Cost Center

Getting Started

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1 Getting Started with Cost Center

This section describes how to use Cost Center for cost analysis and optimization.

Confirming Your Cost Allocation Method

There are three ways to allocate cost data in Cost Center: Organization Management, Cost Tags, and Enterprise Projects. You are advised to decide which method you plan to use as early as possible. For details, see **Confirming Your Cost Allocation Method**.

Using Grouping Tools to View Costs

- **Viewing Costs by Linked Account**

  If you are using an enterprise master account, you can view your own costs and the costs of your member accounts by linked account.

- **Viewing Costs by Enterprise Project**

  If you have enabled the Enterprise Project function, you can view your costs by enterprise project.

- **Viewing Costs by Cost Tag**

  If you have created and activated cost tags, you can view your costs by cost tag.

- **Viewing Costs By Cost Category**

  If **Linked Account**, **Enterprise Project**, and **Cost Tags** cannot meet your cost allocation requirements, you can use cost categories to define cost splitting rules and then view your costs based on these rules.

- **Viewing Split CDN Costs**

  If you have monthly-settled Content Delivery Network (CDN) expenditures billed by traffic, you can view your costs by domain name.

Making Cost Analysis to Explore Costs and Usage

You can track costs and usage in the following ways:

- **Preconfigured Analysis Reports**

Cost Center comes with several report types preconfigured with commonly used data display filters. You can explore your cost and usage data in analysis reports.

- **Custom Analysis Reports**

  You can save your analysis results in a custom report so that you can run the same analysis again later if needed.

- **Cost Tags**

  You can use cost tags to manage resources and activate them as needed to track your cloud costs.

- **Cost Details**

  Cost Center provides you with amortized cost details, which can be exported as needed for further analysis.

- **Forecasting**

  Cost and usage can be forecasted based on the cost analysis.

Creating Forecasts and Budgets to Track Costs and Usage

- **Creating Budgets and Configuring Alerts**

  After Forecasting is enabled, you can view forecasted costs and usage in the cost analyses, and set budget alerts based on the forecasting results.

- **Using Reports to Track Your Budget**

  You can create a budget report so that Cost Center will periodically email the report to you on a schedule that you configured.

Enabling Cost Anomaly Detection to Identify Anomalies

- **Enabling Cost Anomaly Detection to Identify Anomalies**

  After you create a monitor, Cost Center applies its detection rules to identify cost anomalies and report them in a timely manner.

Changing Billing Modes to Optimize Costs

You can optimize your costs in the following ways:

- **Evaluating Cost Optimization Option of Changing the Billing Mode from Pay-per-Use to Yearly/Monthly**

  If you want to use pay-per-use products for a long term, you might want to consider changing the billing mode from pay-per-use to yearly/monthly to find cost-saving opportunities. With this option, Cost Center analyzes the usage of your pay-per-use Elastic Cloud Server (ECS), Elastic Volume Service (EVS), and Relational Database Service (RDS) resources and identifies places where you can save money by changing the billing mode from pay-per-use to yearly/monthly.

- **Analyzing RI Utilization and Coverage**

  Cost Center analyzes the utilization of reserved instances (RIs) you purchased. If your RIs are underutilized, check if you have purchased too many. If the coverage of your RIs is too low, check if you have under-purchased RIs. You can adjust your plan on purchasing RIs in the following period based on the analysis results.

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2 Confirming Your Cost Allocation Method

Before you start managing costs, confirm your cost allocation method. The chosen cost allocation method helps map Huawei Cloud expenditures onto your organizational structure, including financial and business units, and various applications. This makes it easier to track costs and gain invisibility to your costs.

There are several ways to allocate cost data in Cost Center: **Organization Management**, **Cost Tags**, **Enterprise Project Management**, and **Cost Categories**. The cost data will be used by a range of Cost Center tools, including those designed for cost analysis and budget management.

You are advised to plan and activate cost tags as early as possible because they take effect only for cost data generated after tag activation.

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3 Using Grouping Tools to View Costs

3.1 Introduction

Huawei Cloud Cost Center provides various tools for you to group your costs in different ways. You can experiment with different tools to find out which way works best for your needs.

