

**Cost Center**

# **User Guide**

**Issue**            01  
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## Vulnerability

Huawei's regulations on product vulnerability management are subject to the *Vul. Response Process*. For details about this process, visit the following web page:

<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>

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# Contents

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<b>1 Upgrade Description (New Edition)</b> .....	<b>1</b>
<b>2 About Cost Center</b> .....	<b>8</b>
2.1 Functions.....	8
2.2 Data Scope.....	10
2.3 Cost Type.....	11
2.4 Data Precision.....	11
<b>3 Overview</b> .....	<b>12</b>
<b>4 Overview (New Edition)</b> .....	<b>14</b>
<b>5 Cost Assistant (New Edition)</b> .....	<b>18</b>
<b>6 Getting Started</b> .....	<b>23</b>
<b>7 Cost Analysis</b> .....	<b>26</b>
7.1 Viewing Cost Analyses.....	26
7.2 Viewing Cost Analyses (New Edition).....	33
7.3 Viewing Multi-Dimensional Cost Breakdowns.....	50
7.4 Contributory Factors.....	53
7.5 Cost Amortization Rules.....	54
7.5.1 Overview of Cost Amortization Rules.....	54
<b>8 Cost and Usage Forecasting</b> .....	<b>61</b>
8.1 Forecasting.....	61
8.2 When to Use Cost Forecasting.....	62
<b>9 Budgets</b> .....	<b>66</b>
9.1 Baseline Time Range.....	66
9.2 Creating a Budget.....	68
9.3 Viewing Your Budgets.....	75
9.4 Editing a Budget.....	75
9.5 Copying a Budget.....	76
9.6 Deleting a Budget.....	76
<b>10 Budget Management (New Edition)</b> .....	<b>77</b>
10.1 Dynamic Budgeting.....	77
10.2 Budgets.....	79

10.3 Budget Reports.....	92
10.4 Managing Budgets.....	93
<b>11 Cost Anomaly Detection.....</b>	<b>95</b>
11.1 Overview.....	95
11.2 Detection Rules.....	95
11.3 Creating a Cost Monitor.....	96
11.4 Analyzing Cost Anomalies.....	97
11.5 Configuring Alert Notifications.....	100
<b>12 Cost Optimization.....</b>	<b>102</b>
12.1 Overview of Cost Optimization.....	102
12.2 Rightsizing Resources.....	105
12.2.1 Overview of Resource Optimization.....	105
12.2.2 Supported Regions.....	106
12.2.3 Optimizing EVS, EIP, and ELB Resources.....	106
12.2.4 Rules for Calculating Resource Optimization Recommendations.....	110
12.3 Changing Billing Mode.....	111
12.3.1 Changing Pay-per-Use to Yearly/Monthly.....	111
<b>13 Savings Plans (in OBT).....</b>	<b>114</b>
13.1 What Are Savings Plans?.....	114
13.2 Overview of Savings Plans.....	115
13.2.1 Savings Plans Types.....	116
13.2.2 Notes and Constraints.....	116
13.2.3 Contributory Factors of Discounts.....	116
13.2.4 Savings Plans Billing.....	117
13.2.5 Comparison Between Savings Plans and Reserved Instances.....	118
13.3 Purchasing Savings Plans.....	119
13.3.1 Following Cost Optimization Recommendations.....	119
13.3.2 Purchasing a Savings Plan on the Console.....	122
13.3.3 Savings Plan Discounts.....	123
13.4 Viewing Purchased Savings Plans.....	123
13.5 Viewing How Savings Plans Are Applied.....	126
13.5.1 Viewing the Bill of Savings Plans.....	126
13.5.2 Analyzing the Cost of Savings Plans.....	127
13.5.3 Viewing the Usage of Savings Plans.....	128
13.6 Creating a Savings Plan Report.....	133
13.7 FAQ.....	134
<b>14 Cost Allocation.....</b>	<b>136</b>
14.1 Cost Tags.....	136
14.1.1 Overview of a Cost Tag.....	136
14.1.2 Activating Cost Tags.....	137
14.2 Cost Categories.....	138

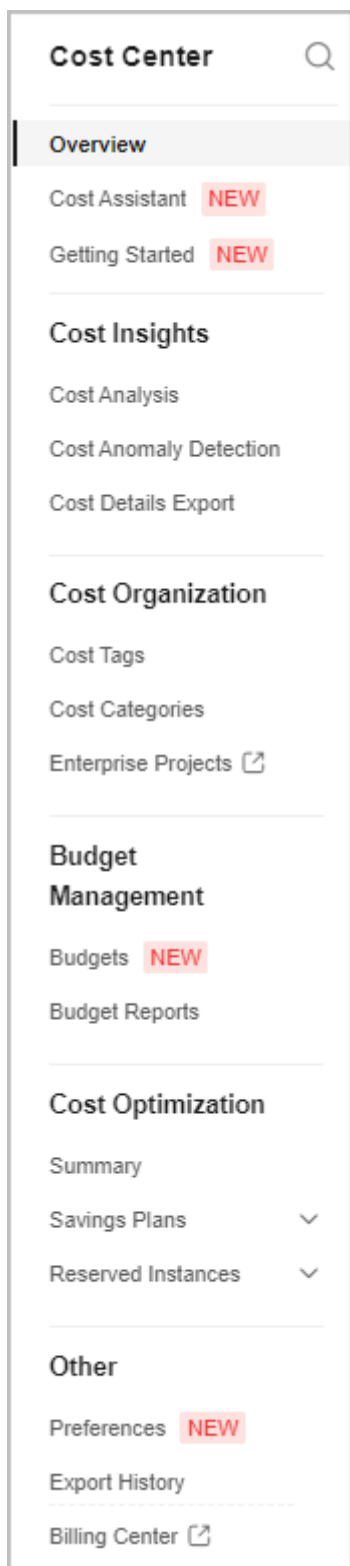
14.2.1 Overview of a Cost Category.....	138
14.2.2 Application Scenarios.....	139
14.2.3 Managing Cost Categories.....	143
14.2.4 Viewing Cost Category Details.....	148
14.2.5 Application of Cost Categories.....	150
<b>15 Reports.....</b>	<b>153</b>
15.1 Analysis Reports.....	153
15.2 Budget Reports.....	155
<b>16 Exporting Cost Details.....</b>	<b>157</b>
16.1 Export to Local Directory.....	157
16.1.1 Exporting Cost Details to Local Directories.....	157
16.1.2 Export to Local Directory - Fields for Amortized Costs.....	159
16.1.3 Export to Local Directory - Fields for Original Costs.....	163
16.2 Export to OBS (OBT).....	167
16.2.1 Exporting Cost Details to OBS.....	167
16.2.2 Export to OBS - Fields for Amortized Costs.....	171
16.2.3 Export to OBS - Fields for Original Costs.....	176
<b>17 Preferences.....</b>	<b>180</b>
<b>18 Export History.....</b>	<b>181</b>
<b>19 Cost Management for Enterprises.....</b>	<b>182</b>
<b>20 Permissions.....</b>	<b>184</b>
20.1 Introduction.....	184
20.2 Creating a User Group and Assigning Permissions.....	190
20.3 Creating a Custom Policy.....	192
<b>21 Quotas and Constraints.....</b>	<b>193</b>
<b>22 Auditing.....</b>	<b>195</b>
22.1 Supported Cost Center Operations.....	195
22.2 Viewing Audit Logs.....	197

# 1 Upgrade Description (New Edition)

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## Easier Navigation

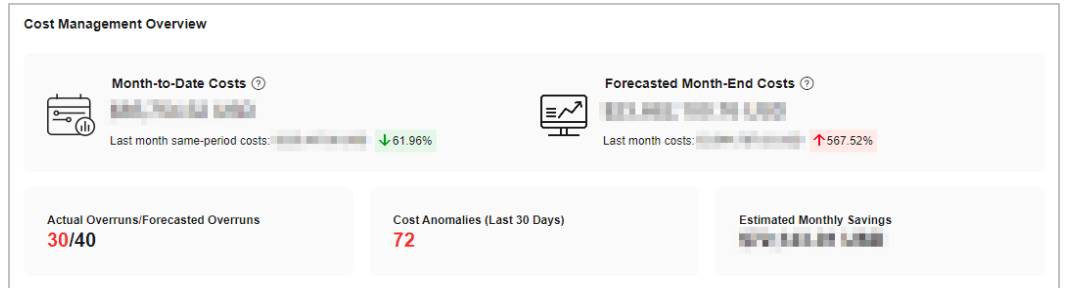
Navigation menus have been reorganized to streamline your cloud cost management experience. The new navigation provides clear direction on where to go to find **Cost Assistant, Cost Insights, Cost Organization, Budget Management, and Cost Optimization.**



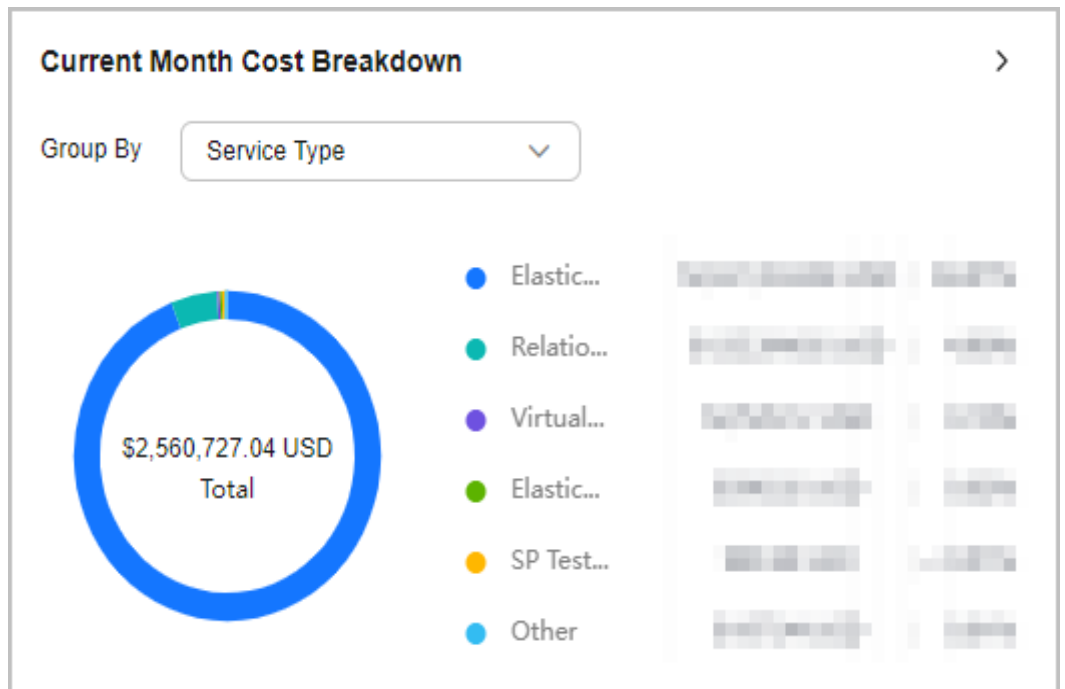
## Comprehensive Cost Overview

1. The layout of **Cost Management Overview** has been optimized to give you 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.

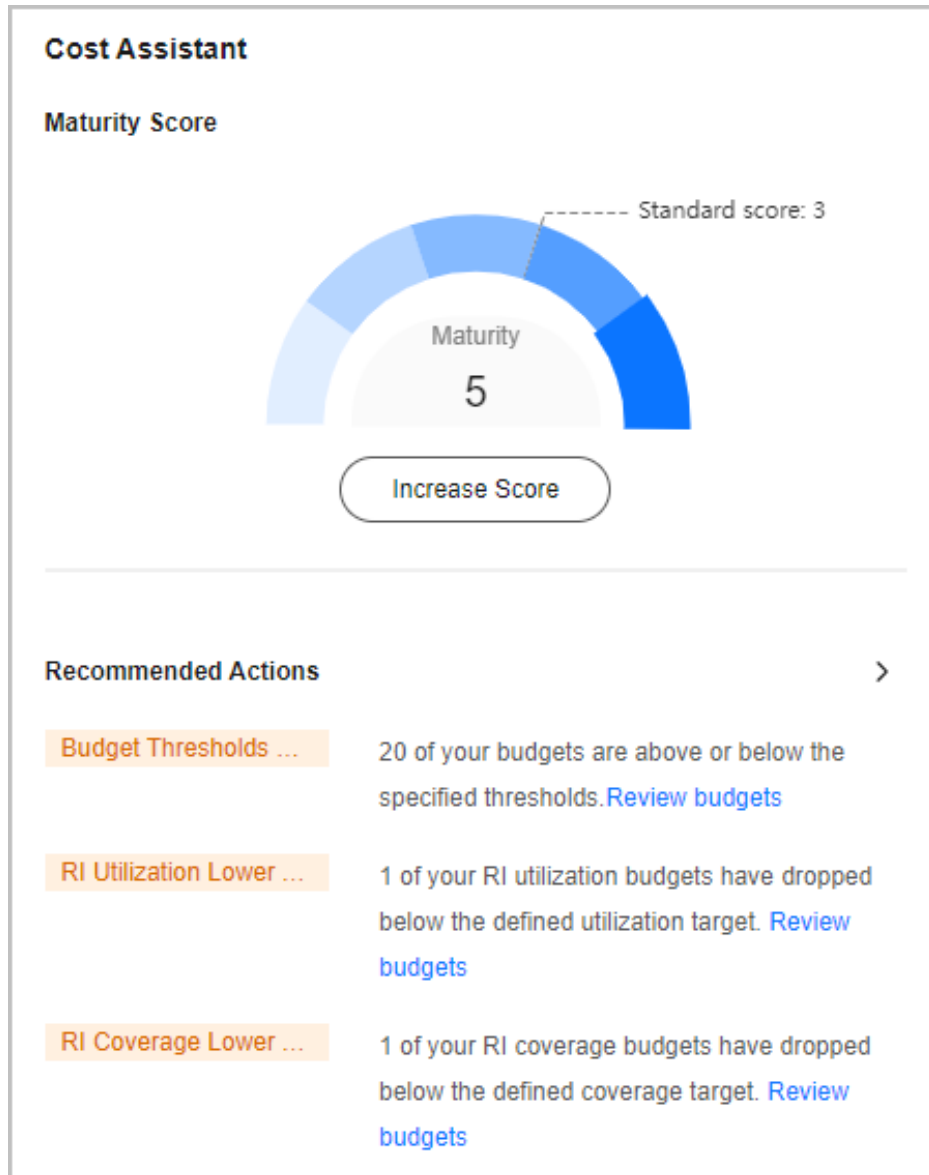




- The breakdown of current month costs has been added. You can now view your current month costs in multiple dimensions, for example, by service type, enterprise project, cost tag, cost category, linked account, and region.



- 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.

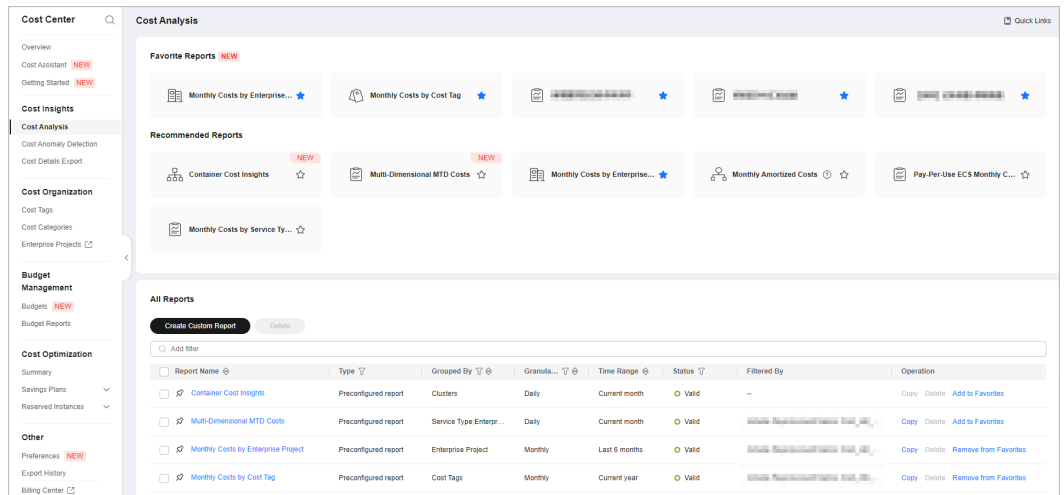
**Cost Allocation** ⓘ Enterprise Project ▾ | ⚙ Preferences

You can choose a specific method to view cost allocation details.

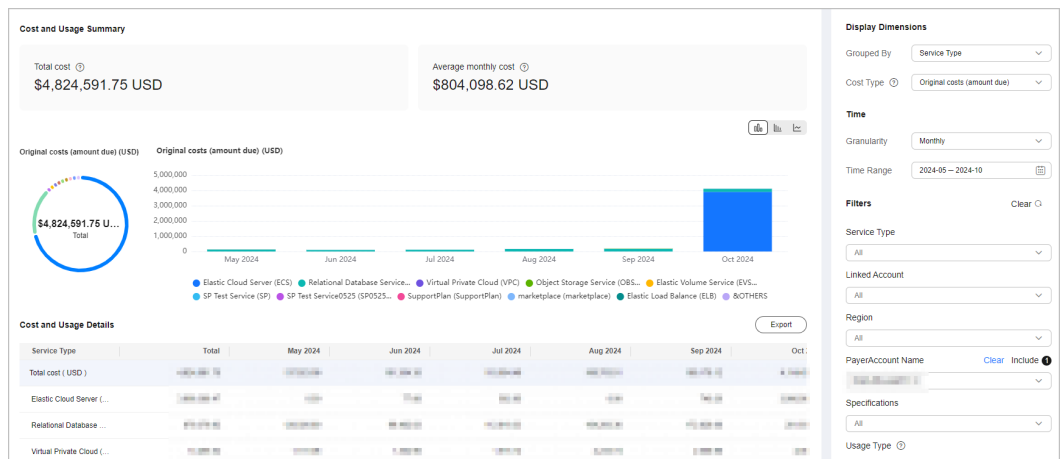
Enterprise Project	Percentage Unal...	MoM Change
<a href="#">Enterprise Project</a>	100.00%	--

## 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.

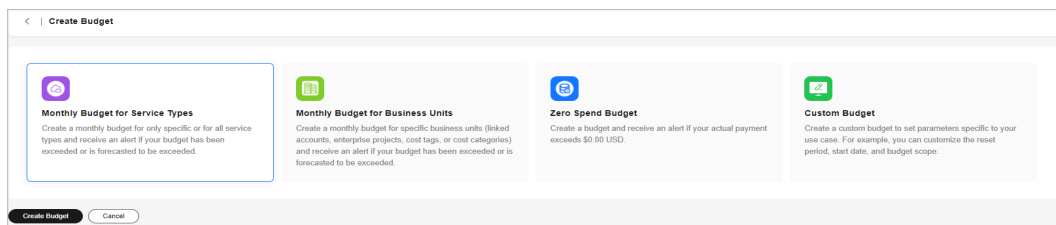


- On cost analysis pages, browsing views are now distinguished from action views. Specifically, **Cost and Usage Summary** illustrates key cost data and breakdown, and available actions are sorted by operation type on the right, giving you a better experience.



## Simpler Budget Creation

There are 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.	<a href="#">Overview</a>
	Cost Assistant	Offers maturity scores and insight recommendations to help you manage costs better.	<a href="#">Cost Assistant</a>
	Getting Started	Presents best practices for cloud financial management in common scenarios.	
Cost Insights	Cost Analysis	Analyzes costs with preconfigured or custom reports, shows cost breakdowns and trends, and forecasts your costs.	<a href="#">Cost Analysis</a>
	Cost Anomaly Detection	Identifies any unexpected cost spikes and sends you alerts.	<a href="#">Cost Anomaly Detection</a>
	Cost Details Export	Allows you to export original costs, amortized costs, and usage details to OBS (in OBT).	<a href="#">Cost Details Export</a>
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.	<a href="#">Cost Tags</a> <a href="#">Activating Cost Tags</a>
	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.	<a href="#">Overview of a Cost Category</a>
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.	<a href="#">Budgets</a>

Module		Function	Reference
	Budget Reports	Allows you to create daily, weekly, and monthly budget reports so you can track the performance of your budgets.	<a href="#">Budget Reports</a>
Pre fer en ces	Cost Amortization	Allows you to split some of CDN, WSA, and Live traffic costs by domain name.	
	Pay-per-Use to Yearly/Monthly	Identifies cost optimization opportunities by analyzing your historical pay-per-use expenditures.	<a href="#">Changing Pay-per-Use to Yearly/Monthly</a>
	Hourly Cost Analysis	Presents original costs by the hour from the last 14 days.	<a href="#">Viewing Cost Analyses</a>
	Monthly Multi-Year Cost Analysis	Presents monthly analysis of cost data going back as far as the last 38 months.	<a href="#">Viewing Cost Analyses</a>
Ot her	IAM	Implements fine-grained permissions management to isolate permissions of different employees.	<a href="#">Permissions</a>
	Bill	Presents the overview or details of your Huawei Cloud expenditures. It records your expenditure history and can be used for reconciliation.	<a href="#">Bills</a>

# 2 About Cost Center

## 2.1 Functions

Cost Center is a free 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.	<a href="#">Overview</a>
	Cost Assistant	Offers maturity scores and insight recommendations to help you manage costs better.	<a href="#">Cost Assistant</a>
	Getting Started	Presents best practices for cloud financial management in common scenarios.	
Co st Ins igh ts	Cost Analysis	Analyzes costs with preconfigured or custom reports, shows cost breakdowns and trends, and forecasts your costs.	<a href="#">Cost Analysis</a>
	Cost Anomaly Detection	Identifies any unexpected cost spikes and sends you alerts.	<a href="#">Cost Anomaly Detection</a>
	Cost Details Export	Allows you to export original costs, amortized costs, and usage details to OBS (in OBT).	<a href="#">Cost Details Export</a>

Module		Function	Reference
Co st Or ga niz ati on	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.	<a href="#">Cost Tags</a> <a href="#">Activating Cost Tags</a>
	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.	<a href="#">Cost Categories</a>
Bu dg et Ma na ge me nt	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.	<a href="#">Budgets</a>
	Budget Reports	Allows you to create daily, weekly, and monthly budget reports so you can track the performance of your budgets.	<a href="#">Budget Reports</a>
Pre fer en ces	Cost Amortization	Allows you to split some of CDN, WSA, and Live traffic costs by domain name.	
	Pay-per-Use to Yearly/Monthly	Identifies cost optimization opportunities by analyzing your historical pay-per-use expenditures.	<a href="#">Changing Pay-per-Use to Yearly/Monthly</a>
	Hourly Cost Analysis	Presents original costs by the hour from the last 14 days.	<a href="#">Viewing Cost Analyses</a>
	Monthly Multi-Year Cost Analysis	Presents monthly analysis of cost data going back as far as the last 38 months.	<a href="#">Viewing Cost Analyses</a>
Ot her	IAM	Implements fine-grained permission management to isolate permissions of different employees.	<a href="#">Permissions</a>

Module		Function	Reference
	Bill	Presents the overview or details of your Huawei Cloud expenditures. It records your expenditure history and can be used for reconciliation.	<a href="#">Bills</a>

## 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 and 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 provides you only with the cost and usage data generated during the association period. If you are no longer associated with the master account and are using an individual account, the cost and usage data generated during the association period will no longer be available to you. You will only be able to access the data generated during the disassociation 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).

## 2.3 Cost Type

The 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, 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
  - Monthly-settled CDN services (if enabled)

# 3 Overview

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## Cost Summary

The line chart displays current month costs in the following dimensions:

- **Current month costs:** original costs already generated for the current month
- **Last month same-period costs:** total original costs generated in the same period of the last month
- **Month-End Forecast Costs:** original costs that may be generated for the current month, which are forecasted based on the historical monthly costs
- **Last month costs:** original costs generated for the last month

## Top 5 Costs By MoM Growth (\$)

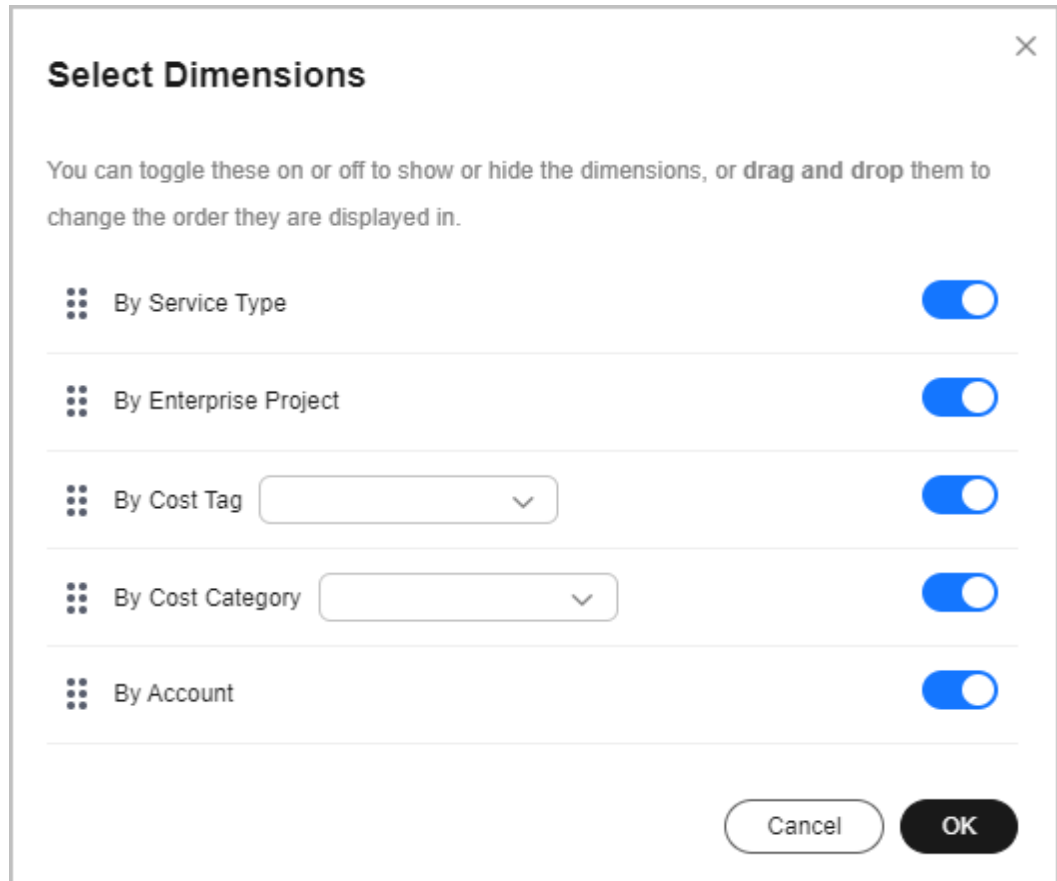
This area displays the top 5 costs by MoM growth (\$). The data can be displayed by service type, enterprise project, cost tag, cost category, or linked account.

