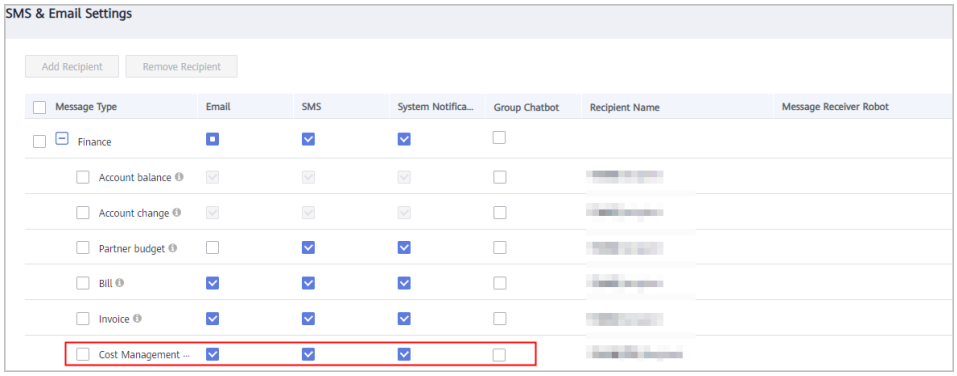
Opportunity	Reference
Optimizing idle EIPs	**Optimizing EVS, EIP, and ELB Resources**
Optimizing idle EVS disks	**Optimizing EVS, EIP, and ELB Resources**
Optimizing idle load balancers	**Optimizing EVS, EIP, and ELB Resources**
Changing from pay-per-use to yearly/monthly for all cloud services	**Changing Pay-per-Use to Yearly/Monthly**
Purchasing ECS Savings Plans	**Purchasing Savings Plans**

----End

Subscribing to Cost Optimization

When you toggle on **Subscribe**, you will receive cost optimization recommendations based on the schedule you configure.

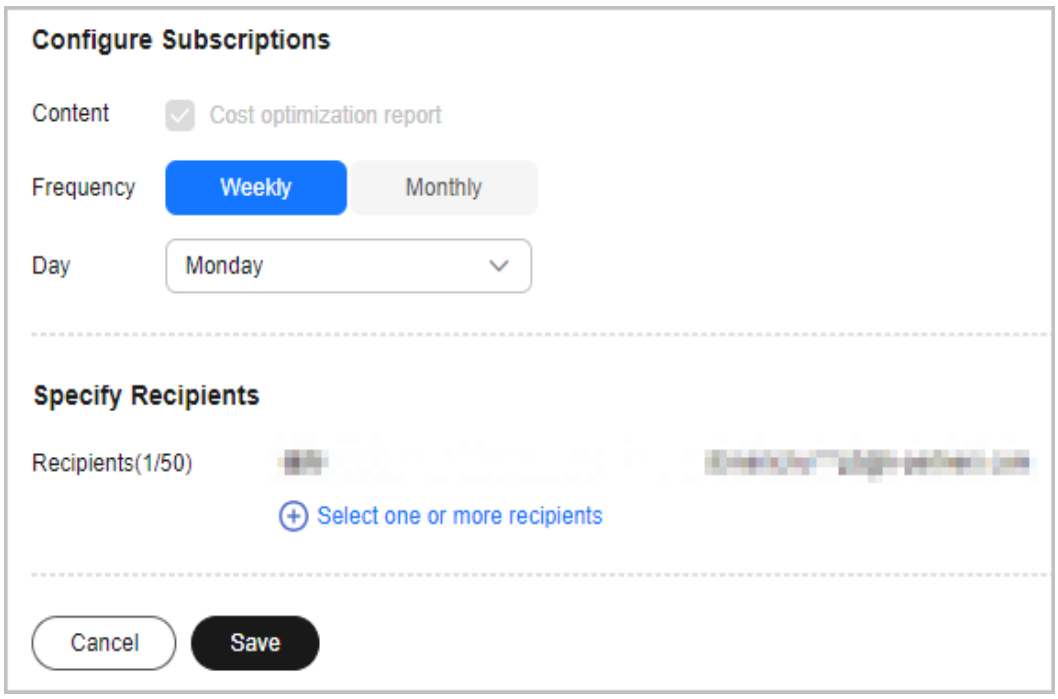
Before you enable this function, configure notification methods for **Cost Management** in **Message Center**. For details, see **Configuring Message Receiving Methods**.



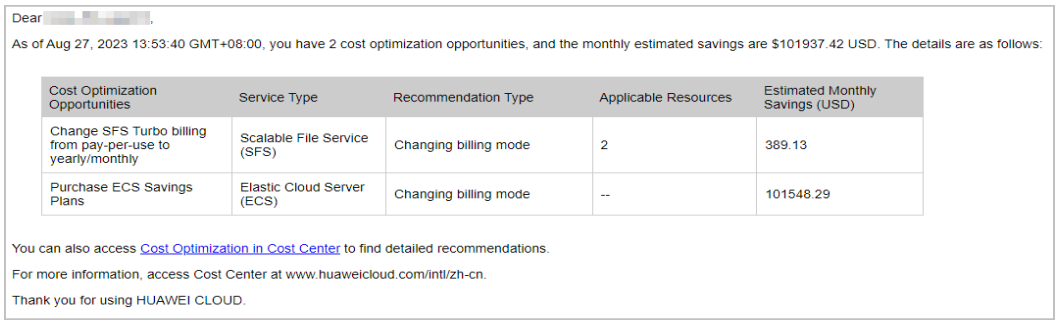
Step 1 Access the **Summary** page.

Step 2 Turn on the toggle **Subscribe** in the upper right corner of the displayed page.

Step 3 Set the subscription frequency and date, and specify recipients.



Step 4 Receive a summary of cost optimization recommendations from Cost Center on the date you scheduled.



Dear [redacted],

As of Aug 27, 2023 13:53:40 GMT+08:00, you have 2 cost optimization opportunities, and the monthly estimated savings are $101937.42 USD. The details are as follows:

Cost Optimization Opportunities	Service Type	Recommendation Type	Applicable Resources	Estimated Monthly Savings (USD)
Change SFS Turbo billing from pay-per-use to yearly/monthly	Scalable File Service (SFS)	Changing billing mode	2	389.13
Purchase ECS Savings Plans	Elastic Cloud Server (ECS)	Changing billing mode	--	101548.29

You can also access Cost Optimization in Cost Center to find detailed recommendations.

For more information, access Cost Center at www.huaweicloud.com/intl/zh-cn.

Thank you for using HUAWEI CLOUD.

----End

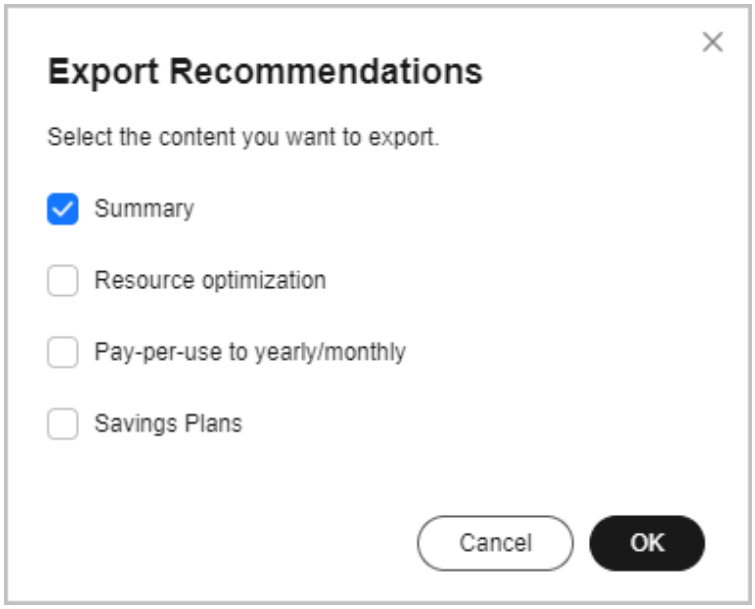
Exporting Cost Optimization Recommendations

You can export all cost optimization recommendations and determine whether to adopt the recommendations based on your site requirements.

Step 1 Access the **Summary** page.

Step 2 Click **Export Recommendations** in the upper right corner of the page.

Step 3 Select the optimization recommendations to export and click **OK**.



Step 4 Go to the **Export History** page to download the exported file.

----End

10.2 Rightsizing Resources

10.2.1 Overview of Resource Optimization

What Is Resource Optimization?

Cost Center monitors your historical expenditures and resource usage, identifies idle resources, checks resource status, and produces optimization recommendations for you to find cost-saving opportunities.

Currently, resource optimization recommendations are only available for the following cloud services:

- EIP: Optimization Advisor (OA) checks whether there are EIPs not bound to any instances. If there are, optimization recommendations are provided for such EIPs. You can determine whether to apply the recommendations based on the displayed time range and estimated monthly savings.
- ELB: OA checks whether there are load balancers not associated with any backend servers. If there are, optimization recommendations are provided for such load balancers. You can determine whether to apply the recommendations based on the displayed time range and estimated monthly savings.
- EVS: OA checks whether there are EVS disks not attached to any servers. If there are, optimization recommendations are provided for such EVS disks. You can determine whether to apply the recommendations based on the displayed time range and estimated monthly savings.

Enabling Resource Optimization

To enable resource optimization for EIP, ELB, and EVS services, click **enable OA for free** on the **Cost Optimization** page in Cost Center.

What Are Idle EVS, EIP, and ELB Resources?

If resources are not bound or attached to any instances, they are identified as idle resources.

- EVS: EVS disks that have not been attached in the last seven days are considered idle.
- EIP: EIPs that are detected not bound during resource checks are considered idle.
- ELB: During resource checks, if load balancers are detected not associated with any backend server group or not bound to any backend server, they are considered idle.

10.2.2 Supported Regions

Optimization recommendations for EIP, ELB, and EVS resources can apply to all regions.

10.2.3 Optimizing EVS, EIP, and ELB Resources

Background

Contributory Factors in Estimated Monthly Savings

Estimated Monthly Savings are calculated by multiplying hourly amortized cost by 730. The estimation may be inaccurate in the following situations:

- There are resources whose validity period is less than one day in the historical time range. (The estimation is calculated based on historical daily expenditures.)
- The commercial discounts have changed. (The estimation is calculated based on the amount due with historical commercial discounts applied.)
- Yearly/Monthly subscriptions are not renewed. (The estimation is calculated based on the assumption that yearly/monthly subscriptions will be renewed.)
- Resources are unsubscribed from based on the optimization recommendations. (The estimation does not take into account the impact of handling fees and coupons.)

Possible Causes for No Resource Optimization Recommendations

If you have enabled OA but have not received any EIP, ELB, or EVS resource optimization recommendations for a long time, the possible causes are as follows:

- There are no idle EIP, ELB, or EVS resources.
- Auto Check in OA has not been enabled or manual checks are not performed.
- Requirements on cost checks are not met. For details, see **Billing**.

Step 1: Enabling OA

Before you start, sign up for a HUAWEI ID and enable Huawei Cloud services. For details, see **Signing Up**.

Step 1 Log in to the Huawei Cloud management console.

Step 2 In the service list, choose **Management & Governance** > **Optimization Advisor**.

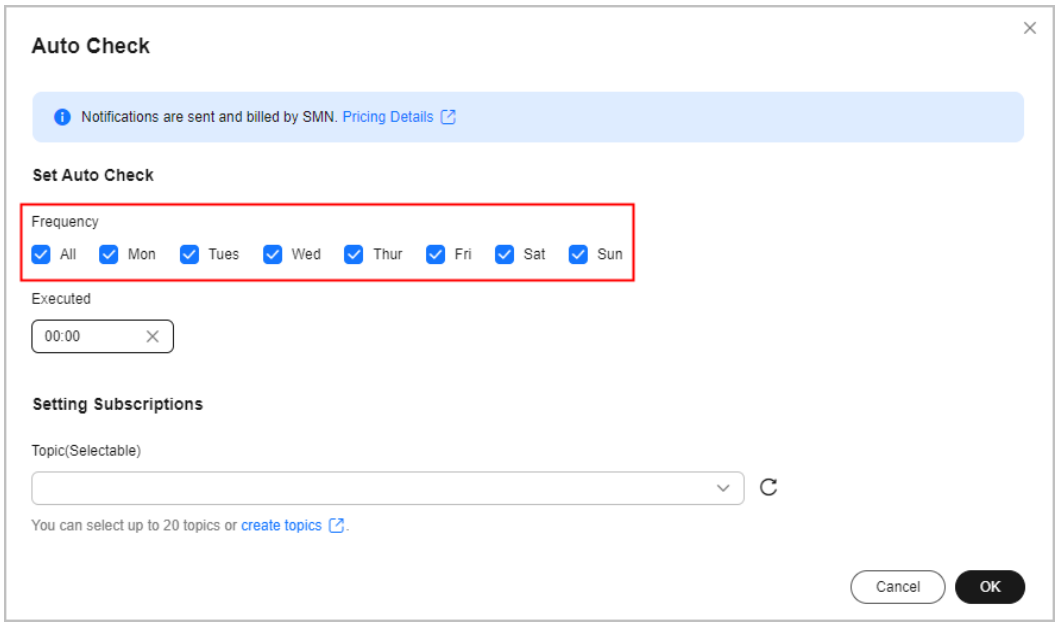
Step 3 Select **I have read and agree to the *Optimization Advisor Service Statement*** and click **OK**.

Step 4 Select **Access to Cloud Resources** and **Access to Check Result**, and click **OK**.

----End

Step 2: Enabling Auto Check in OA

After you subscribe to OA reports, Cost Center can periodically obtain resource inspection data from OA and generate cost optimization recommendations.

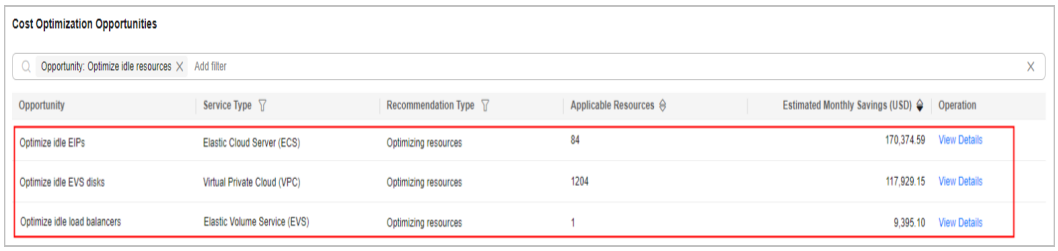


As Cost Center obtains resource inspection data from OA based on the frequency you set, you are advised to set **Frequency** to **All**.

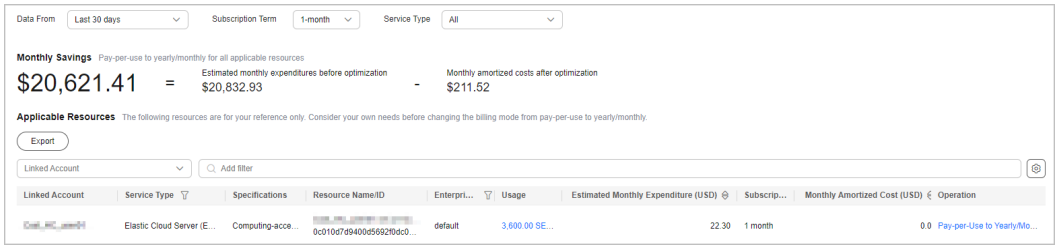
You will periodically receive inspection data from OA. For details about cost optimization recommendations, see **Step 3: Viewing Applicable Resources**.

Step 3: Viewing Applicable Resources

Step 1 Access the **Summary** page. In the **Cost Optimization Opportunities** area, locate the opportunity of optimizing idle resources and click **View Details** in the **Operation** column.



Step 2 View the list of applicable resources and optimize them based on the optimization recommendations.



Parameter	Description
Estimated Monthly Savings	Total estimated monthly savings for all applicable resources.
Applicable Resources	Total number of applicable resources.
Last Updated	Latest time when optimization recommendations are collected. After OA is enabled, your resource optimization recommendations are updated at 17:00 every day.
Resource Name/ID	Name and ID of an applicable resource. **NOTE** When you switch from a specific cost optimization recommendation to cost analysis, you may see a different resource name. This is because you have modified the resource name and it will take about 24 hours for the new name to be displayed.
Linked Account	Account that is using the applicable resource. In unified accounting management, an enterprise master account can view the resource optimization recommendations for all its associated member accounts, and the member accounts can only view the recommendations for their own resources.
Enterprise Project	Enterprise project to which the applicable resource belongs.
Tag	Tag attached to the applicable resource.
Billing Mode	Billing mode of the applicable resource.
Region	Region where the applicable resource is used.
Monthly Amortized Costs	Monthly amortized costs over the last 30 days in the current billing mode and for the current linked accounts. You can click the cost data hyperlink to go to the **Cost Analysis** page to view the amortized costs over the past 30 days. The monthly amortized costs are calculated on a daily basis. The amortized cost for the day the billing mode was changed is recorded for the new billing mode. Suppose the billing mode was yearly/monthly for the first five days of the last 30 days, and the billing mode was changed to pay-per-use on the sixth day and has been used for the remaining days. In this case, only the cost data of the sixth to thirtieth days is used to calculate the monthly amortized costs.
Estimated Monthly Savings	An estimation of how much you will save after cost optimization recommendations are applied. If the recommendation is to release or delete resources, the estimated monthly saving will equal the estimated monthly expenditure.

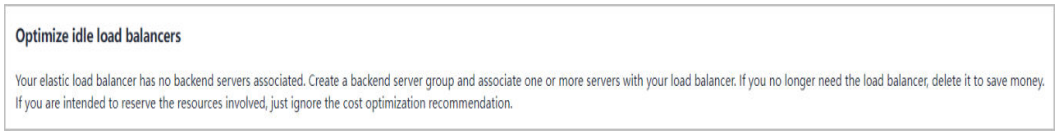
Parameter	Description
Estimated Monthly Expenditure	An estimation of how much you will pay for the current resource per month. Estimated Monthly Expenditure = Monthly amortized cost/Time Range/24 x 730 • **Time Range** refers to the number of days during which the resource is using the new billing mode over the last 30 days. • The estimated monthly expenditure may have slight discrepancies in precision due to amortization calculation. • **730** is used as the default number of hours per month.
Service Type	Type of the service to which the applicable resource belongs.
Resource Type	Product to which the applicable resource belongs.

----End

Step 4: Viewing Optimization Recommendations

Release or delete resources following the instructions based on the site requirements.

For example, when idle load balancers are identified, you can release them if they are no longer needed.



10.2.4 Calculating Estimated Monthly Savings

After identifying idle resources, Cost Center provides you with the number of resources that can be optimized and the estimated monthly savings. This section describes how to calculate the estimated monthly savings.

Estimated Monthly Savings

Cost Center provides you with the estimated monthly savings for your reference only when handling idle resources. **Estimated Monthly Savings** is the total estimated monthly cost savings of all resources that can be optimized.

- **Estimated Monthly Savings** = **Estimated Monthly Expenditure** – **Estimated Monthly Expenditure After Optimization**
- **Estimated Monthly Expenditure = Monthly amortized cost/Time Range/24 x 730**
  - **Time Range** refers to the number of days during which the resource is using the new billing mode over the last 30 days.
  - **Estimated Monthly Expenditure** may have slight discrepancies in precision due to amortization calculation.

  - **730** is used as the default number of hours per month.
- **Estimated Monthly Expenditure After Optimization**: In the case of releasing idle resources, the estimated monthly expenditure after optimization is 0.

Contributory Factors

- **Estimated Monthly Savings** are calculated based on historical daily expenditures. If there are resources whose validity period is less than one day in the historical time range, **Estimated Monthly Savings** may be inaccurate.
- **Estimated Monthly Savings** are calculated based on the amount due with historical commercial discounts applied. If the commercial discounts have changed, **Estimated Monthly Savings** may be inaccurate.
- **Estimated Monthly Savings** are calculated based on the assumption that yearly/monthly subscriptions will be renewed. If yearly/monthly subscriptions are not renewed, **Estimated Monthly Savings** may be inaccurate.
- **Estimated Monthly Savings** do not take into account the impact of handling fees and coupons. If resources are unsubscribed from based on the optimization recommendations, **Estimated Monthly Savings** may be inaccurate.

For pay-per-use resources, if a certain amount of usage has been paid for using special products over the last 30 days, **Estimated Monthly Savings** may be different from the actual savings.

- Over the last 30 days, if the pay-per-use billing is changed to special products and the special products will continue to be used, then **Estimated Monthly Expenditure After Optimization** is greater than the actual cost and **Estimated Monthly Savings** are less than the actual costs saved.
- Over the last 30 days, if the billing of using special products is changed to pay-per-use and the pay-per-use billing will continue to be used, then **Estimated Monthly Expenditure After Optimization** is less than the actual cost and **Estimated Monthly Savings** are greater than the actual costs saved.

Important Notes

Resource optimization recommendations are not generated in real time for EVS, EIP, and ELB resources. They are updated daily at 00:00:00 (GMT+08:00).

For example, the recommendations you saw at March 10, 2024 00:00:00 GMT +08:00 were generated based on your resource performance during the period from March 08, 2024 12:00:00 GMT+08:00 to March 09, 2024 12:00:00 GMT +08:00.

The cost analysis results (including the monthly amortized costs, estimated monthly savings, and estimated monthly expenditure) were calculated based on the cost data by March 09, 2024 00:00:00 GMT+08:00.

10.3 Changing Billing Mode

10.3.1 Changing Pay-per-Use to Yearly/Monthly

You can analyze the usage of your pay-per-use resources in Cost Center. Cost Center provides optimization options based on these analyses, identifying places where you can save money by changing the billing mode from pay-per-use to yearly/monthly.

Optimization Options

Cost Center evaluates optimization options based on the usage of your resource usage within the last 7, 30, or 60 days. Cost Center:

1. Collects the costs and usage of your pay-per-use resources within a period you specify.
2. Estimates monthly usage and expenditures.
3. Searches for any yearly/monthly subscriptions that can be applied to these pay-per-use resources, and calculates their monthly amortized costs.
4. Identifies situations where the monthly amortized costs are less than the monthly expenditures, and offers you an opportunity to optimize your costs.

Important Notes

The monthly amortized costs after optimization are calculated based on the commercial discounts for historical expenditures. The calculation result may differ from that calculated based on the actual commercial discounts.

Cost Center currently only provides you with the option of changing from pay-per-use to a monthly or 1-year subscription. If you want to evaluate optimization options for other subscription terms, access the **Price Calculator**.

If you are using a master account and have enabled unified accounting management, Cost Center will also analyze the costs and usage of your member accounts during the association period and offer you the optimization evaluation records for your member accounts.

Cost Center provides evaluations based on the assumption that your historical costs and usage will be similar in the future. It does not forecast your usage while estimating your monthly usage and does not consider any forecasted data when making the evaluation.

Optimization options are evaluated and updated daily after 17:00 (GMT+08:00).

Changing Pay-per-Use to Yearly/Monthly

Step 1 Access the **Preferences** page.

Step 2 Turn on the toggle for **Pay-per-Use to Yearly/Monthly**.

NOTE

This function is enabled by default. You can disable it at will

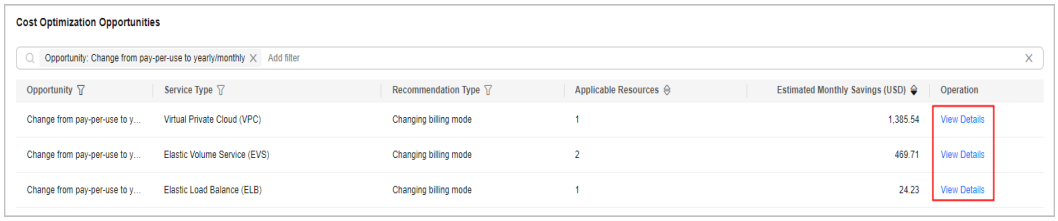
but only by an enterprise master account that has enabled unified accounting management.

----End

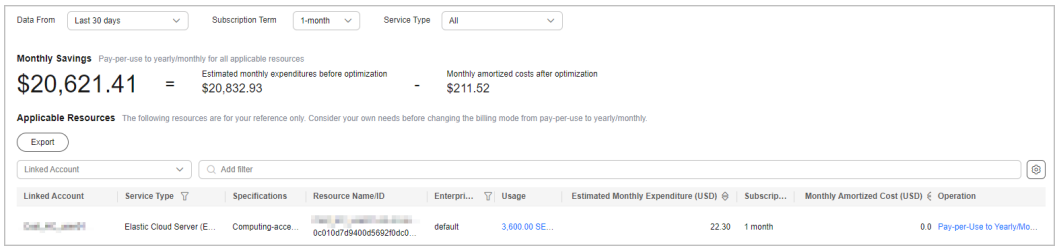
Viewing Cost Optimizations

Step 1 Access the **Summary** page.