Supported Grouping Tools

1. Basic tools: You can view your costs by linked account, enterprise project, or cost tag.

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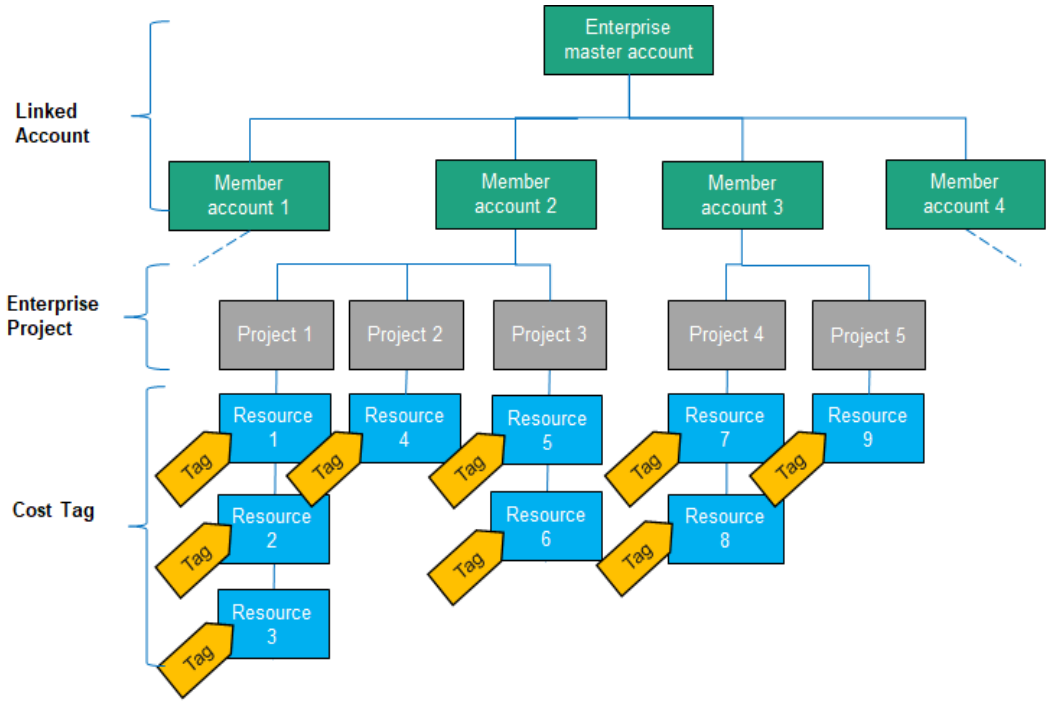

- **Viewing Costs by Linked Account**
- **Viewing Costs by Enterprise Project**
- **Viewing Costs by Cost Tag**

2. Advanced tools: You can also use cost categories to group and split your costs. If you have purchased monthly-settled CDN billed by traffic, you can split your CDN traffic costs by domain name.
   - **Viewing Costs By Cost Category**
   - **Viewing Split CDN Costs**

Recommendations

- **User-based cost allocation**: Costs are attributed to the actual user.

  For example, if you are using an enterprise member account and your master account is the payer account, then the relevant costs are still considered to be yours.
- **Amortization-based cost allocation**: Costs are amortized over a set period of time.

  Amortized costs reflect the amounts prepaid for yearly/monthly subscriptions and reserved instances, which are amortized on a daily basis. For example, if you purchase a one-year cloud service at $365 USD, the amortized cost per day is $1 USD.
- **Cost splitting**: Shared costs are split based on certain rules.
  - Proportionally: Your costs are allocated in proportion to the weight of each target.

    For example, if the cost of target B is $800 USD and that of target C is $200 USD, you can split costs based on a set proportion, such as B: C = 4:1. Then 80% of the costs will be allocated to target B and 20% to target C.

- Evenly: Your costs are allocated evenly across different targets.

  For example, if there are two targets (A and B), then 50% of the costs will be allocated to target A and 50% to target B.
- Custom: Your costs are allocated based on a percentage you define for each target value. The percentages must add up to 100%.

Cost Allocation Details Delivered By Using Different Grouping Tools

When you view cost details by linked account, enterprise project, or cost tag, you can also obtain cost allocation details for further analysis.

Table 3-1 Grouping tools for different cost types and allocation methods

Cost Type	Allocation Method	Grouping Tool	Allocation Details
Original costs	Linked account	Log in to Billing Center, choose **Billing** > **Bills**. Log in to Cost Center, and access the **Cost Analysis** page.	Log in to Billing Center and access the **Billing** > **Bills** > **Bill Details** page. Log in to Cost Center, and access the **Cost Analysis** page to export the monthly original cost details.
	Enterprise project	Log in to Billing Center, choose **Billing** > **Bills**. Log in to Cost Center, and access the **Cost Analysis** page.	Log in to Billing Center and access the **Billing** > **Bills** > **Bill Details** page. Log in to Cost Center, and access the **Cost Analysis** page to export the monthly original cost details.
	Cost tag	Log in to Cost Center, and access the **Cost Analysis** page.	Log in to Billing Center and access the **Billing** > **Bills** > **Bill Details** page. The details contain unstructured data of the original tags. Log in to Cost Center, and access the **Cost Analysis** page to export the monthly original cost details with structured data of the cost tags included.
Amortized costs	Linked account	Log in to Cost Center, and access the **Cost Analysis** page.	Log in to Cost Center, and access the **Cost Analysis** page to export the monthly amortized cost details.
	Enterprise project	Log in to Cost Center, and access the **Cost Analysis** page.	Log in to Cost Center, and access the **Cost Analysis** page to export the monthly amortized cost details.

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Cost Type	Allocation Method	Grouping Tool	Allocation Details
	Cost tag	Log in to Cost Center, and access the **Cost Analysis** page.	Log in to Cost Center, and access the **Cost Analysis** page to export the monthly amortized cost details.

NOTE

You can view and export bill details on the **Bill Details** page. Alternatively, you can subscribe to bill details via OBS or call relevant APIs to obtain bill details.