- **MoM Growth (\$):** MoM growth = Month-to-date costs – Last month same-period costs
- **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:** original costs generated from the beginning of the month to the current date of the month
- **Last Month Same-Period Cost:** original costs generated in the same period of the last month

You can toggle the provided switches on or off to show or hide specified 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.



## Latest News

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 Optimization Recommendations

This area presents the cost-saving opportunities and estimated savings, which are calculated based on the usage of pay-per-use resources and savings plans.

## Cost Anomalies (Last 30 Days)

This area displays the number of cost anomalies in the last 30 days. You can click **Enable Alerting** to specify the recipients who will receive alerts.

## Budget Management

This area displays the top 3 percentages of actual cost divided by the budgeted amount.

# 4 Overview (New Edition)

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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:** total estimated monthly cost savings of all resources that can be rightsized.

## 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 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

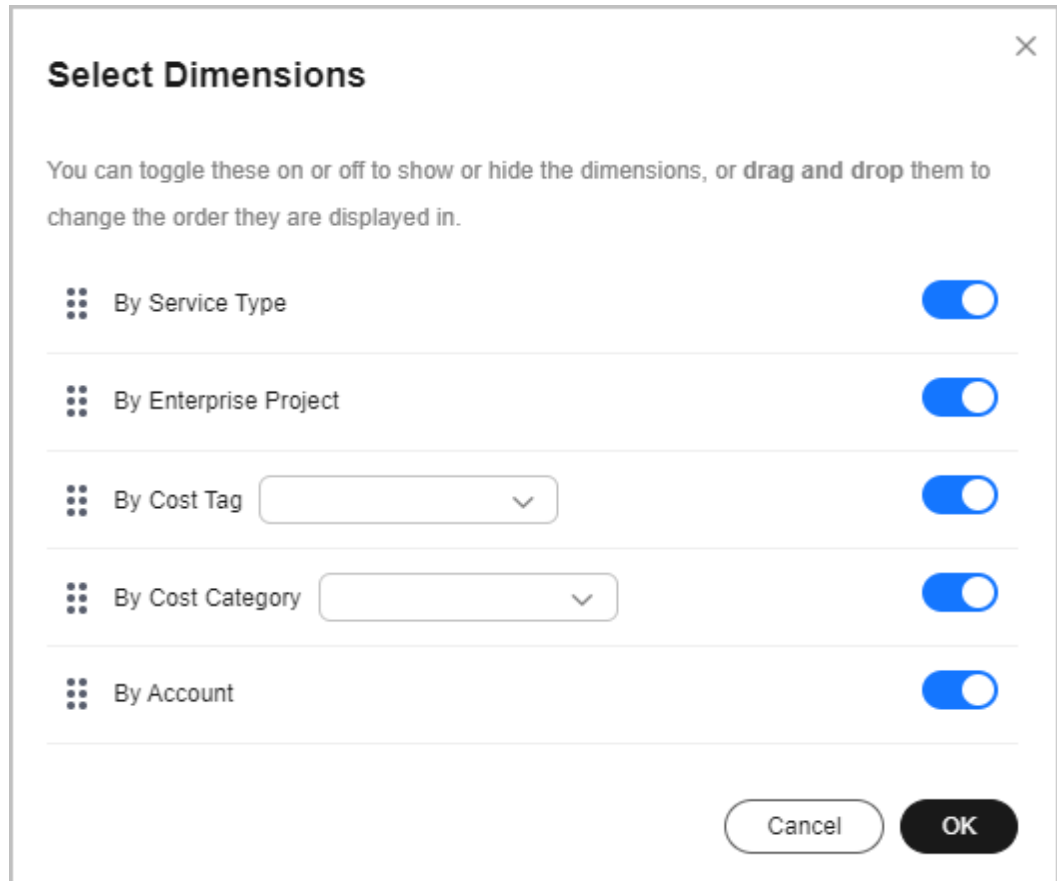
This area displays the top 5 costs by MoM growth (\$). The data can be displayed by service type, enterprise project, cost tag, cost category, or linked account.

- **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 specified 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.



## Latest News

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

- **Cost Management 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 monitoring, 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

# 5 Cost Assistant (New Edition)

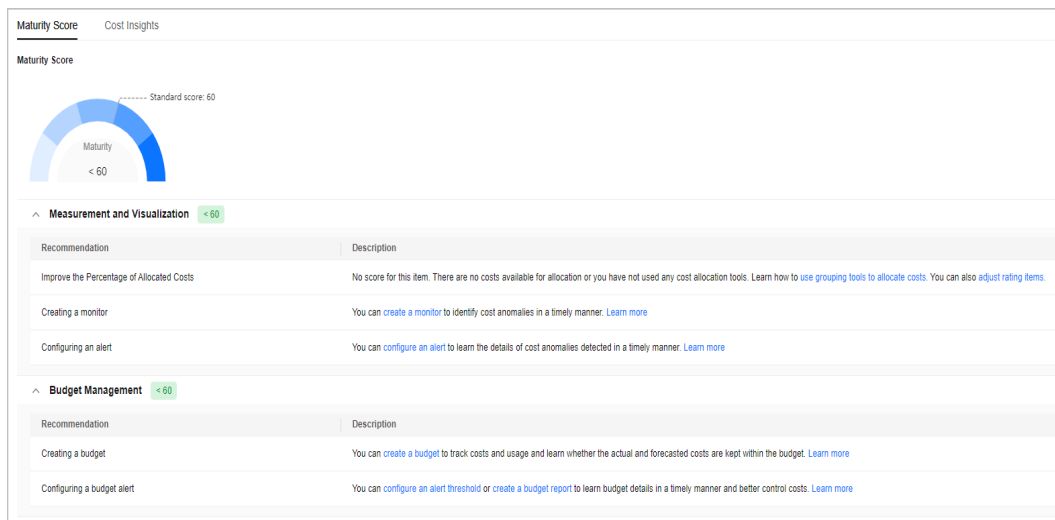
## Cost Management Maturity Score

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

 **NOTE**

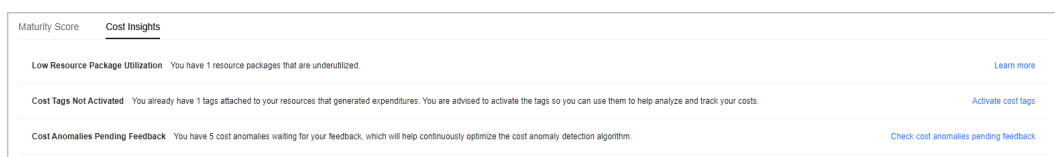
A higher percentage unallocated indicates a lower maturity score.

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 monitoring, 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.

Tag	Tag Source	Status	Operation
<input type="checkbox"/>	Predefined tags	Deactivated	Activate
<input type="checkbox"/>	Predefined tags	Deactivated	Activate
<input type="checkbox"/>	Predefined tags	Deactivated	Activate
<input type="checkbox"/>	Predefined tags	Deactivated	Activate

- **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.

**Specify Notification Name**

Notification Name:  You can define a unique notification name to identify your alert notification.

---

**Define Notification Scope**

Associated Monitors:  All  Selected Include anomalies detected by the monitors you selected.

Select one or more monitors.

Cost Anomalies:  Pay-per-use  Yearly/monthly

Select either pay-per-use or yearly/monthly cost anomalies, or both.

---

**Configure Notification Details**

Notification Threshold (USD):  Under associated monitors, if the cost impact of an anomaly reaches or exceeds this threshold, specified recipients will be notified.

Frequency:  Once a day  Once a week Specified recipients will be notified of cost anomalies from the previous day at 9:00 a.m. every day.

---

**Specify Notification Recipients(0/50)**

Recipient:

## 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:**  $\text{MoM change} = (\text{Percentage of MTD costs that are not allocated} - \text{Percentage of last month costs that are not allocated}) / \text{Percentage of last month costs that are not allocated}$

## Increasing the Percentage Allocated via Cost Assistant

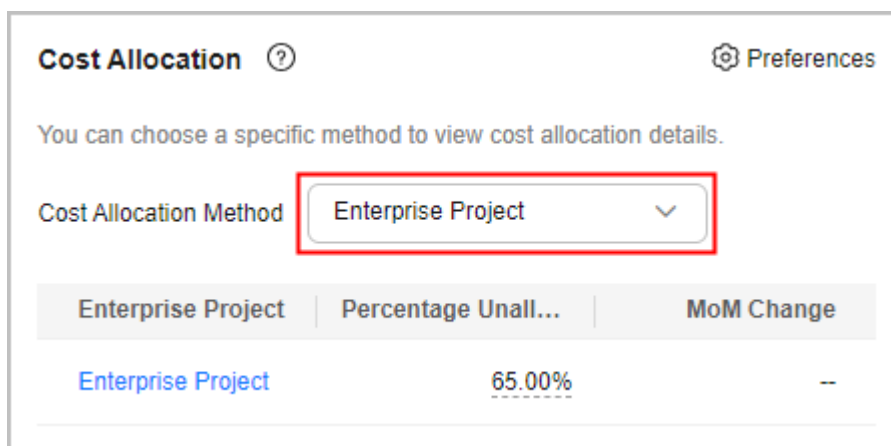
You use perform the following procedure to improve the percentage of costs that are allocated by enterprise project (as an example). You can use other cost allocation methods as required.

**Step 1** Log in to Cost Center.

**Step 2** Choose **Overview**.

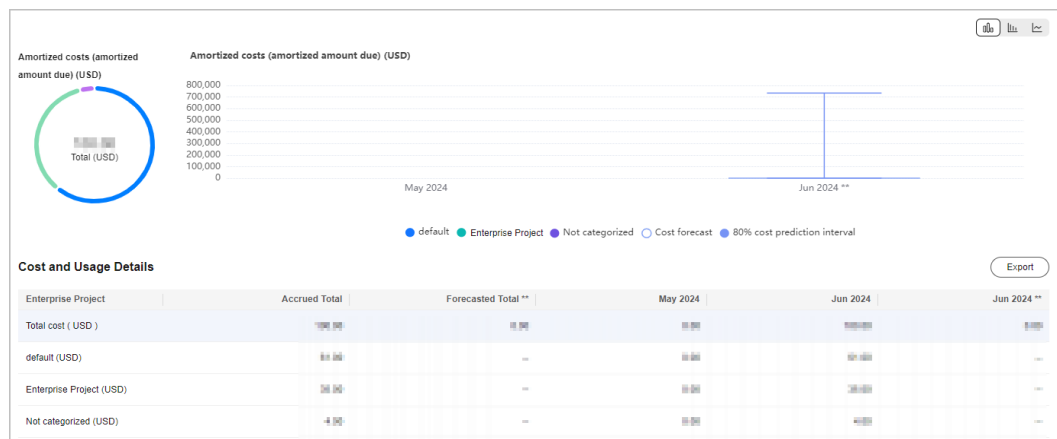
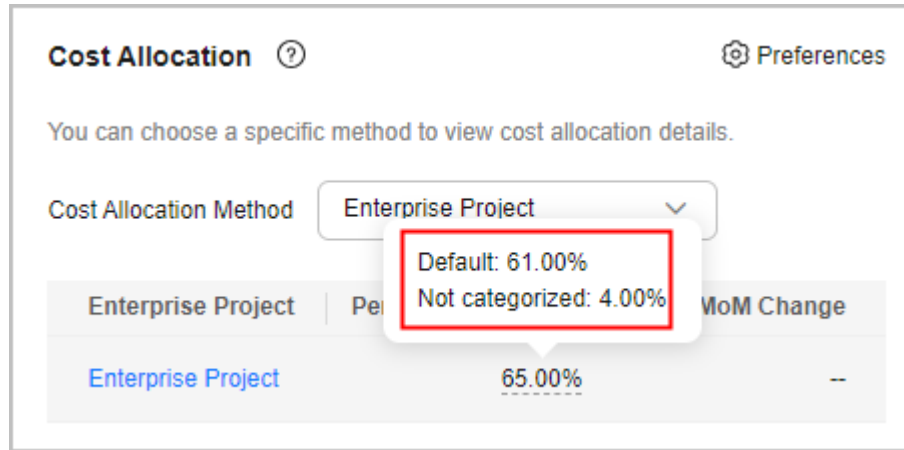
**Step 3** Select a specific method from **Cost Allocation Method**.

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



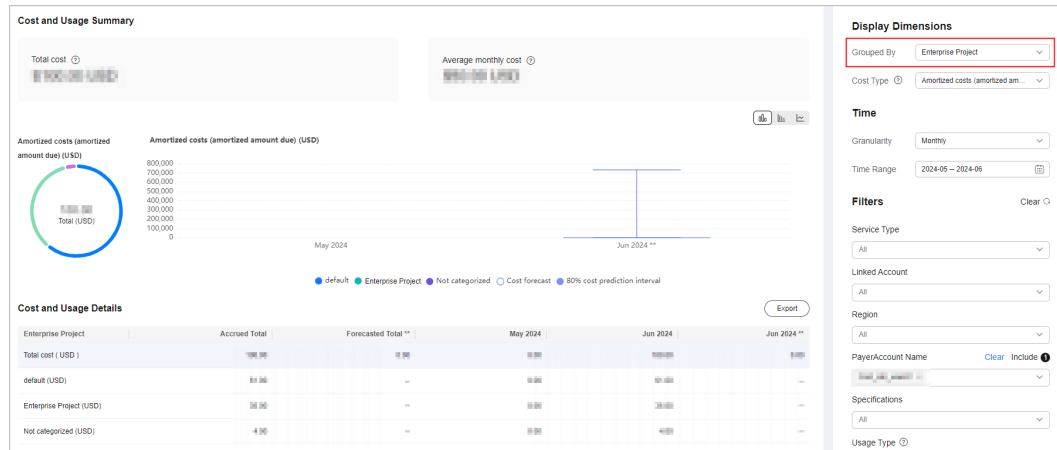
**Step 4** View cost allocation.

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 5** Go to **Cost Analysis** to view details.

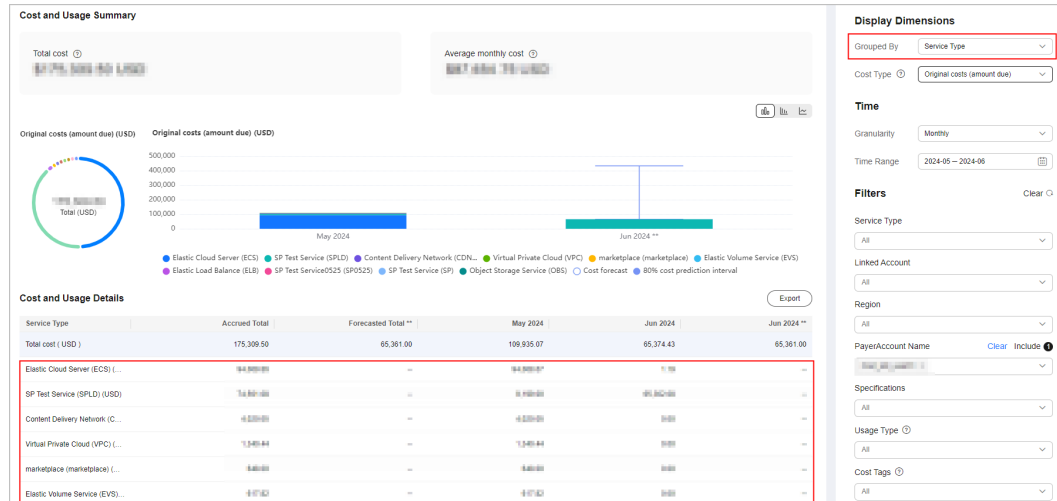
- Since you set **Cost Allocation Method** to **Enterprise Project**, **Group By** is automatically **Enterprise Project**.
- You can view the allocation of your total costs by enterprise project.
- **Not categorized** indicates that certain costs cannot be allocated to any enterprise projects. **default** 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 6** 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

# 6 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 6-1** 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.	<a href="#">Cost Analysis</a>
	Detecting cost anomalies	Identify any unexpected cost spikes and receive alerts.	<a href="#">Cost Anomaly Detection</a>
	Obtaining cost details	Export original costs, amortized costs, and usage details to OBS (in OBT).	<a href="#">Cost Details Export</a>
	Analyzing costs for longer term and at finer granularity	Enable hourly cost analysis and monthly multi-year cost analysis.	<a href="#">Preferences</a>

Scenario	Work Goal	Description	Reference
	Analyzing CCE cluster costs	Learn about the cost breakdowns and trends of CCE clusters by namespace or workload.	<a href="#">Cost Analysis</a>
	Splitting shared costs of certain services	Enable cost splitting. Only some of CDN, WSA, and Live traffic costs can be split by domain name.	
	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.	<a href="#">What Are Amortized Costs?</a>
Cost Organization	Allocating costs by cost identifier	Use cost tags or enterprise projects to identify resources and allocate costs.	<a href="#">Confirming Your Cost Allocation Method</a>
	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.	<a href="#">Viewing Costs By Cost Category</a>
	Splitting shared costs	Proportionally allocate shared costs (such as shared resources, platform services, and untagged costs) across an organization.	<a href="#">Viewing Costs By Cost Category</a>
	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.	<a href="#">Cost Analysis</a>
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.	<a href="#">Budgets</a>

Scenario	Work Goal	Description	Reference
	Monitoring budget performance	Create and receive daily, weekly, and monthly reports to monitor the performance of your budgets.	<a href="#">Budget Reports</a>

# 7 Cost Analysis

## 7.1 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- or monthly-granularity. 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](#).

### Specifying a Time Range

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



The screenshot shows a user interface for specifying a time range. It features a dropdown menu on the left with 'Daily' selected and a downward arrow. To its right is a 'Period' label followed by a text input field containing 'Last 14 days' and a calendar icon on the right side.

#### 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.

#### Period

- **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, the cost data generated in the past days of the month and the forecasted cost data in the coming days of the month will be displayed.
- **+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.

2024-06-25

–

2024-07-08

<< <
Jun 2024
Jul 2024
>>

Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat
26	27	28	29	30	31	1	30	1	2	3	4	5	6
2	3	4	5	6	7	8	7	8	9	10	11	12	13
9	10	11	12	13	14	15	14	15	16	17	18	19	20
16	17	18	19	20	21	22	21	22	23	24	25	26	27
23	24	25	26	27	28	29	28	29	30	31	1	2	3
30	1	2	3	4	5	6	4	5	6	7	8	9	10

7D
14D
30D
Current Month
3M
MTD

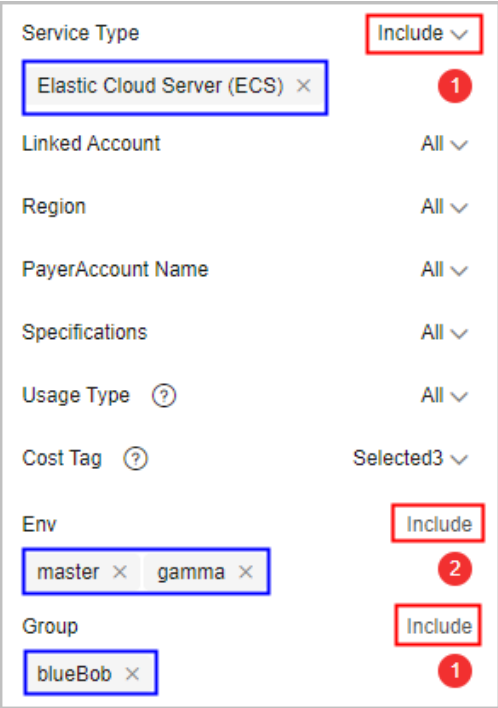
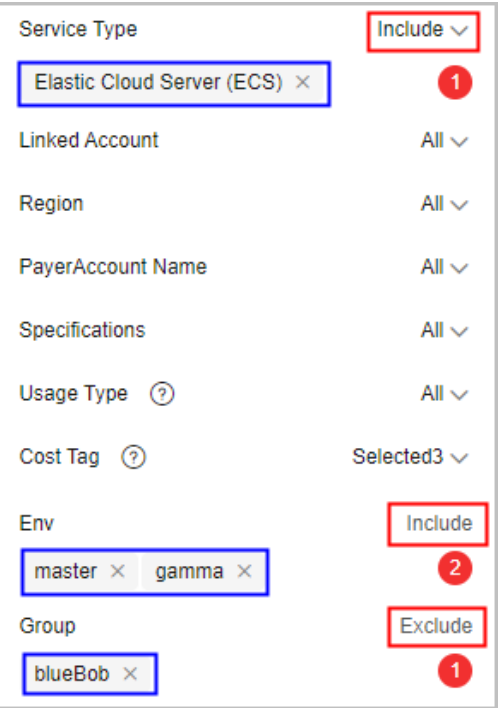
+1M
+3M

OK

## Selecting Dimensions/Filters

You can use different dimensions to identify the resource types, regions, or linked accounts that have incurred highest costs. You can also select any combination of filters to control which datasets are displayed.

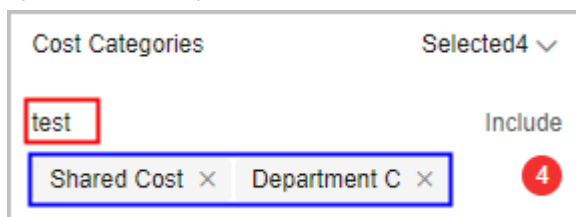
If you select multiple filters, only results meeting all filtering criteria will be displayed. However, if you select multiple items for any given filter, results meeting any of the items selected will be displayed.

Example 1	Example 2
<p>When you filter data based on the filter criteria below, the cost data meeting all these requirements will be displayed.</p> <ol style="list-style-type: none"> <li>The service type is <b>Elastic Cloud Server (ECS)</b>.</li> <li>The value of the tag key <b>Env</b> is <b>master</b> or <b>gamma</b>.</li> <li>The value of the tag key <b>Group</b> is <b>blueBob</b>.</li> </ol> 	<p>When you filter data based on the filter criteria below, the cost data meeting all these requirements will be displayed.</p> <ol style="list-style-type: none"> <li>The service type is <b>Elastic Cloud Server (ECS)</b>.</li> <li>The value of the tag key <b>Env</b> is <b>master</b> or <b>gamma</b>.</li> <li>The tag key <b>Group</b> has any value except for <b>blueBob</b>.</li> </ol> 

**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 dimensions and filters 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.
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.
Enterprise Project	The enterprise project selected when you purchased cloud resources. If no enterprise project is selected, <b>default</b> is displayed as the value for this field. If the enterprise project management is not supported for the cloud service, <b>Not categorized</b> is presented. <b>NOTE</b> 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 type of a billing item. 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. <ul style="list-style-type: none"> <li>• Generally, resources are used by this account.</li> <li>• For member accounts that are associated with a master account for unified accounting, <b>PayerAccount Name</b> is the enterprise master account. The master account can change the value of <b>PayerAccount Name</b> to view the cost data of the member accounts that are not associated for unified accounting.</li> </ul>

Dimension	Description
Cost Tag	Used to track costs of resources associated with each other in an enterprise. For more information, see <a href="#">Activating Cost Tags</a> . 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.

## Advanced Settings

By default, Cost Center provides you with the analysis of original costs. You can configure advanced settings to view analyses of other costs if needed.

### Cost Type

- Original costs: 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: the original costs after cash coupons are applied. Before the billing date, this is the estimated amount without any cash coupons applied.
- Amortized costs: the effective costs of the prepaid amounts 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 costs after cash coupons are applied. Before the billing date, this is the estimated amount without any cash coupons applied.

### Costs

When **Cost Type** is set to **Original costs**, you can select or deselect **Include discount**. If you select this option, discounts 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 for total cost

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

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.