Step 2 In the **Cost Optimization Opportunities** area, locate a specific opportunity to change from pay-per-use to yearly/monthly and click **View Details** in the **Operation** column.



Step 3 Set **Data From** and **Subscription Term** to view optimization options for the period you select.



Field	Description
Estimated monthly expenditure before optimization	The estimated monthly original cost of pay-per-use resources within the specified time range before optimization. For example, if **Data From** is set to **Last 60 days**, the calculation would be as follows: Estimated monthly expenditures before optimization = (Amount due of pay-per-use resources over the last 60 days)/60/24 x 730 **NOTE** **730** is used as the default number of hours per month.
Monthly amortized cost after optimization	The monthly amortized cost that is calculated based on the specified subscription term after the optimization. • For a monthly subscription, the monthly amortized cost is equivalent to the price of the monthly subscription. • For a 1-year subscription, the monthly amortized cost is equivalent to the price of the 1-year subscription divided by 12.
Linked Account	Account that uses the pay-per-use resource.
Service Type	Service type of the pay-per-use resource.
Specifications	Specifications of the pay-per-use resources.

Field	Description
Resource Name/ID	Name or ID of the pay-per-use resource.
Enterprise Project	Enterprise Project selected when you purchase the pay-per-use service.
Usage	Usage of pay-per-use resources in a specified historical period.
Estimated Monthly Expenditure	Estimated monthly pay-per-use expenditures for resources in the specified historical period.
Subscription Term	Term of a yearly/monthly subscription as the optimization option recommended for pay-per-use resources.
Monthly Amortized Cost	Estimated monthly amortized cost calculated after the billing mode of a pay-per-use resource is changed to yearly/monthly.
Estimated Monthly Savings	Estimated amount that can be saved after the billing mode of a pay-per-use resource is changed to yearly/monthly. Estimated monthly savings = Estimated monthly expenditure – Monthly amortized cost
Break-Even Time	For a monthly subscription, the calculation would be as follows: Break-even time (days) = Price of the recommended monthly subscription/(Estimated monthly expenditure/730 x 24) For a yearly subscription, the calculation would be as follows: Break-even time (months) = Price of the recommended yearly subscription/Estimated monthly expenditure
Operation	If you click **Pay-per-Use to Yearly/Monthly**, you will be switched to the specific service management console, where you can change the billing mode. **NOTE** Before changing the billing mode from pay-per-use to yearly/monthly, you are advised to confirm the application scenario with your business team. If you are using a master account and have enabled unified accounting management, you can download the optimization evaluation report and give it to your member accounts for reference, but cannot directly change the pay-per-use billing mode to yearly/monthly for your member accounts.

----End

10.3.2 Purchasing Savings Plans

To help you save money, Cost Center provides you with customized savings plan recommendations based on your historical pay-per-use expenditures.

Important Notes

- Recommendations are currently available only for ECS Savings Plans.
- By default, your expenditures over the last 30 days are used as a reference for savings plans recommendations. If your pay-per-use expenditures fluctuate greatly or your identity (enterprise master or member account) has changed recently, take such factors into account when selecting a period for savings plans recommendations. When purchasing a savings plan, you can also adjust the upfront payment by adjusting your hourly commitment to avoid unnecessary waste caused by deviations from predicted use. (Currently, savings plans cannot be unsubscribed from.)
- Savings plans recommendations require up to eight days to reflect recent purchases of savings plans, yearly/monthly subscriptions, and reserved instances. When you select the historical data from the last 30 or 60 days as a reference for savings plans recommendations, the recommendations will be compared with those generated based on the historical data of the last 7 days. If it looks like a plan based on the most recent 7 days will save you more money than one based on the past 30 to 60 days, the plan based on the more recent data will be recommended. This is intended to help you avoid wasting money because of recent changes to your spending patterns.
- The estimated monthly amortized costs (after recommended purchase) are calculated based on the monthly amortized costs of the upfront payment and the hourly list price, without taking commercial discounts into account. The estimated monthly savings may be different from your actual cost savings.

Understanding Your Recommendation Calculations

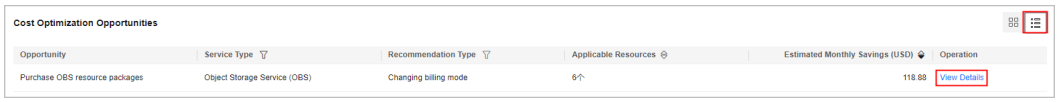
To generate savings plans recommendations, Cost Center:

1. Analyzes your hourly pay-per-use usage for the last 7, 30, or 60 days.
2. Generates a savings plan based on your commitment term and payment option.
3. Compares the cost of a savings plan with the actual pay-per-use cost over your selected period.
4. Recommends the hourly commitment value that should result in the best savings and displays the estimated monthly expenditure, the estimated monthly amortized cost after purchase, and the estimated monthly savings.
   - If the hourly pay-per-use amortized cost is less than $0.1 or the estimated monthly savings is less than $1, no savings plan purchase recommendations are provided.
   - In unified accounting management, enterprise master accounts can view the following recommendations for purchasing savings plans:
     - Recommendations at the master account level based on its own historical pay-per-use expenditures
     - Recommendations at the member account level based on the historical expenditures of that member account during the unified accounting management period
   - If an account has shifted from the master to the member or vice versa, savings plan recommendations are provided only for the current account identity.

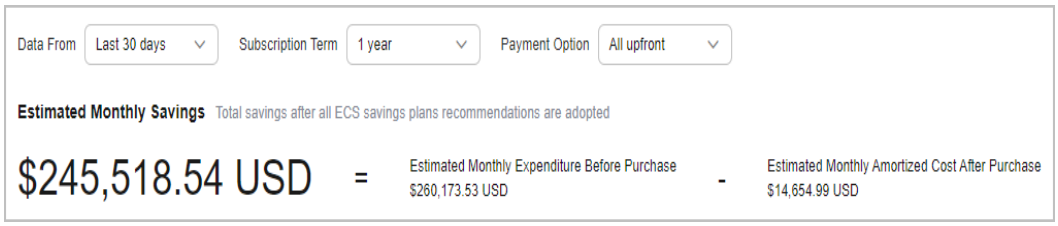
Viewing Savings Plan Recommendations

Step 1 Access the **Summary** page.

Step 2 In the **Cost Optimization Opportunities** area, locate the purchased savings plan and click **View Details** in the **Operation** column.



Step 3 Set the search criteria for savings plans.



- **Data From**: look-back period (7, 30, or 60 days). Pay-per-use expenditures from this period are used as reference to generate savings plan recommendations.
- **Subscription Term**: the term commitment, in years. It is either a 1-year or 3-year term.
- **Payment Option**: the way the savings plan is paid for. It can be all upfront, partial upfront, or no upfront.
- **Recommendation Level**: An enterprise master account can choose to view the savings plan recommendations by organization or account.
  - **Organization**: Recommendations are generated at the management account level. They consider pay-per-use expenditures across all member accounts in the organization.
  - **Account**: Recommendations are generated based on the pay-per-use expenditures of the individual account or at the member account level under unified accounting management.

Step 4 View savings plan recommendations.

- **Estimated Monthly Savings**: The monthly amount that could be saved if you adopt all recommended savings plans under the current query criteria. Estimated Monthly Savings = Estimated Monthly Expenditure Before Purchase – Estimated Monthly Amortized Cost After Purchase
- **Estimated Monthly Expenditure Before Purchase**: The monthly expenditures that may be generated for using pay-per-use resources under the current query criteria. Estimated Monthly Expenditure Before Purchase = Pay-per-use expenditures payable within selected days/Number of selected days/24 x 730
- **Estimated Monthly Amortized Cost After Purchase**: The estimated monthly costs that could have been saved if you had purchased the recommended savings plans under the current query criteria. Estimated Monthly Amortized Cost After Purchase = (Hourly commitment x 730) + (Pay-per-use expenditures beyond the savings plan commitment within selected days/ Number of selected days/24 x 730)

NOTE

When calculating savings plan recommendations, each month is treated as 730 hours long.

- (Optional) If you adopt the recommendations, click **Buy Savings Plan** in the **Operation** column of the specified savings plan. Then you will be redirected to the savings plan purchase page.

Step 5 Click above the list of savings plan recommendations to export the recommendations.

Table 10-1 Field details

Field	Description
Linked Account	Used to filter savings plan recommendations by the enterprise master or member account associated with the current account
Service Type	Cloud services eligible for the savings plan
Site	Site that the savings plan is used for
Region	Region that the savings plan applies to
Specifications	Specifications eligible for the savings plan
Payment Option	Payment option of the savings plan, which can be all upfront, partial upfront, or no upfront
Subscription Term	Term of the savings plan, either one year or three years
Hourly Commitment	Hourly commitment recommended for the savings plan
Avg. Hourly Pay-per-Use Expenditure	Average hourly pay-per-use expenditure over the selected period
Min. Hourly Pay-per-Use Expenditure	Minimum hourly pay-per-use expenditure over the selected period
Max. Hourly Pay-per-Use Expenditure	Maximum hourly pay-per-use expenditure over the selected period
Estimated Average Utilization	Expected utilization percentage of the recommended savings plan over the selected period

Field	Description
Estimated Monthly Expenditure Before Recommended Purchase	Estimated monthly pay-per-use expenditure calculated based on the historical expenditure within the selected period Estimated Monthly Expenditure Before Recommended Purchase = Avg. Hourly Pay-per-Use Expenditure x 730 hours
Estimated Monthly Amortized Cost After Purchase	Estimated monthly amortized costs if you had purchased the recommended savings plan
Estimated Monthly Savings	Estimated monthly savings after you purchase the recommended savings plan Estimated Monthly Savings = Estimated Monthly Expenditure Before Purchase – Estimated Monthly Amortized Cost After Purchase
Operation	When you click **Buy Savings Plan** in the **Operation** column of the savings plan, you will be navigated to the savings plan purchase page.

----End

11 Savings Plans (in OBT)

11.1 What Are Savings Plans?

Introduction

Savings Plans is a flexible billing option that provides significant savings on your Huawei Cloud usage. You can get lower prices compared to pay-per-use pricing in exchange for a commitment to use a specified amount of resources (measured in USD/hour) for a one- or three-year term. If your hourly resource usage is fully covered by the hourly commitment, you will be billed only for the hourly commitment at the discounted rate. Any resource usage beyond the hourly commitment will be billed at standard pay-per-use rates.

Savings plans need to be used for your pay-per-use resources. They give you pricing discounts but do not affect the provisioning of your resources.

Application Scenarios

If you have relatively stable pay-per-use resource demands, buying a savings plan lets you reduce Huawei Cloud costs.

Table 11-1 Application scenarios for savings plans

Scenario	Savings Plan
Services need to be adjusted, and instance types need to be able to change and adapt.	No savings plans limit instance sizes.
Budgeting needs to be simplified.	When you make a budget with a savings plan, you just need an estimate of your total expected needs. You do not need to budget for other dimensions, such as instance types and sizes. This allows you to easily select the resources you desire.

Benefits

- Low prices

  Savings plans provide significant savings compared to pay-per-use pricing. For example, if you purchase a 3-year, all upfront savings plan, you will get savings up to 73% off pay-per-use pricing.

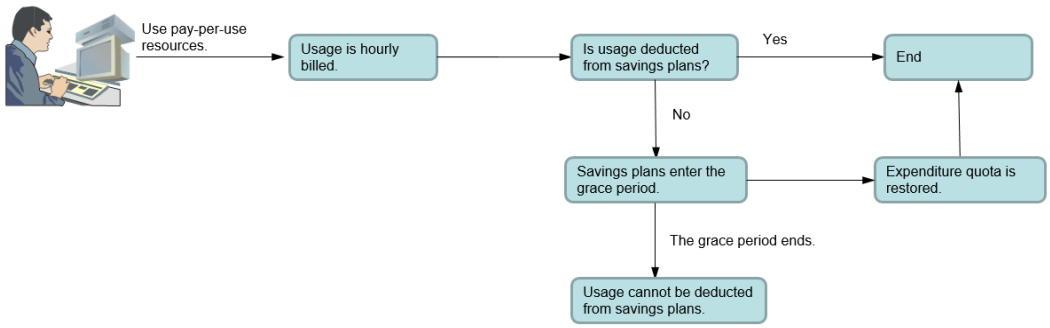
- Flexible use

  Savings plans offer low prices, like yearly/monthly subscriptions, but with added flexibility. When you have an active savings plan, the savings plan benefit is applied automatically to all pay-per-use resources that match the savings plan scope, and the resources are billed at the discount offered by the savings plan. You do not have to worry about when the resources expire. You can enable and release the resources at any time without incurring any extra expenditures from operations, such as unsubscriptions or specification changes.

- Multiple payment options

  Savings plans give you the flexibility to use no upfront, partial upfront, or all upfront payments. The more you pay up front, the better discounts you will get.

Lifecycle



- **Validation or Expiration**

  Savings plans become active immediately after purchase and take effect at the top of the hour you purchased them. Both the validation time and the expiration time of a savings plan starts at the beginning of the current hour, regardless of the exact time.

  For example, if you purchased a 1-year savings plan at 13:45:20, December 6, 2022, then the validation time of the savings plan is 13:00:00, December 6, 2022, and its expiration time will be 12:59:59, December 6, 2023. If you have pay-per-use resources that match the savings plan, the hourly usage of those resources will be paid for using the savings plan from 13:00 to 14:00 on December 6, 2022.

  NOTE

  If your savings plan expires, the usage of pay-per-use resources will be billed at standard rates, and you need to ensure that your account balance is sufficient.

- **Grace Period**

  If you have purchased a partial upfront or no upfront savings plan, and your usage has exceeded the expenditure quota, then your savings plan will enter

a grace period, during which your pay-per-use resource usage can still be paid for using the savings plan. If the grace period ends but your expenditure quota is still exceeded, the savings plan will be unsubscribed. There are no handling fees for the unsubscription.

11.2 Overview of a Savings Plan

11.2.1 Savings Plan Types

Table 11-2 describes the savings plans currently available on Huawei Cloud.

Table 11-2 Savings plan types

Type	Cloud Service	Feature
ECS Savings Plans	Elastic Cloud Server (ECS) (Linux)	Only for a single instance type Only for a single region

11.2.2 Notes and Constraints

Purchase

Member accounts for **Organizations** cannot buy savings plans.

Savings plans currently can be used only for certain regions.

Payment Options

- When you purchase an all upfront savings plan, the upfront part can only be paid by using the credit card you added or via bank transfer.
- The recurring hourly fee of no upfront must be paid after the bill is generated.

Change

The commitment of a savings plan cannot be changed after purchase.

Renewal

Savings plans cannot be renewed. You can purchase another savings plan of the same type if needed.

Unsubscription

Savings plans cannot be unsubscribed from after purchase. If you want to unsubscribe from a savings plan, **submit a service ticket** to contact the account manager.

11.2.3 Contributory Factors of Discounts

Upfront Fee

You can choose no upfront or all upfront payment when purchasing a savings plan. The more upfront fee you pay, the lower prices you will get.

Commitment Term

You can choose one- or three-year savings plans. The longer the term is, the better your discount and the more pay-per-use expenditures will be paid for using the savings plans.

11.2.4 Savings Plans Billing

Billing Method

A savings plan is billed based on its hourly commitment. The total fee of a savings plan is as follows:

Total fee of a savings plan = Hourly commitment x Hours in a day (24) x Days in a year (365) x Commitment term

NOTE

If the commitment term covers a leap year, the formula is as follows:

Total fee of a savings plan = Hourly commitment x Hours in a day (24) x Days in a year (365) x Commitment term + Hourly commitment x Hours in a day (24)

Payment Options

You have three payment options when buying a savings plan:

- **All upfront**: You pay the entire price in a single upfront payment. During the commitment term you specified, you are not billed any additional fees for the savings plan.
- **No upfront**: You do not need to pay anything at the time of purchase. You are billed for the commitment by the hour.

The total price of a savings plan is calculated based on the hourly commitment and commitment term, not the payment option, but you do get the best discount with the all upfront option.

Example: If you purchased a 1-year savings plan with an hourly commitment of $1 USD, the total price would be $8,760 USD (1 x 24 x 365).

- **Full upfront**: Pay the full $8,760 USD at the time of purchase.
- **No upfront**: You do not make any upfront payment and will be, instead, billed at $1 USD/hour throughout the commitment term.

Pricing Rules

- The sequence of applying discounts is as follows: Resource Packages > Reserved Instances > Savings Plans > Cash coupons

- If the discount for pay-per-use resources is better than that provided by the savings plan, the better discount is used first, and the money owed (after applying the discount) can be covered by the savings plan.

Example

Assume you have 30 ECS.C7.large.2 instances in LA-Sao Paulo1 at a $0.428 USD/hour price. The hourly fee for these instances would be $12.84 USD (30*0.428=12.84).

Savings plan 1: Purchase a 1-year all upfront ECS.C7 savings plan with a $6 USD/hour commitment in LA-Sao Paulo1. With the savings plan, the price of the C7.large. 2 instances would be 55.6% of the original pay-per-use price. It would be $0.238 USD/hour (0.428 x 55.6%).

Savings plan 2: Purchase a 1-year all upfront ECS.C7 savings plan with a $7.14 USD/hour commitment in LA-Sao Paulo1. With the savings plan, the price of the C7.large. 2 instances would be 55.6% of the original pay-per-use price. It would be $0.238 USD/hour (0.428 x 55.6%).

Item	Savings Plan 1	Savings Plan 2
Price of the usage that the savings plan covers	6/55.6% = $10.79 USD	7.14/55.6% = $12.84 USD
Price of the remaining usage billed at pay-per-use price (Price for all usage charged at pay-per-use price – Price for the usage that the savings plan covers)	12.84 - 10.79 = $2.05 USD	12.84 - 12.84 = $0 USD
Actual price when the savings plan applies (Commitment of the savings plan + Price of the remaining usage charged at pay-per-use price)	6 + 2.05 = $8.05 USD	7.14 + 0 = $7.14 USD
Savings (Price for all usage charged at pay-per-use price – Actual price when the savings plan applies)/ Price for all usage charged at pay-per-use price	(12.84 – 8.05)/12.84 = 37.3%	(12.84 – 7.14)/12.84 = 44.4%

11.2.5 Comparison Between Savings Plans and Reserved Instances

Similarities

Both Reserved Instances (RIs) and Savings Plans can be used to save money on pay-per-use resources. You can choose one- or three-year, no upfront RIs or savings plans. The longer term you choose, the lower prices you will get.

Differences

With reserved instances, you get the discount only when the pay-per-use resources exactly match the reserved instances you purchase. Savings plans have fewer limitations and are more flexible. To get the discount with an ECS Savings Plan, for example, you only need to match the instance type and region.

Recommendations

- If your pay-per-use resources are consistent and stable without any changes to instance types or regions in the short term, you can choose RIs to save more.
- If the instance types of your pay-per-use resources change frequently or you have resources running in multiple regions, consider using Savings Plans, as they give you more flexibility.

11.3 Purchasing Savings Plans

11.3.1 Following Cost Optimization Recommendations

To help you save money, Cost Center provides you with customized savings plan recommendations based on your historical pay-per-use expenditures.

Important Notes

- Recommendations are available only for ECS Savings Plans.
- By default, your expenditures over the last 30 days are used as a reference for savings plans recommendations. If your pay-per-use expenditures fluctuate greatly or your identity (enterprise master or member account) has changed recently, take such factors into account when selecting a period for savings plans recommendations. When purchasing a savings plan, you can also adjust the upfront payment by adjusting your hourly commitment to avoid unnecessary waste caused by deviations from predicted use. (Currently, savings plans cannot be unsubscribed from.)
- The estimated monthly amortized costs (after recommended purchase) are calculated based on the monthly amortized costs of the upfront payment and the hourly list price, without taking commercial discounts into account. The estimated monthly savings may be different from your actual cost savings.

Understanding Your Recommendation Calculations

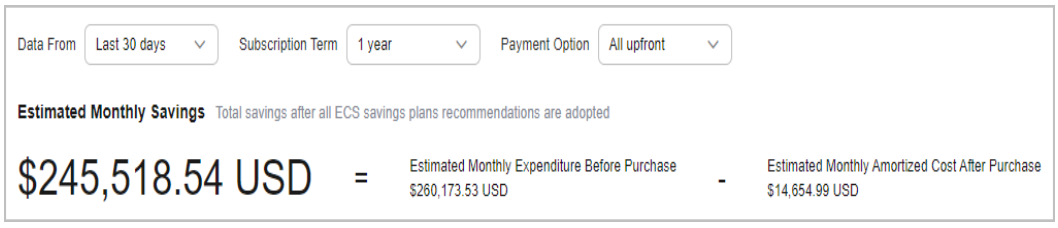
To generate savings plans recommendations, Cost Center:

1. Analyzes your hourly pay-per-use usage for the last 7, 30, or 60 days.
2. Generates a savings plan based on your commitment term and payment option.
3. Compares the cost of a savings plan with the actual pay-per-use cost over your selected period.
4. Recommends the hourly commitment value that should result in the best savings and displays the estimated monthly expenditure, the estimated monthly amortized cost after purchase, and the estimated monthly savings.
   - If the hourly pay-per-use amortized cost is less than $0.1 or the estimated monthly savings is less than $1, no savings plan purchase recommendations are provided.
   - In unified accounting management, enterprise master accounts can view the following recommendations for purchasing savings plans:
     - Recommendations at the master account level based on its own historical pay-per-use expenditures
     - Recommendations at the member account level based on the historical expenditures of that member account during the unified accounting management period
   - If an account has shifted from the master to the member or vice versa, savings plan recommendations are provided only for the current account identity.

Viewing Savings Plan Recommendations

Step 1 Access the **Purchase Recommendations** page.

Step 2 Set the search criteria for savings plans.



- **Data From**: look-back period (7, 30, or 60 days). Pay-per-use expenditures from this period are used as reference to generate savings plan recommendations.
- **Subscription Term**: the term commitment, in years. It is either a 1-year or 3-year term.
- **Payment Option**: the way the savings plan is paid for. It can be all upfront, partial upfront, or no upfront.
- **Recommendation Level**: An enterprise master account can choose to view the savings plan recommendations by organization or account.

  - **Organization**: Recommendations are generated at the management account level. They consider pay-per-use expenditures across all member accounts in the organization.
  - **Account**: Recommendations are generated based on the pay-per-use expenditures of the individual account or at the member account level under unified accounting management.

Step 3 View savings plan recommendations.

- **Estimated Monthly Savings**: The monthly amount that could be saved if you adopt all recommended savings plans under the current query criteria. Estimated Monthly Savings = Estimated Monthly Expenditure Before Purchase – Estimated Monthly Amortized Cost After Purchase
- **Estimated Monthly Expenditure Before Purchase**: The monthly expenditures that may be generated for using pay-per-use resources under the current query criteria. Estimated Monthly Expenditure Before Purchase = Pay-per-use expenditures payable within selected days/Number of selected days/24 x 730
- **Estimated Monthly Amortized Cost After Purchase**: The estimated monthly costs that could have been saved if you had purchased the recommended savings plans under the current query criteria. Estimated Monthly Amortized Cost After Purchase = (Hourly commitment x 730) + (Pay-per-use expenditures beyond the savings plan commitment within selected days/Number of selected days/24 x 730)

  NOTE

  When calculating savings plan recommendations, each month is treated as 730 hours long.

- (Optional) If you adopt the recommendations, click **Buy Savings Plan** in the **Operation** column of the specified savings plan. Then you will be redirected to the savings plan purchase page.

Step 4 Click above the list of savings plan recommendations to export the recommendations.

Table 11-3 Field details

Field	Description
Linked Account	Used to filter savings plan recommendations by the enterprise master or member account associated with the current account
Service Type	Cloud services eligible for the savings plan
Site	Site that the savings plan is used for
Region	Region that the savings plan applies to
Specifications	Specifications eligible for the savings plan
Payment Option	Payment option of the savings plan, which can be all upfront, partial upfront, or no upfront

Field	Description
Subscription Term	Term of the savings plan, either one year or three years
Hourly Commitment	Hourly commitment recommended for the savings plan
Avg. Hourly Pay-per-Use Expenditure	Average hourly pay-per-use expenditure over the selected period
Min. Hourly Pay-per-Use Expenditure	Minimum hourly pay-per-use expenditure over the selected period
Max. Hourly Pay-per-Use Expenditure	Maximum hourly pay-per-use expenditure over the selected period
Estimated Average Utilization	Expected utilization percentage of the recommended savings plan over the selected period
Estimated Monthly Expenditure Before Recommended Purchase	Estimated monthly pay-per-use expenditure calculated based on the historical expenditure within the selected period Estimated Monthly Expenditure Before Recommended Purchase = Avg. Hourly Pay-per-Use Expenditure x 730 hours
Estimated Monthly Amortized Cost After Purchase	Estimated monthly amortized costs if you had purchased the recommended savings plan
Estimated Monthly Savings	Estimated monthly savings after you purchase the recommended savings plan Estimated Monthly Savings = Estimated Monthly Expenditure Before Purchase – Estimated Monthly Amortized Cost After Purchase
Operation	When you click **Buy Savings Plan** in the **Operation** column of the savings plan, you will be navigated to the savings plan purchase page.