3.2 Viewing Costs by Linked Account

The enterprise master account can categorize the costs of its member accounts by linked account to manage the accounting of those member accounts.

Step 1: Enabling Enterprise Center

Enterprise Center allows you to associate multiple Huawei Cloud accounts for accounting. You can use a master account to create a hierarchical organization, create and associated member accounts with the master account. The master account then can manage the accounting of all its associated member accounts. For details about how to enable Enterprise Center, see **Enabling Enterprise Center**.

Step 2: Associating with Member Accounts

An enterprise master account associated with member accounts can manage the accounting of these member accounts. For details about how to associate a master account with member accounts, see **Associating Accounts**.

Step 3: Viewing Costs by Linked Account

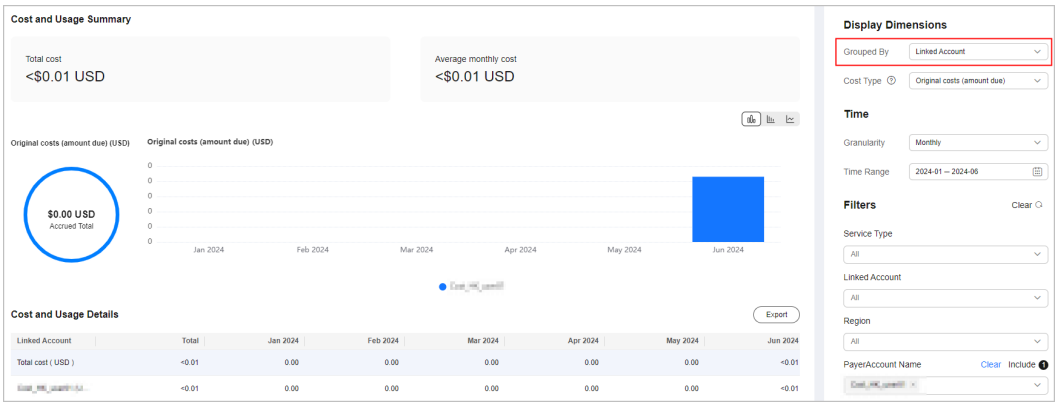
When viewing costs by linked account, you are advised to summarize cost data based on amortized costs.

Step 1 Log in to Cost Center.

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

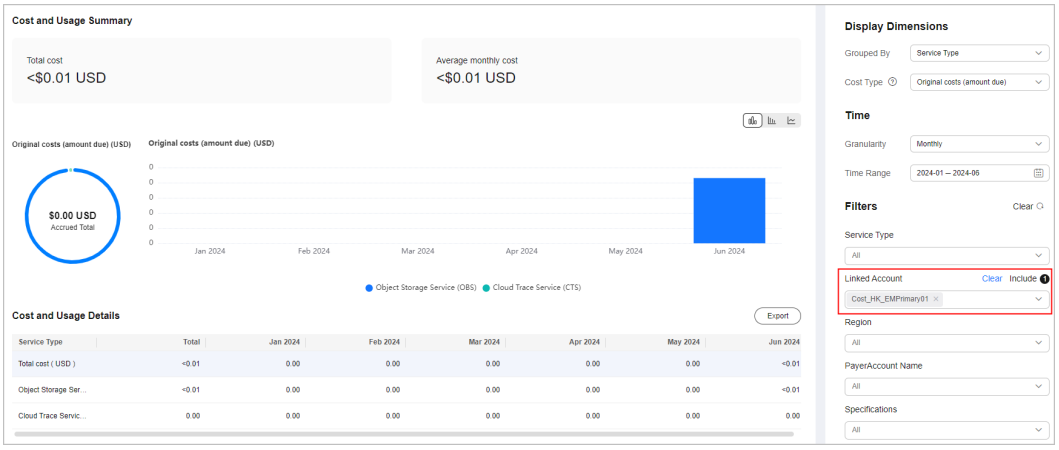
Step 3 Set **Grouped By** to **Linked Account**.

- Group cost data by linked account.



In this figure, the current login account is an enterprise master account, and the cost data for each linked account is displayed in the chart.

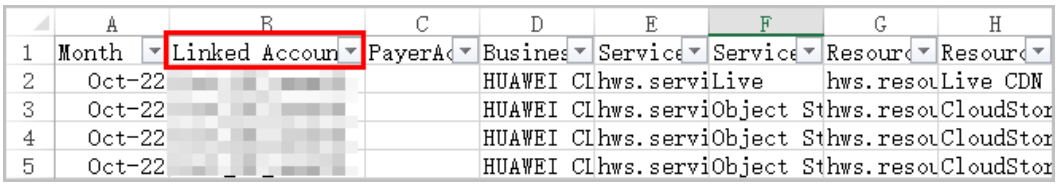
- Filter cost data by linked account.



In this figure, costs for the linked account **Cost_HK_EMPrimary01** are displayed by service type in the chart.

- View cost details by linked account.

  Click **Export** to export the cost details file. In the file, you can view cost details by **Linked Account**.