## Charts

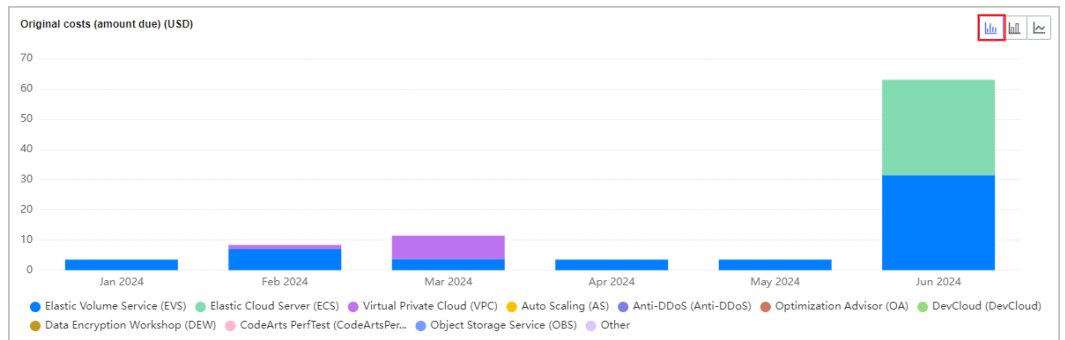
In Cost Center, you can view cost data in stacked charts, bar charts, and line charts.

### 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.

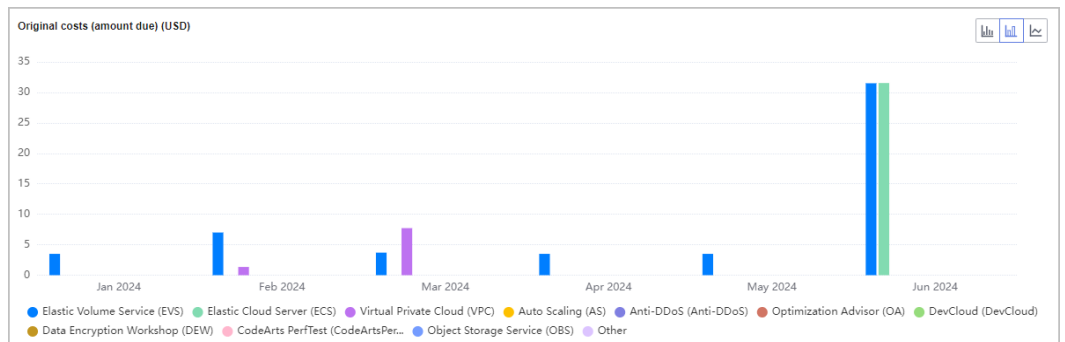
- Stacked chart

**Figure 7-1** Stacked chart



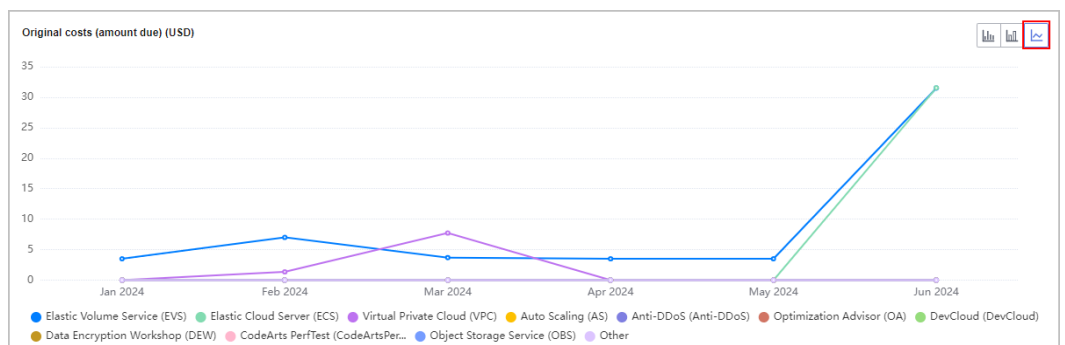
- Bar chart

**Figure 7-2** Bar chart



- Line chart

**Figure 7-3** Line chart



## Viewing Cost Analyses

- Step 1** Log in to Cost Center.
- Step 2** Choose **Cost Analysis**.
- Step 3** Set search criteria to view desired cost data.



- If you set **Cost Type** to **Original costs** or **Net original costs**, the data displayed on the page is nearly real-time.
- If you set **Cost Type** to **Amortized costs** or **Net amortized costs**, 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.

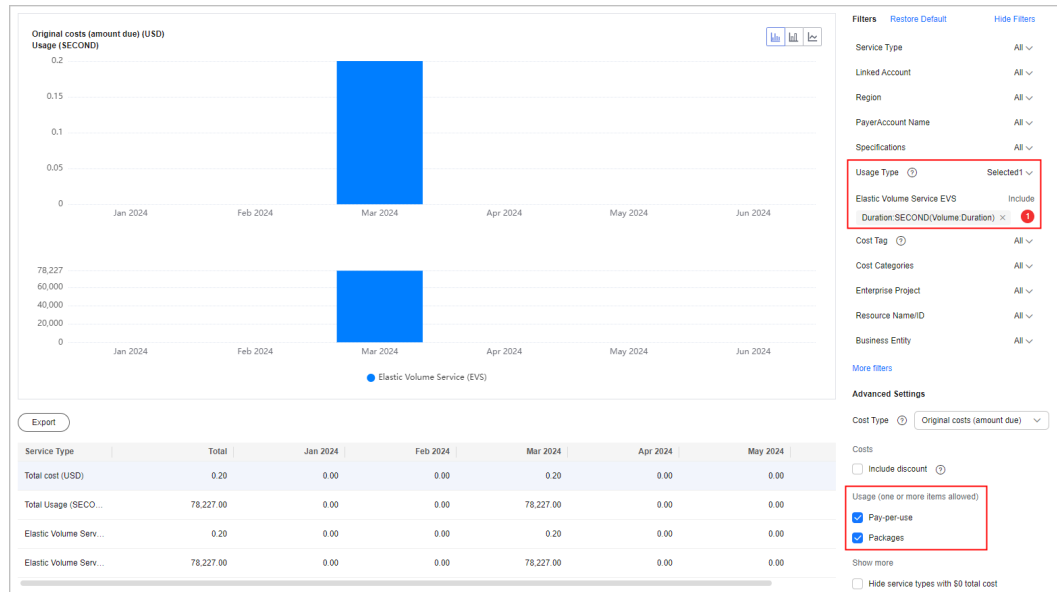
----End

## Viewing Usage Analyses

- Step 1** Log in to Cost Center.
- Step 2** Choose **Cost Analysis**.
- Step 3** Select **Usage Type** under **Filters**. The usage data over the selected time range will be displayed in the specified dimension.

### NOTE

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



----End

## 7.2 Viewing Cost Analyses (New Edition)

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](#).

### 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 7-1** 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 <a href="#">Viewing Multi-Dimensional Cost Breakdowns</a> .
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 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.

## 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 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. <ul style="list-style-type: none"> <li>• Generally, resources are used by this account.</li> <li>• For member accounts that are associated with a master account for unified accounting, <b>PayerAccount Name</b> is the enterprise master account. The master account can change the value of <b>PayerAccount Name</b> to view the cost data of the member accounts that are not associated for unified accounting.</li> </ul>
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	<p>The enterprise project selected when you purchased cloud resources.</p> <p>If you have not organized your resources by enterprise project, the following may occur:</p> <ul style="list-style-type: none"> <li>• A default enterprise project named <b>default</b> is assigned to cloud services, and the costs of these services are categorized as part of the <b>default</b> enterprise project by default.</li> <li>• Cloud services do not support cost allocation by enterprise project, and the costs of those services will be displayed as <b>Not categorized</b>.</li> </ul> <p><b>NOTE</b> An enterprise master account can select enterprise projects by linked account, except the default enterprise project and those not categorized.</p>
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	<p>The type of a billing item.</p> <p>Example: expenditure-purchase and expenditure-hourly billing</p>
Business Entity	<p>The business entity that a cloud service belongs to.</p> <p>Example: Huawei Cloud</p>
Cost Tags	<p>Used to track costs of resources associated with each other in an enterprise. For more information, see <a href="#">Activating Cost Tags</a>.</p> <p>If you are using a member account associated for unified accounting, you can only use the cost tags activated by the master account.</p>
Resource Name/ID	The name or unique ID of a cloud service resource.

## Specifying a Time Range

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

Granularity ▼

Monthly

---

Time Range 📅

2023-12 – 2024-05

### 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

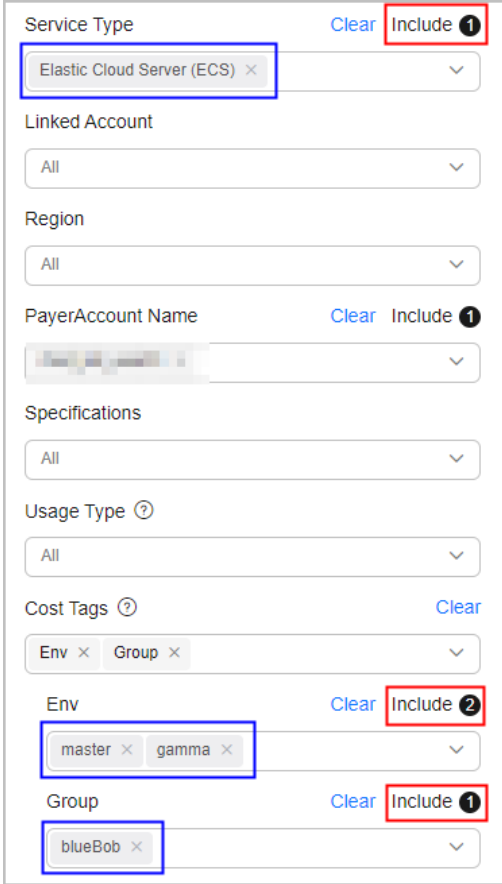
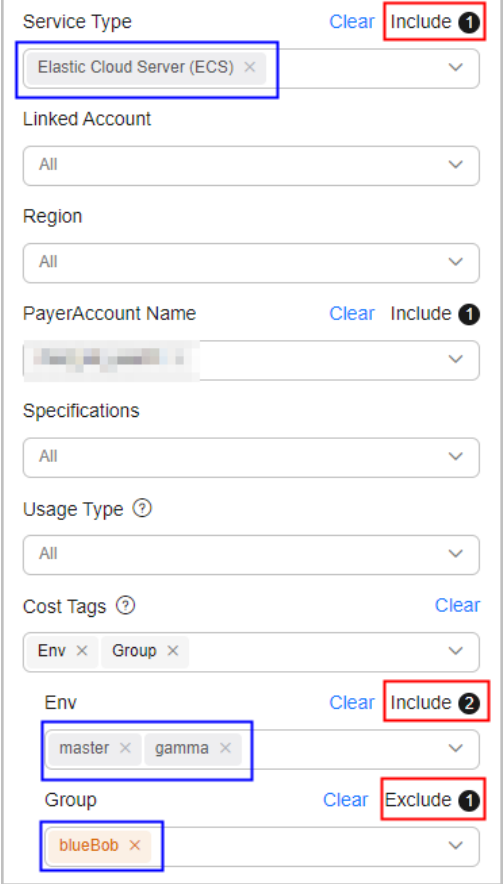
- **7D:** the cost data for the last 7 days (excluding the current day)
- **14D:** the cost data for the last 14 days (excluding the current day)
- **30D:** the cost data for the last 30 days (excluding the current day)
- **MTD:** the month-to-date cost data
- **3M:** the cost data for the last 3 months (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, the cost data generated in the past days of the month and the forecasted cost data in the coming days of the month will be displayed.
- **+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.

The image shows a date selection interface. At the top, there are two input fields: the first contains '2023-12' and the second contains '2024-05', separated by a minus sign. Below these is a calendar view for the years 2023 and 2024. The months are arranged in a grid. In 2023, 'Dec' is highlighted in blue. In 2024, 'May' is highlighted in blue. Below the calendar, there are options for time periods: '3M', '6M' (highlighted in blue), and '12M', followed by 'Current Month', 'MTD', and 'YTD'. To the right of these are '+3M', '+6M', and '+12M'. At the bottom right, there is an 'OK' button.

## Setting Filters

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

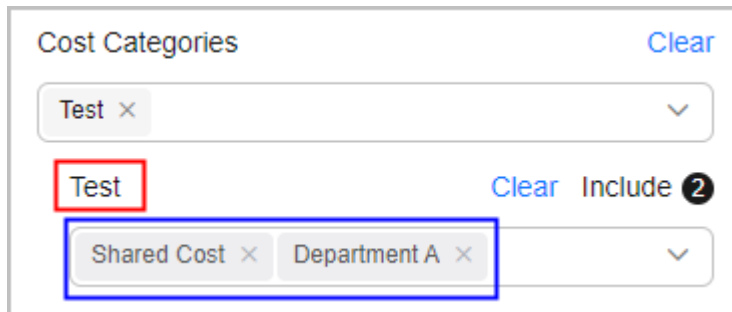
If you select multiple filters, only results meeting all filtering criteria will be displayed. However, if you select multiple items for any given filter, results meeting any of the items selected will be displayed.

Example 1	Example 2
<p>When you filter data based on the filter criteria below, the cost data meeting all these requirements will be displayed.</p> <ol style="list-style-type: none"> <li>1. The service type is <b>Elastic Cloud Server (ECS)</b>.</li> <li>2. The value of the tag key <b>Env</b> is <b>master</b> or <b>gamma</b>.</li> <li>3. The value of the tag key <b>Group</b> is <b>blueBob</b>.</li> </ol> 	<p>When you filter data based on the filter criteria below, the cost data meeting all these requirements will be displayed.</p> <ol style="list-style-type: none"> <li>1. The service type is <b>Elastic Cloud Server (ECS)</b>.</li> <li>2. The value of the tag key <b>Env</b> is <b>master</b> or <b>gamma</b>.</li> <li>3. The tag key <b>Group</b> has any value except for <b>blueBob</b>.</li> </ol> 

**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. <ul style="list-style-type: none"> <li>Generally, resources are used by this account.</li> <li>For member accounts that are associated with a master account for unified accounting, <b>PayerAccount Name</b> is the enterprise master account. The master account can change the value of <b>PayerAccount Name</b> to view the cost data of the member accounts that are not associated for unified accounting.</li> </ul>
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	<p>The enterprise project selected when you purchased cloud resources.</p> <p>If you have not organized your resources by enterprise project, the following may occur:</p> <ul style="list-style-type: none"> <li>• A default enterprise project named <b>default</b> is assigned to cloud services, and the costs of these services are categorized as part of the <b>default</b> enterprise project by default.</li> <li>• Cloud services do not support cost allocation by enterprise project, and the costs of those services will be displayed as <b>Not categorized</b>.</li> </ul> <p><b>NOTE</b> An enterprise master account can select enterprise projects by linked account, except the default enterprise project and those not categorized.</p>
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	<p>The type of a billing item.</p> <p>Example: expenditure-purchase and expenditure-hourly billing</p>
Business Entity	<p>The business entity that a cloud service belongs to.</p> <p>Example: Huawei Cloud</p>
PayerAccount Name	<p>The account used to pay for Huawei Cloud resources.</p> <ul style="list-style-type: none"> <li>• Generally, resources are used by this account.</li> <li>• For a member account that is associated with a master account for unified accounting management, <b>PayerAccount Name</b> is the enterprise master account. The master account can switch the value of <b>PayerAccount Name</b> to view the cost data of the member accounts that are not associated for unified accounting management.</li> </ul>
Cost Tags	<p>Used to track costs of resources associated with each other in an enterprise. For more information, see <a href="#">Activating Cost Tags</a>.</p> <p>If you are using a member account associated for unified accounting, you can only use the cost tags activated by the master account.</p>
Resource Name/ID	The name or unique ID of a cloud service resource.

## 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 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.

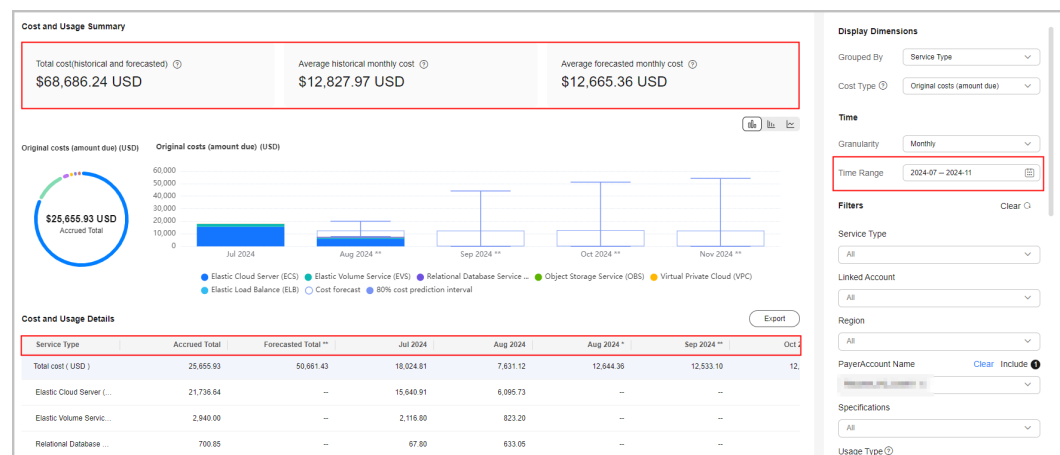
**Cost and Usage Summary**

**Total cost:** total cost in each day or month. If the time range you select 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 7-2](#).



**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 7-2** 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  <b>NOTE</b> 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.	<p>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.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>
	Average historical daily/monthly cost	The average daily/monthly cost of the total historical cost  Average historical daily/monthly cost = $\frac{\text{Accrued total}}{\text{Number of historical days or months}}$  <b>NOTE</b> 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 = $\frac{\text{Forecast total}}{\text{Number of forecasted days or months}}$  <b>NOTE</b> Number of days or months include the current day or month with both historical and forecasted costs.	

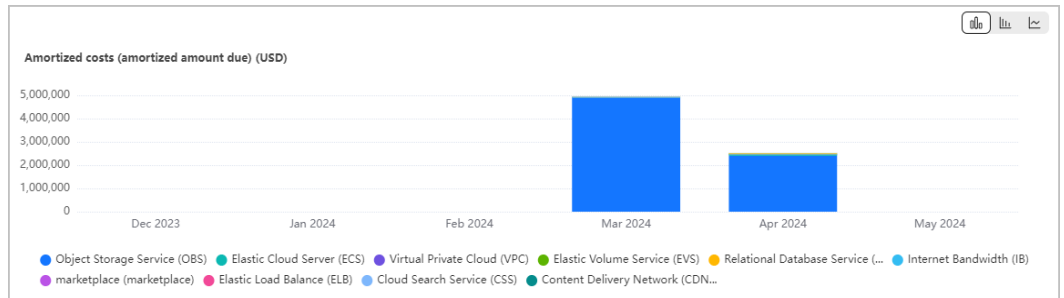
In Cost Center, you can also view cost data in stacked charts, bar charts, and line charts.

 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.

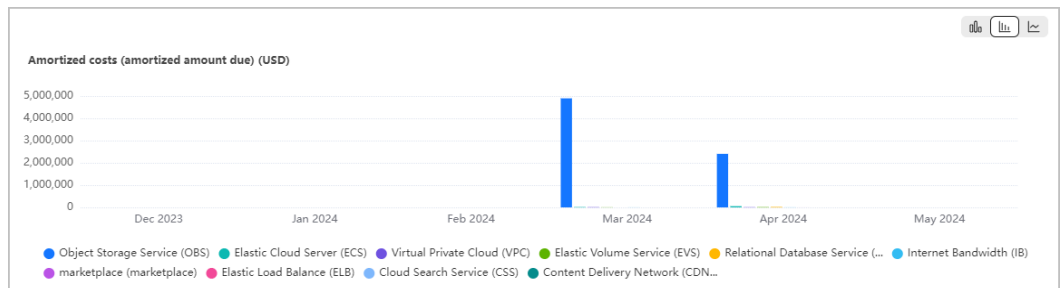
- Stacked chart

Figure 7-4 Stacked chart



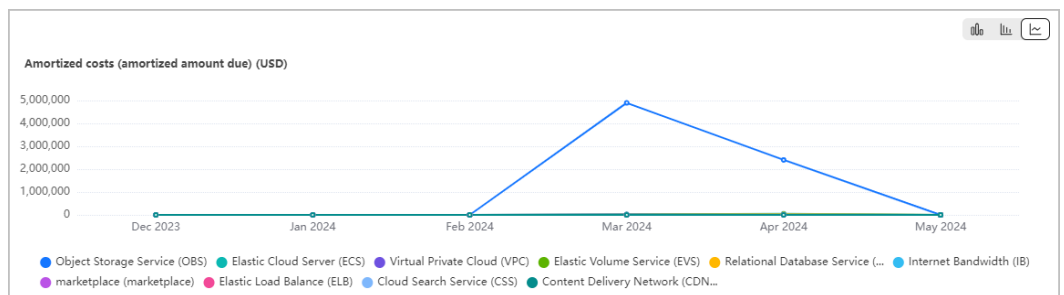
- Bar chart

Figure 7-5 Bar chart



- Line chart

Figure 7-6 Line chart



- Donut chart

**Figure 7-7** Donut chart



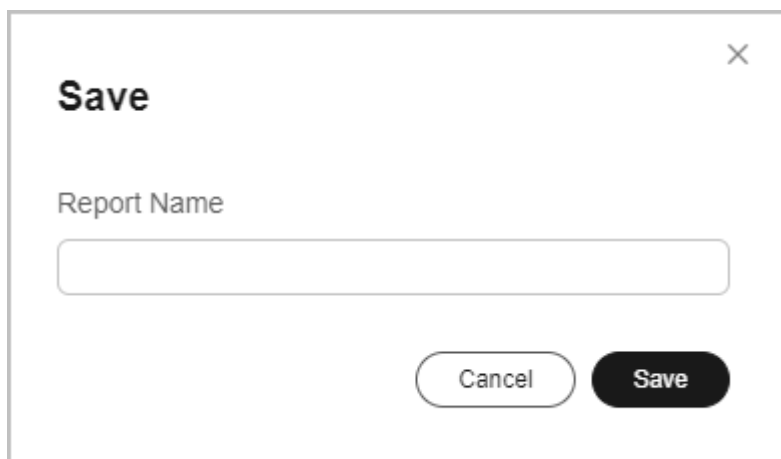
## Creating a Custom Report

- Step 1** Log in to Cost Center.
- Step 2** Choose **Cost Insights > Cost Analysis**.
- Step 3** Click **Create Custom Report** under **All Reports**.
- Step 4** Configure filters in the displayed page.

 **NOTE**

For details about the filters, see [Setting Filters](#).

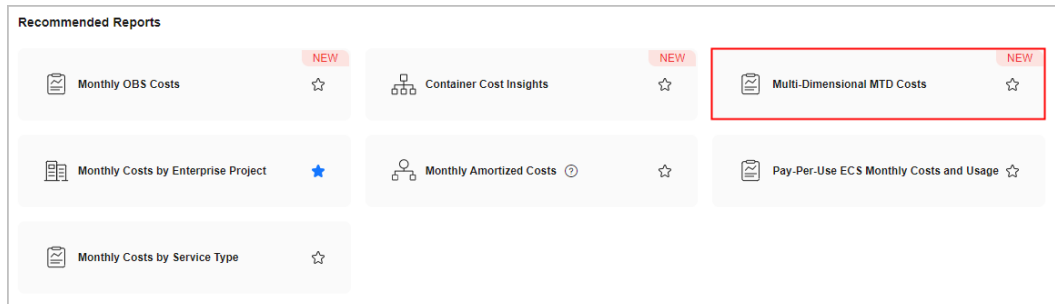
- Step 5** Click **Save** on the upper right corner.
- Step 6** Specify a name for the report, and click **Save**.

A dialog box titled "Save" with a close button (X) in the top right corner. It contains a text input field labeled "Report Name". At the bottom, there are two buttons: "Cancel" and "Save".

----End

## Viewing Multi-Dimensional Cost Breakdowns

- Step 1** Log in to Cost Center.
- Step 2** Choose **Cost Insights > Cost Analysis**.
- Step 3** Select the preconfigured report **Multi-Dimensional MTD Costs**.