----End

11.3.2 Purchasing a Savings Plan on the Console

Important Notes

You can buy ECS Savings Plans.

Purchasing Savings Plans

Step 1 Log in to the cloud service console.

Step 2 Under **Compute**, click **Elastic Cloud Server**.

Step 3 Click **Savings Plans** in the navigation tree on the left.

Step 4 Click **Buy Savings Plan** in the upper right corner of the displayed page.

Step 5 Select and configure the savings plan you want to buy.

1. Select a savings plan.
   - **Type**: Currently, only **ECS Saving Plans** is available.
   - **Region**: Specify the region to which the savings plan applies.
   - **Specifications**: Specify the specifications of the cloud service to which the savings plan applies.
2. Configure the savings plan.
   - **Hourly Commitment**: minimum hourly amount of the savings plan
   - **Commitment Term**: duration during which you are committed to use the savings plan. You can select 1 year or 3 years.
   - **Payment Option**: purchase option of the savings plan, which can be all upfront, partial upfront, or no upfront.
   - **Starts**: You can choose to make the savings plan effective immediately or at a specified time after you buy it.

Step 6 Click **Buy Now**.

Step 7 Confirm the order information. Then, click **Pay** and complete the payment as prompted.

----End

11.3.3 Savings Plan Discounts

For details, access **Savings Plans Price Calculator** and switch to the **Details** page.

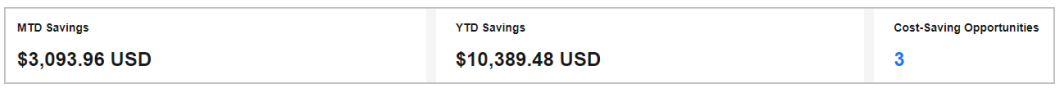
11.4 Viewing Purchased Savings Plans

You can view the details of your purchased savings plans, including the basic information, purchase records, and usage summary.

Viewing Savings Summary

Step 1 Access the **Summary** page.

Step 2 View the savings summary of your savings plans.



- **MTD Savings**: total amount saved so far for the current month.

NOTE

It may take up to one or two days to display the latest savings plan summary.

- **YTD Savings**: total amount saved in the current year after the expenditures of eligible pay-per-use resources are paid for using the savings plan.
- **Cost-Saving Opportunities**: number of recommended 1-year, all upfront ECS Savings Plans if you have adopted all the recommendations, which are generated based on the expenditures of the last 30 days.

----End

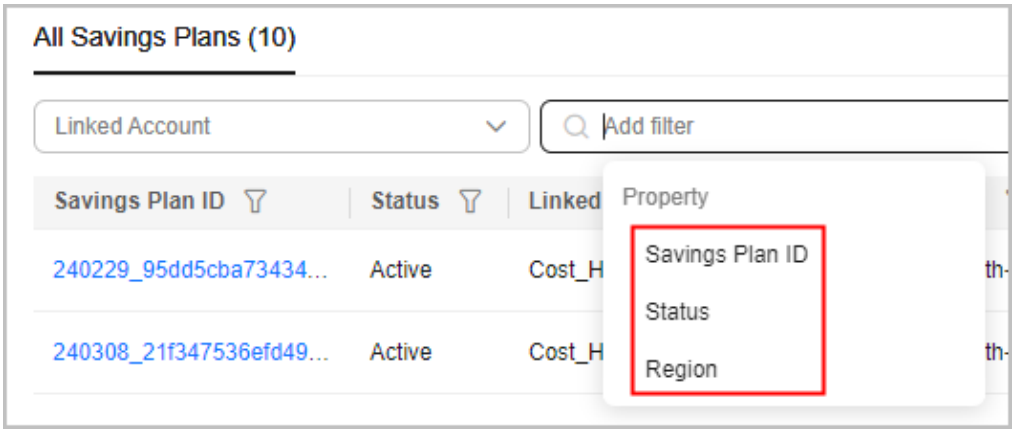
Viewing All Savings Plans

Step 1 Access the **Summary** page.

Step 2 View all savings plans in the current account.

NOTE

You can filter savings plans by savings plan ID, status, linked account, type, and region.



Field	Description
Savings Plan ID	Unique identifier of a savings plan
Status	Status of a savings plan, including **Start Pending**, **Active**, **Retired**, and **Frozen**
Linked Account	Account that the savings plan belongs to
Type	Type of the savings plan
Region	Region that the savings plan applies to
Site	Site that the savings plan is used for
Specifications	Cloud service specifications eligible for the savings plan
Hourly Commitment	Committed amount per hour for the savings plan

Field	Description
Payment Option	Payment option of the savings plan, which can be all upfront, partial upfront, or no upfront
Started	Time when you can start using the savings plan
Ended	Time when you should stop using the savings plan

----End

Viewing the Details of a Savings Plan

Step 1 Access the **Summary** page.

Step 2 Click the ID link of a savings plan to view its details.

- Basic information

Field	Description
Savings Plan ID	ID of the savings plan
Savings Plan Type	Type of the savings plan
Linked Account	Account that the savings plan belongs to
Service Type	Cloud services eligible for the savings plan
Region	Region that the savings plan applies to
Specifications	Cloud service specifications eligible for the savings plan
Order	ID of the order for the savings plan. You can click the link to go to the order details page.
Commitment Term	Committed amount per hour for the savings plan
Started	Time when you start using a savings plan
Ended	Time when you stop using a savings plan

- Purchase information

Field	Description
Total Commitment	Total amount of your commitment when purchasing the savings plan Total Commitment = Hourly Commitment x Commitment Term
Upfront Fee	Money you paid up front when purchasing an all upfront or partial upfront savings plan

Field	Description
Recurring Hourly Fee	Amount payable per hour when you purchase a no upfront or partial upfront savings plan
Commitment Term	Savings plan term in hours

- MTD Usage information

Field	Description
Savings	Month-to-date savings. Savings = Pay-per-Use Cost Equivalent – Commitment
Pay-per-Use Cost Equivalent	Month-to-date amount you would have spent on the same pay-per-use resources if you did not commit to the savings plan
Commitment	Month-to-date amount you committed when purchasing the savings plan
Utilization	Month-to-date utilization percentage of the savings plan Utilization = Used Commitment/Commitment x 100%
Used Commitment	Month-to-date amount that has been paid for using the savings plan

----End

11.5 Viewing How Savings Plans Are Applied

11.5.1 Viewing the Bill of Savings Plans

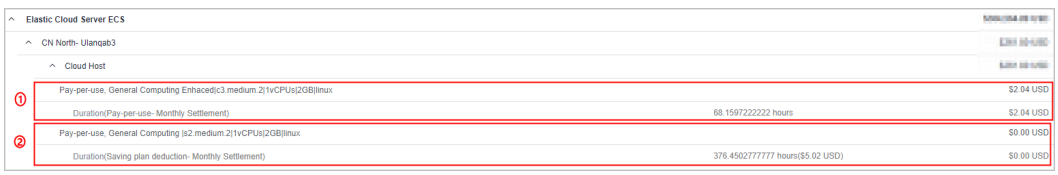
Step 1 Log in to Billing Center.

Step 2 Choose **Billing** > **Bills** to view the bill summary.

Viewing discounts

Under **Discounts**, you can view the discount amounts for savings plans.

Viewing the amount paid for using savings plans



① Actual amount paid for pay-per-use resources whose usage cannot be covered by the savings plan.

② Duration and amount covered by the savings plan.

Viewing the savings plan order information and hourly commitment

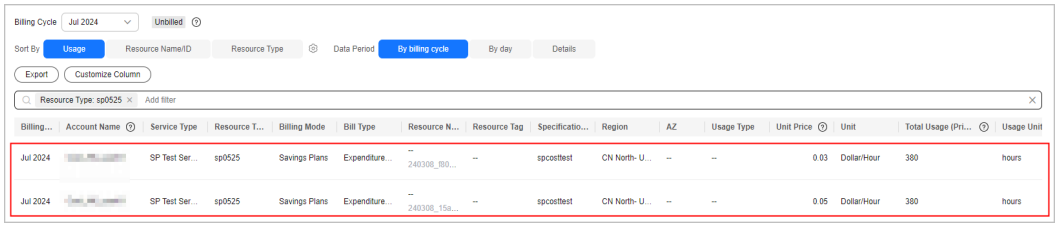
In the example, the 1-year savings plan was purchased using **Partial upfront** with hourly commitment of $0.10 USD. You can click the order No. to view the order details.

① Recurring hourly fee of the savings plan

② Upfront payment of the savings plan

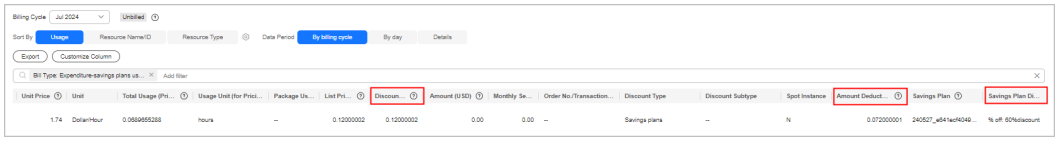
Step 3 Choose **Billing** > **Bill Details**. You can view the detailed bills by usage or billing cycle.

The following bills for the upfront payment and recurring payment are taken as an example:



The details are as follows:

- List price = Unit price x Usage = 1.74 x 0.0689655288 = $0.12000002 USD
- Discount amount = List price = $0.12000002 USD
- **Amount deducted from the savings plan = List price x Savings plan discount** = 0.12000002 x 60% = $0.072000001 USD



----End

11.5.2 Analyzing the Cost of Savings Plans

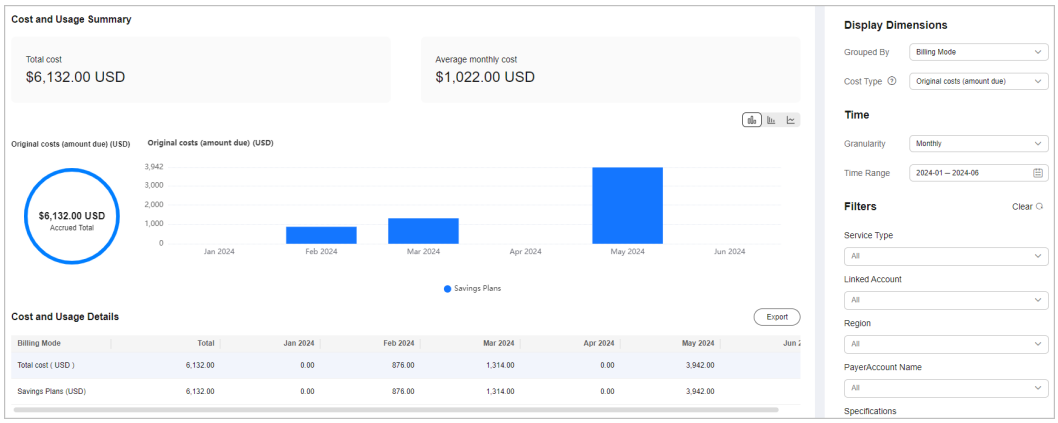
You can use the cost analysis function in Cost Center to view the original costs, amortized costs, and usage details of your purchased savings plans.

Viewing Original Costs

Step 1 Access the **Cost Analysis** page.

Step 2 Set **Grouped By** to **Billing Mode**. Under **Filters**, include **Savings Plans** in **Billing Mode**.

Step 3 View the original costs of your savings plans over the selected period.



Step 4 View the details of the original costs.

1. Access the **Cost Details Export** page.
2. Set **Cost Type** to **Original costs**. Then, click **Export**.

   In the exported file, filter the records with **Billing Mode** being **Savings Plans**.

   - **Service Type**: type of the purchased savings plan, for example, **ECS Savings Plan**.
   - **Bill Type**
     - **Expenditure - purchase**: expenditures paid up front for purchasing a savings plan
     - **Refund - unsubscription**: refund for the unsubscription from a savings plan
     - **Expenditure - hourly billing**: hourly expenditures of a savings plan

----End

11.5.3 Viewing the Usage of Savings Plans

You can view the utilization and coverage of your purchased savings plans to visually understand how they apply to your resource usage.

NOTE

- Enterprise master accounts associated with member accounts for unified accounting management can view the utilization and coverage across all their member accounts during the association.
- Savings plan utilization and coverage are updated once every 24 hours, but some data may take longer than one day to be displayed.

Viewing Utilization Analyses

You can view the utilization of a savings plan in a specified period, including the total savings, pay-per-use cost equivalent, and amount deducted from the savings

plan. If the utilization of a savings plan is low, you can add more pay-per-use resources that are eligible for the savings plan.

Savings plan utilization = Amount deducted from the savings plan/Total amount saved by using the savings plan x 100%

Step 1 Access the **Utilization & Coverage Analysis** page.

Step 2 Click the **Utilization Analysis** tab to view the utilization analyses.

Step 3 Set search criteria to view the savings plan utilization.

1. Set **Period** to **Monthly**, **Daily**. You can query data from the last 18 months. Utilization is calculated based on how your savings plans applied to your usage over the look-back period.
   - **Monthly**: You can view the month-to-date and year-to-date utilization, and also the utilization from the last 3, 6, or 12 months. Also you can manually search for data within a specific period (18 months at most).
   - **Daily**: You can view the month-to-date utilization, and also the utilization from the last 7 days, 14 days, 30 days, or 3 months.
2. View your utilization data over the selected period.

Table 11-4 Savings plan utilization fields

Field	Description	Example
Average Utilization	Percentage of the savings plan that was used over the selected period	Suppose that you purchased an all upfront 3-year savings plan with an hourly price of $0.5 USD. During the selected period from June 1, 2023 to June 30, 2023, the total savings plan commitment is $360 USD. Suppose that your usage billed with the savings plan rates totals $180 USD during the selected period. Your utilization for that savings plan is 50% (180/360 x 100%). Suppose that the list price of your pay-per-use equivalent is $370 USD, the total savings will be $10 USD (370 - 360).
Used Commitment	Amount of the savings plan that was used over the selected period	
Total Commitment	Total committed amount of the savings plan over the selected period Total Commitment = Hourly Commitment x Number of active savings plan hours over the selected period	
Total Savings	Amount of money saved after the savings plan was applied to your eligible resources over the selected period	

Field	Description	Example
Pay-per-Use Cost Equivalent	Amount of money that you would have paid at the list price if the savings plan was not applied to your eligible resource usage over the selected period	

3. View your utilization trend over the selected period.
4. Apply filters to include or exclude certain types of data. You can select up to 50 items for each filter.

Table 11-5 Savings plan utilization filters

Filter	Description
Linked Account	Displays data for enterprise master/member accounts associated with the account to get savings plan utilization.
Region	Displays data for a specified region (such as **CN South-Guangzhou**) to get savings plan utilization.
Specifications	Displays specified specifications to get savings plan utilization.
Type	Displays specified savings plan types to get savings plan utilization.

Step 4 View savings plan utilization and click in the table if you want to export the savings plan utilization data.

NOTE

- You can click in the upper right corner of the table to control which fields are displayed.
- When you export the savings plan data, if there is currently no data, 0% is displayed.

Table 11-6 Fields for savings plan utilization in the exported table

Field	Description
Savings Plan ID	Unique identifier of the savings plan
Account	Name of the account that purchases the savings plan
Region	Region that the savings plan applies to
Site	Site that the savings plan is used for

Field	Description
Specifications	Specifications eligible for the savings plan
Utilization	Percentage of the savings plan that was used Utilization = Amount deducted from the savings plan/Total amount saved by using the savings plan x 100%
Savings	Total amount saved by using the savings plan compared to pay-per-use pricing

----End

Viewing Coverage Analyses

You can view the coverage of a savings plan for a specified period, including the average coverage and the additional pay-per-use cost. If the coverage of a savings plan is low, you can purchase additional savings plans of the same type.

Savings plan coverage = Amount deducted from the savings plan/(Amount deducted from the savings plan + Cost of eligible usage not covered by the savings plan) x 100%

Step 1 Access the **Utilization & Coverage Analysis** page.

Step 2 Click the **Coverage Analysis** tab to view the coverage analyses.

Step 3 Set search criteria to view the savings plan coverage.

1. Set **Period** to **Monthly**, **Daily**. You can query data from the last 18 months. Coverage shows how much of your eligible usage was covered by your savings plans over the look-back period.
   - **Monthly**: You can view the month-to-date and year-to-date coverage, and also the coverage from the last 3, 6, or 12 months. Also you can manually search for data within a specific period (18 months at most).
   - **Daily**: You can view the month-to-date coverage, and also the coverage from the last 7 days, 14 days, 30 days, or 3 months.
2. View your coverage data over the selected period.

Table 11-7 Savings plan coverage fields

Field	Description	Example
Average Coverage	Average coverage of all savings plans over the selected period Average coverage = Amount deducted from savings plans/(Amount deducted from savings plans + Cost of eligible usage not covered by savings plans) x 100%	Suppose you purchased a savings plan (discount: 48% off) and the hourly commitment is $2 USD/hour. If you have two pay-per-use instances and the unit price is $3 USD per instance per hour over the period from July 1, 2023 to July 2, 2023. In this case: – The unit price after the savings plan is applied is $1.56 USD (3 x 0.52), and 1.282 (2/1.56) instances can be billed with the savings plan per hour. Over the selected period, the total amount deducted from the savings plan is $96 USD (2 x 48). – The additional hourly pay-per-use cost is $2.154 USD, calculated as (2 – 1.282) x 3. Over the selected period, the total additional pay-per-use cost is $103.392 USD (2.154 x 48). – The average coverage is calculated as follows: 96/(96 + 103.392) x 100% = 48.15%
Additional Pay-per-Use Cost	Amount of pay-per-use resources uncovered by the savings plan over the selected period	

3. View your coverage trend over the selected period.
4. Apply filters to include or exclude certain types of data. You can select up to 50 items for each filter.

Table 11-8 Savings plan coverage filters

Filter	Description
Linked Account	Displays data for enterprise master/member accounts associated with the account to get savings plan coverage.
Service Type	Displays data for a specified service type to get savings plan coverage.
Region	Displays data for a specified region (such as **CN South-Guangzhou**) to get savings plan coverage.
Specifications	Displays specified specifications to get savings plan coverage.

Filter	Description
Enterprise Project	Displays data for a specified enterprise project to get savings plan coverage.
Cost Tag	Displays data for a specified cost tag to get savings plan coverage.
Cost Category	Displays data for a specified cost category to get savings plan coverage.

Step 4 View savings plan coverage and click in the table if you want to export the savings plan coverage data.

NOTE

- You can click  in the upper right corner of the table to control which fields are displayed.
- When you export the savings plan data, if there is currently no data, 0% is displayed.

Table 11-9 Fields for savings plan coverage in the exported table

Field	Description
Linked Account	Account that uses the pay-per-use resource
Service Type	Service type of the pay-per-use resource
Resource Type	Resource type of the pay-per-use resource
Region	Region where the pay-per-use resources were used
Specifications	Specifications of the pay-per-use resources
Usage Type	Usage type for the pay-per-use resources
Used Commitment	Amount of the savings plan that was used over the selected period
Additional Pay-per-Use Cost	Amount of pay-per-use resources that are not covered by the savings plan over the selected period
Average Coverage	Average coverage of pay-per-use resources covered by the savings plan over the selected period

----End

Optimizing Savings Plans Based on Utilization and Coverage

- High utilization and coverage: Your purchased savings plans are fully utilized, delivering significant savings.

- High utilization but low coverage: Many pay-per-use resources are not covered by the purchased savings plans. You can increase the savings plan commitment to reduce more costs.
- Low utilization and coverage: Your purchased savings plans are underutilized. Only few resources are covered by the savings plans. You can adjust the use of your resources so that as many as pay-per-use resources can be covered by the savings plans to reduce costs.
- Low utilization but high coverage: The commitment of your purchased savings plans greatly exceeds that required by your pay-per-use resources. You can try to lower the savings plan commitment or purchase other types of savings plans to best fit into your service requirements.

11.6 Creating a Savings Plan Report

Creating a Savings Plan Utilization Report

Step 1 Access the **Utilization & Coverage Analysis** page.

Step 2 Click **Create Analysis Report** in the upper right corner of the page.

Step 3 Select **Savings Plan Utilization** and click **Create Report**.

Step 4 Configure filters on the **Savings Plan Utilization** page, click **Save Report**, specify the report name, and click **OK**.

For details about the filters, see **Viewing Purchased Savings Plans**.

----End

Creating a Savings Plan Coverage Report

Step 1 Access the **Utilization & Coverage Reports** page.

Step 2 Click **Create Analysis Report** in the upper right corner of the page.

Step 3 Select **Savings Plan Coverage** and click **Create Report**.

Step 4 Configure filters on the **Coverage Analysis** page, click **Save Report**, specify the report name, and click **OK**.

For details about the filters, see **Viewing Purchased Savings Plans**.

----End

11.7 FAQ

How Do I Understand the Hourly Commitment of a Savings Plan?

When you buy a savings plan, you commit to using a specified amount over a one- or three-year term. Your hourly commitment is the minimum amount you promised to spend. The expenditure of eligible pay-per-use resources will be paid for using the savings plan at a discounted rate. If you use partial upfront or zero upfront, you still need to pay the hourly commitment value even if the actual amount for a specific hour is less than the committed amount.

Suppose the price of a c6.xlarge.4 ECS in CN North-Beijing4 is $1.46 USD/hour (discount: 67.8% off), and your hourly commitment is $10 USD. In each hour, the number of c6.xlarge.4 ECSs whose usage can be paid for using the savings plan is as follows: 10/(1.46 x 0.322) = 21.27.

How Do I Buy a Savings Plan?

- Method 1

  Log in to Cost Center, and choose **Cost Optimization** > **Savings Plans** > **Purchase Recommendations**. Then, click **Buy Savings Plan** in the **Operation** column of the specified savings plan.

- Method 2

  Log in to Cost Center, and choose **Cost Optimization** > **Savings Plans** > **Summary**. Then, click **Buy Savings Plan** in the upper right corner of the page.

- Method 3

  Log in to the management console, and choose **Compute** > **Elastic Cloud Server**. Then, click **Savings Plans** in the navigation pane. In the displayed page, click **Buy Savings Plan** in the upper right corner.

What Will Happen When My Savings Plan Expire?

After your savings plans expire, the pay-per-use resource usage will be billed at standard pay-per-use rates, but the resources will not be released, avoiding any negative impacts on your ongoing services.

12 Reserved Instances

12.1 Viewing RI Analysis

You can view the usage of the reserved instances (RIs) you have purchased. The amounts displayed are only estimates. You can view the exact amounts in the bills generated on the third day of the following month.

NOTE

If you are using a master account and shares RIs with your member accounts, it is acceptable that the RI utilization and coverage before and after the bill is generated may be different.

RI utilization and coverage are updated once every day. It may take 24 to 48 hours for the data to be displayed.

If you are using a master account but have not enabled unified accounting management, you are not allowed to view the RI utilization and coverage of your member accounts.

If RIs are combined or split, RI utilization cannot be calculated.

RI Utilization

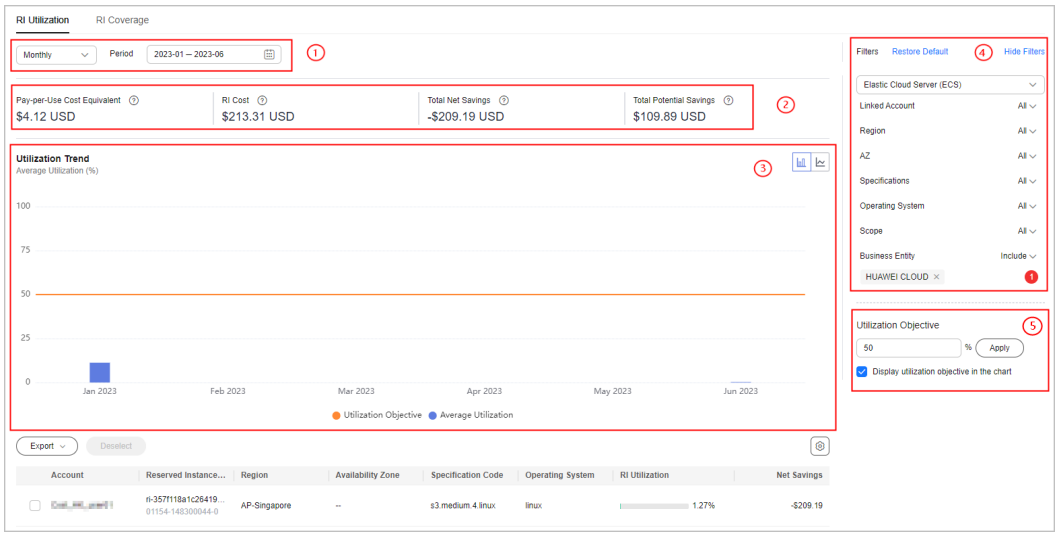
You can learn about the RI usage, including the amounts saved and amortized after using RIs, and monitor the comprehensive utilization rate of your RIs.