----End

3.3 Viewing Costs by Enterprise Project

If you have already enabled the Enterprise Project function, you can view your costs by enterprise project. By default, costs are allocated based on the enterprise project selected when you place an order. Therefore, you are advised to plan your enterprise projects as early as possible.

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Step 1: Enabling Enterprise Project

Complete real-name authentication, and then enable Enterprise Project. For details, see **Enabling Enterprise Project**.

Step 2: Creating an Enterprise Project

Create an enterprise project based on your department or business needs. For details, see **Creating an Enterprise Project**.

Step 3: Selecting an Enterprise Project for a New Cloud Resource

Select an enterprise project in the **Enabled** state for a newly purchased cloud resource. The costs of that resource will be allocated to that enterprise project. For details, see **Selecting an Enterprise Project for a New Cloud Resource**.

Step 4: Viewing Costs by Enterprise Project

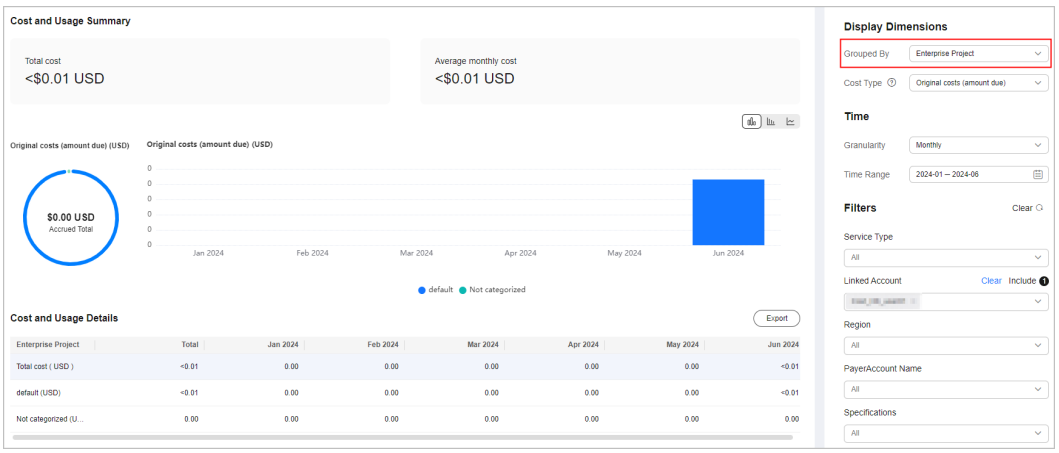
When viewing costs by enterprise project, you are advised to summarize cost data based on amortized costs.

Step 1 Log in to Cost Center.

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

Step 3 Set **Grouped By** to **Enterprise Project**.

- Group cost data by enterprise project.



In this figure, Enterprise Project has been enabled for the current account, and the cost data for each enterprise project is displayed in the chart.

- Filter cost data by enterprise project.

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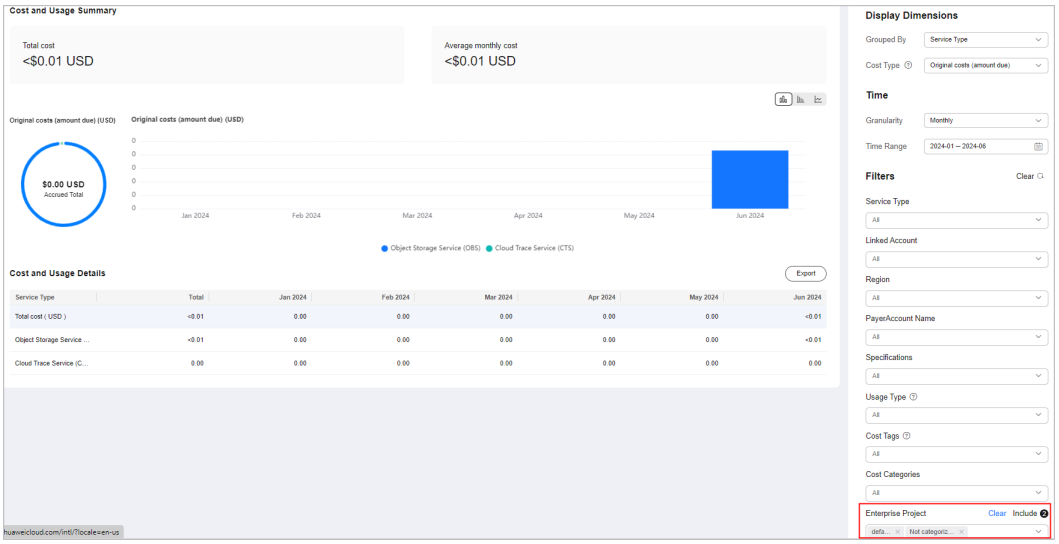
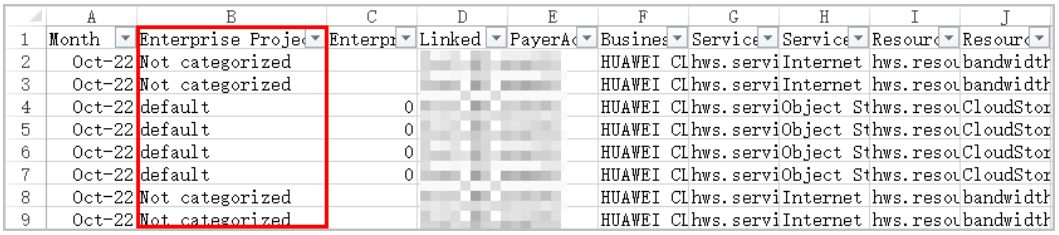


In this figure, costs for the enterprise project **default** or **Not categorized** are displayed by service type in the chart.