**NOTE**

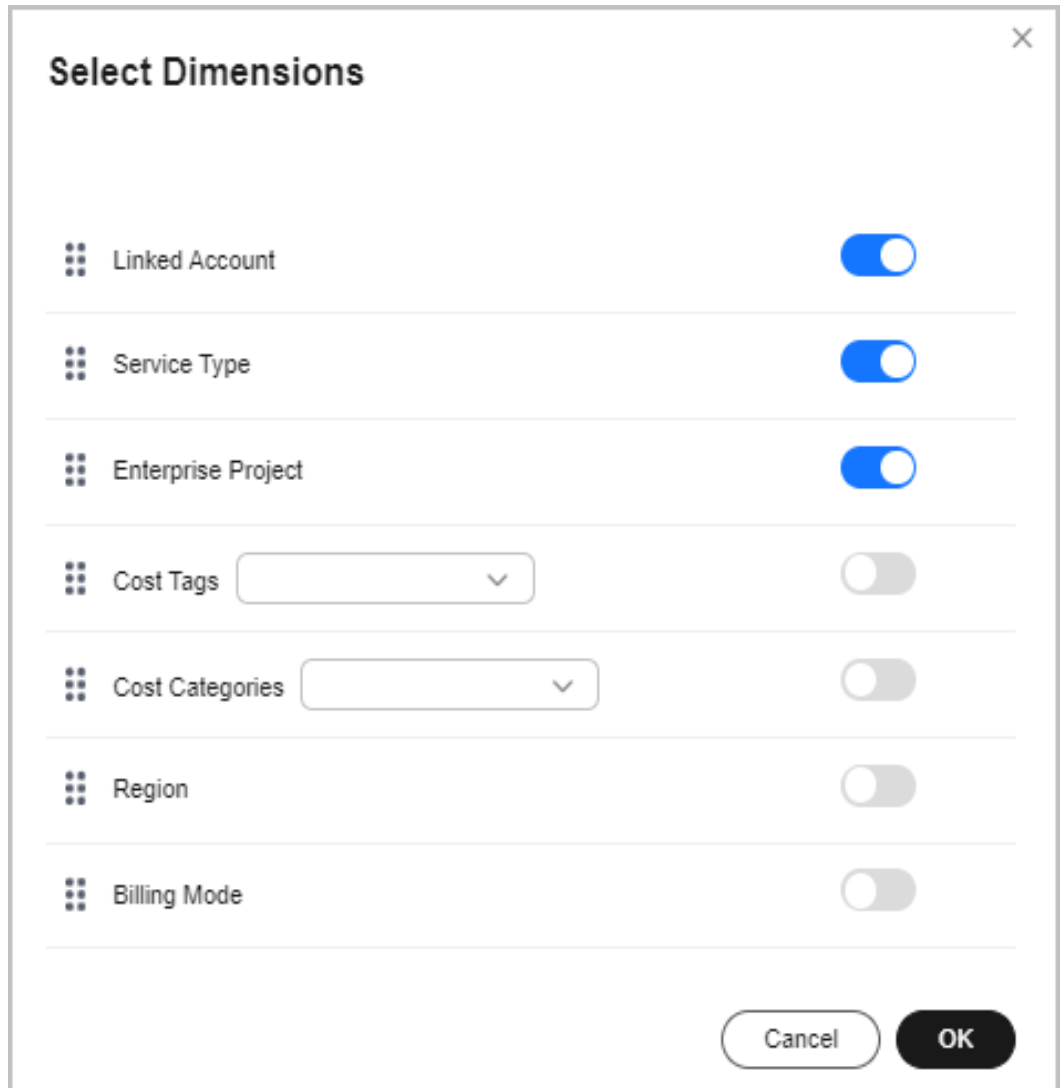
- The **Multi-Dimensional MTD Costs** report is only available in the new edition of Cost Center. If you switch back to the old edition, you cannot access the report.
- The **Multi-Dimensional MTD Costs** report does not include forecasted costs.

**Step 4** 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 5** 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** Log in to Cost Center.

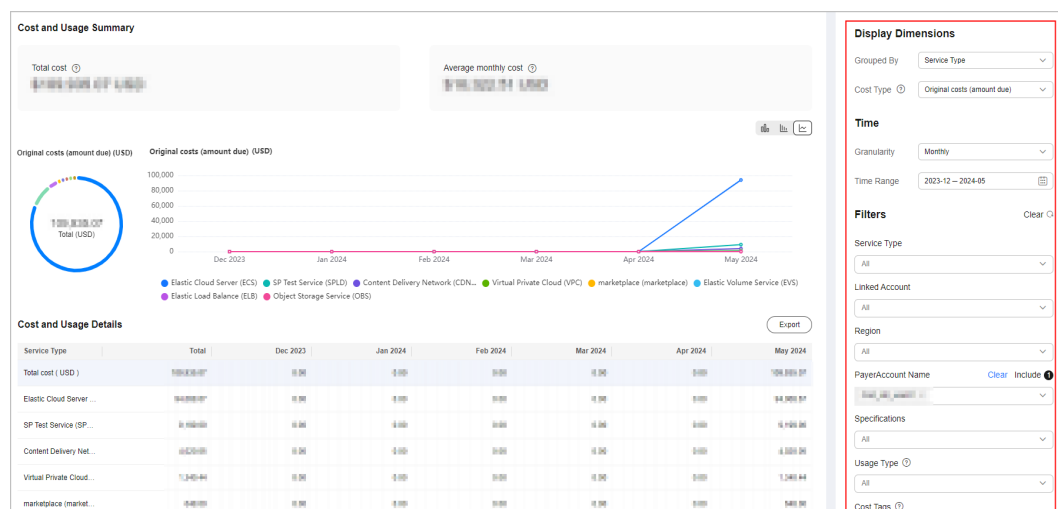
**Step 2** Choose **Cost Insights > Cost Analysis**.

**Step 3** 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 4** 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 5** 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** Log in to Cost Center.

**Step 2** Choose **Cost Insights > Cost Analysis**.

**Step 3** Select a recommended report or a custom report.

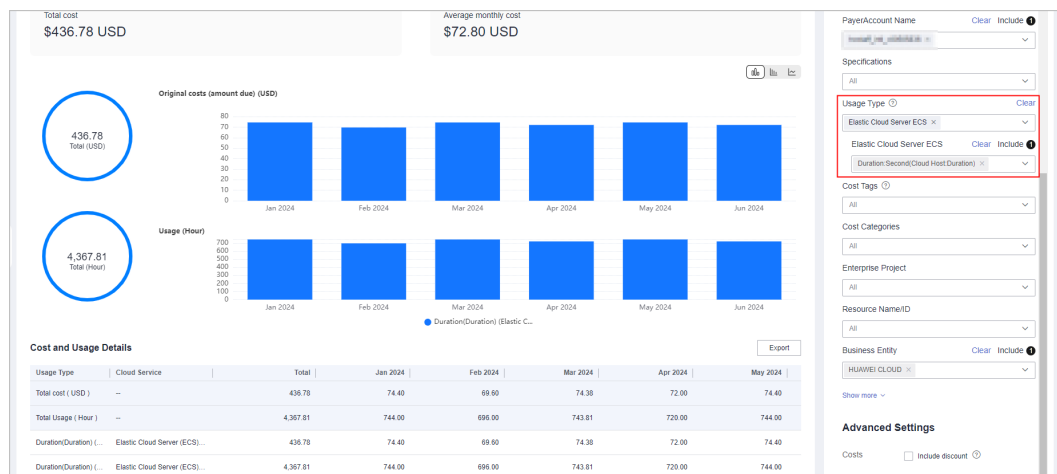
### NOTE

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

**Step 4** Select **Usage Type** under **Filters**. The usage data over the selected time range will be displayed in the specified dimension.

### NOTE

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



----End

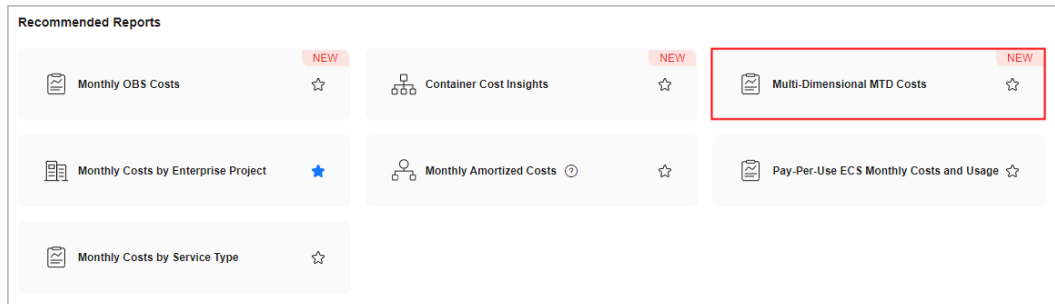
## 7.3 Viewing Multi-Dimensional Cost Breakdowns

**Step 1** Log in to Cost Center.

**Step 2** Choose **Cost Insights > Cost Analysis**.

**Step 3** Select the preconfigured report **Multi-Dimensional MTD Costs**.





 **NOTE**

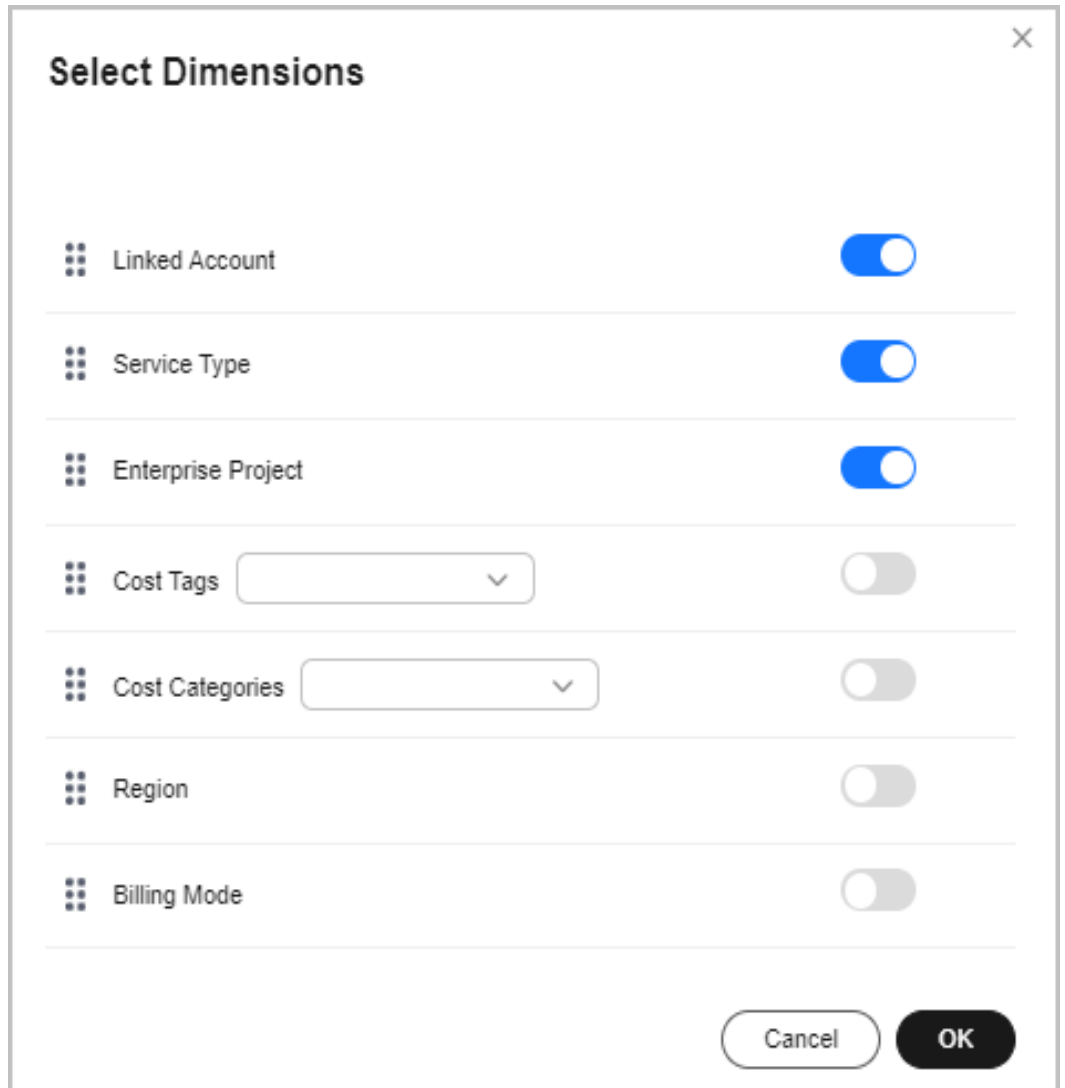
- The **Multi-Dimensional MTD Costs** report does not include forecasted costs.

**Step 4** 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 5** 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

## 7.4 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
  - 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 that will be generated on the 3rd day of the following month. The original costs are available for viewing and exporting at 12:00 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 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](#).

## 7.5 Cost Amortization Rules

### 7.5.1 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?](#)

#### Pay-per-Use Resources

Before June 1, 2021, pay-per-use expenditures were not amortized. Instead, they were recorded for the transaction day.

**Pay-per-use expenditures generated as of June 1, 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 1, 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 1, 2021 00:53:30) were

not in the same billing cycle, the amount due (\$2 USD) was recorded as the amortized cost for July 1, 2021.

**Pay-per-use expenditures generated as of September 1, 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.

## Yearly/Monthly Subscriptions

### NOTE

Starting from August 1, 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 1, 2023. For orders unsubscribed from before February 1, 2023 and their associated historical orders, the unallocated expenditures were recorded as amortized costs for February 1, 2023.

For refunds generated before February 1, 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 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 subscription	2	2	56	-	-	-	...	-
Amortized cost for unsubscription	-	-	-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 1 to January 30) at \$60 USD, renewed it for one month at \$60 USD on January 5, 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 subscription	2	2	2	2	2	2	...	2	2	2
Amortized cost for renewal	-	-	-	-	-	-	-	60	-	-

Order Line	1st Day	2nd Day	3rd Day	4th Day	5th Day	6th Day	...	28th Day	29th Day	30th Day
Amortized cost for unscription from renewal period	-	-	-	-	-	-	-	-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 1 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 1	January 2	January 3	January 4	January 5	January 6	...	January 28	January 29	January 30
Amortized cost for subscription	2	2	2	2	2	2	...	2	2	2



Order Line	January 1	January 2	January 3	January 4	January 5	January 6	...	January 28	January 29	January 30
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 the price of \$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 subscription	2	2	2	2	2	2	...	2
Amortized cost for account adjustment (refund)	-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 (payment)	2.2	2.2	2.2	2.2	2.2	2.2	...	2.2

## 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 1, 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 1, 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.

## Example

If you purchased a yearly/monthly subscription (valid from January 1, 2021 to February 1, 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 1, 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 1, 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 ( $1.83/20 \times 19 = 1.7385$ ).

# 8 Cost and Usage Forecasting

---

## 8.1 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 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 Method

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 can be forecasted. If the subscriptions expire, forecasts cannot be produced. The forecasting is based on the following assumptions:
  - If you do not choose **Non-Renewal Upon Expiration** or **Change to Pay-per-Use Upon Expiration**, resources will be renewed upon expiration.

- If auto-renewal is enabled and the auto-renewal deduction date is set, expenditures should be paid seven days before resource expiration.
- If auto-renewal is not enabled, resources will be renewed within the grace period.
- If resources are to be renewed at a discounted price, the discount for the most recent purchase or renewal will be used.

## Constraints

1. 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.
2. Forecasts do not take into account any future changes due to refunds, account adjustments, or master-member account association or disassociation.
3. If the grace period of yearly/monthly subscriptions ends, forecasts will not be produced for these subscriptions.
4. 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.
5. 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.
6. 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.

## 8.2 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** Log in to Cost Center.

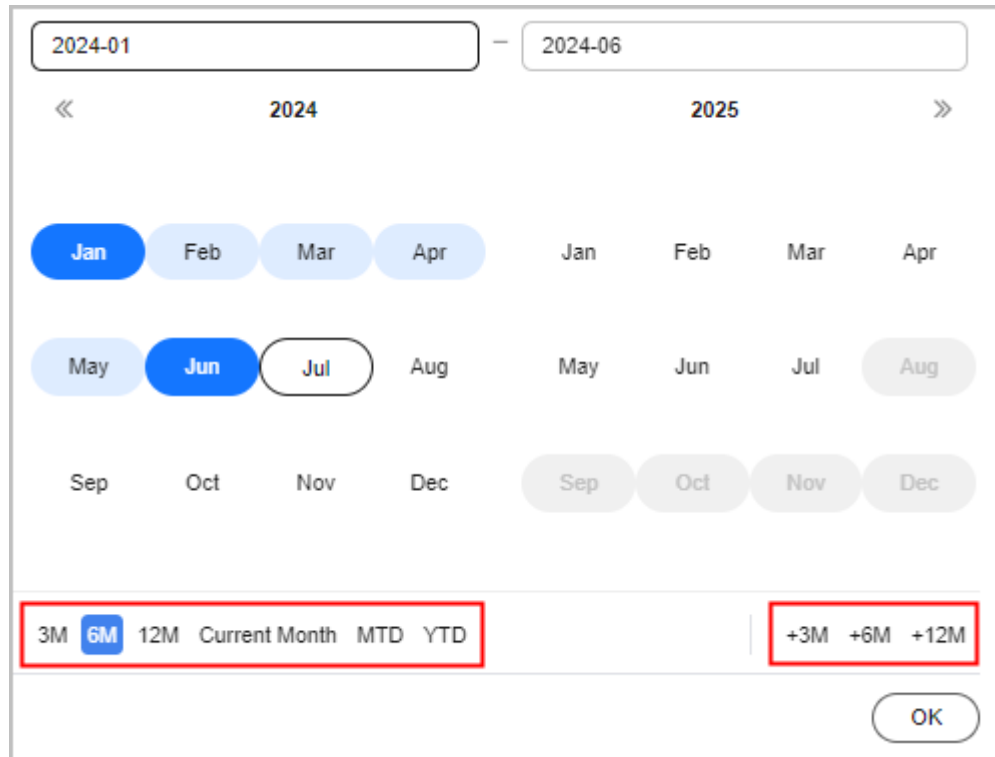
**Step 2** Choose **Cost Insights > Cost Analysis**.

**Step 3** Click **Create Custom Report** under **All Reports**.

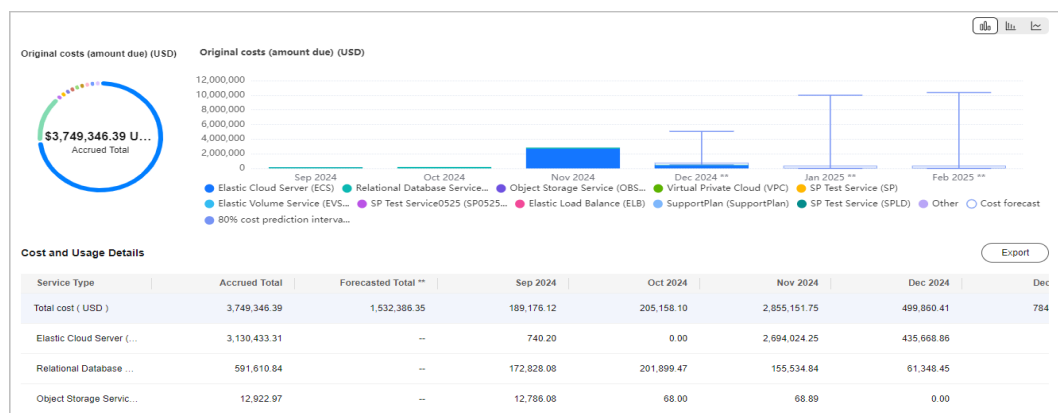
**Step 4** Specify the period.

- 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 5** 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 8-1** The descriptions of the parameters in the command are as follows:

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 <b>Grouped By</b> to summarize the costs.
Forecast Total	Forecasted total costs in the current and future months during the statistical period Costs cannot be summarized by <b>Grouped By</b> .
Total Cost	Total cost in each day or month

----End

## Creating a Forecasting-based Budget

**Step 1** Log in to Cost Center.

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

**Step 3** Click **Create Budget**.

**Step 4** Select **Custom Budget** and click **Create Budget**.

**Step 5** Select **Cost budget** or **Usage budget** as needed, and click **Next**.

**Step 6** Configure the budget name, details, and scope, and click **Next**.

### NOTE

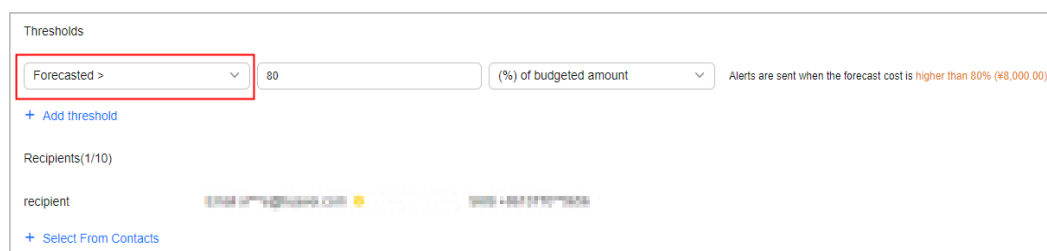
If you select **Daily** for **Reset Period** when creating a budget, the following functions are not available:

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

**Step 7** 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 8** Confirm budget details and click **Save**.

----End

## Scope of Forecasting-based Analysis

You can set the cost type to original costs, net original costs, amortized costs, or net amortized costs.

You can select pay-per-use usage, usage from packages.

You can set the data period to either daily or monthly.

## Scope of Forecasting-based Budgets

You can set the budget type to cost budget or usage budget.

You can set the reset period to monthly, quarterly, or yearly.

You can set the cost type to original costs, net original costs, amortized costs, or net amortized costs.

You can select pay-per-use usage, usage from packages, or usage from RIs.

# 9 Budgets

## 9.1 Baseline Time Range

You can select **Dynamic** for **Allocation** only when **Reset Period** is **Monthly** or **Quarterly**. 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 change. Cost Center will notify all alert recipients of the newly adjusted budgeted amount on the 5th day in each month or quarter.

 **NOTE**

Dynamic budget plans are only supported for cost budgets and usage budgets.

### Baseline Time Ranges for Monthly Budget

Baseline Time Range	Description
Last month actual	The actual cost of the previous month is directly used as the budgeted amount. Example: If the actual cost of the previous 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 <a href="#">Forecasting Usage and Constraints</a> . Example: If the forecasted cost of the current month is \$100 USD, the budgeted amount of the current month is \$100 USD. <b>NOTE</b> Ensure that the historical data is sufficient before using this baseline time range to calculate your budgeted amount.



Baseline Time Range	Description
Last several months average	<p>The average value of actual costs in last several months is used to calculate your budgeted amount. The average value of the actual costs in last 1 to 12 months can be used.</p> <p>Example: Select <b>Last several months average &gt; Last 3 months</b> for <b>Baseline Time Range</b>. The actual costs for last three months are \$90 USD, \$120 USD, and \$150 USD, respectively.</p> <p>Last three months average = <math>(90 + 120 + 150)/3 = 120</math>. The budgeted amount for the current month is \$120 USD.</p>
Last several months compound growth rate	<p>The compound growth rate of the last several months is used to calculate the budgeted amount. The average value of the actual costs in last 2 to 12 months can be used.</p> <p>The formulas are as follows:</p> <ul style="list-style-type: none"> <li>Compound growth rate = <math>\sqrt[n-1]{ v_n/v_1 } - 1</math></li> <li>Budgeted amount = <math>v_n \times (1 + \text{Compound growth rate})</math></li> <li><math>v_n</math> is the actual cost of the final month in the last <math>n</math> months, and <math>v_1</math> is the actual cost of the first month in the last <math>n</math> months.</li> </ul> <p>Example: Select <b>Last several months compound growth rate &gt; Last 3 months</b> for <b>Baseline Time Range</b>. The actual costs for the last three months are \$100 USD, \$120 USD, and \$200 USD, respectively.</p> <p style="text-align: right;"> <math display="block">\sqrt{\frac{200}{100}} - 1 = 0.41.</math> </p> <p>Last three months compound growth rate = <math>\sqrt{\frac{200}{100}} - 1 = 0.41</math>.            Budgeted amount for the current month = <math>200 \times (1 + 0.41) = \\$282</math> USD</p>

### Baseline Time Ranges for Quarterly Budgets

Baseline Time Range	Description
Last quarter actual	<p>The actual cost of the previous quarter is directly used as the budgeted amount.</p> <p>Example: If the actual cost of the previous quarter is \$100 USD, the budgeted amount of the current quarter is \$100 USD.</p>

Baseline Time Range	Description
Current quarter forecast	<p>The forecasted cost of the current quarter is used to calculate your budgeted amount. For details about the forecasting function, see <a href="#">Forecasting Usage and Constraints</a>.</p> <p>Example: If the forecasted cost of the current quarter is \$100 USD, the budgeted amount of the current quarter is \$100 USD.</p> <p><b>NOTE</b> Ensure that the historical data is sufficient before using this baseline time range to calculate your budgeted amount.</p>
Last several quarters average	<p>The average value of actual costs in last several quarters is used to calculate your budgeted amount. The average value of the actual costs in last 1 to 4 quarters can be used.</p> <p>Example: Select <b>Last several quarters average &gt; Last 2 quarters</b> for <b>Baseline Time Range</b>. The actual costs for last two quarters are \$90 USD and \$120 USD, respectively.</p> <p>Last two quarters average = <math>(90 + 120)/2 = 105</math>. The budgeted amount for the current quarter is \$105 USD.</p>
Last several quarters compound growth rate	<p>The compound growth rate of the last several quarters is used to calculate the budgeted amount. The average value of the actual costs in last 2 to 4 quarters can be used.</p> <p>The formulas are as follows:</p> <ul style="list-style-type: none"> <li>Compound growth rate = <math>\sqrt[n]{ v_n / v_1 } - 1</math></li> <li>Budgeted amount = <math>v_n \times (1 + \text{Compound growth rate})</math></li> <li><math>v_n</math> is the actual cost of the final quarter in the last <math>n</math> quarters, and <math>v_1</math> is the actual cost of the first quarter in the last <math>n</math> quarters.</li> </ul> <p>Example: Select <b>Last several quarters compound growth rate &gt; Last 3 quarters</b>. The actual costs for the last three quarters are \$100 USD, \$120 USD, and \$200 USD, respectively.</p> <p style="text-align: right;"> <math display="block">\sqrt{\frac{200}{100}}</math> </p> <p>Last three quarters compound growth rate = <math>\sqrt{\frac{200}{100}} - 1 = 0.41</math>.            Budgeted amount for the current quarter = <math>200 \times (1 + 0.41) = \\$282</math> USD</p>

## 9.2 Creating a Budget

You can set budget thresholds and configure alerts to track your daily, monthly, quarterly, and yearly costs or your resource usage. If your actual costs or usage exceeds the alert threshold configured for your budget, you will receive an alert.