RI utilization = Number of used RI hours/Number of purchased RI hours x 100%

Step 1 Access the **Utilization & Coverage Analysis** page.

Step 2 Click **RI Utilization**.

Step 3 Set search criteria to view the RI utilization.



① You can select **Monthly**, **Daily**, or **Hourly** for a period of time from the last 18 months.

- **Monthly**: You can view the utilization data from the last 3, 6, or 12 months. Also you can manually search for data within a specific period (18 months at most).
- **Daily**: You can view the month-to-date utilization, and also the utilization from the last 7 days, 14 days, 30 days, or 3 months.
- **Hourly**: You can view the utilization from 00:00 to 24:00 for a given day.

② This area displays the utilization data for the selected period.

Table 12-1 RI utilization fields

Field	Description	Example
Pay-per-Use Cost Equivalent	Pay-per-use costs equivalent to the RI hours you have used, calculated based on the list price.	Example: You purchase an RI with a duration of 100 hours. The price of a pay-per-use resource with the same specifications is $4 USD per hour. This pay-per-use resource has matched the RI for 6 hours. Scenario 1: No upfront fee is charged for the RI, and the hourly rate is $1.5 USD. In this case: • Pay-per-use cost equivalent = 4 x 6 = $24 USD • RI cost = 1.5 x 6 = $9 USD • Total net savings = 24 – 9 = $15 USD • Total potential savings = 4 x 100 – 1.5 x 100 = $250 USD Scenario 2: A partial upfront fee of $40 USD is charged for each RI, and the hourly rate is $1 USD. In this case: • Pay-per-use cost equivalent = 4 x 6 = $24 USD • RI cost = 40/100 x 6 + 1 x 6 = $8.4 USD • Total net savings = 24 – 8.4 = $15.6 USD • Total potential savings = 4 x 100 – (1 x 100 + 40) = $260 USD Scenario 3: An upfront fee of $100 USD is charged for each RI. In this case: • Pay-per-use cost equivalent = 4 x 6 = $24 USD • RI cost = 100/100 x 6 = $6 USD • Total net savings = 24 – 6 = $18 USD • Total potential savings = 4 x 100 – 100 = $300 USD
RI Cost	Cost of used RIs amortized by hour. RI cost = Upfront costs for purchased RIs amortized by hour + Cost charged amortized by hour	
Total Net Savings	Total amount saved by using the RI compared to pay-per-use pricing Total net savings = Pay-per-use cost equivalent – RI cost	
Total Potential Savings	Potential savings that may be realized if RIs are all used up. Total potential savings = Pay-per-use cost equivalent for purchased RI hours – RI cost	

③ This chart shows your utilization over time.

Example: If you purchase a 100-hour RI and the matched pay-per-use resource has been used for 6 hours, the RI utilization is 6% (6/100 x 100%).

④ The **Filters** area is designed for you to include or exclude certain types of data. You can select up to 50 items for each filter.

Table 12-2 RI utilization filters

Filter	Description
Service Type	Displays specified service types to get RI utilization.
Specifications	Displays specified specifications to get RI utilization.
Linked Account	Displays data for enterprise master/member accounts associated with the account to get RI utilization.
Region	Displays data for a specified region (such as **CN South-Guangzhou**) to get RI utilization.
AZ	Displays data for a specified AZ to get RI utilization.
Operating System	Displays RI utilization based on the operating system used.
Scope	Specifies whether the RI can be used in a given AZ or a region.
Business Entity	Displays RI utilization based on the business entity the cloud services belong to. Example: The business entity of direct users is Huawei Cloud. The business entity of a partner's users is the same as that of that partner.

⑤ If the **Display utilization objective in the chart** check box is selected, you will see an orange solid line in the chart as a benchmark to determine whether the target is reached. You can choose not to display the line by deselecting the check box.

Step 4 Click **Export** to export the RI utilization data in the chart or table.

NOTE

- You can click  in the upper right corner of the table to control which fields are displayed.
- You can select the check boxes before specific RIs to view their utilization. If none is selected, the average utilization of all RIs will be displayed by default.
- When you export the RI data, if there is currently no data, 0% is displayed.

Table 12-3 Fields for RI utilization in the exported chart

Field	Description
Date	Date when an RI is used. • Query by month: billing cycle when an RI is used. • Query by day: date when an RI is used. • Query by hour: time when an RI is used. Example: **2020.06.06 15:00:00** indicates the RI is used from June 6, 2020 14:00:00 GMT+08:00 to June 6, 2020 15:00:00 GMT +08:00.
Utilization	Utilization of an RI.

Table 12-4 Fields for RI utilization in the exported table

Category	Field	Description
RI properties	Account	Name of the account that purchases the RI.
	Order ID	Unique order ID of an RI.
	Reserved Instance Name/ID	Name and unique ID of an RI.
	Start Time	Date when the RI takes effect, that is, the time when the RI starts being used.
	End Time	Date when the RI becomes invalid, that is, the time after which the RI will no longer be used.
	Scope	Whether the RI can be used in a given AZ or a region.
	Region	Region where an RI operates.
	AZ	Availability zone where an RI operates.
	Payment Option	Billing mode of an RI, including **No upfront**, **Partial upfront**, or **All upfront**.
	RI Type	Type of an RI. The default value is **Standard**.
	Specifications	Product specifications of an RI.
	Number of RIs	Number of reserved instances.
	Operating System	Operating system of the RI.

Category	Field	Description
RI statistics	RI Utilization	Percentage of used RIs to purchased RIs. RI utilization = Number of used RI hours/Number of purchased RI hours x 100%
	RI Hours Purchased	How many hours the RI was purchased for within the specified time range.
	RI Hours Used	How many hours the RI was used for within the specified time range.
	RI Hours Unused	How many hours the RI was not used for within the specified time range.
	RI Cost	Sum of upfront cost for purchased RIs amortized by the hour and costs amortized by the hour. RI cost = Upfront cost for RIs amortized by hour + Hourly cost
	Pay-per-Use Cost	Pay-per-use costs equivalent to the RI hours you have used, calculated based on the list price.
	Net Savings	Total amount saved by using the RI compared to pay-per-use pricing Net savings = Pay-per-use cost equivalent – RI cost
	Potential Savings	Potential savings that may be realized if RIs are all used up.

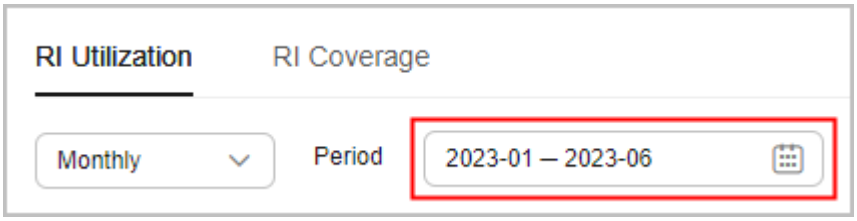
----End

Exporting RI Usage Details

You can export the usage details of RIs from the last 18 months. This offers a basis for analyzing RI utilization.

NOTE

If the query period does not cover any RI usage, the **Export RI Usage** button will not be displayed.

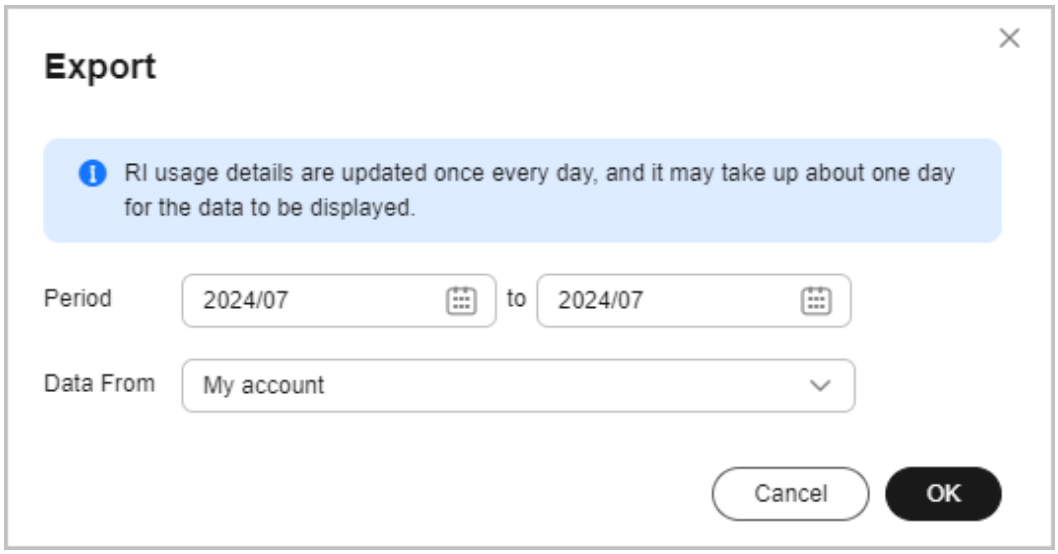


Step 1 Access the **Utilization & Coverage Analysis** page.

Step 2 Click **RI Utilization**.

Step 3 Click **Export** in the upper left corner of the list.

Step 4 Specify the period and data source you want to export, and click **OK**.



NOTE

RI usage details are refreshed every 24 hours, but the cost data for the current month may take longer than one day to be exported.

Table 12-5 describes the fields in the exported RI usage details.

Table 12-5 Fields in RI usage details

Field	Description
Account	Account that purchased the RI. By default, the account is the current login account or an enterprise member account associated with an enterprise master account.
Service Type	Service type of the RI. Currently, only ECS is supported.
Reserved Instance Name	Name of the RI. The value is the same as the resource name on the **Bill Details** page in the Billing Center.
Reserved Instance ID	ID of the RI. The value is the same as the resource ID on the **Bill Details** page in the Billing Center.
RI Specifications	RI specifications, for example, 2 vCPUs | 4 GiB | c6.large.2.
Operating System	Operating system of the RI.
Scope	Whether the RI can be used in a given AZ or a region.
Region	Region where an RI operates.
Availability Zone	Availability zone where an RI operates.

Field	Description
Number of RIs	Number of RIs purchased.
RI Hours Purchased	How many hours the RI was purchased for within the specified period, which is the overlapped part of the RI effective duration and the export period. RI Hours Purchased = RI Hours Used + RI Hours Unused
RI Hours Used	How many hours the RI was used for within the specified period. RI Hours Used = Cumulative number of RI Hours Used per Resource
RI Hours Unused	How many hours the RI was not used for within the specified period.
RI Normalized Units Purchased	RI Hours Purchased x RI normalization factor
RI Normalized Units Used	RI Hours Used x RI normalization factor
RI Normalized Units Unused	RI Hours Unused x Normalization Factor for RIs
Resource ID	Resource ID for the RI.
Specification Code	Specifications code for the RI.
RI Hours Used per Resource	Number of RI hours consumed by the resource. RI Hours Used per Resource = RI Usage Amount x Normalization Factor for pay-per use products/Normalization Factor for RIs **NOTE** In this formula, the value of **RI Usage Amount** needs to be converted into hours based on **RI Usage Unit**.
RI Normalized Units Used per Resource	RI Hours Used per Resource x Normalization Factor for RIs
RI Usage Amount	Actual usage of an instance that matches the RI.
RI Usage Unit	Unit of the actual usage amount.
Start Time	Time when pay-per-use resources start to use RI hours.
End Time	Time when pay-per-use resources stop using RI hours.

----End

RI Coverage

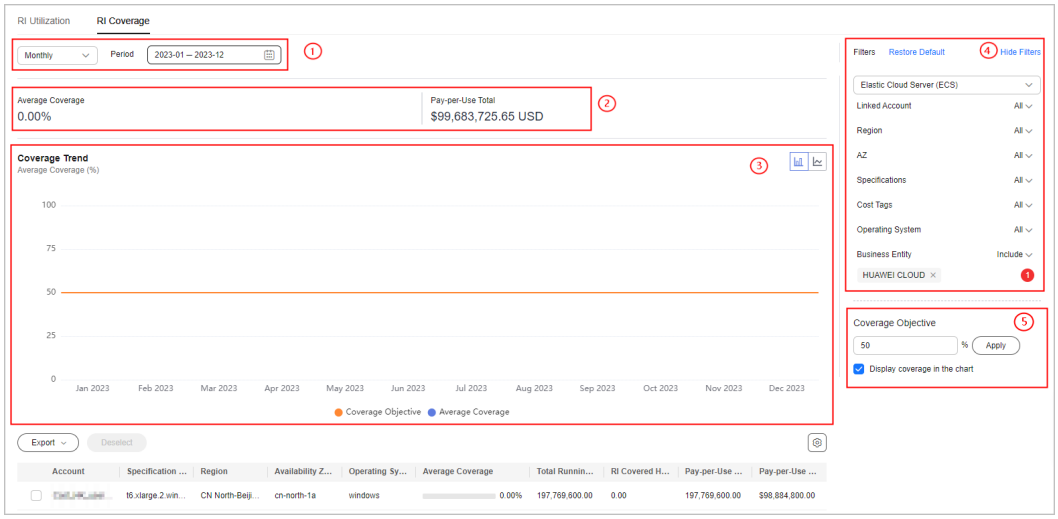
RI coverage lets you know what percentage of pay-per-use resources are covered by your purchased RIs so that you can evaluate whether you have purchased enough RIs.

Coverage = RI covered hours/Total resource running hours x 100%

Step 1 Access the **Utilization & Coverage Analysis** page.

Step 2 Click **RI Coverage**.

Step 3 Set search criteria to view the RI coverage.



① You can select **Monthly**, **Daily**, or **Hourly** for a period of time from the last 18 months.

- **Monthly**: You can view the coverage data from the last 3, 6, or 12 months. Also you can manually search for data within a specific period (18 months at most).
- **Daily**: You can view the month-to-date coverage, and also the coverage from the last 7 days, 14 days, 30 days, or 3 months.
- **Hourly**: You can view the coverage from 00:00 to 24:00 for a given day.

② This area displays the coverage data for the queried period.

Table 12-6 RI coverage fields

Field	Description	Example
Average Coverage	The average coverage rate within the queried period. Coverage = RI covered hours/Total resource running hours x 100% • RI covered hours refer to the used RI hours. • Total resource running hours refer to the total used hours of the pay-per-use resource.	Example: You purchase an RI and run two pay-per-use resources for 10 hours each. The hourly rate of the pay-per-use resources is $4 USD. One pay-per-use resource has matched the RI for 4 hours. In this case: • Coverage = 4/20 x 100% = 20% • Total pay-per-use cost = (20 – 4) x 4 = $64 USD
Pay-per-Use Total	Total pay-per-use costs for pay-per-use instances not covered by the used hours in the query period.	

③ This chart shows your coverage over time.

Example: If a pay-per-use resource runs for 10 hours and matches the RI for 4 hours, the coverage rate is 4/10 x 100% = 40%.

④ The **Filters** area is designed for you to include or exclude certain types of data. You can select up to 50 items for each filter.

Table 12-7 RI coverage filters

Filter	Description
Service Type	Displays specified service types to get RI coverage.
Specifications	Displays specified service types to get RI coverage.
Linked Account	Displays data for enterprise master/member accounts associated with the account to get RI coverage.
Region	Displays data for a specified region (such as **CN South-Guangzhou**) to get RI coverage.
Availability Zone	Displays data for a specified AZ, for example, AZ1, to get RI coverage.
Cost Tags	Displays activated tags to get RI coverage. For details, see **Activating Cost Tags**. Under the **Cost Tag** filter, you can select up to 20 items for a level-1 option and up to 50 items for a level-2 option at a time.
Operating System	Displays RI coverage based on the operating system used.

Filter	Description
Business Entity	Displays RI coverage based on the business entity the cloud services belong to. Example: The business entity of direct users is Huawei Cloud. The business entity of a partner's users is the same as that of that partner.

⑤ If the **Display coverage objective in the chart** check box is selected, you will see an orange solid line in the chart as a benchmark to determine whether the target is reached. You can choose not to display the line by deselecting the check box.

Step 4 Click **Export** to export the RI coverage data in the chart or table.

NOTE

- You can click  in the upper right corner of the table to control which fields are displayed.
- You can select the check boxes before specific RIs to view their coverage. If none is selected, the average coverage of all RIs will be displayed by default.
- When you export the RI data, if there is currently no data, 0% is displayed.
- Account adjustments do not change the historical data regarding RI coverage.

Table 12-8 Fields for RI coverage in the exported chart

Field	Description
Date	Date when an RI is used. • Query by month: billing cycle when an RI is used. • Query by day: date when an RI is used. • Query by hour: time when an RI is used. Example: **2020.06.06 15:00:00** indicates the RI is used from June 6, 2020 14:00:00 GMT+08:00 to June 6, 2020 15:00:00 GMT +08:00.
Average Coverage	Average coverage rate of an RI

Table 12-9 Fields for RI coverage in the exported table

Category	Field	Description
RI properties	Account	Name of the account that purchases the RI.
	Specifications	Product specifications of an RI.

Category	Field	Description
	Region	Region where an RI operates.
	Availability Zone	Availability zone where an RI operates.
	Operating System	Operating system of the RI.
RI statistics	Average Coverage	Average used hours that an RI covers. Average coverage = RI covered hours/Total resource running hours x 100%
	Total Running Hours	Total combined used hours that an RI covers and does not cover.
	RI Covered Hours	Used hours that an RI covers.
	Pay-per-Use Hours	Used hours that an RI does not cover.
	Pay-per-Use Cost	Amount for used hours that an RI does not cover, calculated based on the list price

----End

12.2 Creating an RI Report

Creating an RI Utilization Report

Method 1

Step 1 Access the **Utilization & Coverage Analysis** page.

Step 2 Click **RI Utilization**.

Step 3 Configure filters on the **RI Utilization** page, click **Save Report**, specify the report name, and click **OK**.

NOTE

For details about the filters, see **Analyzing RIs**.

----End

Method 2

Step 1 Access the **Utilization & Coverage Reports** page.

Step 2 Click **Create Report** in the upper right corner of the page.

Step 3 Select **RI utilization** and click **Create Report**.

Step 4 Configure filters on the **RI Utilization** page, click **Save Report**, specify the report name, and click **OK**.

For details about the filters, see **Analyzing RIs**.

----End

Creating an RI Coverage Report

Method 1

Step 1 Access the **Utilization & Coverage Analysis** page.

Step 2 Click **RI Coverage**.

Step 3 Configure filters on the **RI Coverage** page, click **Save Report**, specify the report name, and click **OK**.

NOTE

For details about the filters, see **Analyzing RIs**.

----End

Method 2

Step 1 Access the **Utilization & Coverage Reports** page.

Step 2 Click **Create Report** in the upper right corner of the page.

Step 3 Select **RI coverage** and click **Create Report**.

Step 4 Configure filters on the **RI Coverage** page, click **Save Report**, specify the report name, and click **OK**.

For details about the filters, see **Analyzing RIs**.

----End

13 Cost Allocation

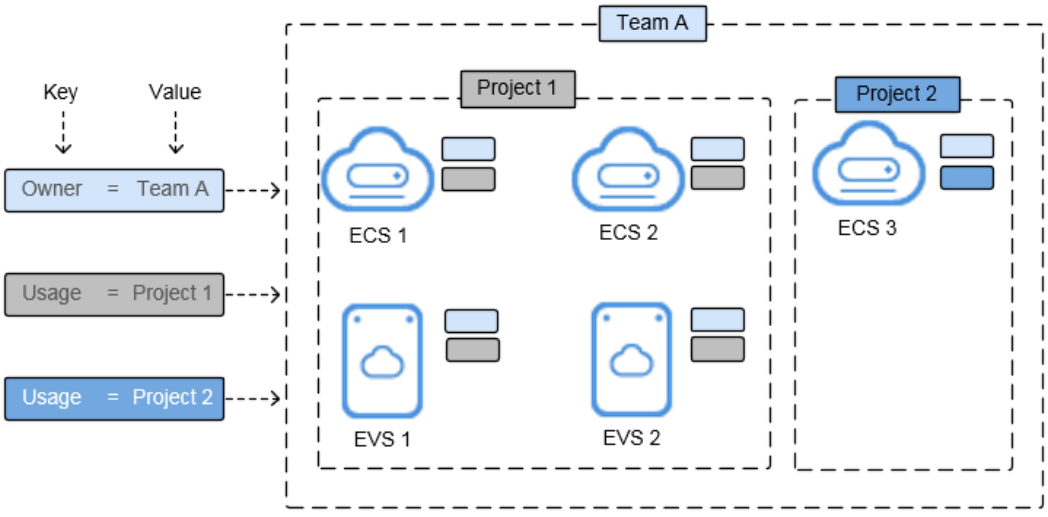
13.1 Cost Tags

13.1.1 Overview of a Cost Tag

What Is a Tag?

Tags are used to identify cloud resources, such as instances, images, and disks. If you have several types of cloud resources that are relevant under your account, you can use tags to classify these cloud resources (by usage, owner, environment, or others).

Figure 13-1 Example tags



In this example, you assign two tags to each cloud resource. Each tag contains a key and a value that you define. The key of one tag is **Owner**, and the key of another tag is **Usage**. Each tag has a value. For details about tag naming principles, see **Principles for Naming Tags**.

You can quickly search for and filter specific cloud resources based on the tags added to them. For example, you can define a set of tags for cloud resources in an account to track the owner and usage of each cloud resource, making resource management easier.

What Is a Cost Tag?

You can activate tags in Cost Center to help classify and track your Huawei Cloud costs. Once activated, such tags are referred to as cost tags. Only activated tags can be used to organize your resource costs and for cost analysis. For details, see **Activating Cost Tags**.

There are two types of tags:

- Expenditure tags: You can add such tags when creating resources. They will appear on the **Cost Tags** page 24 hours after their associated resources have generated expenditures.
- Predefined tags: You can create such tags on the TMS console. They will appear on the **Cost Tags** page immediately after being created.

When to Use Cost Tags

You can use cost tags to summarize or filter cost data on the **Cost Analysis** page or track the cost and usage of a specific resource on the **Budgets** page.

Constraints on Using Cost Tags

For details about the cloud services that support tag management, see **TMS and Other Services**.

Generally, tags will appear on this page 24 hours after they are created and their associated resources have generated expenditures. The following is an example:

1. You activate the cost tag **groupA**.
2. You attach the cost tag **groupA** when placing an order.
3. You can query the cost data by **groupA** in Cost Center about 24 hours after the order is placed.

Adding a Tag

To learn how to add tags (for ECS for example), see **Adding Tags**. You can also use Tag Management Service (TMS) to add tags to cloud resources. For details, see **Adding Tags to Cloud Resources**.

13.1.2 Activating Cost Tags

Important Notes

Generally, tags appear on the **Cost Tags** page 24 hours after their associated resources have generated expenditures. If there are no tags to activate, consider removing the colons (:) from tags.

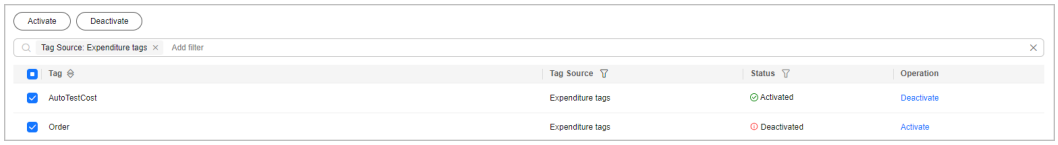
You can filter or group cost data by cost tag only after the tags are activated and their associated resources have incurred costs. If you activate the tags, they will be used to organize your resource costs generated thereafter.

If you are using a member account that has been associated with your master account for unified accounting management, you are not allowed to activate or deactivate tags. Instead, you can only use the tags activated by your master account for data analysis.

Activating or Deactivating a Tag

Step 1 Access the **Cost Tags** page.

Step 2 Select a tag and activate or deactivate it.



There are two types of tags:

- Expenditure tags: You can add such tags when creating resources. They will appear on the **Cost Tags** page 24 hours after their associated resources have generated expenditures.
- Predefined tags: You can create such tags on the TMS console. They will appear on the **Cost Tags** page immediately after being created.

----End

13.2 Cost Categories

13.2.1 Overview of a Cost Category

A cost category automatically groups your costs based on the rules you configure, such as linked account, service type, bill type, cost tag, and enterprise project, or even the custom rules configured for other cost categories.

A cost category goes into effect at the beginning of each month. If you add or modify a cost category in the middle of a month, month-to-date cost data will use the new cost category. After you create or edit a cost category, it can take up to four hours for your cost and usage details to be categorized.

Categorized Cost Information

There are multiple ways of looking at your business, for example, in terms of departments, projects, or applications. A cost category is a unique way, and you can create multiple cost categories accordingly. If you are using a master account and have enabled unified accounting management, you can also use cost categories to group the costs of your enterprise. For details, see **Cost Management for Enterprises**.