- View cost details by enterprise project.

  Click **Export** to export the cost details file for original costs or amortized costs (file name for amortized costs: % *account name* %_AmortizedCostDetailByUsage_YYYY-MM). In the file, you can view cost details by enterprise project.



	A	B	C	D	E	F	G	H	I	J
1	Month	Enterprise Proje	Enterpr	Linked	PayerA	Busines	Service	Service	Resourc	Resourc
2	Oct-22	Not categorized				HUAWEI CL	hws.servi	Internet	hws.resou	bandwidth
3	Oct-22	Not categorized				HUAWEI CL	hws.servi	Internet	hws.resou	bandwidth
4	Oct-22	default	0			HUAWEI CL	hws.servi	Object S	hws.resou	CloudStor
5	Oct-22	default	0			HUAWEI CL	hws.servi	Object S	hws.resou	CloudStor
6	Oct-22	default	0			HUAWEI CL	hws.servi	Object S	hws.resou	CloudStor
7	Oct-22	default	0			HUAWEI CL	hws.servi	Object S	hws.resou	CloudStor
8	Oct-22	Not categorized				HUAWEI CL	hws.servi	Internet	hws.resou	bandwidth
9	Oct-22	Not categorized				HUAWEI CL	hws.servi	Internet	hws.resou	bandwidth

----End

3.4 Viewing Costs by Cost Tag

You or Huawei Cloud assigns tags to your cloud resources so the resources can be sorted in different ways, for example, by purpose, owner, or environment. You can use cost tags to manage resources and activate them to track your cloud costs.

There are two types of cost 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 (recommended): You can create such tags on the Tag Management Service (TMS) console. They will appear on the **Cost Tags** page immediately after being created.

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Step 1: Creating Predefined Tags

Go to the TMS console to create predefined tags. For details about tag naming principles, see **Principles for Naming Tags**. For details about how to create predefined tags, see **Creating Predefined Tags**.

Step 2: Activating Tags

Activate tags by referring to **Activating Cost Tags**. Only the activated tags can be viewed on the **Cost Analysis** and **Budgets** pages, and more.

If you activate some tags, they will be used to organize your resource costs generated thereafter. If you want to use tags to analyze the cost data generated before tag activation, export the bill details file and analyze the data based on the **Resource Tag** field in the file.

Step 3: Adding Tags to Cloud Resources

When adding tags to resources, you can add predefined tags by referring to **Adding Tags to Cloud Resources**.

If you want to associate tags with cloud resources in batches, see **Adding Tags to Resources**.

Step 4: Viewing Costs by Cost Tag

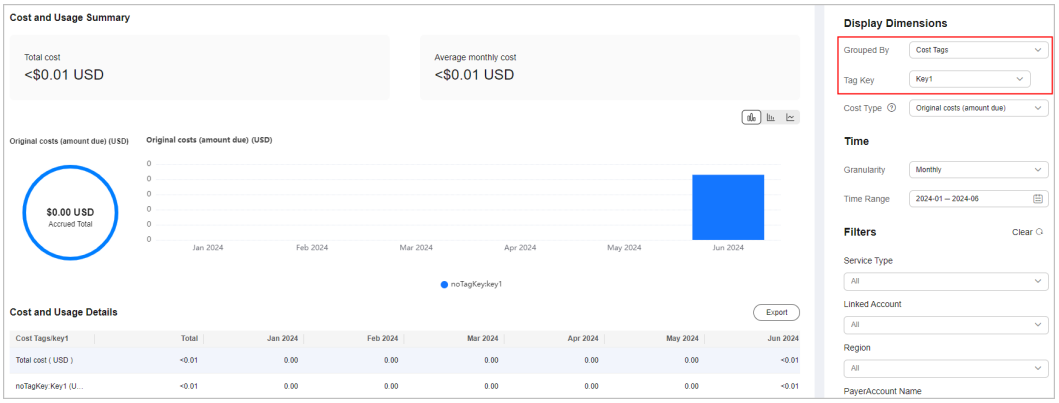
When viewing costs by cost tag, you are advised to summarize cost data based on amortized costs.

Step 1 Log in to Cost Center.