## 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.

## Viewing Budget Summary

You can view your budget summary on the **Budgets** page in Cost Center, including the following 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** Log in to Cost Center.

**Step 2** Choose **Budgets**.

**Step 3** Click **Create Budget**.

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

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

**Table 9-1** Parameters for creating a budget (1)

Parameters	Description
Budget Name	Enter a unique budget name.

Parameters	Description
Budget Scope (optional)	<p>Define a budget scope as required. Specifically, you can set filters such as <b>Service Type</b>, <b>Enterprise Project</b>, and <b>Region</b> on the left, and the cost data from the last 12 months will be displayed on the right.</p> <p><b>NOTE</b> If you are using a master account and want to create a budget for your member accounts, select these member accounts from <b>Linked Account</b>. An enterprise master account can select enterprise projects by linked account, except the default enterprise project and those not categorized.</p>
Cost Type	<ul style="list-style-type: none"> <li>● <b>Original costs:</b> the costs of cloud services purchased at the list price with available discounts applied. Before the billing date, this is an estimated amount. Once the bill is issued, it is the amount due.</li> <li>● <b>Amortized costs:</b> 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.</li> </ul> <p>When you set <b>Cost Type</b> to <b>Original costs</b>, you can toggle on <b>Include discount</b> to include both discount and truncated amount. In this case, the original cost is equivalent to the list price.</p>
Reset Period	<p>The reset period for a budget, which can be:</p> <ul style="list-style-type: none"> <li>● <b>Daily:</b> Budget evaluation begins at 00:00 GMT+08:00 on the start date and will be reset to zero at 00:00 GMT+08:00 on each day moving forward.</li> <li>● <b>Monthly:</b> Budget evaluation begins at 00:00 GMT+08:00 on the 1st day of the start month and will be reset to zero at 00:00 GMT+08:00 on the 1st day of each month moving forward.</li> <li>● <b>Quarterly:</b> Budget evaluation begins at 00:00 GMT+08:00 on the 1st day of the start quarter and will be reset to zero at 00:00 GMT+08:00 on the 1st day of each quarter moving forward.</li> <li>● <b>Yearly:</b> Budget evaluation begins at 00:00 GMT+08:00 on the start date and will be reset to zero at 00:00 GMT+08:00 on January 1st of each year moving forward.</li> </ul>
Budget Duration	<p><b>Recurring:</b> You select a start date on which the recurring budgets will begin renewing.</p> <p><b>Expiring:</b> You set a time range, outside which expiring budgets will not renew.</p>
Allocation	<p><b>Fixed:</b> The budgeted amount is fixed for each reset period.</p> <p><b>Monthly/Quarterly:</b> The amount is budgeted on a monthly or quarterly basis.</p> <p><b>Dynamic:</b> The amount is automatically budgeted based on the configured baseline time range.</p>

Parameters	Description
Baseline Time Range	<p>There are four options. For details, see <a href="#">Baseline Time Range</a>.</p> <ul style="list-style-type: none"> <li>• Last quarter/month actual</li> <li>• Current quarter/month forecast</li> <li>• Last several quarters/months average</li> <li>• Last several quarters/months compound growth rate</li> </ul>
Budgeted Amount	<ul style="list-style-type: none"> <li>• If <b>Allocation</b> is <b>Fixed</b>, you just set the budget amount to a fixed value.</li> <li>• If <b>Reset Period</b> is <b>Daily</b> or <b>Yearly</b>, you just set the budget amount to a fixed value.</li> <li>• If <b>Allocation</b> is <b>Monthly</b> or <b>Quarterly</b>, 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.</li> <li>• If you set <b>Allocation</b> to <b>Dynamic</b>, 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.</li> </ul>

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

**Table 9-2** Parameters for creating a cost budget (2)

Parameters	Description
Thresholds	<p>A maximum of five thresholds can be set for each budget. The following alerting conditions are supported:</p> <ul style="list-style-type: none"> <li>• <b>Actual &gt;</b>: If the actual cost reaches a certain amount or a certain percentage of a budgeted amount, an alert will be reported.</li> <li>• <b>Forecasted &gt;</b>: 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 <a href="#">Creating a Forecasting-based Budget</a>.</li> </ul> <p>The threshold can be a certain amount or a certain percentage of the budgeted amount.</p> <ul style="list-style-type: none"> <li>• <b>Amount (USD)</b>: If the actual cost reaches a certain amount, an alert will be reported.</li> <li>• <b>(%) of budgeted amount</b>: If the actual cost reaches a certain percentage of a budgeted amount, an alert will be reported.</li> </ul>

Parameters	Description
Recipients	The contacts who will receive alerts. If you want to add or modify recipient information, go to the <b>Recipient Management</b> page in the Message Center. Up to 10 recipients can be added for each budget.

**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** Log in to Cost Center.

**Step 2** Choose **Budgets**.

**Step 3** Click **Create Budget**.

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

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

**Table 9-3** Parameters for creating a budget (1)

Parameters	Description
Budget Name	Enter a unique budget name.
Usage Scope (optional)	Define a budget scope as required. Specifically, you can set filters such as <b>Linked Account</b> , <b>Region</b> , and <b>Specifications</b> on the left, and you will see the usage data from the last 12 months in the pane on the right. <b>NOTE</b> If you are using a master account and want to create a budget for your member accounts, select these member accounts from <b>Linked Account</b> .
Usage	<ul style="list-style-type: none"> <li>● Pay-per-use</li> <li>● Packages</li> <li>●</li> </ul> By default, <b>Pay-per-use</b> is selected.
Usage Type	The way a pay-per-use cloud service is billed. Select the usage type you want to budget against.

Parameters	Description
Reset Period	<p>The reset period for a budget, which can be:</p> <ul style="list-style-type: none"> <li>● <b>Daily:</b> Budget evaluation begins at 00:00 GMT+08:00 on the start date and will be reset to zero at 00:00 GMT+08:00 on each day moving forward.</li> <li>● <b>Monthly:</b> Budget evaluation begins at 00:00 GMT+08:00 on the 1st day of the start month and will be reset to zero at 00:00 GMT+08:00 on the 1st day of each month moving forward.</li> <li>● <b>Quarterly:</b> Budget evaluation begins at 00:00 GMT+08:00 on the 1st day of the start quarter and will be reset to zero at 00:00 GMT+08:00 on the 1st day of each quarter moving forward.</li> <li>● <b>Yearly:</b> Budget evaluation begins at 00:00 GMT+08:00 on the start date and will be reset to zero at 00:00 GMT+08:00 on January 1st of each year moving forward.</li> </ul>
Budget Duration	<p><b>Recurring:</b> You select a start date on which the recurring budgets will begin renewing.</p> <p><b>Expiring:</b> You set a time range, outside which expiring budgets will not renew.</p>
Allocation	<p><b>Fixed:</b> The budgeted amount is fixed for each reset period.</p> <p><b>Monthly/Quarterly:</b> The amount is budgeted on a monthly or quarterly basis.</p> <p><b>Dynamic:</b> The amount is automatically budgeted based on the configured baseline time range.</p>
Baseline Time Range	<p>There are four options. For details, see <a href="#">Baseline Time Range</a>.</p> <ul style="list-style-type: none"> <li>● Last quarter/month actual</li> <li>● Current quarter/month forecast</li> <li>● Last several quarters/months average</li> <li>● Last several quarters/months compound growth rate</li> </ul>

Parameters	Description
Budgeted Usage	<ul style="list-style-type: none"> <li>• If <b>Allocation</b> is <b>Fixed</b>, you just set the budget amount to a fixed value.</li> <li>• If <b>Reset Period</b> is <b>Daily</b> or <b>Yearly</b>, you just set the budget amount to a fixed value.</li> <li>• If <b>Allocation</b> is <b>Monthly</b> or <b>Quarterly</b>, 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.</li> <li>• If you set <b>Allocation</b> to <b>Dynamic</b>, 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.</li> </ul>

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

**Table 9-4** Parameters for creating a usage budget (2)

Parameters	Description
Thresholds	<p>A maximum of five thresholds can be set for each budget. The following alerting conditions are supported:</p> <ul style="list-style-type: none"> <li>• <b>Actual &gt;</b>: If the actual cost reaches a certain amount or a certain percentage of a budgeted amount, an alert will be reported.</li> <li>• <b>Forecasted &gt;</b>: 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 <a href="#">Creating a Forecasting-based Budget</a>.</li> </ul> <p>The threshold can be a certain amount or a certain percentage of the budgeted amount.</p> <ul style="list-style-type: none"> <li>• <b>Amount (USD)</b>: If the actual cost reaches a certain amount, an alert will be reported.</li> <li>• <b>(%) of budgeted amount</b>: If the actual cost reaches a certain percentage of a budgeted amount, an alert will be reported.</li> </ul>
Recipients	<p>The contacts who will receive alerts.</p> <p>If you want to add or modify recipient information, go to the <b>Recipient Management</b> page in the Message Center. Up to 10 recipients can be added for each budget.</p>

**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.

## 9.3 Viewing Your Budgets

**Step 1** Log in to Cost Center.

**Step 2** Choose **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

## 9.4 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 **Budgets**.

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

----End

## 9.5 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 **Budgets**.

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

**Step 4** Modify the copied budget.

**Step 5** Click **Save**.

----End

## 9.6 Deleting a Budget

**Step 1** Log in to the Cost Center.

**Step 2** Choose **Budgets**.

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

----End

# 10 Budget Management (New Edition)

## 10.1 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 cost forecasting, see <a href="#">Forecasting Usage and Constraints</a> . Example: If the forecasted cost of the current month is \$100 USD, the budgeted amount of the current month is \$100 USD. <b>NOTE</b> If your historical data is insufficient, this option cannot be used to calculate your budgeted amount.

Baseline Time Range	Description
Last several months average	<p>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.</p> <p>Example: Set <b>Baseline Time Range</b> to <b>Last several months average &gt; Last 3 months</b>. The actual costs for last three months are \$90 USD, \$120 USD, and \$150 USD, respectively.</p> <p>Last three months average = <math>(90 + 120 + 150)/3 = 120</math>. The budgeted amount for the current month is \$120 USD.</p>
Last several months compound growth rate	<p>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.</p> <p>The formulas are as follows:</p> <ul style="list-style-type: none"> <li>Compound growth rate = <math>\sqrt[n-1]{ v_n / v_1 } - 1</math></li> <li>Budgeted amount = <math>v_n \times (1 + \text{Compound growth rate})</math></li> <li><math>v_n</math> is the actual cost of the final month in the last <math>n</math> months, and <math>v_1</math> is the actual cost of the first month in the last <math>n</math> months.</li> </ul> <p>Example: Set <b>Baseline Time Range</b> to <b>Last several months compound growth rate &gt; Last 3 months</b>. The actual costs for the last three months are \$100 USD, \$120 USD, and \$200 USD, respectively.</p> <p style="text-align: right;"> <math display="block">\sqrt{\frac{200}{100}} - 1 = 0.41</math> </p> <p>Last three months compound growth rate = <math>\sqrt{\frac{200}{100}} - 1 = 0.41</math>.            Budgeted amount for the current month = <math>200 \times (1 + 0.41) = \\$282</math> USD</p>

### Baseline Time Ranges for Quarterly Budgets

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

Baseline Time Range	Description
Current quarter forecast	<p>The forecasted cost of the current quarter is used to calculate your budgeted amount. For details about cost forecasting, see <a href="#">Forecasting Usage and Constraints</a>.</p> <p>Example: If the forecasted cost of the current quarter is \$100 USD, the budgeted amount of the current quarter is \$100 USD.</p> <p><b>NOTE</b> If your historical data is insufficient, this option cannot be used to calculate your budgeted amount.</p>
Last several quarters average	<p>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.</p> <p>Example: Set <b>Baseline Time Range</b> to <b>Last several quarters average &gt; Last 2 quarters</b>. The actual costs for last two quarters are \$90 USD and \$120 USD, respectively.</p> <p>Last two quarters average = <math>(90 + 120)/2 = 105</math>. The budgeted amount for the current quarter is \$105 USD.</p>
Last several quarters compound growth rate	<p>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.</p> <p>The formulas are as follows:</p> <ul style="list-style-type: none"> <li>Compound growth rate = <math>\sqrt[n]{ v_n / v_1 } - 1</math></li> <li>Budgeted amount = <math>v_n \times (1 + \text{Compound growth rate})</math></li> <li><math>v_n</math> is the actual cost of the final quarter in the last <math>n</math> quarters, and <math>v_1</math> is the actual cost of the first quarter in the last <math>n</math> quarters.</li> </ul> <p>Example: Set <b>Baseline Time Range</b> to <b>Last several quarters compound growth rate &gt; Last 3 quarters</b>. The actual costs for the last three quarters are \$100 USD, \$120 USD, and \$200 USD, respectively.</p> <p style="text-align: right;"> <math display="block">\sqrt{\frac{200}{100}}</math> </p> <p>Last three quarters compound growth rate = <math>\sqrt{\frac{200}{100}} - 1 = 0.41</math>. Budgeted amount for the current quarter = <math>200 \times (1 + 0.41) = \\$282</math> USD</p>

## 10.2 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** Log in to Cost Center.
- Step 2** Choose **Budget Management > Budgets**.
- Step 3** Click **Create Budget**.
- Step 4** Select **Monthly Budget for Service Types** and click **Create Budget**.
- Step 5** Configure **Budget Name**, **Budget Scope**, and **Budgeted Amount**, select recipients, and click **Save**.

**Table 10-1** 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. <b>NOTE</b> 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 <b>Recipient Management</b> page in the Message Center. <b>NOTE</b> Recipients will receive an alert when: <ol style="list-style-type: none"> <li>1. The actual cost exceeds 85% of the budgeted amount.</li> <li>2. The actual cost exceeds 100% of the budgeted amount.</li> <li>3. The forecasted cost exceeds 100% of the budgeted amount.</li> </ol>

Parameter	Description
	<p>Preset parameters: Common budget parameters have been preset so that you can create a budget more simply.</p> <p>If you need to modify the budget, go to the budget list, locate the budget, and click <b>Edit</b> in the <b>Operation</b> column.</p>
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 6** 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](#).

Budget Name	Type	Reset Pe...	Status	Actual	Forecasted	Budgeted	Actual vs Budgeted	Forecasted vs Budgeted	Notification	Operation
Monthly-Budget-for-Service-Typ...	Cost budget	Monthly	Ongoing	\$0.00	--	\$100,000.00	0.00%	--	Enabled	Edit Copy Delete

**Step 7** 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** Log in to Cost Center.

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

**Step 3** Click **Create Budget**.

**Step 4** Select **Monthly Budget for Business Units** and click **Create Budget**.

**Step 5** Configure **Budget Name**, **Budget Scope**, and **Budgeted Amount**, select recipients, and click **Save**.

**Table 10-2** Parameters for creating a monthly budget for business units

Parameter	Description
<p>Custom parameters: You can customize the following parameters, in which the budget name and alert recipients have been preset as those for common scenarios.</p>	
Budget Name	Enter a unique budget name.
Budget Scope	<p>Specify the business units (linked accounts, enterprise projects, cost tags, and cost categories) for your budget.</p> <p><b>NOTE</b> When you select <b>Linked Account</b>:</p> <ul style="list-style-type: none"> <li>• If you are using a master account and want to create a budget for your member accounts, select these member accounts from <b>Linked Account</b>.</li> <li>• If you are not using a master account, you can only create a budget for the account you are using.</li> </ul> <p>When you select <b>Enterprise Projects</b>:</p> <ul style="list-style-type: none"> <li>• If you are using a master account, you can select enterprise projects by linked account, except the default enterprise project and those not categorized.</li> <li>• If you are not using a master account, you can only create a budget for enterprise projects in the account you are using.</li> </ul>
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	<p>The contacts who will receive alerts. The account contact is the default recipient. Up to 10 recipients can be added for each budget.</p> <p>If you want to add or modify recipient information, go to the <b>Recipient Management</b> page in the Message Center.</p> <p><b>NOTE</b> Recipients will receive an alert when:</p> <ol style="list-style-type: none"> <li>1. The actual cost exceeds 85% of the budgeted amount.</li> <li>2. The actual cost exceeds 100% of the budgeted amount.</li> <li>3. The forecasted cost exceeds 100% of the budgeted amount.</li> </ol>
<p>Preset parameters: Common budget parameters have been preset so that you can create a budget more simply.</p> <p>If you need to modify the budget, go to the budget list, locate the budget, and click <b>Edit</b> in the <b>Operation</b> column.</p>	
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 6** 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](#).

Budget Name	Type	Reset Pe...	Status	Actual	Forecasted	Budgeted	Actual vs Budgeted	Forecasted vs Budgeted	Notification	Operation
Monthly-Budget-for-Business-U...	Cost budget	Monthly	Ongoing	\$1,440.00	\$3,599.82	\$386,596.00	0.37%	0.93%	Enabled	Edit Copy Delete

**Step 7** 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** Log in to Cost Center.

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

**Step 3** Click **Create Budget**.

**Step 4** Select **Zero Spend Monthly Budget** and click **Create Budget**.

**Step 5** Configure **Budget Name**, **Budget Scope**, and **Budgeted Amount** (the default value is **0** and cannot be changed), select recipients, and click **Save**.

**Table 10-3** 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 <b>0</b> and cannot be changed.
Recipients	<p>The contacts who will receive alerts. The account contact is the default recipient. Up to 10 recipients can be added for each budget.</p> <p>If you want to add or modify recipient information, go to the <b>Recipient Management</b> page in the Message Center.</p> <p><b>NOTE</b> Recipients will receive a budget alert if the actual payment exceeds \$0 USD.</p>
<p>Preset parameters: Common budget parameters have been preset so that you can create a budget more simply.</p> <p>If you need to modify the budget, go to the budget list, locate the budget, and click <b>Edit</b> in the <b>Operation</b> column.</p>	
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 6** 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](#).

Budget Name	Type	Reset Pe...	Status	Actual	Forecasted	Budgeted	Actual vs Budgeted	Forecasted vs Budgeted	Notification	Operation
Zero-Spend-Monthly-Budget-test	Cost budget	Monthly	Ongoing	\$1,440.00	\$3,599.82	\$0.00	--	--	Enabled	<b>Edit</b> Copy Delete

**Step 7** 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 [Baseline Time Range](#).

- 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.

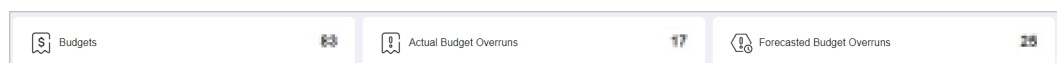
## Prerequisites

Before you enable budget alerts, configure notification methods for **Cost Management** in Message Center.

## Viewing Budget Summary

You can view your budget summary on the **Budget Management > Budgets** page in Cost Center, including the following 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** Log in to Cost Center.
- Step 2** Choose **Budget Management > Budgets**.
- Step 3** Click **Create Budget**.
- Step 4** Select **Custom Budget** and click **Create Budget**.
- Step 5** Select **Cost budget** and click **Next**.
- Step 6** Configure the budget name, details, and scope, and click **Next**.

**Table 10-4** Parameters for creating a cost budget

Category	Parameter	Description
Specify Budget Name	Budget Name	Enter a unique budget name.
Configure Budget Details	Reset Period	<p>The reset period for a budget, which can be:</p> <ul style="list-style-type: none"> <li>• <b>Daily:</b> Budget evaluation begins at 00:00 GMT +08:00 on the start date and will be reset to zero at 00:00 GMT+08:00 on each day moving forward.</li> <li>• <b>Monthly:</b> Budget evaluation begins at 00:00 GMT+08:00 on the 1st day of the start month and will be reset to zero at 00:00 GMT+08:00 on the 1st day of each month moving forward.</li> <li>• <b>Quarterly:</b> Budget evaluation begins at 00:00 GMT+08:00 on the 1st day of the start quarter and will be reset to zero at 00:00 GMT+08:00 on the 1st day of each quarter moving forward.</li> <li>• <b>Yearly:</b> Budget evaluation begins at 00:00 GMT+08:00 on the start date and will be reset to zero at 00:00 GMT+08:00 on January 1st of each year moving forward.</li> </ul>
	Budget Duration	<p><b>Recurring:</b> You select a start date on which the recurring budgets will begin renewing.</p> <p><b>Expiring:</b> You set a time range, outside which expiring budgets will not renew.</p>
	Allocation	<p><b>Fixed:</b> The budgeted amount is fixed for each reset period.</p> <p><b>Monthly/Quarterly:</b> The amount is budgeted on a monthly or quarterly basis.</p> <p><b>Dynamic:</b> The amount is automatically budgeted based on the configured baseline time range.</p>

Category	Parameter	Description
	Baseline Time Range	<p>There are four options. For details, see <a href="#">Dynamic Budgeting</a>.</p> <ul style="list-style-type: none"> <li>• Last quarter/month actual</li> <li>• Current quarter/month forecast</li> <li>• Last several quarters/months average</li> <li>• Last several quarters/months compound growth rate</li> </ul>
	Budgeted Amount	<ul style="list-style-type: none"> <li>• If <b>Allocation</b> is <b>Fixed</b>, you just set the budget amount to a fixed value.</li> <li>• If <b>Reset Period</b> is <b>Daily</b> or <b>Yearly</b>, you just set the budget amount to a fixed value.</li> <li>• If <b>Allocation</b> is <b>Monthly</b> or <b>Quarterly</b>, 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.</li> <li>• If you set <b>Allocation</b> to <b>Dynamic</b>, 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.</li> </ul>
Define Budget Scope	Define Budget Scope	<p>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.</p> <p><b>NOTE</b> If you are using a master account and want to create a budget for your member accounts, select these member accounts from <b>Linked Account</b>.</p>
	Business Entity	<p>Select the business entity that a cloud service belongs to.</p> <p>Example: Huawei Cloud</p>
	Split item name	<p>This parameter is only valid when you set <b>Cost Type</b> to <b>Amortized costs (amortized amount due)</b>. If you have enabled cost splitting, you can view the cost data of the specified cloud service by split item. For details, see .</p>

Category	Parameter	Description
	Cost Type	<ul style="list-style-type: none"> <li>• <b>Original costs (amount due):</b> 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.</li> <li>• <b>Amortized costs (amortized amount due):</b> 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.</li> </ul> <p>When you set <b>Cost Type</b> to <b>Original costs (amount due)</b>, you can toggle on <b>Include discount</b> to include both discount and truncated amount. In this case, the original cost is equivalent to the list price.</p>

**Step 7** Under **Alert Thresholds**, configure **Thresholds** and **Recipients** and click **Next**.

**Table 10-5** Parameters for creating alerts for a cost budget

Parameter	Description
Thresholds	<p>A maximum of five thresholds can be set for each budget. The following alerting conditions are supported:</p> <ul style="list-style-type: none"> <li>• <b>Actual &gt;:</b> If the actual cost reaches a certain amount or a certain percentage of a budgeted amount, an alert will be reported.</li> <li>• <b>Forecasted &gt;:</b> 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 <a href="#">Creating a Forecasting-based Budget</a>.</li> </ul> <p>The threshold can be a certain amount or a certain percentage of the budgeted amount.</p> <ul style="list-style-type: none"> <li>• <b>Amount (USD):</b> If the actual cost reaches a certain amount, an alert will be reported.</li> <li>• <b>(%) of budgeted amount:</b> If the actual cost reaches a certain percentage of a budgeted amount, an alert will be reported.</li> </ul>
Recipients	<p>The contacts who will receive alerts. The account contact is the default recipient. Up to 10 recipients can be added for each budget.</p> <p>If you want to add or modify recipient information, go to the <b>Recipient Management</b> page in the Message Center.</p>

**Step 8** 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** Log in to Cost Center.

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

**Step 3** Click **Create Budget**.

**Step 4** Select **Custom Budget** and click **Create Budget**.

**Step 5** Select **Usage budget** and click **Next**.

**Step 6** Configure the budget name, details, and scope, and click **Next**.

**Table 10-6** 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, which can be: <ul style="list-style-type: none"> <li>• <b>Daily:</b> Budget evaluation begins at 00:00 GMT+08:00 on the start date and will be reset to zero at 00:00 GMT+08:00 on each day moving forward.</li> <li>• <b>Monthly:</b> Budget evaluation begins at 00:00 GMT+08:00 on the 1st day of the start month and will be reset to zero at 00:00 GMT+08:00 on the 1st day of each month moving forward.</li> <li>• <b>Quarterly:</b> Budget evaluation begins at 00:00 GMT+08:00 on the 1st day of the start quarter and will be reset to zero at 00:00 GMT+08:00 on the 1st day of each quarter moving forward.</li> <li>• <b>Yearly:</b> Budget evaluation begins at 00:00 GMT+08:00 on the start date and will be reset to zero at 00:00 GMT+08:00 on January 1st of each year moving forward.</li> </ul>

Category	Parameter	Description
	Budget Duration	<p><b>Recurring:</b> You select a start date on which the recurring budgets will begin renewing.</p> <p><b>Expiring:</b> You set a time range, outside which expiring budgets will not renew.</p>
	Allocation	<p><b>Fixed:</b> The budgeted amount is fixed for each reset period.</p> <p><b>Monthly/Quarterly:</b> The amount is budgeted on a monthly or quarterly basis.</p> <p><b>Dynamic:</b> The amount is automatically budgeted based on the configured baseline time range.</p>
	Baseline Time Range	<p>There are four options. For details, see <a href="#">Dynamic Budgeting</a>.</p> <ul style="list-style-type: none"> <li>• Last quarter/month actual</li> <li>• Current quarter/month forecast</li> <li>• Last several quarters/months average</li> <li>• Last several quarters/months compound growth rate</li> </ul>
	Budgeted Usage	<ul style="list-style-type: none"> <li>• If <b>Allocation</b> is <b>Fixed</b>, you just set the budget amount to a fixed value.</li> <li>• If <b>Reset Period</b> is <b>Daily</b> or <b>Yearly</b>, you just set the budget amount to a fixed value.</li> <li>• If <b>Allocation</b> is <b>Monthly</b> or <b>Quarterly</b>, 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.</li> <li>• If you set <b>Allocation</b> to <b>Dynamic</b>, 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.</li> </ul>



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 pan on the right.  <b>NOTE</b> If you are using a master account and want to create a budget for your member accounts, select these member accounts from <b>Linked Account</b> .
	Usage	<ul style="list-style-type: none"> <li>• Pay-per-use</li> <li>• Packages</li> <li>•</li> </ul> By default, <b>Pay-per-use</b> is selected.