After creating a cost category, you can use it to analyze and monitor your costs and manage your budgets. You can use cost categories to summarize or filter cost and usage data. You can also learn about the application of cost categories in the exported cost details, where each created category is displayed in a separate column.

Splitting Shared Costs

Shared costs include the costs for the resources (network, storage, or resource packages) shared across departments or the costs that cannot be directly split by cost tag or enterprise project configured for the resources. These costs are not directly attributable to a singular owner, and hence cannot be categorized into a singular cost category. In this case, you can define cost splitting rules to fairly allocate these costs among teams or business units.

You can use cost categories to split shared costs, and also create custom categories and map your costs into these categories based on the splitting rules you define. Only net original costs (actual payments) and net amortized costs (amortized actual payments) can be split.

Establishing Multilevel Hierarchical Relationships

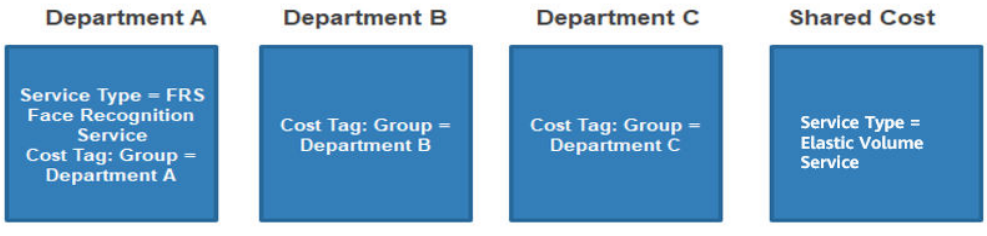
You can select from a list of cost category dimensions to create your cost category rules. Specifically, use existing cost categories as the prerequisites and define your own cost splitting rules. Assume that your enterprise has cost units from multiple departments and each department has multiple teams within. You can create multilevel hierarchical relationships among your cost categories to replicate your organizational structure. This way, you can easily track the cost usage of each team.

13.2.2 Application Scenarios

Example Scenario

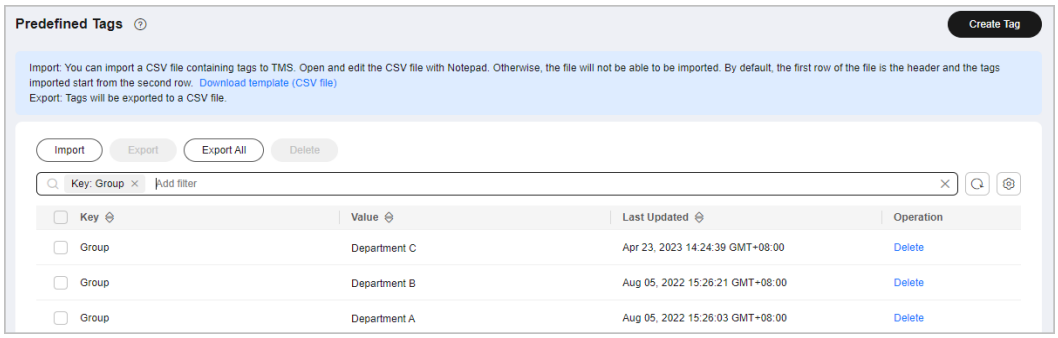
You want to allocate costs across Department A, Department B, and Department C in your company, and the department of most of the costs can be identified based on the tags configured for the resources. In addition, Department A uses the Face Recognition Service that does not support tag management, and an Elastic Volume Service (EVS) is shared across all departments.

As mentioned earlier, you can use the tag key **Group** and tag values **Department A**, **Department B**, and **Department C** to group most of your costs, as shown in the following figure.



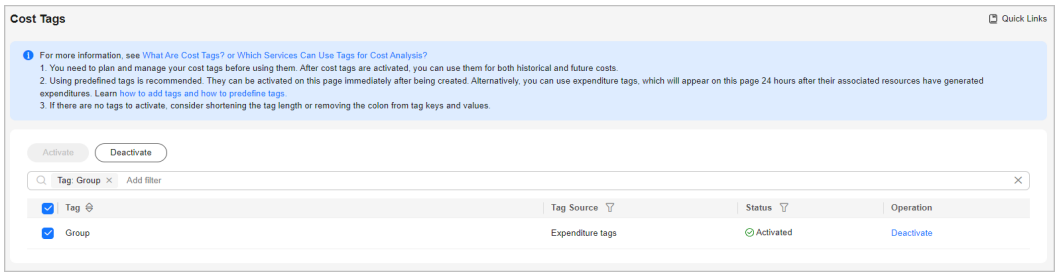
Step 1 Creating Cost Tags

Create tags before using cloud services. For details, see **Creating Predefined Tags**. For example, you can create the tag key **Group** with three tag values (**Department A**, **Department B**, and **Department C**).



Step 2 Activating Cost Tags

Activate the created tag **Group** so that it can be applied to cost categories.



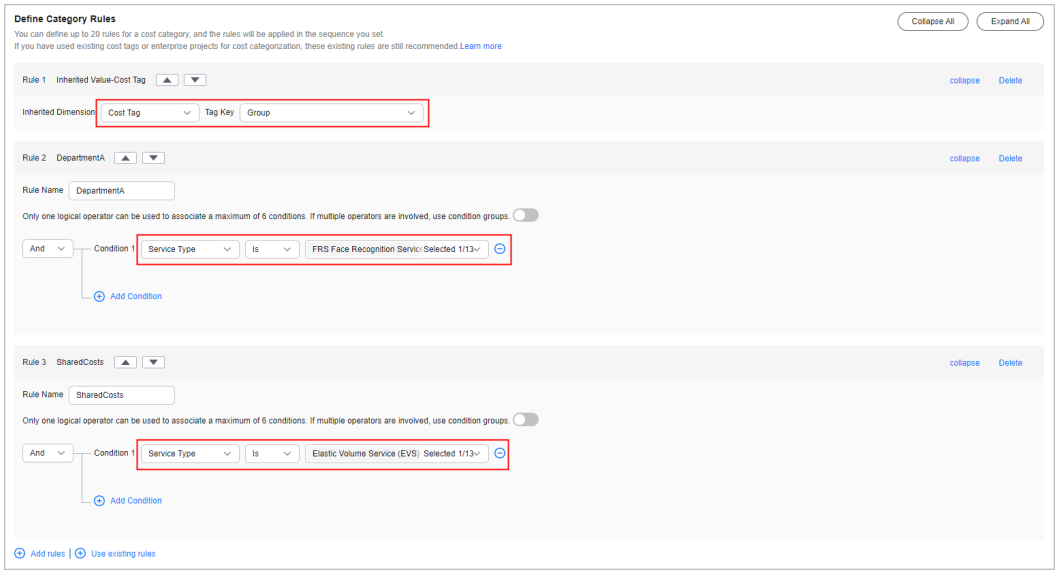
Step 3 Creating Cost Categories (Defining Rules)

Create a cost category and define the following rules for it.

Table 13-1 Defining rules

Rule	Type	Content
Rule 1: Inherited Value - Cost Tags	Use existing rules. **NOTE** If you have used existing cost tags or enterprise projects to group cost data, existing rules are recommended. Example: If rules are defined based on the cost tag **Group**, cost data will be grouped for **DepartmentA**, **DepartmentB**, and **DepartmentC**.	Condition: **Inherited Dimension** is **Cost Tag**, and **Tag Key** is **Group**.
Rule 2: Department A	Add rules.	Condition: **Service Type** is **FRS Face Recognition Service**.
Rule 3: Shared costs	Add rules.	Condition: **Service Type** is **Elastic Volume Service**.
Uncategorized costs	-	Costs that do not match the preceding rules.

Figure 13-2 Creating rules



In this example, costs are amortized in the way described in **Table 13-2**.

Table 13-2 Cost amortization

Cost For	Costs Amortized in the Current Month ($)
Department A	100
Department B	200
Department C	50
Shared costs	40
Uncategorized costs	100

Step 4 Creating Cost Categories (Allocating Shared Costs)

Four hours after the cost category is created, you can define cost splitting rules to split the shared costs across departments.

- Select **Custom** for **Allocation Method** to allocate 30% of the shared costs to Department A, 30% to Department B, and 40% to Department C.
- Select **Custom** for **Allocation Method** to allocate 50% of the uncategorized costs to Department A, 30% to Department B, and 20% to Department C.

NOTE

There are three cost allocation methods:

- **Proportionally**: Allocate your costs in proportion to the weight of each target value.

  Example: Suppose the value of target B is $800 USD and the value of target C is $200 USD. As the ratio of target B to target C is 4:1, 80% of the source value will be allocated to target B and 20% to target C.

- **Evenly**: Allocate your costs evenly across your target values.

  Example: Suppose there are two target values (A and B). With this method, the source value is evenly allocated to A and B, 50% for each.

- **Custom**: Allocate your costs based on a custom percentage for each target value. The percentages must add up to 100%.

Figure 13-3 Defining splitting rules

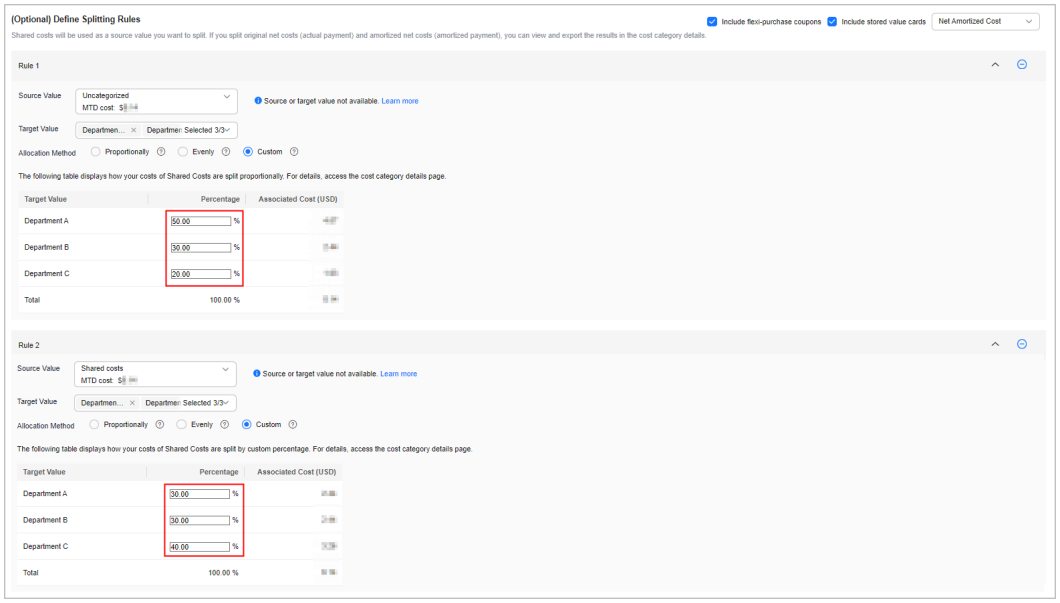


Table 13-3 Cost splitting rules

Rule	Source Value	Target Value	Allocation Method	Content	Associated Cost ($)
Rule 1	Uncategorized costs	Department A Department B Department C	Custom	Department A: 50% Department B: 30% Department C: 20%	Department A: 100 x 50% = 50 Department B: 100 x 30% = 30 Department C: 100 x 20% = 20

Rule	Source Value	Target Value	Allocation Method	Content	Associated Cost ($)
Rule 2	Shared costs	Department A Department B Department C	Custom	Department A: 30% Department B: 30% Department C: 40%	Department A: 40 x 30% = 12 Department B: 40 x 30% = 12 Department C: 40 x 40% = 16

Step 5 Viewing Cost Splitting Results

The following table lists the cost (**Net Amortized Cost** as an example) split for each department.

Table 13-4 Cost split for each department

Department	Net Amortized Cost	Split Amount	Amount Allocated	Proportion
Department A	100	50 + 12	162	33.06%
Department B	200	30 + 12	242	49.39%
Department C	50	20 + 16	86	17.55%

13.2.3 Managing Cost Categories

Important Notes

After you create or edit a cost category, it can take up to four hours for your cost and usage details to be categorized.

You can create up to 10 cost categories.

Creating a Cost Category

Step 1 Access the **Cost Categories** page.

Step 2 Click **Create Cost Category**.

Step 3 Define category rules to group your costs.

NOTE

You can define up to 20 rules for each category.

1. Specify a category name.

   Enter a name to uniquely identify your cost category. The name cannot be changed once your cost category is created.

2. Configure a look-back period.

   You can select any specified month from the previous 12 months.

3. Define category rules.

   Category rules are executed in prioritized order.

   NOTE

   An enterprise master account can select enterprise projects by linked account, except the default enterprise project and those not categorized.

   - Use existing rules for a cost category. This method lets you flexibly define a rule that dynamically inherits the value of a cost category or enterprise project to group your costs. You are advised to use the existing rules.

     You can choose to group costs by enterprise project, as shown in the following figure.

   - Define new rules. You can also associate multiple conditions for a cost category by using logical operators.

     Table 13-5 Logical operators

Logical Operator	Description	Example
And	Indicates that all conditions must be met.	If the logical operator is set to **And** and all of conditions 1, 2, and 3 are met, the rule can be used to categorize the costs.
Or	Indicates that any of configured conditions needs to be met.	If the logical operator is set to **Or** and any of the conditions (1, 2, and 3) is met, the rule can be used to categorize the costs.

     One logical operator can be used to associate a maximum of five conditions. If multiple operators are involved, use nested logic. For details, see **Calculation Logic**.

4. Group uncategorized costs.

All costs that do not comply with the rules you defined will be grouped into the default group **Uncategorized**. You can rename the group, for example, **Shared Costs**.

Step 4 (Optional) Split shared costs.

NOTE

When you use existing rules, the source and target values become available four hours after you create the cost category.

You cannot view cost splitting details in real time, including the cost of a split source and the percentage used for proportionally allocation, in a cost category you created. You are advised to create cost splitting rules four hours after you create a cost category.

Field	Description
Source Value	Shared costs you want to split, which can be either of the following: • Costs in **Step 3.3** that have been categorized but have not met the splitting requirements, for example, the costs of the **default** enterprise project. • Costs in **Step 3.4** that are not captured in your cost category rules
Target Value	The cost categories you want to split your costs across
Allocation Method	• **Proportionally**: Allocate your costs in proportion to the weight of each target value. Example: Suppose the value of target B is $800 USD and the value of target C is $200 USD. As the ratio of target B to target C is 4:1, 80% of the source value will be allocated to target B and 20% to target C. • **Evenly**: Allocate your costs evenly across your target values. Example: Suppose there are two target values (A and B). With this method, the source value is evenly allocated to A and B, 50% for each. • **Custom**: Allocate your costs based on a custom percentage for each target value. The percentages must add up to 100%.

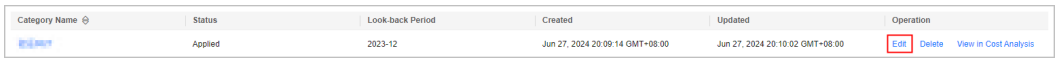
Step 5 Click **Create**.

----End

Editing a Cost Category

Step 1 Access the **Cost Categories** page.

Step 2 Click **Edit** in the **Operation** column of the cost category you want to modify the configured category rules and cost splitting rules.

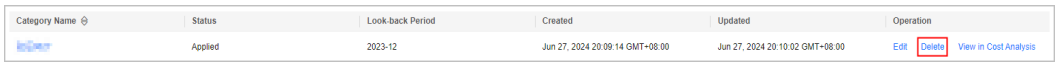


----End

Deleting a Cost Category

Step 1 Access the **Cost Categories** page.

Step 2 Click **Delete** in the **Operation** column of the cost category you want to delete.

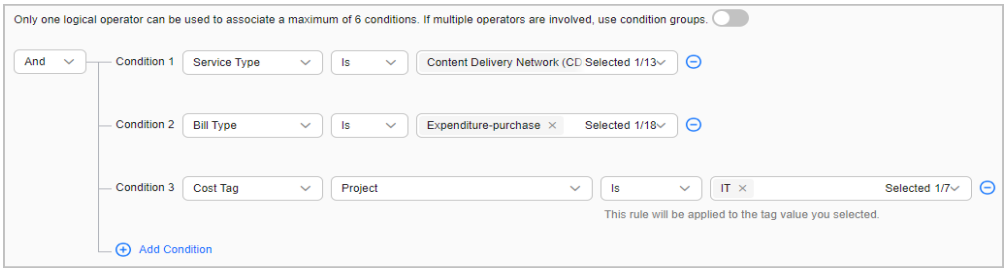


----End

Calculation Logic

- Default logic: One logical operator can be used to associate a maximum of five conditions.

  As shown in the following figure, a logical operator (**And**) is used to associate the three conditions. All these three conditions must be met at the same time so that the rule can be used to categorize costs.



  The following is an example of condition settings:

  Example condition 1: **Cost Tag project Is IT**. When the value of the cost tag **project** is **IT**, this rule will be used to categorize costs.

  Example condition 2: **Cost Tag project Is not IT**. When the value of the cost tag **project** is not **IT**, this rule will be used to categorize costs.

CAUTION

- When you use cost tags to group your costs, if the operator is **Is not**, the rule will not be used to categorize the costs that do not have tags.

  Example: The key of a cost tag is **project**, and the key values are **IT1**, **IT2**, and **IT3**. If you configure a condition where **Cost Tag project Is not IT1**, the costs whose cost tag values are **IT2** and **IT3** will be grouped. Costs that do not have the cost tag **project** will not be grouped.

- When you use enterprise projects to group your costs, if the operator is **Is not**, the rule will be used to categorize the costs that do not belong to any enterprise projects.

  Example: There are three enterprise projects (**project 1**, **project 2**, and **project 3**). If you configure a condition where **Enterprise Project Is not project 1**, costs that do not have enterprise projects as well costs whose enterprise projects are **project 2** and **project 3** will be grouped.

Example condition 3: **Cost Tag project Starts with IT**. When the value of the cost tag **project** starts with **IT**, this rule will be used to categorize costs.

Example condition 4: **Cost Tag project Is absent**. If the cost tag **project** is not used, this rule will be used to categorize costs.

Table 13-6 Conditional operators supported by different dimensions

Dimension	Is	Is Not	Starts With	Is Absent
Linked Account	Supported	Supported	Not Supported	Not Supported
Service Type	Supported	Supported	Not Supported	Not Supported
Bill Type	Supported	Supported	Not Supported	Not Supported
Cost Tag	Supported	Supported	Supported	Supported
Enterprise Project	Supported	Supported	Supported	Not Supported
Cost Category	Supported	Supported	Supported	Not Supported

- Nested logic: Two logical operators can be used to associate up to five conditions.

  As shown in the following figure, two logical operators are used to associate five conditions in a nested manner.

13.2.4 Viewing Cost Category Details

Important Notes

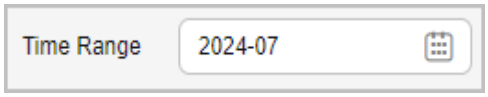
The splitting details of shared costs are only displayed on the cost category details page. Splitting rules do not affect the data for cost analysis, budget management, and cost details.

Viewing Cost Category Details

Step 1 Access the **Cost Categories** page.

Step 2 Click the name of a cost category.

Step 3 Specify **Time Range** in the upper right corner of the displayed page.



Step 4 View the details about the cost category.

1. Basic information

In this area, the cost category name, creation time, and last update time are displayed.

2. Splitting rules

In this area, the splitting rules for shared costs are displayed, and you can click **Edit** to modify these rules.

3. Splitting details

   - Cost distribution is displayed in the ring chart on the left.
   - The table on the right shows the cost splitting details for **Net Amortized Cost** or **Net Original Cost**

Field	Description
Item	Category rule name
Net Amortized Cost	Net amortized cost after the cost splitting rules have been applied
Net Original Cost	Net original cost after the cost splitting rules have been applied
Split Amount	Split amount of the shared cost. If the value of this field is negative, the corresponding cost is the split source.
Amount Allocated	Amount allocated. Amount allocated = Net amortized cost or Net original cost + Split amount
Proportion	Percentage of an allocated cost to the total cost allocated.

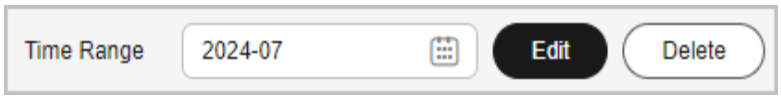
----End

Modifying Splitting Rules for Historical Costs

Step 1 Access the **Cost Categories** page.

Step 2 Click the name of a cost category.

Step 3 Specify **Time Range** and click **Edit** in the upper right corner of the displayed page.



NOTE

You can choose to only modify the category rules.

Step 4 Modify the category rules and splitting rules and click **Save**.

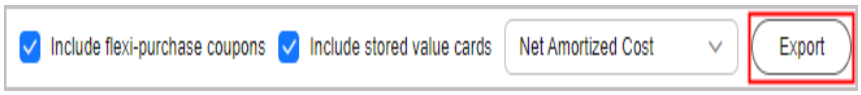
NOTE

After you modify a cost category, it can take up to four hours for your cost and usage details to be categorized.

----End

Exporting Cost Splitting Details

In the **Splitting Details** area on the cost category details page, click **Export** to export the cost splitting details.



13.2.5 Application of Cost Categories

Using a Cost Category to Group Costs

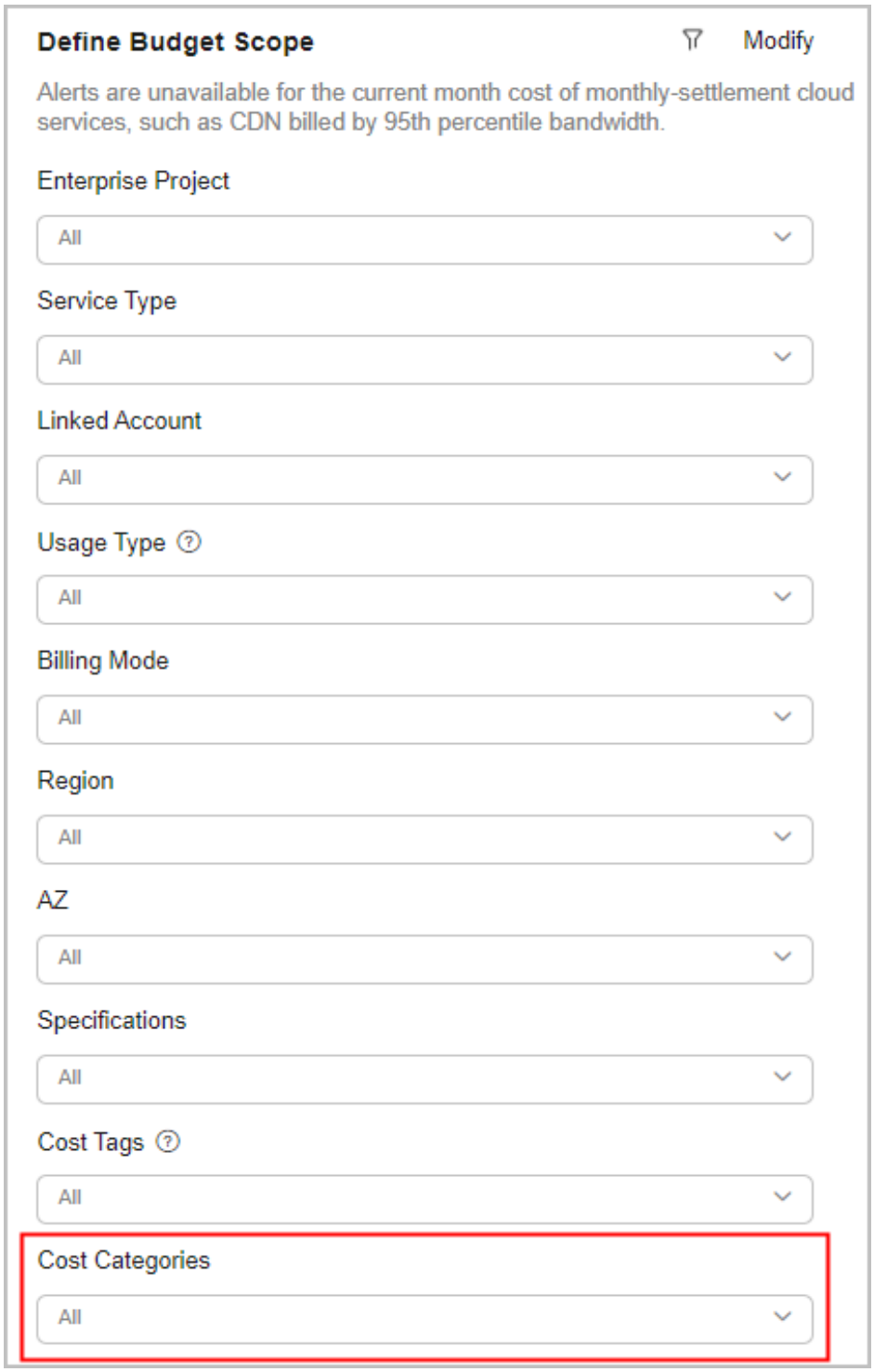
In Cost Center, choose **Cost Insights** > **Cost Analysis**, and set **Grouped By** to **Cost Categories** to group data.