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

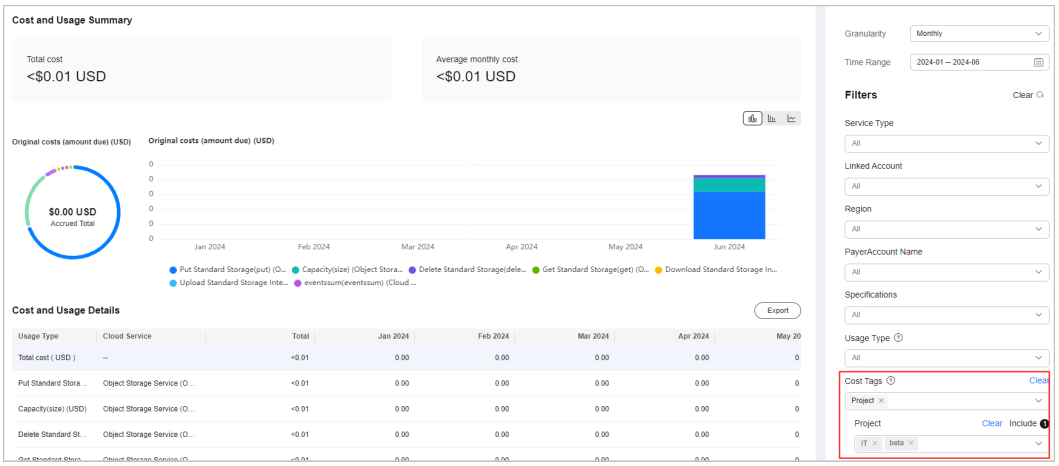
Step 3 Set **Grouped By** to **Cost Tags**.

- Group cost data by cost tag.



In this figure, costs for resources with the tag key **Key1** are displayed in the chart.

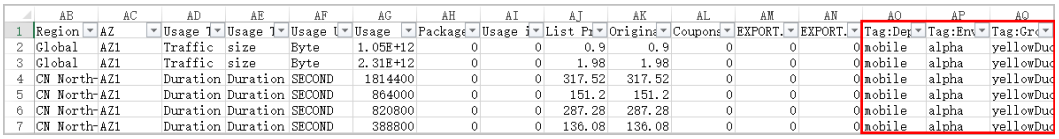
- Filter cost data by cost tag.



In this figure, costs for resources with the tag key **Project** being **IT** and **beta** are displayed by service type in the chart.

- View cost details by cost tag.

  Click **Export** to export the cost details file for original costs or amortized costs (file name for amortized costs: %*account name* %_AmortizedCostDetailByUsage_*YYYY-MM*). In the file, you can view cost details by cost tag.



	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ
1	Region	AZ	Usage T	Usage T	Usage U	Usage	Package	Usage i	List Pr	Origina	Coupons	EXPORT.	EXPORT.	Tag:Dep	Tag:Env	Tag:Gr
2	Global	AZ1	Traffic	size	Byte	1.05E+12	0	0	0.9	0.9	0	0	0	mobile	alpha	yellowDuc
3	Global	AZ1	Traffic	size	Byte	2.31E+12	0	0	1.98	1.98	0	0	0	mobile	alpha	yellowDuc
4	CN North-	AZ1	Duration	Duration	SECOND	1814400	0	0	317.52	317.52	0	0	0	mobile	alpha	yellowDuc
5	CN North-	AZ1	Duration	Duration	SECOND	864000	0	0	151.2	151.2	0	0	0	mobile	alpha	yellowDuc
6	CN North-	AZ1	Duration	Duration	SECOND	820800	0	0	287.28	287.28	0	0	0	mobile	alpha	yellowDuc
7	CN North-	AZ1	Duration	Duration	SECOND	388800	0	0	136.08	136.08	0	0	0	mobile	alpha	yellowDuc

----End

3.5 Viewing Costs By Cost Category

You can use cost categories to group costs by linked account, service type, bill type, cost tag, or enterprise project, or other custom rules you defined.

Example

You need to allocate costs among departments A, B, and C.

1. You can identify the responsible department for most of the costs by using the tags you attached to the specific resources. Suppose department A additionally deploys the CDN service, whose resources cannot be tagged, and all the departments share the Cloud Phone service.

   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.

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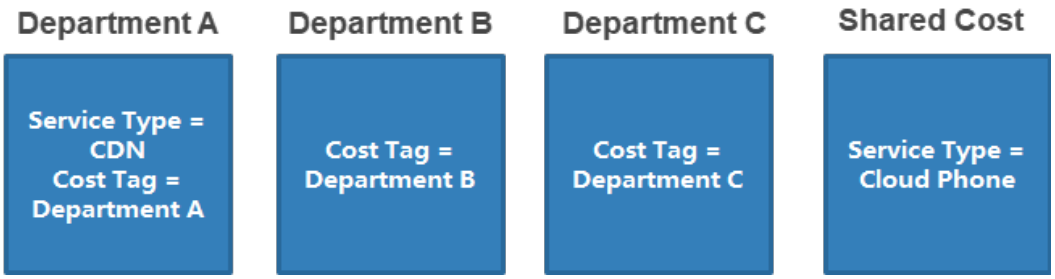