**Step 7** Under **Alert Thresholds**, configure **Thresholds** and **Recipients** and click **Next**.

**Table 10-7** 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: <ul style="list-style-type: none"> <li>• <b>Actual &gt;</b>: If the actual usage reaches a certain usage or a certain percentage of a budgeted usage, an alert will be reported.</li> <li>• <b>Forecasted &gt;</b>: 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 <a href="#">Creating a Forecasting-based Budget</a>.</li> </ul> The threshold can be a certain usage or a certain percentage of the budgeted usage. <ul style="list-style-type: none"> <li>• <b>Usage (Byte)</b>: If the actual usage reaches this value, an alert will be reported.</li> <li>• <b>(%) of budgeted usage</b>: If the actual usage reaches a certain percentage of budgeted usage, an alert will be reported.</li> </ul>
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 <b>Recipient Management</b> page in the Message Center.

**Step 8** 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.

## 10.3 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

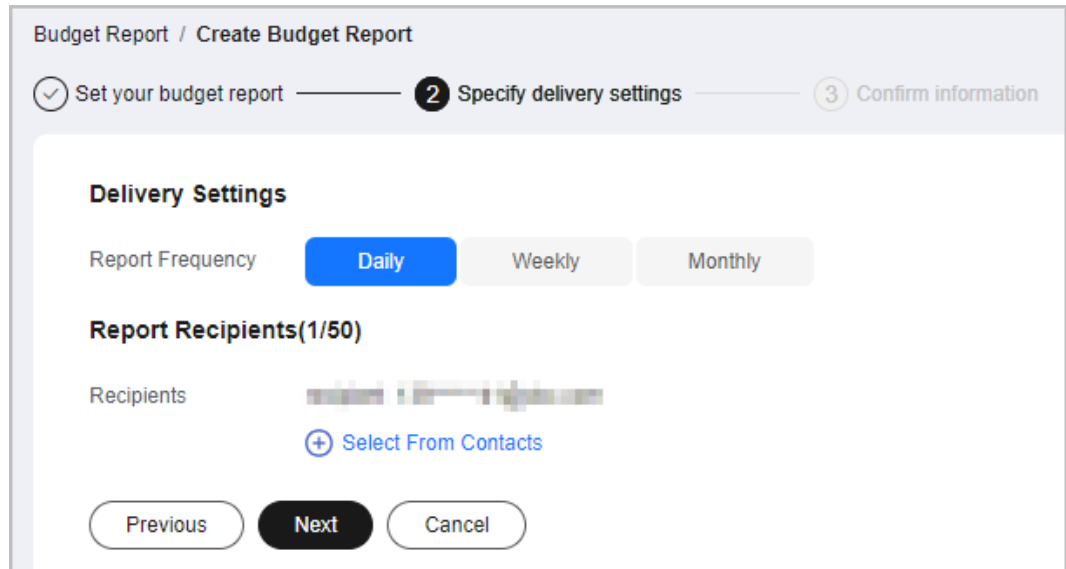
**Step 1** Log in to Cost Center.

**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

## 10.4 Managing Budgets

### Viewing a Budget

**Step 1** Log in to Cost Center.

**Step 2** Choose **Budget Management**.

**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**.

**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**.

**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**.

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

----End

# 11 Cost Anomaly Detection

---

## 11.1 Overview

### 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.

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. Only one monitor of this type can be created under an account.
- 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 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.
- 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.

## 11.2 Detection Rules

Cost Anomaly Detection helps you monitor the actual payments of both pay-per-use and yearly/monthly resources.

- **Pay-per-use expenditures:** AI algorithms are used to intelligently identify unexpected expenditure spikes based on machine learning. If the actual cost in a day exceeds the maximum forecasted cost of that day and the difference is greater than \$1 USD, a cost anomaly will be identified.

Percentage of pay-per-use costs that are impacted = (Actual cost – Maximum forecasted cost)/Maximum forecasted cost

For example, if the actual cost on July 23 was \$105 USD, but the maximum forecasted cost was \$100 USD, that will be identified as a cost anomaly.

- **Yearly/monthly expenditures:** If the actual period-over-period (PoP) growth rate of MTD costs (excluding the cost of the current day) exceeds the threshold you set over the previous billing cycle and the difference is greater than \$1 USD, a cost anomaly will be identified.

PoP growth rate = (Actual cost for the current month – Cost for the previous month)/Cost for the previous month

For example, if your expenditures from June 1 to 23 were \$100 USD and the expenditures from July 1 to 23 (the current day is July 24) were \$121 USD, and the threshold was set to 20%, then the actual growth rate (21%) exceeds the threshold, and that will be identified as a cost anomaly.

#### NOTE

There are three severity levels for cost anomalies:

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

## Delay of Cost Anomalies

Cost anomalies are not updated in real time. You can view cost anomalies of the previous day in the afternoon of the current day. The anomalies were identified based on data collected the day before yesterday. If you have subscribed to email notifications from Cost Center, you will be notified of all cost anomalies for the previous day after 09:00 a.m. every day.

## 11.3 Creating a Cost Monitor

### Procedure

**Step 1** Log in to Cost Center.

**Step 2** Choose **Cost Insights > Cost Anomaly Detection**.

**Step 3** Click **Create Monitor**.

**Step 4** Choose a monitor type and click **Next**.

- **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 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.
- **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 5** Configure monitor details and click **Create Monitor**.

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

**Name Your Monitor**

\* Monitor Name

---

**Monitored Objects**

You can select up to 10 tag values for each tag key at a time.

\* Tag Key

\* Tag Value

---

**Detection Rules**

Pay-per-use expenditures: AI algorithms are used to intelligently identify unexpected expenditure spikes based on machine learning.

Yearly/monthly expenditures: Expenditures are identified as anomalies if they have increased by  % over the previous billing cycle.

[View detailed rules](#)

---

----End

## 11.4 Analyzing Cost Anomalies

### Viewing Anomaly History

**Step 1** Log in to Cost Center.

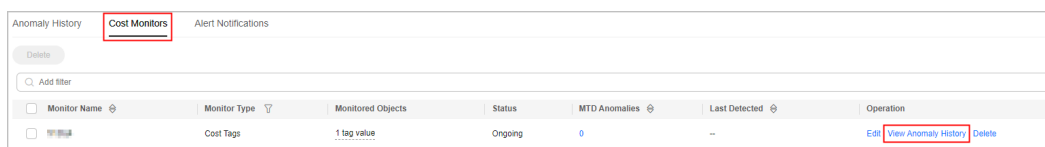
**Step 2** Choose **Cost Insights > Cost Anomaly Detection**.

**Step 3** View the cost anomalies of the last 30 days in the **Cost Anomaly Detection Summary** area.

Cost Anomaly Detection Summary		
Anomalies Pending Feedback (Last 30 Days) 5	Cost Anomalies from the Last 30 Days 5	Cost Impact from the Last 30 Days \$113.42 USD
Anomalies Pending Feedback (Last 30 Days) 5	Cost Anomalies from the Last 30 Days 5	Cost Impact from the Last 30 Days \$113.42 USD

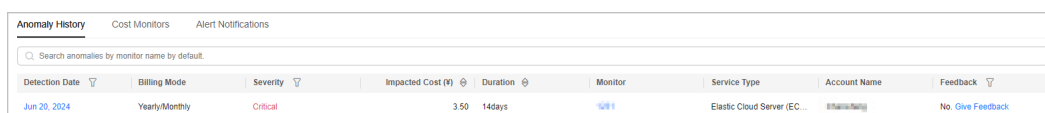
- **Anomalies Pending Feedback (Last 30 Days):** number of cost anomalies waiting for you to give feedback on in the last 30 days
- **Cost Anomalies from the Last 30 Days:** number of cost anomalies reported in the last 30 days
- **Cost Impact from the Last 30 Days:** cost of the anomalies reported in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

**Step 4** Click the **Cost Monitors** tab.



**Step 5** Click **View Anomaly History** in the **Operation** column of the monitor.

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



**Table 11-1** Fields for anomaly history

Field	Description
Detection Date	Date when a cost anomaly is detected.
Billing Mode	How the resources with a cost anomaly are billed.
Severity	Degree of an anomaly. <b>Low</b> indicates a small gap between the maximum forecasted cost and the actual cost when the anomaly is detected, and <b>High</b> indicates a large gap.
Cost Impact	<ul style="list-style-type: none"> <li>● 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.</li> <li>● 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.</li> </ul>
Duration	The length of time a cost anomaly persists for. The anomaly might not be only temporary.



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	<p>Feedback provided in <a href="#">Providing Feedback</a>.</p> <ul style="list-style-type: none"> <li>● <b>Not provided:</b> No feedback is provided.</li> <li>● <b>Unforeseen anomaly:</b> The detection result is accurate, and the anomaly is unforeseen.</li> <li>● <b>False positive:</b> It is not an anomaly.</li> <li>● <b>Foreseen anomaly:</b> The detection result is accurate, and the anomaly is foreseen.</li> </ul>

**Step 6** Click the value of **Detection Date**. You can view the details about that anomaly.

----End

## Analyzing Root Causes

**Step 1** Log in to Cost Center.

**Step 2** Choose **Cost Insights > Cost Anomaly Detection**.

**Step 3** Click the **Anomaly History** tab.

**Step 4** View all anomalies detected by a specified monitor.

**Step 5** Click a particular detection date to view the possible causes of the anomaly.

Cause	Account	Service Type	Product	Region	Specifications	Usage Type	Bill Type	Operation
No.1Cause	lihanglihang	Elastic Cloud Server (...)	Cloud Host	CN North-Beijing4	s6.medium.2.linux	--	Expenditure-change	<a href="#">View Cost Analysis</a>
No.2Cause	lihanglihang	Elastic Volume Service...	Volume	CN North-Beijing4	GPSSD	--	Expenditure-purchase	<a href="#">View Cost Analysis</a>
No.3Cause	lihanglihang	Elastic Volume Service...	Volume	CN East-Shanghai1	SAS	--	Expenditure-purchase	<a href="#">View Cost Analysis</a>

**Step 6** 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** Log in to Cost Center.

**Step 2** Choose **Cost Insights > Cost Anomaly Detection**.

**Step 3** Click the **Anomaly History** tab.

**Step 4** Click **Give Feedback** in the **Operation** column.

**Step 5** Provide your feedback on the anomaly detection result.

The screenshot shows a 'Feedback' form with the following fields:

- Detection Assessment:** Three radio buttons: 'I was not aware of this anomaly' (selected), 'It was a false positive', and 'I already knew about this anomaly'.
- Reasons:** Five checkboxes: 'Unforeseen usage' (checked), 'Resource packages expired', 'Resource package usage exceeded', 'Commercial discounts changed', and 'Other reasons'.
- A 'Submit' button is located at the bottom left of the form.

----End

## 11.5 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.

The screenshot shows the 'SMS & Email Settings' page. It features a table with columns for 'Message Type', 'Email', 'SMS', 'System Notifica...', 'Group Chatbot', 'Recipient Name', and 'Message Receiver Robot'. The 'Cost Management ...' row is highlighted with a red box, showing that 'Email', 'SMS', and 'System Notifica...' are all checked.

Message Type	Email	SMS	System Notifica...	Group Chatbot	Recipient Name	Message Receiver Robot
<input type="checkbox"/> Finance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/> Account balance ⓘ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/> Account change ⓘ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/> Partner budget ⓘ	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/> Bill ⓘ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/> Invoice ⓘ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/> Cost Management ...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

### Enabling Alert Notifications

**Step 1** Log in to Cost Center.

**Step 2** Choose **Cost Insights > Cost Anomaly Detection**.

**Step 3** Click **Create Alert Notification** in the upper right corner of the page.

**Step 4** 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.

Field	Description
Notification Name	Name of an alert notification.
Associated Monitors	<p>There are two options:</p> <ul style="list-style-type: none"> <li>● <b>All:</b> Include anomalies detected by all monitors, including those you will create later. Each account can create only one such notification.</li> <li>● <b>Selected:</b> Include anomalies detected by the monitors you selected.</li> </ul>
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.
Notification Frequency	<p>There are two notification frequency options you can choose from:</p> <ul style="list-style-type: none"> <li>● <b>Once a day:</b> Specified recipients will be notified of cost anomalies from the previous day after 09:00 a.m. every day.</li> <li>● <b>Once a week:</b> Specified recipients will be notified of cost anomalies from the previous week after 09:00 a.m. every Monday.</li> </ul>

----End

# 12 Cost Optimization

## 12.1 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.

### Viewing Cost Optimization Summary

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

**Step 1** Log in to Cost Center.

**Step 2** Choose **Cost Optimization > Summary**.

**Step 3** View the summary of all cost optimization recommendations.

Field	Description
Data Scope	<p>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.</p> <p><b>NOTE</b> An enterprise master account can select enterprise projects by linked account, except the default enterprise project and those not categorized.</p>

Field	Description
Cost optimization opportunities	<p>You can view the total number of opportunities, including those for resource optimization and billing mode changes.</p> <ul style="list-style-type: none"> <li>● Resource optimization consists of: <ul style="list-style-type: none"> <li>- Optimizing idle EIPs</li> <li>- Optimizing idle EVS disks</li> <li>- Optimizing idle load balancers</li> </ul> </li> <li>● Billing mode changes include: <ul style="list-style-type: none"> <li>- Changing from pay-per-use to yearly/monthly for all cloud services</li> </ul> </li> </ul>
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 4** View the details about cost optimization in a graph or 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	<a href="#">Optimizing EVS, EIP, and ELB Resources</a>
Optimizing idle EVS disks	<a href="#">Optimizing EVS, EIP, and ELB Resources</a>
Optimizing idle load balancers	<a href="#">Optimizing EVS, EIP, and ELB Resources</a>
Changing from pay-per-use to yearly/monthly for all cloud services	<a href="#">Changing Pay-per-Use to Yearly/Monthly</a>

----End

## Subscribing to Cost Optimization

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

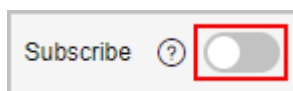
Before you enable this function, configure notification methods for **Cost Management** in Message Center.

Message Type	Email	SMS	System Notifica...	Group Chatbot	Recipient Name	Message Receiver Robot
<input type="checkbox"/> Finance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/> Account balance ⓘ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/> Account change ⓘ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/> Partner budget ⓘ	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/> Bill ⓘ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/> Invoice ⓘ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/> Cost Management --	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

**Step 1** Log in to Cost Center.

**Step 2** Choose **Cost Optimization > Summary**.

**Step 3** Turn on the toggle **Subscribe** in the upper right corner of the displayed page.



**Step 4** Set the subscription frequency and date, and specify recipients.

**Configure Subscriptions**

Content  Cost optimization report

Frequency **Weekly** Monthly

Day **Monday** ▾

---

**Specify Recipients**

Recipients(1/50) [Avatar] [Avatar]

[+ Select one or more recipients](#)

Cancel Save

**Step 5** 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](http://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** Log in to Cost Center.
- Step 2** Choose **Cost Optimization > Summary**.
- Step 3** Click **Export Recommendations** in the upper right corner of the page.
- Step 4** Select the optimization recommendations to export and click **OK**.
- Step 5** Go to the **Export History** page to download the exported file.

----End

## 12.2 Rightsizing Resources

### 12.2.1 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.

## 12.2.2 Supported Regions

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

## 12.2.3 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.)

### 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.

**Auto Check**

Notifications are sent and billed by SMN. [Pricing Details](#)

**Set Auto Check**

Frequency

All  Mon  Tues  Wed  Thur  Fri  Sat  Sun

Executed

00:00

**Setting Subscriptions**

Topic(Selectable)

You can select up to 20 topics or [create topics](#)

Cancel OK

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** Log in to Cost Center.
- Step 2** Choose **Cost Optimization > Summary**. In the displayed table, click **View Details** for **Optimize idle EIPs**, **Optimize idle EVS disks**, or **Optimize idle load balancers**.

Opportunity	Service Type	Recommendation Type	Applicable Resources	Estimated Monthly Savings (USD)	Operation
Optimize idle EIPs	Elastic Cloud Server (ECS)	Optimizing resources	84	170,374.59	<a href="#">View Details</a>
Optimize idle EVS disks	Virtual Private Cloud (VPC)	Optimizing resources	1204	117,929.15	<a href="#">View Details</a>
Optimize idle load balancers	Elastic Volume Service (EVS)	Optimizing resources	1	9,385.10	<a href="#">View Details</a>

**Step 3** View the list of applicable resources and optimize them based on the optimization recommendations.

The screenshot displays a dashboard for cost optimization. At the top, there are filters for 'Data From' (Last 30 days), 'Subscription Term' (1-month), and 'Service Type' (All). Below this, a summary shows 'Monthly Savings' of \$20,621.41, calculated as 'Estimated monthly expenditures before optimization' (\$20,832.93) minus 'Monthly amortized costs after optimization' (\$211.52). An 'Export' button is visible. Below the summary is a table of applicable resources with columns: Linked Account, Service Type, Specifications, Resource Name/ID, Enterpri..., Usage, Estimated Monthly Expenditure (USD), Subscrip..., Monthly Amortized Cost (USD), and Operation. One resource is listed: Elastic Cloud Server (E... Computing-acce... Cost\_HC\_user01 vm.cn-no... 0c010e7d9400e569210dc0... default 3,600.00 SE... 22.30 1 month 0.0 Pay-per-Use to YearlyMo...

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. <b>NOTE</b> 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.

Parameter	Description
Monthly Amortized Costs	<p>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 <b>Cost Analysis</b> page to view the amortized costs over the past 30 days.</p> <p>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.</p> <p>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.</p>
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.
Estimated Monthly Expenditure	<p>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</p> <ul style="list-style-type: none"> <li>• <b>Time Range</b> refers to the number of days during which the resource is using the new billing mode over the last 30 days.</li> <li>• The estimated monthly expenditure may have slight discrepancies in precision due to amortization calculation.</li> <li>• <b>730</b> is used as the default number of hours per month.</li> </ul>
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.

**Optimize idle load balancers**

Your elastic load balancer has no backend servers associated. Create a backend server group and associate one or more servers with your load balancer. If you no longer need the load balancer, delete it to save money. If you are intended to reserve the resources involved, just ignore the cost optimization recommendation.

## 12.2.4 Rules for Calculating Resource Optimization Recommendations

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.

## 12.3 Changing Billing Mode

### 12.3.1 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

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** Log in to Cost Center.

**Step 2** Choose **Preferences**.

**Step 3** 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.

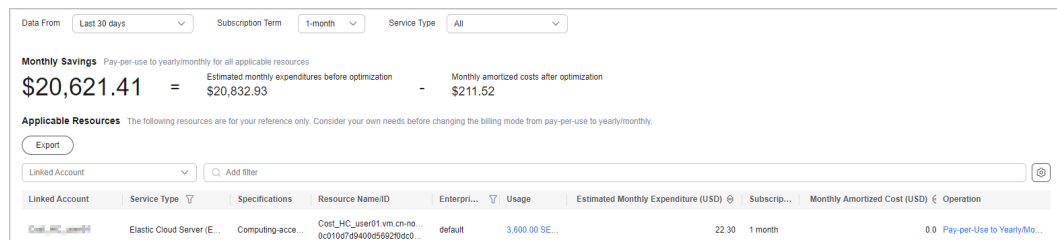
----End

## Viewing Cost Optimizations

**Step 1** Log in to Cost Center.

**Step 2** Choose **Cost Optimization > Summary**. In the **Cost Optimization Opportunities** area, locate the opportunity of changing 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.



**Monthly Savings** Pay-per-use to yearly/monthly for all applicable resources

\$20,621.41 = Estimated monthly expenditures before optimization \$20,632.93 - Monthly amortized costs after optimization \$211.52

**Applicable Resources** The following resources are for your reference only. Consider your own needs before changing the billing mode from pay-per-use to yearly/monthly.

Linked Account	Service Type	Specifications	Resource Name/ID	Enterpri...	Usage	Estimated Monthly Expenditure (USD)	Subscrip...	Monthly Amortized Cost (USD)	Operation
Cost_HC_...	Elastic Cloud Server (E...	Computing-acce...	Cost_HC_user01.vm.cn-no-0c010c789400b59270cc0...	default	3,600.00 SE...	22.30	1 month	0.0	Pay-per-Use to YearlyMo...

Field	Description
Estimated monthly expenditure before optimization	<p>The estimated monthly original cost of pay-per-use resources within the specified time range before an optimization.</p> <p>For example, if <b>Data From</b> is set to <b>Last 60 days</b>, 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</p> <p><b>NOTE</b> 730 is used as the default number of hours per month.</p>
Monthly amortized cost after optimization	<p>The monthly amortized cost that is calculated based on the specified subscription term after the optimization.</p> <ul style="list-style-type: none"> <li>For a monthly subscription, the monthly amortized cost is equivalent to the price of the monthly subscription.</li> <li>For a 1-year subscription, the monthly amortized cost is equivalent to the price of the 1-year subscription divided by 12.</li> </ul>

Field	Description
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.
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 <b>Pay-per-Use to Yearly/Monthly</b> , you will be switched to the specific service management console, where you can change the billing mode.  <b>NOTE</b> 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

# 13 Savings Plans (in OBT)

## 13.1 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 13-1** 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.

## 13.2 Overview of Savings Plans

## 13.2.1 Savings Plans Types

**Table 13-2** describes the savings plans currently available on Huawei Cloud.

**Table 13-2** 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

## 13.2.2 Notes and Constraints

### Purchase

Member accounts for 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, contact the account manager.

## 13.2.3 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.

## 13.2.4 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	$(12.84 - 8.05)/12.84 = 37.3\%$	$(12.84 - 7.14)/12.84 = 44.4\%$

## 13.2.5 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.

## 13.3 Purchasing Savings Plans

### 13.3.1 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 \$0.1, no savings plan purchase recommendations are provided.

- , 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
- 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** Log in to Cost Center.

**Step 2** Choose **Cost Optimization > Savings Plans > Purchase Recommendations**.

**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.


**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 13-3** 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
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 <b>Buy Savings Plan</b> in the <b>Operation</b> column of the savings plan, you will be navigated to the savings plan purchase page.

----End

## 13.3.2 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

### 13.3.3 Savings Plan Discounts

For details, access [Savings Plans Price Calculator](#) and switch to the **Details** page.

## 13.4 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** Log in to Cost Center.

**Step 2** Choose **Cost Optimization > Savings Plans > Summary**.

**Step 3** View the savings summary of your savings plans.

MTD Savings \$3,093.96 USD	YTD Savings \$10,389.48 USD	Cost-Saving Opportunities 3
-------------------------------	--------------------------------	--------------------------------

- **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

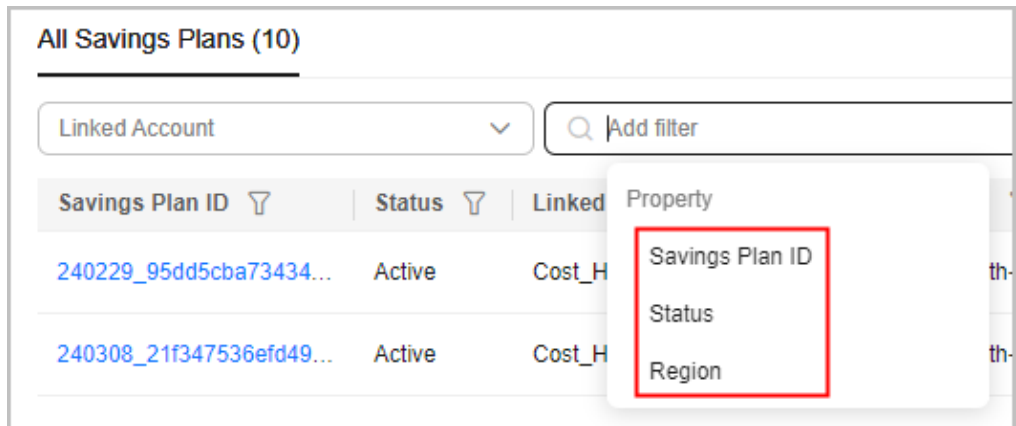
**Step 1** Log in to Cost Center.

**Step 2** Choose **Cost Optimization > Savings Plans > Summary**.

**Step 3** 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 <b>Start Pending, Active, Retired, and Frozen</b>
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
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** Log in to Cost Center.