Using a Cost Category to Filter Costs

In Cost Center, choose **Cost Insights** > **Cost Analysis**. Under **Filters**, select a cost category to filter costs.

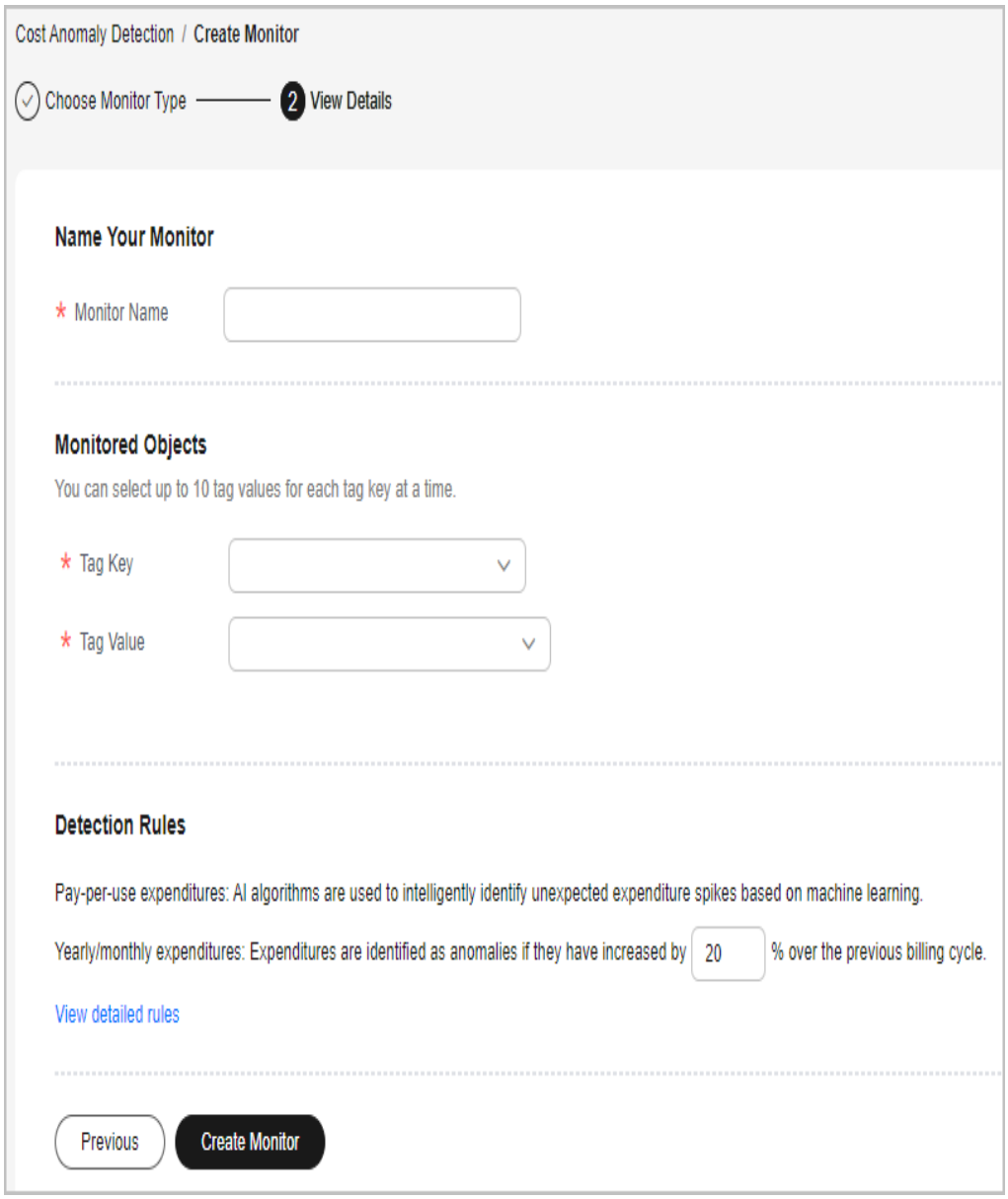
Using a Cost Category to Specify a Budget Scope

In Cost Center, choose **Budget Management** > **Budgets**. Then, click **Create Budget** and select a cost category in the **Budget Scope** area.



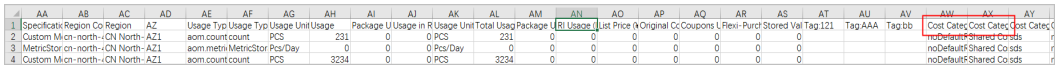
Detecting Cost Anomalies for a Cost Category

In Cost Center, choose **Cost Insights** > **Cost Anomaly Detection**. Then, click **Create Monitor** and select **Cost Categories** for **Monitor Type**. This monitor tracks the pay-per-use expenditure anomalies for a cost category rule.



Viewing Cost Details for a Cost Category

In Cost Center, choose **Cost Insights** > **Cost Details Export** to export cost details. In the exported file, you can view cost details by cost category.



14 Exporting Cost Details

14.1 Export to Local Directory

14.1.1 Exporting Cost Details to Local Directories

Important Notes

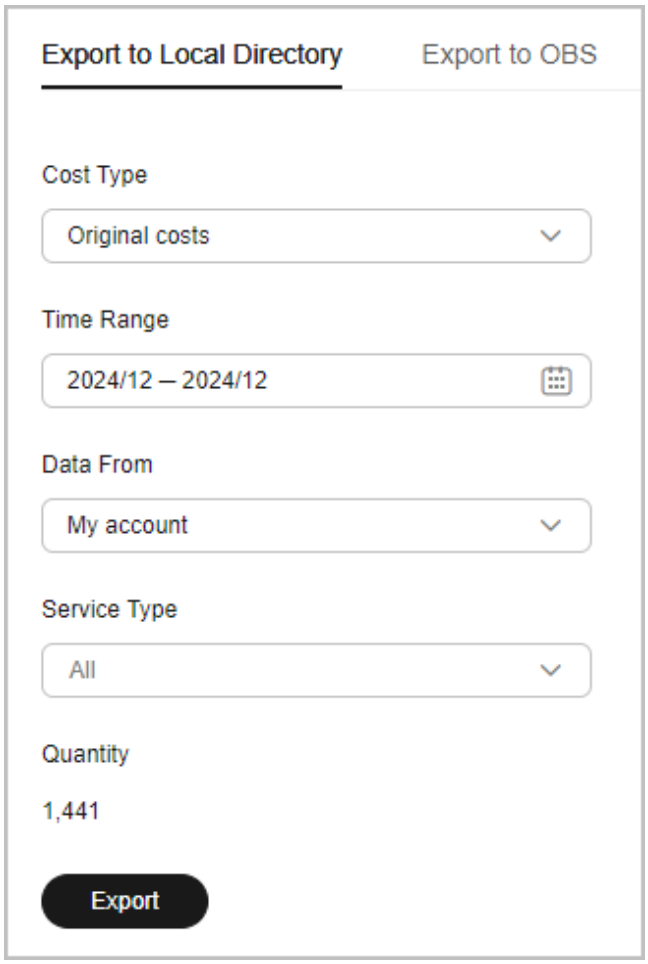
You can check the data scope for exporting cost details in Cost Center. For details, see **Data Scope**.

Cost Center refreshes your amortized costs once every 24 hours, and it may take longer than 24 to 48 hours for some data to be displayed. The current month costs of monthly-settlement cloud services, such as CDN and VPC, are available for export after 12:00 noon on the 4th day of the following month.

Procedure

Step 1 Access the **Cost Details Export** page.

Step 2 On the **Export to Local Directory** page, set the cost type, time range, data scope, and service type. Then, click **Export**.



NOTE

Cost details are refreshed every 24 hours, but it may take about 24 hours before the cost data for the current month is displayed.

You can export the details of amortized costs and original costs on a monthly basis.

Cost Type	File Name Identifier	Example File Name	Description
Amortized costs	%Account name%_AmortizedCostDetailByUsage_*YYYY-MM*	Jack_AmortizedCostDetailByUsage_2022-03_2022-05_20220519022405_0001.csv	Reflects the original costs amortized based on the usage in each billing cycle. The file only contains the month-to-date amortized costs. For details about the fields in the exported cost details, see **Fields in Exported Amortized Cost Details**.

Cost Type	File Name Identifier	Example File Name	Description
Original costs	%Account name%_OriginalCostDetail_*YYYY-MM*	Jack_OriginalCostDetail_2022-03_2022-05_20220519022940_0001.csv	Reflects the original costs for purchased and used resources. For details about the fields in the exported cost details, see **Fields in Exported Original Cost Details**.

----End

14.1.2 Export to Local Directory - Fields for Amortized Costs

To create a task for exporting amortized cost details, go to the **Cost Insights** > **Cost Details Export** > **Export to Local Directory** page, set **Cost Type** to **Amortized costs**, and configure the task details as prompted. For details, see **Procedure**.

Table 14-1 Fields in exported amortized cost details

Field	Description
Month	The month costs are amortized over. For details about cost amortization rules, see **Cost Amortization Rules**.
Enterprise Project	The enterprise project selected when you purchase a cloud service. If no enterprise project is selected, **default** is displayed as the value for this field. If the enterprise project management is not supported for the cloud service, **Not categorized** is presented.
Enterprise Project ID	ID of the specified enterprise project. If no enterprise project is selected during purchases, **0** is displayed as the value of this field.
Linked Account	The Huawei Cloud account that the cloud resources belong to.
PayerAccount Name	The account used to pay for Huawei Cloud resources.
Business Entity	The business entity that a cloud service belongs to. Example: Huawei Cloud (The business entity of member accounts associated with a master account owned by an authorized distributor is the same as that of the master account.)
Service Type Code	The code of the cloud service type. Example: hws.service.type.vpc
Service Type	The type of a cloud service. Example: VPC

Field	Description
Resource Type Code	The resource type code of a cloud service. Example: hws.resource.type.ip
Resource Type	The type of the resources of a cloud service. Example: EIP
Service Type Code (Child Resource)	The service type code of a child resource.
Service Type (Child Resource)	The service type of a child resource.
Resource Type Code (Child Resource)	The resource type code of a child resource.
Resource Type (Child Resource)	The resource type of a child resource.
Product ID	ID of a product.
Billing Mode	Billing mode. This parameter is not applicable when the order type is unsubscription. • Yearly/Monthly • Pay-per-Use • Reserved Instances • Savings Plans

Field	Description
Bill Type	Type of a billing item. • Expenditure-purchase: expenditures for purchased yearly/monthly products • Expenditure-renewal: expenditures for yearly/monthly subscriptions that you manually renew • Expenditure-use: expenditures for pay-per-use resources • Expenditure-auto-renewal: expenditures for yearly/monthly subscriptions that are automatically renewed • Expenditure-hourly billing: expenditures for reserved instances that are billed hourly • Expenditure-monthly payment: expenditures for services that are paid for on a monthly basis • Expenditure-savings plans used: expenditures that are paid for using savings plans • Expenditure-unsubscription service charge: handling fees upon unsubscription • Expenditure-month-end deduction for support plan: expenditures for the support plan at the end of a month • Expenditure-change: expenditures for changing the specifications of yearly/monthly products • Expenditure-tax: taxes for yearly/monthly subscriptions and pay-per-use products • Expenditure-difference amount: expenditures that HCDP users need to pay for if their expenditures do not reach the minimum guaranteed amount. Difference amount = Guaranteed minimum payment amount – Expenditure amount • Refund-unsubscription: expenditures for a yearly/monthly subscription that is unsubscribed from or that specifications were downgraded for • Refund-change: expenditures for a yearly/monthly subscription that specifications were downgraded for • Refund-change to pay-per-use: refunds generated when a yearly/monthly subscription is changed to pay-per-use billing • Refund-tax: taxes refunded when a yearly/monthly subscription is unsubscribed from or that specifications were downgraded for • Adjustment-compensation: amount compensated by Huawei Cloud • Adjustment-deduction: account adjustment made by Huawei Cloud. For example, when Huawei Cloud adjusts a specification downgrade order, the original refund amount is paid first. • Adjustment-compensation tax: taxes for Huawei Cloud compensations

Field	Description
	• Adjustment-deduction tax: taxes for Huawei Cloud account adjustments
Order No.	The unique identifier of a yearly/monthly or a reserved instance order.
Start Time	Time when billing for a specified cloud service starts.
End Time	Time when billing for a specified cloud service ends.
Billing Cycle	Billing cycle in which original costs for resources are generated.
Resource ID	The unique ID of a cloud service resource.
Resource Name	User-defined name of a cloud service resource.
Child Resource ID	The unique ID of a child resource.
Child Resource Name	Name of a child resource.
Specification Code	A group of codes used to describe the specifications of a cloud service. Example: s3.large.2
Specifications	Resource specifications.
Region Code	The code of a region.
Region	A cloud service region that provides public cloud service resources independently and serves a large geographical area.
AZ	A physically isolated zone where resources have their own independent power supply and internal networks. One region can have multiple AZs, and if one AZ becomes faulty, the other AZs in the same region can still provide services. AZs in the same region can access each other as they are on the same intranet.
Split Item	Item by which shared costs can be split. This parameter is only valid when cost splitting is enabled. You can view cost details by split item.
Usage Type Code	The code of a usage type. Example: Duration
Usage Type	The way a pay-per-use cloud service is billed. Example: Duration:Second (Stream computing:Stream computing:Duration)

Field	Description
Usage	The amount a cloud service was used within the amortization period, measured by such items as duration, capacity, count, or traffic.
Usage Unit	The unit used to measure the product usage.
Package Usage	The usage of a resource included in a package within the amortization period. If this usage does not exceed the package quota, no extra expenditures are incurred.
Usage in Reserved Instances	The usage of a resource included in a reserved instance within the amortization period. If this usage does not exceed the RI quota, no extra expenditures are incurred.
Original Cost	The original cost of a resource. This is equivalent to the amount due in the bill.
Current Month Amortized	The cost already amortized in the current month.
Amortized Cash Coupon	The amount of cash coupons in **Current Month Amortized**.
Savings Plan	ID of the savings plan applicable to your usage.
Payment Option	The payment option for savings plans can be: • **NO_UPFRONT** • **PARTIAL_UPFRONT** • **ALL_UPFRONT**
Savings Plan Discount	Discount offered by the savings plan.
Hourly Commitment	The amount of hourly commitment associated with the savings plan.
Amount Deducted from Savings Plan	The amount that is paid for using the savings plan.

Field	Description
Amortized Amount Within Resource Package Reset Period	Amount amortized for each reset period of the resource package. Amortized amount = Original costs (amount due)/Number of reset periods
Total Usage Within Resource Package Reset Period	Total usage of the resource package in its reset period.
Usage Unit Within Resource Package Reset Period	Measurement unit of the resource package usage in a reset period.
Resource Package Reset Period	Time range of the resource package reset period. **NOTE** 1. For hourly and daily resettable resource packages, the time range of the reset period is not displayed. 2. For monthly and yearly resettable resource packages, the time range of the reset period is displayed. 3. For non-resettable resource packages, the effective time and expiration time of the resource package are displayed.
First Order ID	Unique ID of an order. **NOTE** If the specifications of a resource package have been upgraded, this field indicates the order ID for the resource package purchase.
Resource Package Instance ID	ID of the resource package.
Resource Package Name	Name of the resource package.
RI Hours Used	Reserved instance hours used. (Required when **Bill Type** is **Expenditure-reserved instances used**)
RI ID (Used)	ID of the reserved instance in use. (Required when **Bill Type** is **Expenditure-reserved instances used**)
RI Name (Used)	Name of the reserved instance in use. (Required when **Bill Type** is **Expenditure-reserved instances used**)

Field	Description
Tag	The name of a cost tag for a resource within the amortization period. If there are multiple cost tags for a given resource, then multiple values will be displayed. Example: Department
Cost Category	A tool used to automatically group your costs based on the defined rules. For details, see **Overview of a Cost Category**. Separate fields are displayed for different cost categories in the cost details.

14.1.3 Export to Local Directory - Fields for Original Costs

To create a task for exporting original cost details, go to the **Cost Insights** > **Cost Details Export** > **Export to Local Directory** page, set **Cost Type** to **Original costs**, and configure the task details as prompted. For details, see **Procedure**.

Table 14-2 Fields in exported original cost details

Field	Description
Month	The month that the cost data you are exporting belongs to.
Enterprise Project	The enterprise project selected when you purchase a cloud service. If no enterprise project is selected, **default** is displayed as the value for this field. If the enterprise project management is not supported for the cloud service, **Not categorized** is presented.
Enterprise Project ID	ID of the specified enterprise project. If no enterprise project is selected during purchases, **0** is displayed as the value of this field.
Linked Account	The Huawei Cloud account that the cloud resources belong to.
PayerAccount Name	The account used to pay for Huawei Cloud resources.
Business Entity	The business entity that a cloud service belongs to. Example: Huawei Cloud (The business entity of member accounts associated with a master account owned by an authorized distributor is the same as that of the master account.)
Service Type Code	The code of the cloud service type. Example: hws.service.type.vpc
Service Type	The type of a cloud service. Example: VPC

Field	Description
Resource Type Code	The resource type code of a cloud service. Example: hws.resource.type.ip
Resource Type	The type of the resources of a cloud service. Example: EIP
Service Type Code (Child Resource)	The service type code of a child resource.
Service Type (Child Resource)	The service type of a child resource.
Resource Type Code (Child Resource)	The resource type code of a child resource.
Resource Type (Child Resource)	The resource type of a child resource.
Product ID	ID of a product.
Billing Mode	Billing mode. This parameter is not applicable when the order type is unsubscription. • Yearly/Monthly • Pay-per-Use • Reserved Instances • Savings Plans

Field	Description
Bill Type	Type of a billing item. • Expenditure-purchase: expenditures for purchased yearly/monthly products • Expenditure-renewal: expenditures for yearly/monthly subscriptions that you manually renew • Expenditure-use: expenditures for pay-per-use resources • Expenditure-auto-renewal: expenditures for yearly/monthly subscriptions that are automatically renewed • Expenditure-hourly billing: expenditures for reserved instances and savings plans that are billed hourly • Expenditure-monthly payment: expenditures for services that are paid for on a monthly basis • Expenditure-savings plans used: expenditures that are paid for using savings plans • Expenditure-unsubscription service charge: handling fees upon unsubscription • Expenditure-month-end deduction for support plan: expenditures for the support plan at the end of a month • Expenditure-change: expenditures for changing the specifications of yearly/monthly products • Expenditure-tax: taxes for yearly/monthly subscriptions and pay-per-use products • Expenditure-difference amount: expenditures that HCDP users need to pay for if their expenditures do not reach the minimum guaranteed amount. Difference amount = Guaranteed minimum payment amount – Expenditure amount • Refund-unsubscription: expenditures for a yearly/monthly subscription that is unsubscribed from or that specifications were downgraded for • Refund-change: expenditures for a yearly/monthly subscription that specifications were downgraded for • Refund-change to pay-per-use: refunds generated when a yearly/monthly subscription is changed to pay-per-use billing • Refund-tax: taxes refunded when a yearly/monthly subscription is unsubscribed from or that specifications were downgraded for • Adjustment-compensation: amount compensated by Huawei Cloud • Adjustment-deduction: account adjustment made by Huawei Cloud. For example, when Huawei Cloud adjusts a specification downgrade order, the original refund amount is paid first. • Adjustment-compensation tax: taxes for Huawei Cloud compensations

Field	Description
	• Adjustment-deduction tax: taxes for Huawei Cloud account adjustments
Order No.	The unique identifier of a yearly/monthly or a reserved instance order.
Start Time	Time when billing for a specified cloud service starts.
End Time	Time when billing for a specified cloud service ends.
Resource ID	The unique ID of a cloud service resource.
Resource Name	User-defined name of a cloud service resource.
Child Resource ID	Unique ID of a child resource.
Child Resource Name	Name of a child resource.
Specification Code	A group of codes used to describe the specifications of a cloud service. Example: s3.large.2
Specifications	Resource specifications.
Region Code	The code of a region.
Region	A cloud service region that provides public cloud service resources independently and serves a large geographical area.
AZ	A physically isolated zone where resources have their own independent power supply and internal networks. One region can have multiple AZs, and if one AZ becomes faulty, the other AZs in the same region can still provide services. AZs in the same region can access each other as they are on the same intranet.
Usage Type Code	The code of a usage type. Example: Duration
Usage Type	The way a pay-per-use cloud service is billed. Example: Duration:Second (Stream computing:Stream computing:Duration)
Usage Unit	The unit used to measure the product usage.
Usage	Pay-per-use resource usage within the specified period, measured by such items as duration, capacity, count, or traffic.
Package Usage	Usage of a resource included in a package within a given period. If this usage does not exceed the package quota, no extra expenditures are incurred.

Field	Description
Usage in Reserved Instances	Usage of a resource included in a reserved instance within a given period. If this usage does not exceed the reserved instance quota, no extra expenditures are incurred.
Usage Unit (for Pricing)	Usage unit used for pricing a product when the product is released.
Total Usage (Pricing Unit)	Usage displayed in the unit used for pricing when the product is released. The value is truncated to a maximum of 10 decimal places. Total Usage (Pricing Unit) = Total Usage/Conversion Factor For example, 1 byte = 1/(1024 x 1024 x 1024) GB. The value is truncated to 10 decimal places and will be displayed as **0.0000000009**.
Package Usage (Pricing Unit)	Package usage displayed in the unit used for pricing when the product is released. The value is truncated to a maximum of 10 decimal places.
RI Usage (Pricing Unit)	RI usage displayed in the unit used for pricing when the product is released. The value is truncated to a maximum of 10 decimal places.
List Price	The price of a product without any discounts applied.
Original Cost	Amount that should be paid for used cloud services after discounts are applied. The discounts include commercial discounts and partner authorized discounts.
Coupons Used	The amount paid using cash coupons.
Savings Plan	ID of the savings plan applicable to your usage.
Payment Option	The payment option for savings plans can be: • **NO_UPFRONT** • **PARTIAL_UPFRONT** • **ALL_UPFRONT**
Savings Plan Discount	Discount offered by the savings plan.
Hourly Commitment	The amount of hourly commitment associated with the savings plan.
Amount Deducted from Savings Plan	The amount that is paid for using the savings plan.

Field	Description
Cost Tag	The name of a cost tag for a resource. If there are multiple cost tags for a given resource, then multiple values will be displayed. Example: Department
Cost Category	A tool used to automatically group your costs based on the defined rules. For details, see **Overview of a Cost Category**. Separate fields are displayed for different cost categories in the cost details.

14.2 Export to OBS

14.2.1 Exporting Cost Details to OBS

Cost Center provides your cost data and usage details with cost allocation identifiers. You can create tasks for exporting **amortized cost details**, **original cost details**, and **cost details (FOCUS 1.0)** to OBS. The cost details will then be periodically pushed to the specified OBS bucket.

Important Notes

You can create up to 10 export tasks.

If you are using an enterprise master account, the cost details you export will include your own cost data and the cost data of your member accounts associated for unified accounting management.

NOTE

1. The current month's costs are only estimates. Before your bill is generated, export the latest cost details to view the exact amounts. After your bill is generated on the 4th day of the following month, view the exact amounts in the bill.
2. For the meanings of fields in the exported files, see **Export to OBS - Fields for Amortized Costs** and **Export to OBS - Fields for Original Costs**.

Prerequisites

An OBS bucket is available.

If you are an IAM user, ensure that your administrator has granted you the OBS bucket permissions to:

- Obtain the bucket ACL information.
- Obtain the bucket policy configuration.
- Configure a bucket policy.
- Delete a bucket policy.
- List all buckets.

Creating an OBS Export Task

Step 1 Access the **Cost Details Export** page.