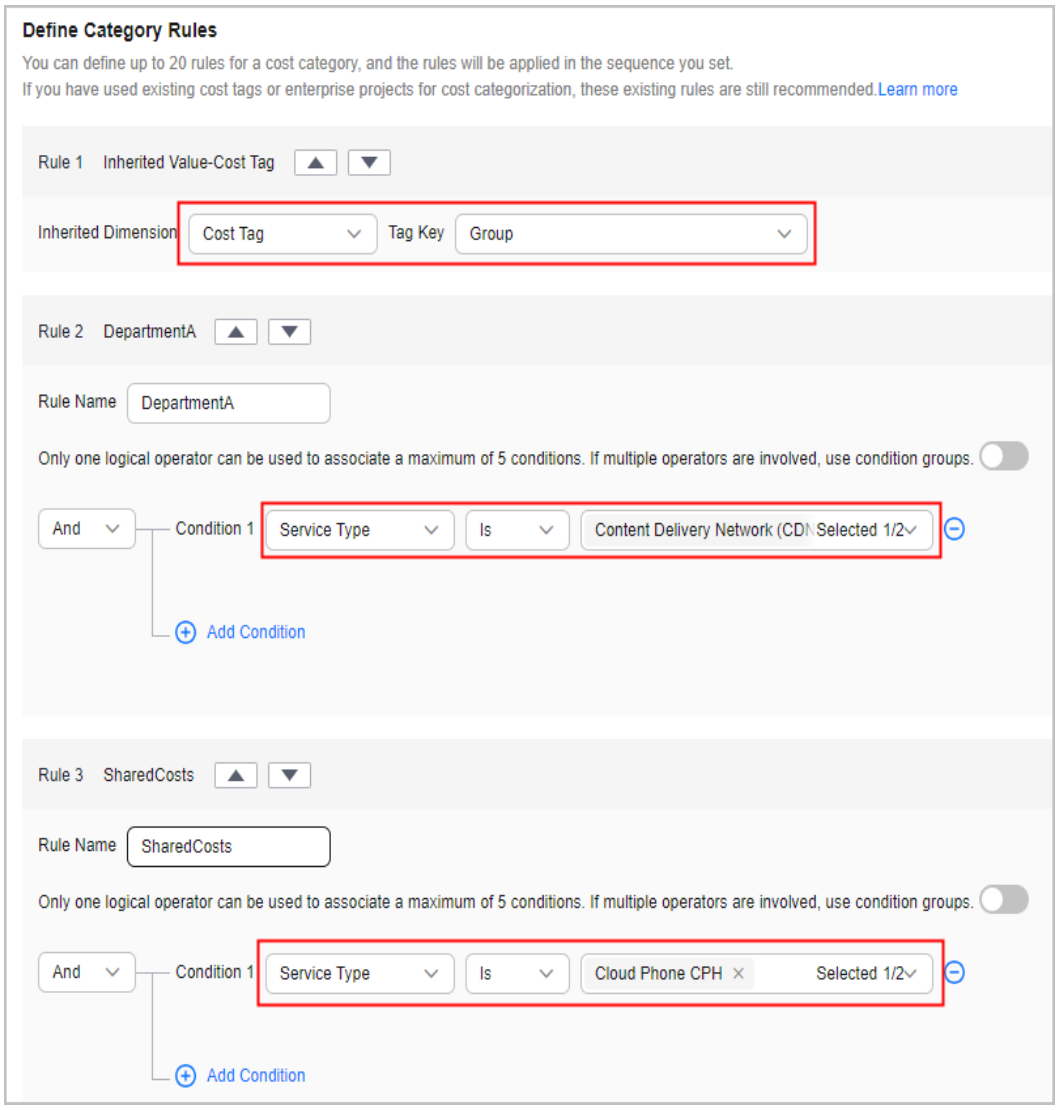
2. You need to create cost categories for further cost allocation. Four hours after the creation, you can define cost splitting rules to split the shared cost across those departments.
   - Select **Custom** for **Allocation Method** to split the unallocated cost, with 50% allocated to Department A, 30% to Department B, and 20% to Department C.
   - Select **Custom** for **Allocation Method** to split the shared cost, with 30% allocated to Department A, 30% to Department B, and 40% to Department C.

Step 1: Creating Cost Categories

Step 1 Log in to Cost Center.

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

Step 3 Create cost categories and configure their basic rules by referring to **Example**.



Step 4 Define cost splitting rules four hours after the creation, by referring to **Example**.