**Step 2** Choose **Cost Optimization > Savings Plans > Summary**.

**Step 3** 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
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

Field	Description
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

## 13.5 Viewing How Savings Plans Are Applied

### 13.5.1 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.

Discounts	\$3.19 USD
Discount Type	Discount Amount (USD)
Savings plans	\$3.19 USD

#### Viewing the amount paid for using savings plans

Elastic Cloud Server ECS		
CN North- Ulanqab3		
Cloud Host		
① Pay-per-use, General Computing Enhanced(c3.medium.2ivCPUs2GB)linux		\$2.04 USD
Duration(Pay-per-use - Monthly Settlement)	68.1597222222 hours	\$2.04 USD
② Pay-per-use, General Computing (c2.medium.2ivCPUs2GB)linux		\$0.00 USD
Duration(Saving plan deduction - Monthly Settlement)	376.4502777777 hours(\$0.02 USD)	\$0.00 USD

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

SP		
CN North- Ulanqab3		
sp0525		
① Savings Plans, Order SP20230605194548, paymentType_4, spsku0525en, Commitment \$0.00 USD/Hour, (Hourly billing - Monthly Settlement)	17 hours	\$0.85 USD
② Savings Plans, Order SP20230605194548, Partial upfront, spsku0525en, Commitment \$0.10 USD/Hour, (Hourly billing - Monthly Settlement)	599 hours	\$29.95 USD

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:

Billing Cycle	Account Name	Service Type	Resource Type	Billing Mode	Bill Type	Resource Name	Resource Tag	Specification	Region	AZ	Usage Type	Unit Price	Unit	Total Usage (P/L)	Usage Unit
Jul 2024	SP Test Ser...	SP Test Ser...	sp0525	Savings Plans	Expenditure...	240308_060...		spcoetest	CN North-U...			0.03	Dollar/Hour	380	hours
Jul 2024	SP Test Ser...	SP Test Ser...	sp0525	Savings Plans	Expenditure...	240308_15a...		spcoetest	CN North-U...			0.05	Dollar/Hour	380	hours

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**

Unit Price	Unit	Total Usage (P/L)	Usage Unit (for Price)	Package Us...	List Pri...	Discoun...	Amount (USD)	Monthly Se...	Order No./Transaction...	Discount Type	Discount Subtype	Spot Instance	Amount Deduct...	Savings Plan	Savings Plan Di...
1.74	Dollar/Hour	0.0689655288	hours		0.12000002	0.12000002	0.00	0.00		Savings plans		N	0.072000001	240527_4641eef049...	% off 60% discount

----End

## 13.5.2 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.

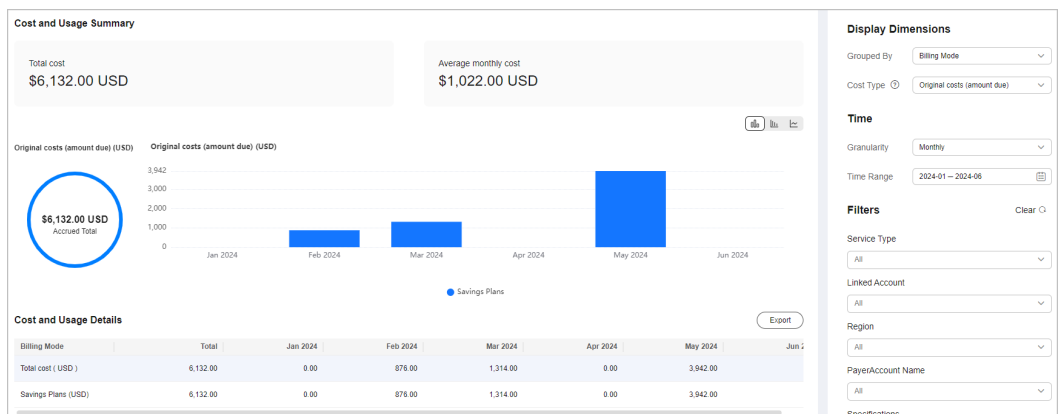
### Viewing Original Costs

**Step 1** Log in to Cost Center.

**Step 2** Choose **Cost Insights > Cost Analysis**.

**Step 3** Set **Grouped By** to **Billing Mode**. Under **Filters**, include **Savings Plans** in **Billing Mode**.

**Step 4** View the original costs of your savings plans over the selected period.



**Step 5** View the details of the original costs.

1. Choose **Cost Insights > Cost Details Export** and access the **Export to Local Directory** 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

### 13.5.3 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 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, and it may take about one day before some data is 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** Log in to Cost Center.

**Step 2** Choose **Cost Optimization > Savings Plans > Utilization & Coverage Analysis**.

**Step 3** Click the **Utilization Analysis** tab to view the utilization analyses.

**Step 4** 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 13-4** Savings plan utilization fields


Field	Description	Example
Average Utilization	Percentage of the savings plan that was used over the selected period	<p>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.</p> <p>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% (<math>180/360 \times 100\%</math>).</p> <p>Suppose that the list price of your pay-per-use equivalent is \$370 USD, the total savings will be \$10 USD (<math>370 - 360</math>).</p>
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	
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 13-5** 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 <b>CN South-Guangzhou</b> ) to get savings plan utilization.

Filter	Description
Specifications	Displays specified specifications to get savings plan utilization.
Type	Displays specified savings plan types to get savings plan utilization.

**Step 5** 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 13-6** Fields 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
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** Log in to Cost Center.



**Step 2** Choose **Cost Optimization > Savings Plans > Utilization & Coverage Analysis**.

**Step 3** Click the **Coverage Analysis** tab to view the coverage analyses.

**Step 4** 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 13-7** 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: <ul style="list-style-type: none"> <li>- 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).</li> <li>- The hourly additional pay-per-use cost is \$2.154 USD (2 - 1.282) x 3). Over the selected period, the total additional pay-per-use cost is \$103.392 USD (2.154 x 48).</li> <li>- The average coverage is calculated as follows: 96/(96 + 103.392) x 100% = 48.15%</li> </ul>
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 13-8** 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 <b>CN South-Guangzhou</b> ) to get savings plan coverage.
Specifications	Displays specified specifications to get savings plan coverage.
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 5** 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 13-9** 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

Field	Description
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.

## 13.6 Creating a Savings Plan Report

### Creating a Savings Plan Utilization Report

#### Method 1

- Step 1** Log in to Cost Center.
- Step 2** Choose **Savings Plans > Utilization & Coverage Analysis**.
- Step 3** Click the **Savings Plans Utilization** tab and click **Create Analysis Report** in the upper right corner.
- Step 4** Configure filters on the **Savings Plans Utilization** page, click **Save Report**, specify the report name, and click **OK**.

#### NOTE

For details about the filters, see [Viewing Purchased Savings Plans](#).

----End

#### Method 2

- Step 1** Log in to Cost Center.

- Step 2** Choose **Savings Plans > Utilization & Coverage Report**.
  - Step 3** Click **Create Analysis Report** in the upper right corner of the page.
  - Step 4** Select **Savings Plans Utilization** and click **Create Report**.
  - Step 5** Configure filters on the **Savings Plans 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

### Method 1

- Step 1** Log in to Cost Center.
- Step 2** Choose **Savings Plans > Utilization & Coverage Analysis**.
- Step 3** Click the **Savings Plans Coverage** tab and click **Create Analysis Report** in the upper right corner.
- Step 4** Configure filters on the **Savings Plans Coverage** page, click **Save Report**, specify the report name, and click **OK**.

#### NOTE

For details about the filters, see [Viewing Purchased Savings Plans](#).

----End

### Method 2

- Step 1** Log in to Cost Center.
- Step 2** Choose **Savings Plans > Utilization & Coverage Report**.
- Step 3** Click **Create Analysis Report** in the upper right corner of the page.
- Step 4** Select **Savings Plans Coverage** and click **Create Report**.
- Step 5** Configure filters on the **Savings Plans Coverage** page, click **Save Report**, specify the report name, and click **OK**.

For details about the filters, see [Viewing Purchased Savings Plans](#).

----End

## 13.7 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:  $10 / (1.46 \times 0.322) = 21.27$ .

## 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 Expires?

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.

# 14 Cost Allocation

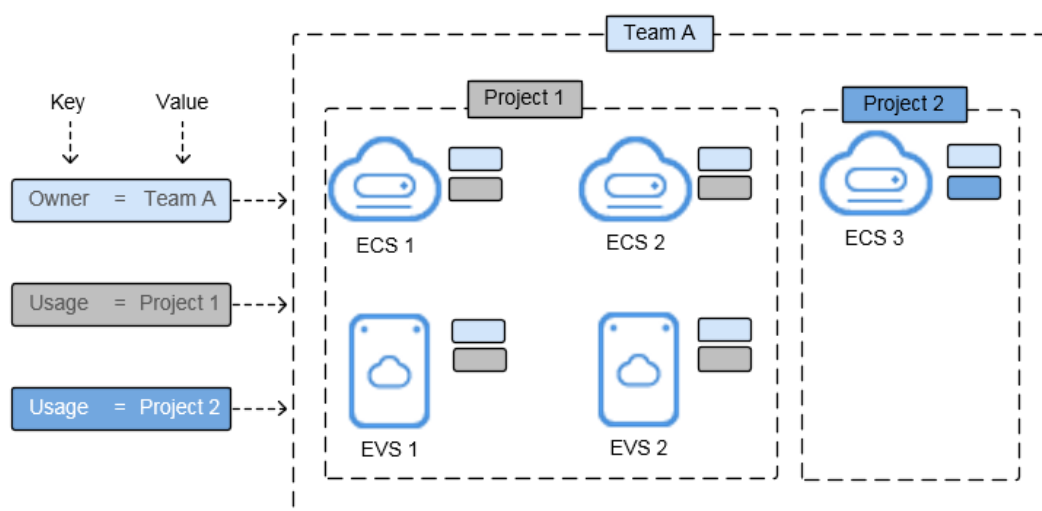
## 14.1 Cost Tags

### 14.1.1 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 14-1** 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](#).

It can take up to 48 hours before the most recent tag information is displayed. The following is an example scenario.

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 45 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](#).

## 14.1.2 Activating Cost Tags

### Important Notes

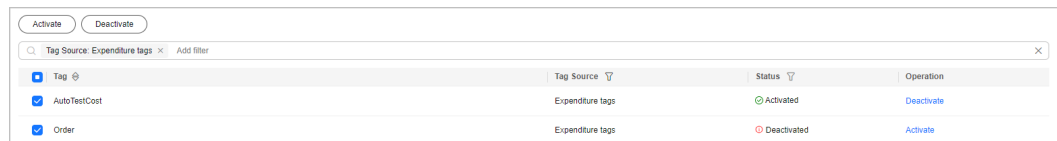
Generally, tags appear on the **Cost Tags** page 24 hours after their associated resources have generated expenditures. If there are no tags to activate, consider removing the colons (:) from tags.

You can filter or group cost data by cost tag only after the tags are activated and their associated resources have incurred costs. Activated tags are not used for historical costs.

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** Log in to Cost Center.
- Step 2** Choose **Cost Allocation > Cost Tags**.
- Step 3** 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

## 14.2 Cost Categories

### 14.2.1 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

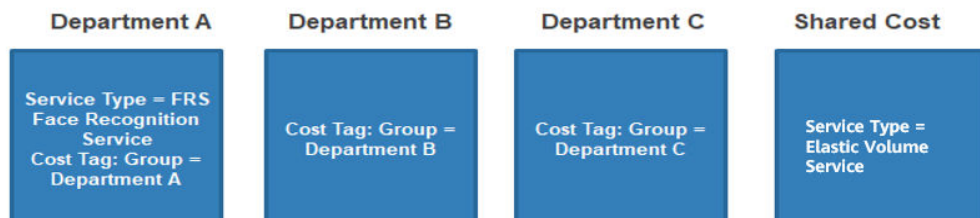
You can select from a list of cost category dimensions to create your cost category rules. Specifically, use existing cost categories as the prerequisites and define your own cost splitting rules. Assume that your enterprise has cost units from multiple departments and each department has multiple teams 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.

## 14.2.2 Application Scenarios

### Example Scenario

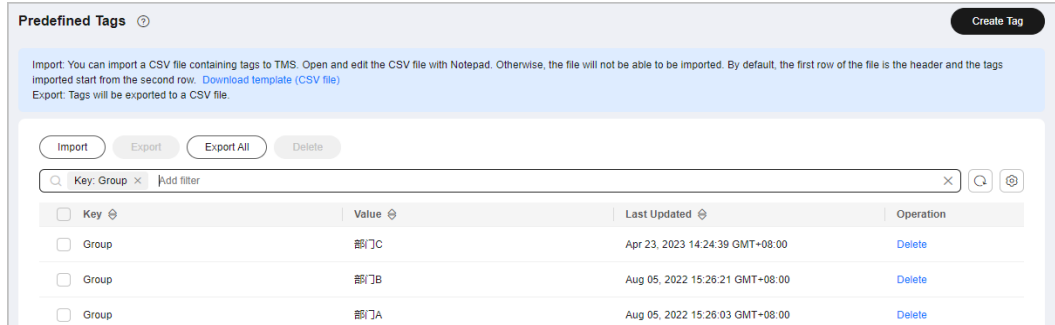
You want to allocate costs across Department A, Department B, and Department C in your company, and the department of most of the costs can be identified based on the tags configured for the resources. In addition, Department A uses the Face Recognition Service that does not support tag management, and 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.



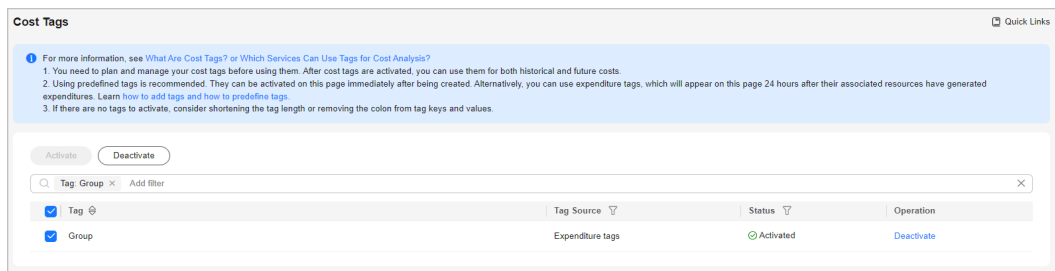
## Step 1 Creating Cost Tags

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 (**DepartmentA**, **DepartmentB**, and **DepartmentC**).



## 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)

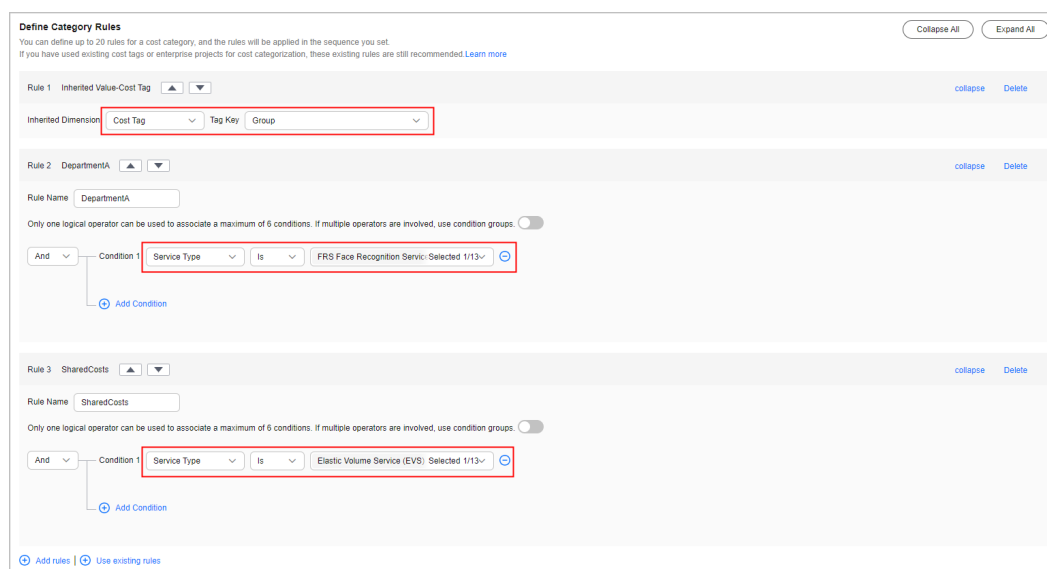
Create a cost category and define the following rules for it.

**Table 14-1** Defining rules

Rule	Type	Content
Rule 1: Inherited Value - Cost Tags	Use existing rules. <b>NOTE</b> 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 <b>Group</b> , cost data will be grouped for <b>DepartmentA</b> , <b>DepartmentB</b> , and <b>DepartmentC</b> .	Condition: <b>Inherited Dimension</b> is <b>Cost Tag</b> , and <b>Tag Key</b> is <b>Group</b> .
Rule 2: Department A	Add rules.	Condition: <b>Service Type</b> is <b>FRS Face Recognition Service</b> .
Rule 3: Shared costs	Add rules.	Condition: <b>Service Type</b> is <b>Elastic Volume Service</b> .

Rule	Type	Content
Uncategorized costs	-	Costs that do not match the preceding rules.

**Figure 14-2** Creating rules



In this example, costs are amortized in the way described in [Table 14-2](#).

**Table 14-2** 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.

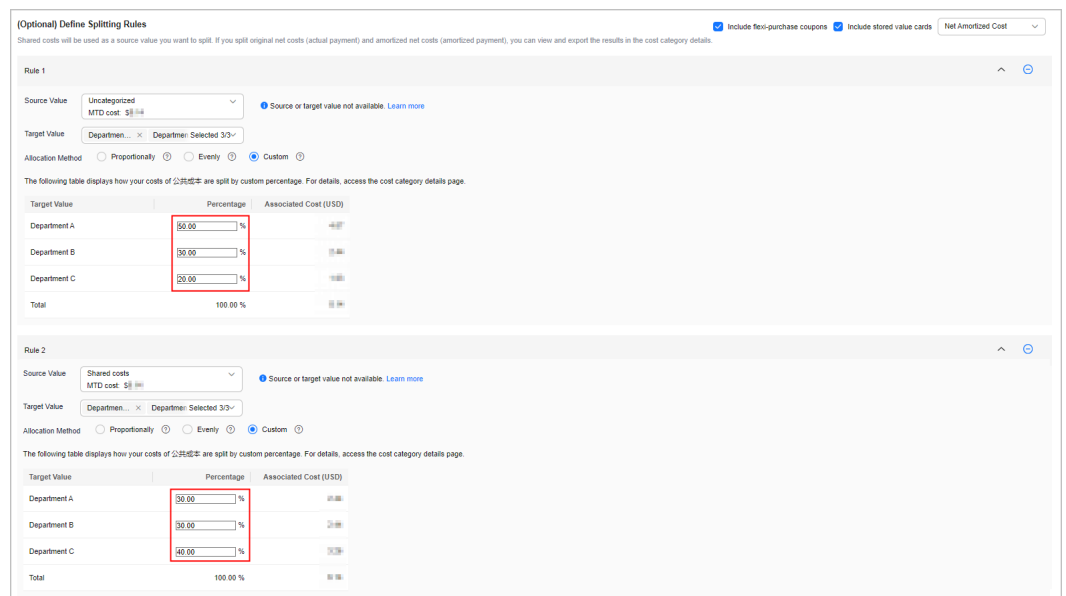
- Select **Custom** for **Allocation Method** to allocate 50% of the shared costs to Department A, 30% to Department B, and 20% to Department C.
- Select **Custom** for **Allocation Method** to allocate 30% of the uncategorized costs to Department A, 30% to Department B, and 40% to Department C.

**NOTE**

Currently, 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 14-3** Defining splitting rules



**Table 14-3** 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: $100 \times 50\% = 50$ Department B: $100 \times 30\% = 30$ Department C: $100 \times 20\% = 20$

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: $40 \times 30\% = 12$ Department B: $40 \times 30\% = 12$ Department C: $40 \times 40\% = 16$

## Step 5 Viewing Cost Splitting Results

The following table lists the cost (**Net Amortized Cost** as an example) split for each department.

**Table 14-4** 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%

## 14.2.3 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** Log in to Cost Center.
- Step 2** Choose **Cost Allocation > Cost Categories**.
- Step 3** Click **Create Cost Category**.
- Step 4** Define category rules to group your costs.

**NOTE**

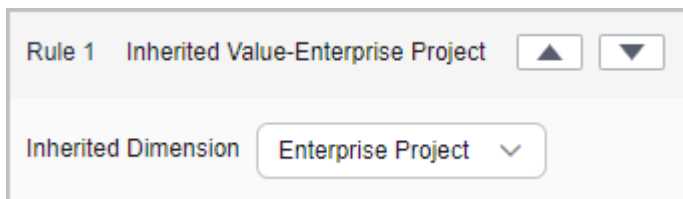
You can define up to 20 rules for each category.

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 14-5** Logical operators

Logical Operator	Description	Example
And	Indicates that all conditions must be met.	If the logical operator is set to <b>And</b> 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 <b>Or</b> 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 condition groups. 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 5** (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	<p>Shared costs you want to split, which can be either of the following:</p> <ul style="list-style-type: none"> <li>• Costs in <b>Step 4.3</b> that have been categorized but have not met the splitting requirements, for example, the costs of the <b>default</b> enterprise project.</li> <li>• Costs in <b>Step 4.4</b> that are not captured in your cost category rules</li> </ul>
Target Value	The cost categories you want to split your costs across
Allocation Method	<ul style="list-style-type: none"> <li>• <b>Proportionally:</b> 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.</li> <li>• <b>Evenly:</b> 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.</li> <li>• <b>Custom:</b> Allocate your costs based on a custom percentage for each target value. The percentages must add up to 100%.</li> </ul>

**Step 6** Click **Create**.

----End

## Editing a Cost Category

**Step 1** Log in to Cost Center.

**Step 2** Choose **Cost Allocation > Cost Categories**.

**Step 3** Click **Edit** in the **Operation** column of the cost category you want to modify the configured category rules and cost splitting rules.

Category Name	Status	Look-back Period	Created	Updated	Operation
<a href="#">Category Name</a>	Applied	2023-12	Jun 27, 2024 20:09:14 GMT+08:00	Jun 27, 2024 20:10:02 GMT+08:00	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">View in Cost Analysis</a>

----End

## Deleting a Cost Category

**Step 1** Log in to Cost Center.

**Step 2** Choose **Cost Allocation > Cost Categories**.

**Step 3** Click **Delete** in the **Operation** column of the cost category you want to delete.

Category Name	Status	Look-back Period	Created	Updated	Operation
<a href="#">Category Name</a>	Applied	2023-12	Jun 27, 2024 20:09:14 GMT+08:00	Jun 27, 2024 20:10:02 GMT+08:00	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">View in Cost Analysis</a>

----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.

Only one logical operator can be used to associate a maximum of 6 conditions. If multiple operators are involved, use condition groups.

And

Condition 1 Service Type Is Content Delivery Network (CD) Selected 1/13

Condition 2 Bill Type Is Expenditure-purchase Selected 1/18

Condition 3 Cost Tag Project Is IT Selected 1/7

This rule will be applied to the tag value you selected.

[Add Condition](#)

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 14-6** 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.

Only one logical operator can be used to associate a maximum of 6 conditions. If multiple operators are involved, use condition groups.

And ▾

Condition 1 Service Type ▾ Is ▾ Content Delivery Network (CD Selected 1/13 ▾)

Condition 2 Bill Type ▾ Is ▾ Expenditure-purchase X Selected 1/18 ▾

Condition 3 Cost Tag ▾ Project ▾ Is ▾ IT X Selected 1/7 ▾

This rule will be applied to the tag value you selected.

+ Add Condition

## 14.2.4 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** Log in to Cost Center.
- Step 2** Choose **Cost Allocation > Cost Categories**.
- Step 3** Click the name of a cost category.
- Step 4** Specify **Time Range** in the upper right corner of the displayed page.

Time Range 2024-07

- Step 5** View the details about the cost category.

1. Basic information

Status Applied	Look-back Period 2023/12	Created Jun 27, 2024 20:09:14 GMT+08:00	Updated Jun 27, 2024 20:10:02 GMT+08:00
----------------	--------------------------	---	---

In this area, the cost category name, creation time, and last update time are displayed.

2. Splitting rules

Source Value	Target Value	Allocation Method
shared cost	Rule1.Rule2.Rule3	Custom

[Edit](#)

In this area, the splitting rules for shared costs are displayed, and you can click **Edit** to modify the splitting 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** Log in to Cost Center.

**Step 2** Choose **Cost Allocation > Cost Categories**.

**Step 3** Click the name of a cost category.

**Step 4** 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 5** Modify the category rules and splitting rules and click **Save**.

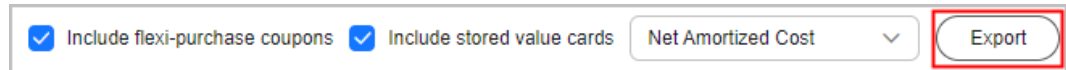
### NOTE

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.



## 14.2.5 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.

### Define Budget Scope 🔍 Modify

Alerts are unavailable for the current month cost of monthly-settlement cloud services, such as CDN billed by 95th percentile bandwidth.

**Enterprise Project**

All ▼

**Service Type**

All ▼

**Linked Account**

All ▼

**Usage Type** ?

All ▼

**Billing Mode**

All ▼

**Region**

All ▼

**AZ**

All ▼

**Specifications**

All ▼

**Cost Tags** ?

All ▼

**Cost Categories**

All ▼

## 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.

Cost Anomaly Detection / Create Monitor

Choose Monitor Type    **2**  View Details

---

**Name Your Monitor**

\* Monitor Name

---

**Monitored Objects**

You can select up to 10 tag values for each tag key at a time.