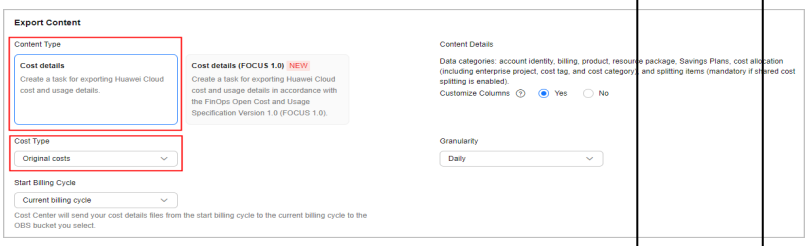
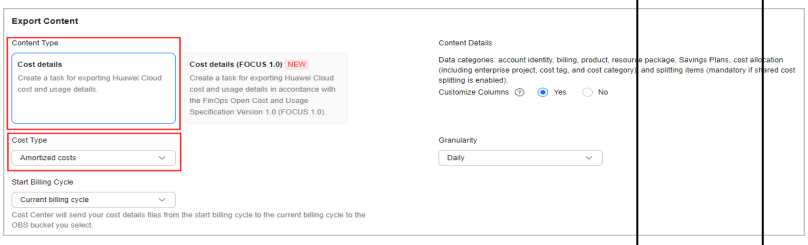
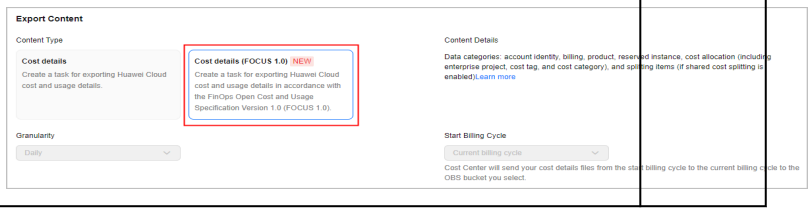
Step 2 On the **Export to OBS** page, click **Create Export Task**.

Step 3 Configure the OBS export task details and click **Save**.

You can create OBS export tasks for **amortized cost details**, **original cost details**, and **cost details (FOCUS 1.0)**. See the table below.

Table 14-3 Field descriptions

Category	Field	Description	Example
Task name	Task Name	Enter a unique name for each task.	test
OBS bucket settings	Bucket Name	Select an OBS bucket to store the cost details file from the drop-down list box.	cost-alpha-test
	Bucket Directory Prefix	Enter the level-1 directory for storing the cost details file.	cost

Category	Field	Description	Example
Export Content	Content Type	• **Cost details**: Create a task for exporting Huawei Cloud cost and usage details. When you select **Cost details**, you can set **Cost Type** to **Original costs** or **Amortized costs**. **Figure 14-1** Exporting original costs  **Figure 14-2** Exporting amortized costs  • **Cost details (FOCUS 1.0)**: Create a task for exporting Huawei Cloud cost and usage details in accordance with the *FinOps Open Cost and Usage Specification Version 1.0* (FOCUS 1.0). When you select **Cost details (FOCUS 1.0)**, you can create OBS export tasks for cost details (FOCUS 1.0).  	Cost details

Category	Field	Description	Example
	Content Details	**Data categories**: account identity, billing, product, resource package, Savings Plans, cost allocation (including enterprise project, cost tag, and cost category), and splitting items (mandatory if shared cost splitting is enabled) **Customize Columns**: **Yes** is selected by default. ● **Yes**: Include **Resource Tag** (also referred to as **Cost Tag**) and **Cost Category** as fixed columns. Their values are presented by key-value pairs. ● **No**: Include each key of a cost tag or cost category as a separated column. The change of any keys will change the file columns.	/
	Cost Type	If **Content Type** is set to **Cost details**, you can set **Cost Type** to **Original costs** or **Amortized costs**.	Amortized costs
	Granularity	Specify the granularity of cost details. By default, the daily granularity is provided. ● If **Content Type** is set to **Cost details**, the granularity can be **Daily** or **Monthly**. ● If **Content Type** is set to **Cost details (FOCUS 1.0)**, the granularity can only be **Daily** and cannot be changed.	Daily
	Start Billing Cycle	Specify the billing cycle from which you want to start exporting the cost details files to OBS. ● If **Content Type** is set to **Cost details**, the start billing cycle is the current month by default. ● If **Content Type** is set to **Cost details (FOCUS 1.0)**, the start billing cycle can only be the current month and cannot be changed.	Current billing cycle

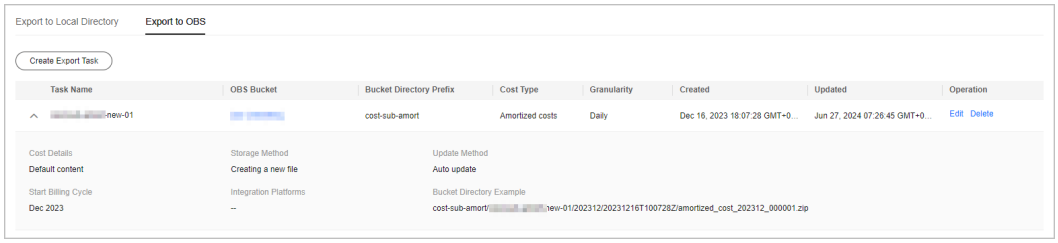
Category	Field	Description	Example
File Settings	Storage Method	Select the method for storing the exported cost details file. There are two methods: • **Creating a new file**: When a daily cost details file is pushed to OBS, a new folder named after the current calendar date will be created. All the folders are saved by date in the billing cycle directory. – The file storage directory will be in the format of *{Bucket directory prefix}/{Task name}/{Billing cycle}/{File push time}/{File name}*, for example, **cost/test/202310/20231016T092614Z/amortized_cost_202310_000001.zip**. • **Overwriting existing files**: When a daily cost details file is pushed to OBS, it will overwrite the existing file for the same billing cycle to ensure that only the latest cost detail file will be retained in the billing cycle directory. The file storage directory will be in the format of *{Bucket directory prefix}/{Task name}/{Billing cycle}/{File name}*, for example, **cost/test/202310/amortized_cost_202310_000001.zip**. **NOTE** If **Content Type** is set to **Cost details (FOCUS 1.0)**, the file storage directory will be in the format of {Bucket directory prefix}/{Task name}/{Billing cycle}/{File push time}/{File name}, for example, **cost/{test}/202507/20250731T021846Z/FOCUS_COST_202507_000001.zip**.	Creating a new file
	Update Method	Only **Auto update** is supported. Cost Center pushes cost details files to the OBS bucket every day as specified. If the cost data in a historical billing cycle has changed, Cost Center will push all of the latest cost data to the directory for that billing cycle.	Auto update
	File Format	If **Content Type** is set to **Cost details (FOCUS 1.0)**, the file format can be csv or Parquet.	csv

----End

Viewing an OBS Export Task

Step 1 Access the **Cost Details Export** page.

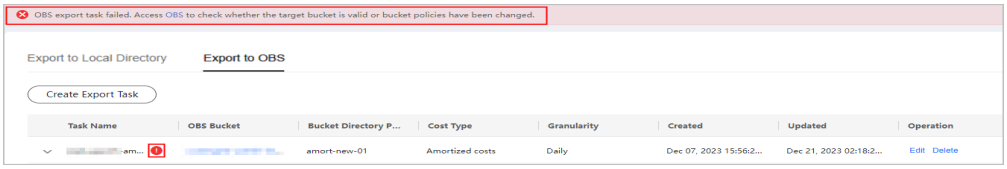
Step 2 On the **Export to OBS** page, view the list of OBS export tasks.



Field	Description
OBS Bucket	OBS bucket used to store the cost details file.
Bucket Directory Prefix	Level-1 directory for storing the cost details file.
Granularity	Specify the granularity of cost details.
Created	Time when the OBS export task was created.
Updated	Last time when the cost details file was exported to the OBS bucket. OBS export tasks are executed once a day. If the time for **Updated** is 24 hours ago, the OBS export task failed to be executed.
Bucket Directory Example	Path for obtaining the cost details file from the OBS bucket.

NOTE

- If the message shown in the following figure is displayed, the OBS export task failed to be executed. In this case, access **the OBS console** to check whether the bucket is invalid or whether the bucket policy has been changed. If the bucket is valid and the bucket policy remains unchanged, check whether the bucket is encrypted using **server-side encryption**. Currently, files cannot be exported to OBS buckets encrypted using server-side encryption.



----End

Obtaining Cost Details

After an OBS export task is created, it is executed once a day. Cost Center pushes the cost details file to the following path in the OBS bucket:

- **Storage Method** set to **Overwriting existing files**: *{Bucket directory prefix}/{Task name}/{Billing cycle}/{File name}*

  Example: If the task name is **test**, the bucket directory prefix is **cost**, and the billing cycle is **202310**, then the path for the exported file will be **cost/test/202310/amortized_cost_202310_000001.zip**.

- **Storage Method** set to **Creating a new file**: *{Bucket directory prefix}/{Task name}/{Billing cycle}/{File push time}/{File name}*

  Example: If the task name is **test**, the bucket directory prefix is **cost**, and the billing cycle is **202310**, then the path will be **cost/test/202310/20231016T093940Z/original_cost_202310_000001.zip** if you export the file on October 16, 2023.

You can directly download the file from the file path or use an API or SDK to obtain the cost details file from the OBS bucket.

- API: Call the API for obtaining the object content in **API Overview**.
- SDK: Call the SDK for obtaining the object content in **SDK Function Matrices**.

14.2.2 Export to OBS - Fields for Amortized Costs

To create a task for exporting amortized cost details, go to the **Cost Insights** > **Cost Details Export** > **Export to OBS** page, click **Create Export Task**, set **Cost Type** to **Amortized costs**, and configure the task details as prompted. For details, see **Creating an OBS Export Task**.

Table 14-4 Fields in exported amortized cost details

Field	Description
Time Range	Time range over which costs are amortized. For example, if **Granularity** is set to **Daily** to export files to OBS, the value of **Time Range** will be the period of days over which costs are amortized, for example, **2023-08-23 00:00:00 GMT +08:00/2023-08-24 00:00:00 GMT+08:00**.
Billing Cycle	Billing cycle in which original costs for resources are generated.
Linked Account	The Huawei Cloud account that the cloud resources belong to.
PayerAccount Name	The account used to pay for Huawei Cloud resources.
Business Entity	The business entity that a cloud service belongs to. Example: Huawei Cloud (The business entity of member accounts associated with a master account owned by an authorized distributor is the same as that of the master account.)
Service Type Code	The code of the cloud service type. Example: hws.service.type.vpc
Service Type	The type of a cloud service. Example: VPC
Resource Type Code	The resource type code of a cloud service. Example: hws.resource.type.ip

Field	Description
Resource Type	The type of the resources of a cloud service. Example: EVS
Service Type Code (Child Resource)	The service type code of a child resource (when the current cost is generated by resources attached to an ECS).
Service Type (Child Resource)	The service type of a child resource (when the current cost is generated by resources attached to an ECS).
Resource Type Code (Child Resource)	The resource type code of a child resource (when the current cost is generated by resources attached to an ECS).
Resource Type (Child Resource)	The resource type of a child resource (when the current cost is generated by resources attached to an ECS).
Product ID	ID of a product.
Specification Code	A group of codes used to describe the specifications of a cloud service. Example: s3.large.2
Specifications	Resource specifications. Example: General computing | si3.2xlarge.2 | 8 vCPUs | 16 GB | Linux
Region Code	The code of a region. Example: cn-north-5
Region	A cloud service region that provides public cloud service resources independently and serves a large geographical area. Region: CN North-Beijing1
AZ	A physically isolated zone where resources have their own independent power supply and internal networks. One region can have multiple AZs, and if one AZ becomes faulty, the other AZs in the same region can still provide services. AZs in the same region can access each other as they are on the same intranet. Example: AZ 1
Billing Mode	Billing mode. The options are as follows: ● Yearly/Monthly ● Pay-per-Use ● Reserved Instances ● Savings Plans

Field	Description
Bill Type	The type of a billing item. • Expenditure-purchase: expenditures for purchased yearly/monthly subscriptions • Expenditure-renewal: expenditures for yearly/monthly subscriptions that you manually renew • Expenditure-use: expenditures for pay-per-use resources • Expenditure-auto-renewal: expenditures for yearly/monthly subscriptions that are automatically renewed • Expenditure-hourly billing: expenditures for reserved instances that are billed hourly • Expenditure-monthly payment: expenditures paid by month • Expenditure-savings plans used: expenditures paid for using savings plans • Expenditure-unsubscription service charge: handling fees upon unsubscription • Expenditure-month-end deduction for support plan: expenditures paid at the end of a month for support plans • Expenditure-change: expenditures for changing the specifications of yearly/monthly subscriptions • Expenditure-tax: taxes for yearly/monthly subscriptions and pay-per-use products • Expenditure-difference amount: expenditures that HCDP users need to pay for if their expenditures do not reach the minimum guaranteed amount. Difference amount = Guaranteed minimum payment amount – Expenditure amount • Refund-unsubscription: expenditures for a yearly/monthly subscription that is unsubscribed from or that specifications were downgraded for • Refund-change: expenditures for a yearly/monthly subscription that specifications were downgraded for • Refund-change to pay-per-use: expenditures for a yearly/monthly subscription when it is changed to pay-per-use • Refund-tax: taxes refunded when a yearly/monthly subscription is unsubscribed from or that specifications were downgraded for • Adjustment-compensation: expenditures compensated by Huawei Cloud • Adjustment-deduction: expenditures paid when Huawei Cloud makes an account adjustment. For example, when Huawei Cloud adjusts a specification downgrade order, the original refund amount is paid first. • Adjustment-compensation tax: taxes for Huawei Cloud compensations

Field	Description
	• Adjustment-deduction tax: taxes for Huawei Cloud account adjustments
Order No.	The unique identifier of a yearly/monthly or a reserved instance order.
Combined Order No.	Order No. for multiple orders that need to be executed in a batch.
Start Time	Time when billing for a specified cloud service starts.
End Time	Time when billing for a specified cloud service ends.
Usage Type Code	The code of a usage type. Example: Duration
Usage Type	The way a pay-per-use cloud service is billed. Example: Duration:Second (Stream computing:Stream computing:Duration)
Usage Unit	The unit used to measure the product usage. Example: second
Usage	The amount a cloud service was used within the amortization period, measured by such items as duration, capacity, count, or traffic.
Package Usage	The usage of a resource included in a package within the amortization period. If this usage does not exceed the package quota, no extra expenditures are incurred.
Usage in Reserved Instances	The usage of a resource included in a reserved instance within the amortization period. If this usage does not exceed the RI quota, no extra expenditures are incurred.
List Price	The price of a product without any discounts applied.
Amortized Amount	The cost that should be amortized for the current month.
Amortized Cash Coupon	The amount of cash coupons in the cost that has been amortized for the current month.
Spot	Whether the current pay-per-use instance is using spot pricing.
Resource ID	The unique ID of a cloud service resource.
Resource Name	Name of a cloud service resource.
Child Resource ID	The unique ID of a child resource for a cloud service.

Field	Description
Child Resource Name	Name of a child resource for a cloud service. A child resource takes the subordinate position among several associated resources, for example, an EVS system disk is a child resource of an ECS.
Split Item	Item by which shared costs can be split. This parameter is only valid when cost splitting is enabled. You can view cost details by split item (domain name or IP address).
Resource Package/ Amortized Cost	The amortized cost of a resource package in the reset period.
Resource Package/ Total Usage	The total usage of a resource package in the reset period.
Resource Package/ Usage Unit	The usage unit of a resource package.
Resource Package/ Reset Period	The validity period of a resource package in the reset period. Example: **2023-08-23 00:00:00 GMT+08:00/2023-09-23 00:00:00 GMT+08:00**.
Resource Package/ Instance ID	ID of the resource package applicable to your usage.
Resource Package/ Name	The name of the resource package applicable to your usage.
Savings Plan/ID	ID of the savings plan applicable to your usage.
Savings Plan/ Payment Option	The payment option for savings plans can be: • **NO_UPFRONT** • **PARTIAL_UPFRONT** • **ALL_UPFRONT**
Savings Plan/ Discount	Discount offered by the savings plan.
Savings Plan/Hourly Commitment	The amount of hourly commitment associated with the savings plan.

Field	Description
Savings Plan/ Amount Deducted	The amount that is paid for using the savings plan.
Enterprise Project/ID	ID of the enterprise project selected when you purchased the resource.
Enterprise Project/ Name	The enterprise project selected when you purchased the resource.
Reserved Instance/ Hours Used	Reserved instance hours used. (Required when **Bill Type** is **Expenditure-reserved instances used**)
Reserved Instance/ID (Used)	ID of the reserved instance in use. (Required when **Bill Type** is **Expenditure-reserved instances used**)
Reserved Instance/ Name (Used)	Name of the reserved instance in use. (Required when **Bill Type** is **Expenditure-reserved instances used**)
Resource Tag/**	The name of the cost tag for the resource during cost amortization. After a tag is activated, it is called a cost tag.
Cost Category/**	The name of the cost category for the resource during cost amortization. A tool used to automatically group your costs based on the defined rules. For details, see **Overview of a Cost Category**.

14.2.3 Export to OBS - Fields for Original Costs

To create a task for exporting original cost details, go to the **Cost Insights** > **Cost Details Export** > **Export to OBS** page, click **Create Export Task**, set **Cost Type** to **Original costs**, and configure the task details as prompted. For details, see **Creating an OBS Export Task**.

Table 14-5 Fields in exported original cost details

Field	Description
Month	The month that the cost data you are exporting belongs to.

Field	Description
Time Range	Time range that the billing cycle belongs to. For example, if **Granularity** is set to **Daily** to export files to OBS, the value of **Time Range** will be the billing date of the costs, for example, **2023-08-01 00:00:00 GMT+08:00/2023-08-31 23:59:59 GMT+08:00**.
Linked Account	The Huawei Cloud account that the cloud resources belong to.
PayerAccount Name	The account used to pay for Huawei Cloud resources.
Business Entity	The business entity that a cloud service belongs to. Example: Huawei Cloud (The business entity of member accounts associated with a master account owned by an authorized distributor is the same as that of the master account.)
Service Type Code	The code of the cloud service type. Example: hws.service.type.vpc
Service Type	The type of a cloud service. Example: VPC
Resource Type Code	The resource type code of a cloud service. Example: hws.resource.type.ip
Resource Type	The type of the resources of a cloud service. Example: EVS
Service Type Code (Child Resource)	The service type code of a child resource (when the current cost is generated by resources attached to an ECS).
Service Type (Child Resource)	The service type of a child resource (when the current cost is generated by resources attached to an ECS).
Resource Type Code (Child Resource)	The resource type code of a child resource (when the current cost is generated by resources attached to an ECS).
Resource Type (Child Resource)	The resource type of a child resource (when the current cost is generated by resources attached to an ECS).
Product ID	ID of a product.
Specification Code	A group of codes used to describe the specifications of a cloud service. Example: s3.large.2

Field	Description
Specifications	Resource specifications. Example: General computing | si3.2xlarge.2 | 8 vCPUs | 16 GB | Linux
Region Code	The code of a region. Example: cn-north-5
Region	A cloud service region that provides public cloud service resources independently and serves a large geographical area. Region: CN North-Beijing1
AZ	A physically isolated zone where resources have their own independent power supply and internal networks. One region can have multiple AZs, and if one AZ becomes faulty, the other AZs in the same region can still provide services. AZs in the same region can access each other as they are on the same intranet. Example: AZ 1
Billing Mode	Billing mode. The options are as follows: ● Yearly/Monthly ● Pay-per-Use ● Reserved Instances ● Savings Plans

Field	Description
Bill Type	The type of a billing item. • Expenditure-purchase: expenditures for purchased yearly/monthly subscriptions • Expenditure-renewal: expenditures for yearly/monthly subscriptions that you manually renew • Expenditure-use: expenditures for pay-per-use resources • Expenditure-auto-renewal: expenditures for yearly/monthly subscriptions that are automatically renewed • Expenditure-hourly billing: expenditures for reserved instances that are billed hourly • Expenditure-monthly payment: expenditures paid by month • Expenditure-savings plans used: expenditures paid for using savings plans • Expenditure-unsubscription service charge: handling fees upon unsubscription • Expenditure-month-end deduction for support plan: expenditures paid at the end of a month for support plans • Expenditure-change: expenditures for changing the specifications of yearly/monthly subscriptions • Expenditure-tax: taxes for yearly/monthly subscriptions and pay-per-use products • Expenditure-difference amount: expenditures that HCDP users need to pay for if their expenditures do not reach the minimum guaranteed amount. Difference amount = Guaranteed minimum payment amount – Expenditure amount • Refund-unsubscription: expenditures for a yearly/monthly subscription that is unsubscribed from or that specifications were downgraded for • Refund-change: expenditures for a yearly/monthly subscription that specifications were downgraded for • Refund-change to pay-per-use: expenditures for a yearly/monthly subscription when it is changed to pay-per-use • Refund-tax: taxes refunded when a yearly/monthly subscription is unsubscribed from or that specifications were downgraded for • Adjustment-compensation: expenditures compensated by Huawei Cloud – Adjustment-deduction: expenditures paid when Huawei Cloud makes an account adjustment. For example, when Huawei Cloud adjusts a specification downgrade order, the original refund amount is paid first. • Adjustment-compensation tax: taxes for Huawei Cloud compensations

Field	Description
	– Adjustment-deduction tax: taxes for Huawei Cloud account adjustments
Order No.	The unique identifier of a yearly/monthly or a reserved instance order.
Combined Order No.	Order No. for multiple orders that need to be executed in a batch.
Start Time	Time when billing for a specified cloud service starts.
End Time	Time when billing for a specified cloud service ends.
Usage Type Code	The code of a usage type. Example: Duration
Usage Type	The way a pay-per-use cloud service is billed. Example: Duration:Second (Stream computing:Stream computing:Duration)
Usage Unit	The unit used to measure the product usage. Example: second
Usage	Pay-per-use resource usage, measured by such items as duration, capacity, count, or traffic.
Package Usage	The usage of a resource included in a package. If this usage does not exceed the package quota, no extra expenditures are incurred.
Usage in Reserved Instances	The usage of a resource included in a reserved instance (RI). If this usage does not exceed the RI quota, no extra expenditures are incurred.
List Price	The price of a product without any discounts applied.
Original Cost	The cost that is calculated based on the list price with discounts applied.
Coupons Used	The amount paid using cash coupons.
Spot	Whether the current pay-per-use instance is using spot pricing.
Resource ID	The unique ID of a cloud service resource.
Resource Name	Name of a cloud service resource.
Child Resource ID	The unique ID of a child resource for a cloud service.

Field	Description
Child Resource Name	Name of a child resource for a cloud service. A child resource takes the subordinate position among several associated resources, for example, an EVS system disk is a child resource of an ECS.
Savings Plan/ID	ID of the savings plan applicable to your usage.
Savings Plan/ Payment Option	The payment option for savings plans can be: • **NO_UPFRONT** • **PARTIAL_UPFRONT** • **ALL_UPFRONT**
Savings Plan/ Discount	Discount offered by the savings plan.
Savings Plan/Hourly Commitment	The amount of hourly commitment associated with the savings plan.
Savings Plan/ Amount Deducted	The amount that is paid for using the savings plan.
Enterprise Project/ID	ID of the enterprise project selected when you purchased the resource.
Enterprise Project/ Name	The enterprise project selected when you purchased the resource.
Resource Tag/**	The name of the cost tag attached to the resource. After a tag is activated, it is called a cost tag.
Cost Category/**	The name of the cost category for the resource. A tool used to automatically group your costs based on the defined rules. For details, see **Overview of a Cost Category**.

14.2.4 Export to OBS - Fields for FOCUS 1.0

To create a task for exporting cost details (FOCUS 1.0), go to the **Cost Insights** > **Cost Details Export** > **Export to OBS** page, click **Create Export Task**, set **Content Type** to **Cost details (FOCUS 1.0)**, and configure the task details as prompted. For details, see **Creating an OBS Export Task**.

Table 14-6 Fields in exported cost details (FOCUS 1.0)

FOCUS Field	Field in Cost Details	Conversion Logic
AvailabilityZone	AZ	None.
BilledCost	Original Cost	None.
BillingAccountId	-	Converted from **PayerAccount Name**. This field will be displayed as the ID of the payer account.
BillingAccountName	PayerAccount Name	None.
BillingCurrency	-	The default currency is USD.
BillingPeriodStart	Month	Example: If the value of **Month** is **2025-01 (GMT+08:00)**, this field will be displayed as **2024-12-31T16:00:00Z** (UTC).
BillingPeriodEnd	Month	Example: If the value of **Month** is **2025-01 (GMT+08:00)**, this field will be displayed as **2025-01-31T15:59:59Z** (UTC).
ChargeCategory	Bill Type	Converted from the values of **Bill Type** and categorized into **Usage**, **Purchase**, **Tax**, **Credit**, and **Adjustment**. 1. If the value of **Bill Type** is **Expenditure-use**, **Expenditure-savings plans used**, or **Expenditure-reserved instances used**, this field will be displayed as **Usage**. 2. If the value of **Bill Type** is **Refund-unsubscription**, **Adjustment-compensation**, **Refund-change**, or **Refund-change to pay-per-use**, this field will be displayed as **Adjustment**. 3. If the value of **Bill Type** is **Expenditure-tax**, **Refund-tax**, **Adjustment-compensation tax**, or **Adjustment-deduction tax**, this field will be displayed as **Tax**. 4. For other values, this field will be displayed as **Purchase**.
ChargeClass	-	Displayed as empty.