\* Tag Key

\* Tag Value

---

**Detection Rules**

Pay-per-use expenditures: AI algorithms are used to intelligently identify unexpected expenditure spikes based on machine learning.

Yearly/monthly expenditures: Expenditures are identified as anomalies if they have increased by  % over the previous billing cycle.

[View detailed rules](#)

---

## 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.

#	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	
1	Specificati	Region Co	Region	AZ	Usage Typ	Usage Typ	Usage Unit	Usage	Package U	Usage In R	Usage Unit	Total Usag	Package U	Unit Usage	List Price	Original Cr	Coupons L	Rev	Purof	Stored Val	Tag121	Tag AAA	Tag bb	Cost Cate	Cost Cate	Cost Cate
2	Custom M/cn-	north-CN	North-AZ1	acom	count	count	PCS	231	0	0	PCS	231	0	0	0	0	0	0	0	0				noDefault	Shared Co	Cost Cate
3	MetricStor	cn-north-CN	North-AZ1	acom	metri	MetricStor	Pcs/Day	0	0	0	Pcs/Day	0	0	0	0	0	0	0	0	0				noDefault	Shared Co	Cost Cate
4	Custom M/cn-	north-CN	North-AZ1	acom	count	count	PCS	3234	0	0	PCS	3234	0	0	0	0	0	0	0	0				noDefault	Shared Co	Cost Cate

# 15 Reports

## 15.1 Analysis Reports

On the **Cost Analysis** page, you can save the analyses that you have created by configuring specific filters or other requirements, as reports. When you view a saved report later, Cost Center displays the same type of report, but updated with the most recent data.

### Preconfigured Reports

Huawei Cloud provides preconfigured reports for quick cost analysis. Preconfigured reports cannot be deleted. They can only be copied and added.

**Table 15-1** Reports on costs and usage


Report Name	Description
Monthly Costs by Service Type	Types of services with high original costs over the last six months
Monthly Costs by Linked Account	Linked accounts with high original costs over the last six months
Daily Costs	Daily original costs over the last three months and in the following one month
Monthly Amortized Costs	Monthly amortized costs over the last six months
Pay-Per-Use ECS Monthly Costs and Usage	Monthly original costs and usage of pay-per-use ECSs over the last six months

### Creating a Cost and Usage Report

Method 1:

- Step 1** Log in to Cost Center.
- Step 2** Choose **Reports > Analysis Reports**.
- Step 3** Click **Create a Report**.
- Step 4** Select **Cost and usage** and click **Create Report**.
- Step 5** Configure filters on the **Cost Analysis** page and click **Save Report**.

 **NOTE**

- For details about the filters, see [Viewing Cost Analyses](#).
- Click  in the upper left corner of the page to edit the report name.

----End

Method 2:

- Step 1** Log in to Cost Center.
- Step 2** Choose **Cost Analysis**.
- Step 3** Configure filters on the **Cost Analysis** page.  
For details about the filters, see [Viewing Cost Analyses](#).
- Step 4** Click **Save Report**.
- Step 5** Specify a name for the report, and click **OK**.

----End

## Copying a Report

- Step 1** Log in to Cost Center.
- Step 2** Choose **Reports > Analysis Reports**.
- Step 3** Locate the report you want to copy and click **Copy** in the **Operation** column.
- Step 4** Specify a name for the report, and click **OK**.
- Step 5** Configure filters on the **Cost Analysis** page and click **Save Report**.

----End

## Viewing a Report

- Step 1** Log in to Cost Center.
- Step 2** Choose **Reports > Analysis Reports**.
- Step 3** Click the name of a report to go to the **Cost Analysis** page and view the report details.



 **NOTE**

- The most recent cost data is displayed based on the filters configured in the report.
- You can also modify and save the filters.

----End

## Deleting a Report

**Step 1** Log in to Cost Center.

**Step 2** Choose **Reports > Analysis Reports**.

**Step 3** Locate the report you want to delete and click **Delete** in the **Operation** column.

 **NOTE**

Preconfigured reports cannot be deleted.

**Step 4** Click **Yes** in the displayed dialog box.

----End

## 15.2 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 are allowed for an account.

### Creating a Budget Report

**Step 1** Log in to Cost Center.

**Step 2** Choose **Reports > 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**.

Budget Report / Create Budget Report

1 Set your budget report — 2 Specify delivery settings — 3 Confirm information

**Delivery Settings**

Report Frequency **Daily** Weekly Monthly

**Report Recipients(1/50)**

Recipients [Redacted]

+ Select From Contacts

Previous **Next** Cancel

**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

# 16 Exporting Cost Details

---

## 16.1 Export to Local Directory

### 16.1.1 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 about 24 to 48 hours before some data is 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** Log in to Cost Center.
- Step 2** Choose **Cost Insights > Cost Details Export**.
- Step 3** On the **Export to Local Directory** page, set the cost type, time range, data scope, and service type. Then, click **Export**.

Export to Local Directory
Export to OBS

Cost Type

Original costs ▼

Time Range

2024/12 – 2024/12 📅

Data From

My account ▼

Service Type

All ▼

Quantity

1,441

Export

**NOTE**

Cost details are refreshed every 24 hours, and it may take about one day 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 %_AmortizedCost DetailByUsage_Y YYY-MM	Jack_AmortizedCost DetailByUsage_2022 -03_2022-05_20220 519022405_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 <a href="#">Fields in Exported Amortized Cost Details</a> .

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 <a href="#">Fields in Exported Original Cost Details</a> .

----End

## 16.1.2 Export to Local Directory - Fields for Amortized Costs

**Table 16-1** Fields in exported amortized cost details

Field	Description
Month	The month costs are amortized over. For details about cost amortization rules, see <a href="#">Cost Amortization Rules</a> .
Enterprise Project	The enterprise project selected when you purchase a cloud service. If no enterprise project is selected, <b>default</b> is displayed as the value for this field. If the enterprise project management is not supported for the cloud service, <b>Not categorized</b> is presented.
Enterprise Project ID	ID of the specified enterprise project. If no enterprise project is selected during purchases, <b>0</b> 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
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: 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. <ul style="list-style-type: none"> <li>● Yearly/Monthly</li> <li>● Pay-per-Use</li> </ul>

Field	Description
Bill Type	<p>Type of a billing item.</p> <ul style="list-style-type: none"> <li>● Expenditure-purchase: expenditures for purchased yearly/monthly products</li> <li>● Expenditure-renewal: expenditures for yearly/monthly subscriptions that you manually renew</li> <li>● Expenditure-use: expenditures for pay-per-use resources</li> <li>● Expenditure-auto-renewal: expenditures for yearly/monthly subscriptions that are automatically renewed</li> <li>● Expenditure-hourly billing: expenditures for reserved instances that are billed hourly</li> <li>● Expenditure-monthly payment: expenditures for services that are paid for on a monthly basis</li> <li>● Expenditure-unsubscription service charge: handling fees upon unsubscription</li> <li>● Expenditure-month-end deduction for support plan: expenditures for the support plan at the end of a month</li> <li>● Expenditure-change: expenditures for changing the specifications of yearly/monthly products</li> <li>● Expenditure-tax: taxes for yearly/monthly subscriptions and pay-per-use products</li> <li>● 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</li> <li>● Refund-unsubscription: expenditures for a yearly/monthly subscription that is unsubscribed from or that specifications were downgraded for</li> <li>● Refund-change: expenditures for a yearly/monthly subscription that specifications were downgraded for</li> <li>● Refund-change to pay-per-use: refunds generated when a yearly/monthly subscription is changed to pay-per-use billing</li> <li>● Refund-tax: taxes refunded when a yearly/monthly subscription is unsubscribed from or that specifications were downgraded for</li> <li>● Adjustment-compensation: amount compensated by Huawei Cloud</li> <li>● 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.</li> <li>● Adjustment-compensation tax: taxes for Huawei Cloud compensations</li> <li>● Adjustment-deduction tax: taxes for Huawei Cloud account adjustments</li> </ul>

Field	Description
Order No.	The unique identifier of a yearly/monthly 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.small.1.linux
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	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.



Field	Description
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 <b>Current Month Amortized</b> .
Cost 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

### 16.1.3 Export to Local Directory - Fields for Original Costs

**Table 16-2** 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, <b>default</b> is displayed as the value for this field. If the enterprise project management is not supported for the cloud service, <b>Not categorized</b> is presented.
Enterprise Project ID	ID of the specified enterprise project. If no enterprise project is selected during purchases, <b>0</b> 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.)

Field	Description
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: 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. <ul style="list-style-type: none"> <li>● Yearly/Monthly</li> <li>● Pay-per-Use</li> </ul>

Field	Description
Bill Type	<p>The type of a billing item.</p> <ul style="list-style-type: none"> <li>● Expenditure-purchase: expenditures for purchased yearly/monthly products</li> <li>● Expenditure-renewal: expenditures for yearly/monthly subscriptions that you manually renew</li> <li>● Expenditure-use: expenditures for pay-per-use resources</li> <li>● Expenditure-auto-renewal: expenditures for yearly/monthly subscriptions that are automatically renewed</li> <li>● Expenditure-hourly billing: expenditures for reserved instances that are billed hourly</li> <li>● Expenditure-monthly payment: expenditures for services that are paid for on a monthly basis</li> <li>● Expenditure-unsubscription service charge: handling fees upon unsubscription</li> <li>● Expenditure-month-end deduction for support plan: expenditures for the support plan at the end of a month</li> <li>● Expenditure-change: expenditures for changing the specifications of yearly/monthly products</li> <li>● Expenditure-tax: taxes for yearly/monthly subscriptions and pay-per-use products</li> <li>● 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</li> <li>● Refund-unsubscription: expenditures for a yearly/monthly subscription that is unsubscribed from or that specifications were downgraded for</li> <li>● Refund-change: expenditures for a yearly/monthly subscription that specifications were downgraded for</li> <li>● Refund-change to pay-per-use: refunds generated when a yearly/monthly subscription is changed to pay-per-use billing</li> <li>● Refund-tax: taxes refunded when a yearly/monthly subscription is unsubscribed from or that specifications were downgraded for</li> <li>● Adjustment-compensation: amount compensated by Huawei Cloud</li> <li>● 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.</li> <li>● Adjustment-compensation tax: taxes for Huawei Cloud compensations</li> </ul>

Field	Description
	<ul style="list-style-type: none"> <li>Adjustment-deduction tax: taxes for Huawei Cloud account adjustments</li> </ul>
Order No.	Unique ID of a yearly/monthly 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	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	<p>A group of codes used to describe the specifications of a cloud service.</p> <p>Example: s3.small.1.linux</p>
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	<p>The code of a usage type.</p> <p>Example: Duration</p>
Usage Type	<p>The way a pay-per-use cloud service is billed.</p> <p>Example: Duration:Second (Stream computing:Stream computing:Duration)</p>
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 <b>0.0000000009</b> .
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.
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

## 16.2 Export to OBS (OBT)

### 16.2.1 Exporting Cost Details to OBS

Cost Center provides you with cost and usage details with cost allocation identifiers. You can create OBS export tasks to periodically export the details files to OBS buckets.

#### 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.

 **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** Log in to Cost Center.

**Step 2** Choose **Cost Insights > Cost Details Export**.

**Step 3** On the **Export to OBS** page, click **Create Export Task**.

**Step 4** Configure the OBS export task information and click **Save**.

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 cost details files.	cost
Export content	Cost Type	Select original costs or amortized costs from the drop-down list.	Amortized costs
	Granularity	Determine at which granularity you want to summarize cost details. Currently, only <b>Daily</b> is supported.	Daily

Category	Field	Description	Example
	Start Billing Cycle	Specify the billing cycle from which you want to start exporting the cost details files to OBS. The default billing cycle is the current month. If you select a start billing cycle, Cost Center will push the cost details from that billing cycle to the current month to your OBS bucket. For the data scope allowed for historical billing cycles, see <a href="#">Data Scope</a> .	Current billing cycle
	Customize Columns	The default value is <b>Yes</b> . <b>Yes:</b> Include <b>Resource Tag</b> (also referred to as <b>Cost Tag</b> ) and <b>Cost Category</b> as fixed columns. Their values are presented by key-value pairs. <b>No:</b> Include each key of a cost tag or cost category as a separated column. The change of any key will change the file columns.	Yes
File Settings	Storage Method	Select the method for storing the exported cost details file. There are two methods: <ul style="list-style-type: none"> <li>• <b>Creating a new file:</b> 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. <ul style="list-style-type: none"> <li>- The file storage directory will be in the format of <i>{Bucket directory prefix}/{Task name}/{Billing cycle}/{File push time}/{File name}</i>, for example, <b>cost/test/202310/20231016T092614Z/amortized_cost_202310_000001.zip</b>.</li> </ul> </li> <li>• <b>Overwriting existing files:</b> 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 <i>{Bucket directory prefix}/{Task name}/{Billing cycle}/{File name}</i>, for example, <b>cost/test/202310/amortized_cost_202310_000001.zip</b>.</li> </ul>	Creating a new file
	Update Method	Currently, only <b>Auto update</b> 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

----End

## Viewing an OBS Export Task

**Step 1** Log in to Cost Center.

**Step 2** Choose **Cost Insights > Cost Details Export**.

**Step 3** On the **Export to OBS** page, view the list of OBS export tasks.

Task Name	OBS Bucket	Bucket Directory Prefix	Cost Type	Granularity	Created	Updated	Operation
cost-sub-amort-new-01	cost-sub-amort	cost-sub-amort	Amortized costs	Daily	Dec 16, 2023 18:07:28 GMT+0...	Jun 27, 2024 07:26:45 GMT+0...	<a href="#">Edit</a> <a href="#">Delete</a>

Cost Details: Default content

Storage Method: Creating a new file

Update Method: Auto update

Start Billing Cycle: Dec 2023

Integration Platforms: --

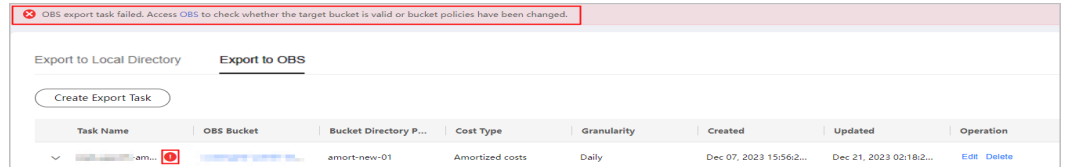
Bucket Directory Example: cost-sub-amort/.../new-01/202312/20231216T100728Z/amortized\_cost\_202312\_000001.zip

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	Granularity at which you want to summarize cost details. Currently, only <b>Daily</b> is supported.
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 <b>Updated</b> 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 Matrixes](#).

### 16.2.2 Export to OBS - Fields for Amortized Costs

Field	Description
Time Range	Time range over which costs are amortized. For example, if <b>Granularity</b> is set to <b>Daily</b> to export files to OBS, the value of <b>Time Range</b> will be the period of days over which costs are amortized, for example, <b>2023-08-23 00:00:00 GMT +08:00/2023-08-24 00:00:00 GMT+08:00</b> .
Billing Cycle	Billing cycle in which original costs for resources are generated.
Linked Account	The Huawei Cloud account that the cloud resources belong to.

Field	Description
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.small.1.linux
Specifications	Resource specifications. Example: General computing  si3.2xlarge.2 8vCPUs 16GB linux
Region Code	The code of a region. Example: cn-north-5

Field	Description
Region	<p>A cloud service region that provides public cloud service resources independently and serves a large geographical area.</p> <p>Region: CN North-Beijing1</p>
AZ	<p>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.</p> <p>Example: AZ 1</p>
Billing Mode	<p>Billing mode. The options are as follows:</p> <ul style="list-style-type: none"> <li>• Yearly/Monthly</li> <li>• Pay-per-Use</li> </ul>

Field	Description
Bill Type	<p>The type of a billing item.</p> <ul style="list-style-type: none"> <li>● Expenditure-purchase: expenditures for purchased yearly/monthly subscriptions</li> <li>● Expenditure-renewal: expenditures for yearly/monthly subscriptions that you manually renew</li> <li>● Expenditure-use: expenditures for pay-per-use resources</li> <li>● Expenditure-auto-renewal: expenditures for yearly/monthly subscriptions that are automatically renewed</li> <li>● Expenditure-hourly billing: expenditures for reserved instances that are billed hourly</li> <li>● Expenditure-monthly payment: expenditures paid by month</li> <li>● Expenditure-unsubscription service charge: handling fees upon unsubscription</li> <li>● Expenditure-month-end deduction for support plan: expenditures paid at the end of a month for support plans</li> <li>● Expenditure-change: expenditures for changing the specifications of yearly/monthly subscriptions</li> <li>● Expenditure-tax: taxes for yearly/monthly subscriptions and pay-per-use products</li> <li>● 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</li> <li>● Refund-unsubscription: expenditures for a yearly/monthly subscription that is unsubscribed from or that specifications were downgraded for</li> <li>● Refund-change: expenditures for a yearly/monthly subscription that specifications were downgraded for</li> <li>● Refund-change to pay-per-use: expenditures for a yearly/monthly subscription when it is changed to pay-per-use</li> <li>● Refund-tax: taxes refunded when a yearly/monthly subscription is unsubscribed from or that specifications were downgraded for</li> <li>● Adjustment-compensation: expenditures compensated by Huawei Cloud</li> <li>● 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.</li> <li>● Adjustment-compensation tax: taxes for Huawei Cloud compensations</li> <li>● Adjustment-deduction tax: taxes for Huawei Cloud account adjustments</li> </ul>

Field	Description
Order No.	The unique identifier of a yearly/monthly 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.
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.

Field	Description
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 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 .

### 16.2.3 Export to OBS - Fields for Original Costs

Field	Description
Month	The month that the cost data you are exporting belongs to.
Time Range	Time range which the billing cycle belongs to. For example, if <b>Granularity</b> is set to <b>Daily</b> to export files to OBS, the value of <b>Time Range</b> will be the billing date of the costs, for example, <b>2023-08-01 00:00:00 GMT+08:00/2023-08-31 23:59:59 GMT+08:00</b> .
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.small.1.linux
Specifications	Resource specifications. Example: General computing  s3.2xlarge.2 8vCPUs 16GB 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: <ul style="list-style-type: none"> <li>Yearly/Monthly</li> <li>Pay-per-Use</li> </ul>

Field	Description
Bill Type	<p>The type of a billing item.</p> <ul style="list-style-type: none"> <li>● Expenditure-purchase: expenditures for purchased yearly/monthly subscriptions</li> <li>● Expenditure-renewal: expenditures for yearly/monthly subscriptions that you manually renew</li> <li>● Expenditure-use: expenditures for pay-per-use resources</li> <li>● Expenditure-auto-renewal: expenditures for yearly/monthly subscriptions that are automatically renewed</li> <li>● Expenditure-hourly billing: expenditures for reserved instances that are billed hourly</li> <li>● Expenditure-monthly payment: expenditures paid by month</li> <li>● Expenditure-unsubscription service charge: handling fees upon unsubscription</li> <li>● Expenditure-month-end deduction for support plan: expenditures paid at the end of a month for support plans</li> <li>● Expenditure-change: expenditures for changing the specifications of yearly/monthly subscriptions</li> <li>● Refund-unsubscription: expenditures for a yearly/monthly subscription that is unsubscribed from or that specifications were downgraded for</li> <li>● Refund-change: expenditures for a yearly/monthly subscription that specifications were downgraded for</li> <li>● Refund-change to pay-per-use: expenditures for a yearly/monthly subscription when it is changed to pay-per-use</li> <li>● Adjustment-compensation: expenditures compensated by Huawei Cloud <ul style="list-style-type: none"> <li>– 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.</li> </ul> </li> </ul>
Order No.	The unique identifier of a yearly/monthly 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	<p>The code of a usage type.</p> <p>Example: Duration</p>
Usage Type	<p>The way a pay-per-use cloud service is billed.</p> <p>Example: Duration:Second (Stream computing:Stream computing:Duration)</p>



Field	Description
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.
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.
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 .

# 17 Preferences

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## Cost Amortization

### 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.

## ECS Resource Optimization

When this function is enabled, Cost Center will monitor your historical expenditures and resource usage, identify idle resources, check the resource status, and provide optimization recommendations to help you find cost saving opportunities. For details, see [Overview of Resource Optimization](#).

## 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](#).

# 18 Export History

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## 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**, and **Budgets** pages, you can obtain the exported files on the **Export History** page.

## Procedure

**Step 1** Log in to Cost Center.

**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

# 19 Cost Management for Enterprises

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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
- Cost Center provides member accounts only with the cost and usage data. 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.

## Budgets

- A master account can select member accounts from **Linked Account** to track their cost and usage data. For details, see [Creating a Budget](#).
- 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 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. 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 [Analysis Reports](#). 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.
- 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. 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. 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.

## 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.

## Preferences

- 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 .

# 20 Permissions

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## 20.1 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 20-1](#) lists all the system-defined roles for Cost Center.

**Table 20-1** 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 20-2** lists the common operations supported by system-defined permissions for Cost Center.

**Table 20-2** 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
Evaluating cost optimization option of changing pay-per-use to yearly/monthly	Supported	Supported	Supported
Viewing cost tags	Supported	Supported	Supported

<b>Function</b>	<b>BSS Administrator</b>	<b>BSS ReadonlyAccess</b>	<b>BSS FinanceAccess</b>
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 cost optimization summary	Supported	Supported	Supported
Viewing the percentage of costs that are allocated	Supported	Supported	Supported
Viewing maturity scores	Supported	Supported	Supported
Viewing bills, monthly costs, usage details, cost management, expenditures and revenues, and cost trends	Supported	Supported	Supported
Viewing budget information, including the budget list and budget details	Supported	Supported	Supported
Viewing parameter settings for Cost Center	Supported	Not supported	Not supported
Viewing cost category information, including the cost category list and the details of each cost category	Supported	Supported	Supported



<b>Function</b>	<b>BSS Administrator</b>	<b>BSS ReadonlyAccess</b>	<b>BSS FinanceAccess</b>
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
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

Function	BSS Administrator	BSS ReadonlyAccess	BSS FinanceAccess
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 20-3](#).

**Table 20-3** 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.

Fine-Grained Permissions Policy	Description
bss:costreport:update	<p>Manages cost reports, including creating, modifying, and deleting custom reports.</p> <p>If this permission is granted to an IAM user, you must also grant the user the <b>bss:costreport:view</b> permission.</p>
bss:budget:update	<p>Manages budgets, including creating, modifying, and deleting budgets.</p> <p>If this permission is granted to an IAM user, you must also grant the user the <b>bss:budget:view</b> permission.</p>
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:costtag:view	Views cost tags.
bss:costtag:update	<p>Activates or deactivates cost tags.</p> <p>If this permission is granted to an IAM user, you must also grant the user the <b>bss:costtag:view</b> permission.</p>
bss:costunit:update	<p>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 <b>bss:costunit:view</b> and <b>bss:costanalysis:view</b> permissions.</p>
bss:costunit:delete	<p>Deletes cost categories. If this permission is granted to an IAM user, you must also grant the user <b>bss:costunit:view</b> permission.</p>
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	<p>Creates cost anomaly notifications.</p> <p>If this permission is granted to an IAM user, you must also grant the user the <b>bss:monitoralert:view</b> permission.</p>

Fine-Grained Permissions Policy	Description
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 <b>Preferences</b> page.
bss:costpreferences:delete	Disables functions on the <b>Preferences</b> page.
bss:recommendation:view	Views cost optimization summary.
bss:recommendationsub:view	Views cost optimization subscriptions.
bss:recommendationsub:update	Configures cost optimization subscriptions.
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.

## 20.2 Creating a User Group and Assigning Permissions

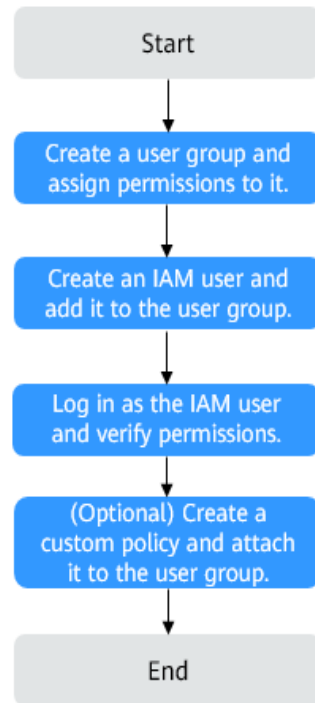
This section describes how to use a group to grant permissions for the Cost Center to a user. [Figure 20-1](#) shows the process for granting permissions.

### 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 20-1 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 20-3](#).

## 20.3 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"
    }
  ]
}
```

# 21 Quotas and Constraints

## Cost Analysis

Maximum number of items allowed for each filter	50 Under the <b>Cost Category</b> or <b>Cost Tag</b> 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 <b>Cost Category</b> or <b>Cost Tag</b> 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

## 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
---	----



# 22 Auditing

## 22.1 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 22-1** 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	exportResourcePackageUtilizationAnalysis
Exporting resource package coverage and detailed analyses	resourcePackage	exportResourcePackageCoverageAnalysis
Exporting resource package purchase recommendations	recommendation	exportResourcePackageRecommendations
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

## 22.2 Viewing Audit Logs

For details about how to view audit logs, see [Querying Real-Time Traces](#).