FOCUS Field	Field in Cost Details	Conversion Logic
ChargeDescription	-	Displayed as empty.
ChargeFrequency	Billing Mode	Converted from the values of **Billing Mode** and categorized into **One-Time**, **Recurring**, and **Usage-Based**. 1. If the value of **Billing Mode** is **Yearly/Monthly**, this field will be displayed as **One-Time**. 2. If the value of **Billing Mode** is **Pay-per-Use**, this field will be displayed as **Usage-Based**. 3. If the value of **Billing Mode** is **Reserved Instances** or **Savings Plans**, this field will be displayed as **Recurring**.
ChargePeriodStart	Start Time	The time is converted from GMT+08:00 to UTC. Example: If the value of **Start Time** is **2025-03-20 00:00:00 GMT+08:00**, this field will be displayed as **2025-03-19T16:00:00Z**. Note: If this field is intended for amortized costs of a yearly/monthly subscription, this field will be displayed as the UTC time on the amortization day.
ChargePeriodEnd	End Time	The time is converted from GMT+08:00 to UTC. Example: If the value of **End Time** is **2025-03-20 23:59:59 GMT+08:00**, this field will be displayed as **2025-03-20T15:59:59Z**. Note: If this field is intended for amortized costs of a yearly/monthly subscription, this field will be displayed as the UTC time on the amortization day.

FOCUS Field	Field in Cost Details	Conversion Logic
CommitmentDiscountCategory	Billing Mode	Converted from the values of **Billing Mode** and categorized into **Spend** and **Usage**. 1. If the value of **Billing Mode** is **Savings Plans**, this field will be displayed as **Spend**. 2. If the value of **Billing Mode** is **Reserved Instances**, this field will be displayed as **Usage**. 3. If the value of **Billing Mode** is **Yearly/Monthly**, this field will be displayed as **Usage** (only for resource packages in yearly/monthly mode). 4. For other values, this field is displayed as empty.
CommitmentDiscountID	-	ID of a reserved instance, savings plan, or resource package.
CommitmentDiscountName	-	Name of a reserved instance, savings plan, or resource package.
CommitmentDiscountStatus	Bill Type	Converted from the values of **Billing Mode** and categorized into **Used** and **Unused**. 1. If the value of **Bill Type** is **Expenditure-savings plans used** or **Expenditure-reserved instances used**, this field will be displayed as **Used**. 2. If the value of **Bill Type** is **Expenditure-savings plans unused** or **Expenditure-reserved instances unused**, this field will be displayed as **Unused**.

FOCUS Field	Field in Cost Details	Conversion Logic
CommitmentDiscountType	Billing Mode	Converted from the values of **Billing Mode** and categorized into **Spend** and **Usage**. 1. If the value of **Billing Mode** is **Savings Plans**, this field will be displayed as **Savings Plan**. 2. If the value of **Billing Mode** is **Reserved Instances**, this field will be displayed as **Reserved Instances (RI)**. 3. If the value of **Billing Mode** is **Yearly/Monthly**, this field will be displayed as **Resource Package** (only for resource packages in yearly/monthly mode). 4. For other values, this field is displayed as empty.
ConsumedQuantity	Usage	None.
ConsumedUnit	Usage Unit	None.
ContractedCost	Original Cost	None.
ContractedUnitPrice	-	Displayed as empty.
EffectiveCost	Current Month Amortized	None.
InvoiceIssuer	-	Displayed as empty.
ListCost	List Price	None.
ListUnitPrice	-	Displayed as empty.
PricingCategory	-	Displayed as empty.
PricingQuantity	-	Displayed as empty.
PricingUnit	-	Displayed as empty.
Provider	-	Displayed as **Huawei Cloud**.
Publisher	-	Displayed as empty.
RegionId	Region Code	None.

FOCUS Field	Field in Cost Details	Conversion Logic
RegionName	Region	None.
ResourceId	Resource ID	None.
ResourceName	Resource Name	None.
ResourceType	Resource Type	None.
ServiceCategory	Service Type	Converted from **Service Type**. Example: If the value of **Service Type** is **Elastic Cloud Server (ECS)**, this field will be displayed as **Computing**.
ServiceName	Service Type	None.
SkuId	Specification Code	None.
SkuPriceId	-	Displayed as empty.
SubAccountId	-	Converted from **Linked Account**. This field will be displayed as the ID of the linked account.
SubAccountName	Linked Account	None.
Tags	Cost Tag/Resource Tag	Displayed as a combination of multiple tags, for example, **Department:pc;Env:beta**.
x_CostUnit	Cost Category	Displayed as a combination of multiple cost categories.
x_EnterpriseId	Enterprise Project ID	None.
x_EnterpriseName	Enterprise Project	None.
x_SplitItem	Split Item	None.

15 Preferences

Cost Amortization

- **Cost splitting**

  Your cloud services may be shared by multiple domain names and IP addresses. When cost splitting is enabled, the costs will be split to each domain name or IP address and will be grouped by cost tag or enterprise project for a specific domain name or IP address. For details, see **Enabling Cost Splitting**.

  ⚠ CAUTION

  - Once enabled, cost splitting cannot be disabled.
  - When you enable cost splitting, you can go to the **Cost Analysis** page to view the splitting results of amortized costs after 12:00:00 p.m. on the 4th day of the following month.

Pay-per-Use to Yearly/Monthly

When this function is enabled, Cost Center will analyze the usage of your pay-per-use ECS, EVS, RDS, ELB, and SFS Turbo resources and provide the optimization option of changing the billing mode from pay-per-use to yearly/monthly to help you find cost-saving opportunities. For details, see **Changing Pay-per-Use to Yearly/Monthly**.

📖 NOTE

This function is enabled by default. You can disable it at will.

If you are using a member account associated with a master account for unified accounting management, this function can only be disabled by the master account.

Hourly Cost Analysis

When this function is enabled, Cost Center will present original costs by the hour from the last 14 days. For details, see **Viewing Cost Analyses**.

Monthly Multi-Year Cost Analysis

When this function is enabled, Cost Center will present monthly analysis of cost data going back as far as the last 38 months. For details, see **Viewing Cost Analyses**.

16 Export History

Important Notes

Export records will be automatically deleted three days after having been generated. Download the exported files in a timely manner.

After submitting an export request on the **Cost Analysis**, **Reserved Instances**, **Cost Categories**, and **Budgets** pages, you can obtain the exported files on the **Export History** page.

Procedure

Step 1 Access the **Export History** page.

Step 2 Choose **Export History**.

Step 3 Select an export record and click **Download** in the **Operation** column to download the corresponding file to a local directory.

----End

17 Cost Management for Enterprises

This section describes cost management for enterprises using unified accounting management.

Data Scope

- Cost Center shows the following data for a master account:
  - Cost and usage data of the master account
  - The cost and usage data of the member accounts when they are associated for unified accounting management
- Cost Center provides member accounts with the cost and usage data generated when they are associated with the master account for unified accounting management. If they are disassociated from the master account and have become individual users, Cost Center displays the cost and usage data from the disassociation period by default. However, the member accounts can switch to the payer account to view the cost and usage data from the association period.

Budgets

- A master account can select member accounts from **Linked Account** to track their cost and usage data. For details, see **Budgets**.
- Member accounts can create their own budgets. If they are no longer associated with any master account and have become individual users, the budgets created when they are associated for unified accounting management will become invalid. If they still need budgets, they have to create new ones.

Cost Analysis

- A master account can select member accounts from **Linked Account** to analyze their cost data. For details, see **Viewing Cost Analyses**.
- Member accounts can only view their cost data generated when they are associated for unified accounting management. If they are no longer associated with the master account and have become individual users, they will only be able to access the cost and usage data generated during the disassociation period but not those generated during the association period.

NOTE

In independent accounting management, a master account can view the cost data of its member accounts only when authorized.

Analysis Reports

- A master account can select member accounts from **Linked Account** to analyze their cost data. For details, see **Viewing Cost Analyses**. If a master account is disassociated from its member accounts and becomes an individual user, it can no longer view the analysis reports of the member accounts.
- If any member accounts are disassociated from the master account and become individual users, they can only view their own analysis reports (**PayerAccount Name** are set to the member accounts).

Cost Anomaly Detection

- A master account can create a monitor of the **linked account** type to detect any pay-per-use and yearly/monthly cost anomalies of the master account or its member accounts associated for unified accounting management.
- Member accounts can only create a monitor of any type except for **linked account** to detect their possible pay-per-use and yearly/monthly cost anomalies.

Changing from Pay-per-Use to Yearly/Monthly

- A master account can select member accounts from **Linked Account** to view the cost optimization option of changing the billing mode from pay-per-use to yearly/monthly for the member accounts when they are associated for unified accounting management. For details, see **Yearly/Monthly Subscriptions**.
- Member accounts can only view the cost optimization option of changing the billing mode from pay-per-use to yearly/monthly when they are associated for unified accounting management. If they are no longer associated with the master account and have become individual users, they will only be able to access the cost optimization option during the disassociation period.

Savings Plans

- The master account can filter **linked accounts** to analyze the utilization and coverage of the savings plans used by its member accounts during unified accounting management. The master account is not allowed to access member accounts' data for savings plans used when the accounts were not associated for unified accounting.
- Member accounts can view only the savings plan utilization and coverage during the association period. If they are no longer associated with the master account and have become individual users, they will be able to access the savings plan utilization and coverage data during the disassociation period but not those data during the association period.
- For details about how to analyze the utilization and coverage of savings plans, see **Viewing Utilization and Coverage**.

Reserved Instances

- A master account can select member accounts from **Linked Account** to analyze their RI utilization and coverage data generated when they are associated for unified accounting management. The master account is not allowed to access member accounts' data for RIs purchased when the accounts were not associated.
- Member accounts associated with the master account for unified accounting management can only view the RI utilization and coverage data generated during the association period. If they are no longer associated with the master account and have become individual users, they will be able to access the data generated during the disassociation period but not those during the associated period.
- For details about how to analyze RI utilization and coverage, see **Reserved Instances**.

Cost Tags

- A master account manages its own cost tags and its member accounts' cost tags, including activating or deactivating tags. For details, see **Activating Cost Tags**.
- Member accounts can only use the tags activated by their associated master account. Any member accounts disassociated from the master account can no longer use the tags activated by their master accounts. If they still need to use those tags, they have to activate them by themselves.

Cost Categories

- A master account manages its own cost categories and its member accounts' cost categories, while member accounts can only use them.
- Any member accounts disassociated from the master account can no longer use the cost categories created by the master account. If they still need to use cost categories, they have to create new ones by themselves. For details, see **Cost Category Management**.

Preferences

- During unified accounting management, the master account is responsible for evaluating the cost optimization option of changing the billing mode from pay-per-use to yearly/monthly, and its member accounts can only use the preferences chosen by the master account.
- Member accounts can enable shared cost splitting, regardless of whether they are associated for unified accounting management.

18 Permissions

18.1 Introduction

If you need to assign different permissions to employees in your enterprise to access your Cost Center, Identity and Access Management (IAM) is a good choice for fine-grained permissions management.

IAM is a free service. You only pay for the resources in your account. For more information about IAM, see **IAM Service Overview**.

System-Defined Roles

New IAM users do not have any permissions assigned by default. You need to first add them to one or more groups and attach policies or roles to these groups. The users then inherit permissions from the groups and can perform specified operations on cloud services based on the permissions they have been assigned. IAM provides frequently used roles that have permissions to access different services, and you have the permissions granted to these roles.

You can grant users permissions by using roles and policies.

- Roles: A coarse-grained authorization strategy provided by IAM to assign permissions based on users' job responsibilities. Only a limited number of service-level roles are available for authorization. Huawei Cloud services depend on each other. When you grant permissions using roles, you also need to attach dependent roles. Roles are not ideal for fine-grained authorization and least privilege access.
- Policies: A fine-grained authorization strategy that defines permissions required to perform operations on specific cloud resources under certain conditions. This type of authorization is more flexible and is ideal for least privilege access.

Table 18-1 lists all the system-defined roles for Cost Center.

Table 18-1 System-defined roles

Role Name	Permissions
BSS Administrator	Full permissions for Cost Center. This role is generally granted to the administrator.
BSS ReadonlyAccess	Read-only permissions for Billing Center, Cost Center, and Message Center.
BSS FinanceAccess	Billing Center's financial administrator, who has full permissions for financial operations.

Table 18-2 lists the common operations supported by system-defined permissions for Cost Center.

Table 18-2 Common operations supported by system-defined permissions

Function	BSS Administrator	BSS ReadonlyAccess	BSS FinanceAccess
Viewing budget reports, including the budget report list and report details	Supported	Supported	Supported
Viewing cost monitors and anomalies	Supported	Supported	Supported
Viewing cost anomaly notifications	Supported	Supported	Supported
Viewing cost analyses	Supported	Supported	Supported
Exporting cost data, including analysis results, cost details, and budgets	Supported	Not supported	Supported
Analyzing utilization and coverage of savings plans	Supported	Supported	Supported

Function	BSS Administrator	BSS ReadonlyAccess	BSS FinanceAccess
Evaluating cost optimization option of changing pay-per-use to yearly/ monthly	Supported	Supported	Supported
Viewing cost tags	Supported	Supported	Supported
Viewing cost optimization subscriptions	Supported	Supported	Supported
Viewing a list of cost reports	Supported	Supported	Supported
Viewing the task list for exporting cost details to OBS	Supported	Supported	Supported
Viewing the analysis of RI utilization and coverage	Supported	Supported	Supported
Viewing cost optimization summary	Supported	Supported	Supported
Viewing the percentage of costs that are allocated	Supported	Supported	Supported
Viewing maturity scores	Supported	Supported	Supported
Viewing savings plans	Supported	Supported	Supported
Viewing bills, monthly costs, usage details, cost management, expenditures and revenues, and cost trends	Supported	Supported	Supported

Function	BSS Administrator	BSS ReadonlyAccess	BSS FinanceAccess
Viewing budget information, including the budget list and budget details	Supported	Supported	Supported
Viewing parameter settings for Cost Center	Supported	Not supported	Not supported
Obtaining recommendations for savings plans	Supported	Not supported	Supported
Viewing cost category information, including the cost category list and the details of each cost category	Supported	Supported	Supported
Exporting bills, monthly costs, and usage details, and creating, deleting, modifying, exporting cost reports, and exporting income and revenues	Supported	Not supported	Supported
Disabling functions	Supported	Not supported	Supported
Enabling Cost Center	Supported	Not supported	Supported
Setting parameters for Cost Center	Supported	Not supported	Not supported
Deleting cost monitors	Supported	Not supported	Supported
Enabling functions	Supported	Not supported	Supported

Function	BSS Administrator	BSS ReadonlyAccess	BSS FinanceAccess
Configuring cost categories, including creating and editing cost categories	Supported	Not supported	Supported
Managing cost reports, including creating, modifying, and deleting custom reports.	Supported	Not supported	Supported
Activating or deactivating cost tags	Supported	Not supported	Supported
Creating and modifying cost monitors	Supported	Not supported	Supported
Creating cost anomaly notifications	Supported	Not supported	Supported
Deleting a cost category	Supported	Not supported	Supported
Deleting budget reports	Supported	Not supported	Supported
Managing budgets, including creating, modifying, and deleting budgets	Supported	Not supported	Supported
Configuring cost optimization subscriptions	Supported	Not supported	Supported
Creating and modifying budget reports	Supported	Not supported	Supported
Creating, modifying, or deleting tasks for exporting cost details to OBS	Supported	Not supported	Supported

Creating a Custom Policy

You can create custom policies to supplement the system-defined roles. For details about the actions supported by custom policies, see **Table 18-3**.

Table 18-3 Supported actions

Fine-Grained Permissions Policy	Description
bss:costcenter:start	Enables Cost Center.
bss:costanalysis:view	Views cost analysis and overview.
bss:costanalysis:export	Exports cost details, including original and amortized cost details, with cost tags.
bss:costreport:view	Views a list of cost reports.
bss:costreport:update	Manages cost reports, including creating, modifying, and deleting custom reports. If this permission is granted to an IAM user, you must also grant the user the **bss:costreport:view** permission.
bss:budget:update	Manages budgets, including creating, modifying, and deleting budgets. If this permission is granted to an IAM user, you must also grant the user the **bss:budget:view** permission.
bss:budget:view	Views budget information, including the budget list and budget details.
bss:budgetreport:update	Creates and modifies budget reports.
bss:budgetreport:delete	Deletes budget reports.
bss:budgetreport:view	Views budget reports, including the budget report list and report details.
bss:riusageanalysis:view	Views the analysis of RI utilization and coverage.
bss:costtag:view	Views cost tags.
bss:costtag:update	Activates or deactivates cost tags. If this permission is granted to an IAM user, you must also grant the user the **bss:costtag:view** permission.

Fine-Grained Permissions Policy	Description
bss:costunit:update	Configures cost categories, including creating and editing cost categories. If this permission is granted to an IAM user, you must also grant the user the **bss:costunit:view** and **bss:costanalysis:view** permissions.
bss:costunit:delete	Deletes cost categories. If this permission is granted to an IAM user, you must also grant the user **bss:costunit:view** permission.
bss:costunit:view	Views cost category information, including the cost category list and the details of each cost category.
bss:monitor:update	Creates and modifies cost monitors.
bss:monitor:delete	Deletes cost monitors.
bss:monitor:view	Views cost monitors and anomalies.
bss:monitoralert:update	Creates cost anomaly notifications. If this permission is granted to an IAM user, you must also grant the user the **bss:monitoralert:view** permission.
bss:monitoralert:view	Views cost anomaly notifications.
bss:costoptimization:view	Evaluates cost optimization option of changing pay-per-use to yearly/monthly.
bss:costpreferences:update	Enables functions on the **Preferences** page.
bss:costpreferences:delete	Disables functions on the **Preferences** page.
bss:savingsplan:view	Views savings plans.
bss:savingsplan:analysis	Views the analysis of savings plan utilization and coverage.
bss:savingsplan:suggest	Obtains recommendations for savings plans.
bss:recommendation:view	Views cost optimization summary.
bss:recommendationsub:view	Views cost optimization subscriptions.
bss:recommendationsub:update	Configures cost optimization subscriptions.

Fine-Grained Permissions Policy	Description
bss:costdetailreport:view	Views tasks for exporting cost details to OBS.
bss:costdetailreport:update	Creates, modifies, or deletes tasks for exporting cost details to OBS.

18.2 Creating a User Group and Assigning Permissions

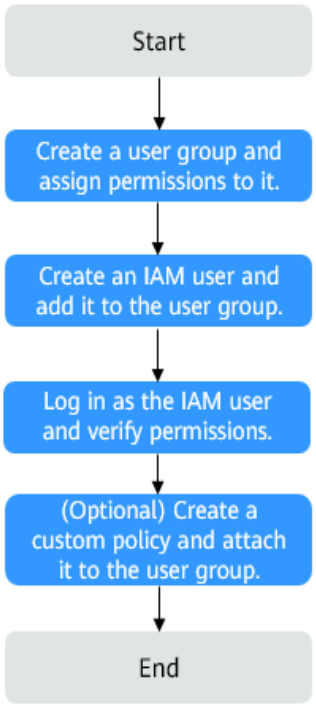
This section describes how to use a group to grant permissions for the Cost Center to a user. **Figure 18-1** shows the process for granting permissions.

Prerequisites

Before assigning permissions to a user group, you should learn about the permissions that can be added to the user group and select the permissions as required. For details about the system permissions supported by the Cost Center, see **Introduction**.

Process Flow

Figure 18-1 Process for granting permissions



1. **Create a user group and assign permissions** to it.

   Create a user group on the IAM console, and assign operation permissions for the Cost Center to **BSS Administrator**.

2. **Create an IAM user and add it to a group**.

   Create a user on the IAM console and add the user to the group created in **1**.

3. Log in to Cost Center and verify permissions.

   Log in to Cost Center using the account of the created user and verify whether the created user has the permission for exporting cost details.

   On the **Cost Analysis** page, click **export records** to verify it. If the export is successful, the BSS Administrator permission has taken effect.

Example Scenarios

- If users need full permissions to Cost Center, grant **BSS Administrator** to them.
- If users only need to view cost data in Cost Center, grant **BSS ReadonlyAccess** to them.
- If users need to perform financial operations, such as viewing and downloading cost analysis, grant **BSS FinanceAccess** to them.
- You can also create custom policies for more fine-grained permissions management. For details about the actions supported by custom policies, see **Table 18-3**.

18.3 Creating a Custom Policy

You can create custom policies in either of the following ways:

- Visual editor: Select cloud services, actions, resources, and request conditions. This does not require knowledge of policy syntax.
- JSON: Edit JSON policies from scratch or based on an existing policy.

For details, see **Creating a Custom Policy**. The following section contains examples of custom policies frequently used in the Cost Center.

Example Policies

- Example 1: Grant users all permissions to the Cost Center.

```
{
   "Version": "1.1",
   "Statement": [
      {
         "Action": [
            "BSS:*:*"
         ],
         "Effect": "Allow"
      }
   ]
}
```

- Example 2: Grant users the permissions to view cost analysis and export analysis results.

```
{
   "Version": "1.1",
   "Statement": [
      {
```



```
            "Action": [
                "bss.costanalysis.view",
                "bss.costanalysis.export",
            ],
            "Effect": "Allow"
        }
    ]
}
```


19 Quotas and Constraints

Cost Analysis

Maximum number of items allowed for each filter	50 Under the **Cost Category** or **Cost Tag** filter, you can select up to 20 items for a level-1 option and up to 50 items for a level-2 option at a time.

Budgets

Total number of budgets per account	1000
Maximum number of recipients per budget	10
Characters allowed in a budget name	Letters, digits, hyphens (-), and underscores (_)
Maximum number of items allowed for each filter	50 Under the **Cost Category** or **Cost Tag** filter, you can select up to 20 items for a level-1 option and up to 50 items for a level-2 option at a time.

Analysis Reports

Maximum number of reports per account	50

Budget Reports

Maximum number of budget reports per account	50
Maximum number of budgets per budget report	50
Maximum number of recipients per budget report	50

Cost Categories

Maximum number of cost categories per account	10
Maximum number of rules per cost cast category	20
Maximum number of conditions per rule	5

Export

Maximum number of the same tasks that can be exported at the same time	1
Maximum number of the tasks (of the same type but with different export criteria) that can be exported at the same time	5
Maximum number of export tasks of the same type within 24 hours	50
Maximum duration for storing exported files on the server	3

Cost Tags

Maximum number of tags that can be activated by each user	50

20 Auditing

20.1 Supported Cost Center Operations

Scenarios

With Cloud Trace Service (CTS), you can record Cost Center operations for later query, auditing, and backtracking.

Prerequisites

You have enabled CTS.

Key Cost Center Operations

Table 20-1 Cost Center operations that can be recorded by CTS

Operation	Resource Type	Trace Name
Querying cost details	costDetail	queryCostDetail
Exporting cost details	costDetail	exportCostDetail
Creating or updating an analysis report	costAnalysis	createOrUpdateAnalysisReport
Deleting an analysis report	costAnalysis	deleteAnalysisReport
Exporting cost analyses	costAnalysis	exportCostAnalysis
Creating or updating a budget	budget	createOrUpdateBudget
Exporting budget details	budget	exportBudgetDetail

Operation	Resource Type	Trace Name
Exporting a budget list	budget	exportBudgetList
Deleting a budget	budget	deleteBudget
Creating or updating a budget report	budget	createOrUpdateBudgetReport
Deleting a budget report	budget	deleteBudgetReport
Creating or updating a cost monitor	costAnomalyDetection	createOrUpdateCostMonitor
Enabling alerting	costAnomalyDetection	enableAlert
Disabling alerting	costAnomalyDetection	disableAlert
Deleting a cost monitor	costAnomalyDetection	deleteCostMonitor
Modifying idle resource identifying rules	recommendation	modifyIdleResourcesIdentifyingRule
Exporting optimization option of changing pay-per-use to yearly/ monthly	recommendation	exportPay-per-UseToYearly-MonthlyCostOptimization
Exporting resource package utilization and detailed analyses	resourcePackage	exportResourcePackageUtilizatio-nAnalysis
Exporting resource package coverage and detailed analyses	resourcePackage	exportResourcePackageCoverageA-nalysis
Exporting resource package purchase recommendations	recommendation	exportResourcePackageRecommen-dations
Activating or deactivating cost tags	costTag	activateOrDeactivateCostTags
Creating or updating a cost category	costCategory	createOrUpdateCostCategories

Operation	Resource Type	Trace Name
Deleting a cost category	costCategory	deleteCostCategories
Enabling or disabling Cost Center features	preference	enableOrDisableCostFeature
Configuring cost optimization subscriptions	recommendation	setRecommSubscription
Canceling cost optimization subscriptions	recommendation	deleteRecommSubscription
Exporting cost optimization recommendations	recommendation	exportCostRecommendation

20.2 Viewing Audit Logs

After you enable Cloud Trace Service (CTS) and the management tracker is created, CTS starts recording operations in your Cost Center. CTS retains operation records generated in the last seven days.

For details about how to view audit logs, see **Querying Real-Time Traces**.