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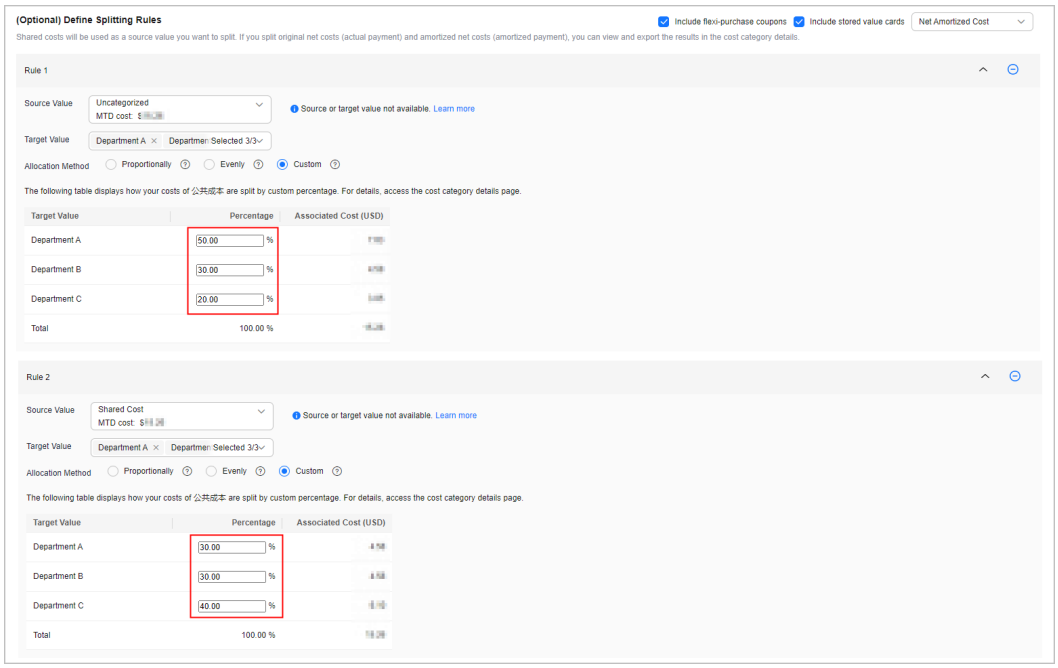


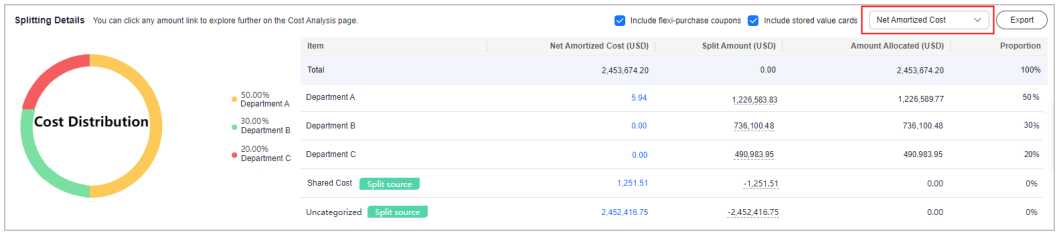
----End

Step 2: Viewing Cost Details

Step 1 Log in to Cost Center.

Step 2 Choose **Cost Categories**.

Step 3 Click the link to the name of a cost category to view the cost details.



In this figure, the net amortized cost is displayed for each proportion.

- **Net Amortized Cost**: the net amortized cost after costs are split based on defined rules
- **Split Amount**: the amount split from the shared cost. If the amount is negative, the corresponding cost is the split source.
- **Amount Allocated**: the amount actually allocated to each tag value. Amount Allocated = Net Amortized Cost + Split Amount
- **Proportion**: the percentage of an allocated cost to the total cost allocated

You can interpret the split amount for each department in the following way:

- Department A

  Net cost amortized by cost tag: $5.94 USD

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Split amount for allocated shared cost and unallocated cost: 30% x 1251.51 + 50% x 2452416.75 = $1,226,583.828 USD

Total amount allocated: 5.94 + 1,226,583.828 = $1,226,589.768 USD

- Department B

  Net cost amortized by cost tag: $0 USD

  Split amount for allocated shared cost and unallocated cost: 30% x 1251.51 + 30% x 2452416.75 = $736,100.478 USD

  Total amount allocated: 0 + 736,100.478 = $736,100.478 USD

- Department C

  Net cost amortized by cost tag: $0 USD

  Split amount for allocated shared cost and unallocated cost: 40% x 1251.51 + 20% x 2452416.75 = $490,983.954 USD

  Total amount allocated: 0 + 490,983.954 = $490,983.954 USD

- Shared cost and unallocated cost

  If they have all been split to Department A, Department B, and Department C, then the amount allocated is 0.

Step 4 View cost details by cost category.

Choose **Cost Details Export**. On the **Export to Local Directory** page, export the original or amortized cost details file (for example, *file name: %Account name %_AmortizedCostDetailByUsage_YYYY-MM*), and then you can view the cost details by cost category.

AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
Usage T	Usage T	Usage U	Usage	Package	Usage i	List Pr	Origina	Coupons	EXPORT.	EXPORT.	Tag:Dep	Tag:Env	Tag:Gro	Cost Unit:CBC
Traffic	size	Byte	2.31E+12	0	0	1.98	1.98	0	0	0	mobile	alpha	yellowDuc	HWCloud
Duration	Duration	SECOND	1814400	0	0	317.52	317.52	0	0	0	mobile	alpha	yellowDuc	HWCloud
Duration	Duration	SECOND	820800	0	0	287.28	287.28	0	0	0	mobile	alpha	yellowDuc	HWCloud
Duration	Duration	SECOND	72000	0	0	320	320	0	0	0	mobile	alpha	yellowDuc	HWCloud
Duration	Duration	SECOND	1900800	0	0	47.52	47.52	0	0	0	mobile	alpha	yellowDuc	HWCloud

----End

3.6 Viewing Split CDN Costs

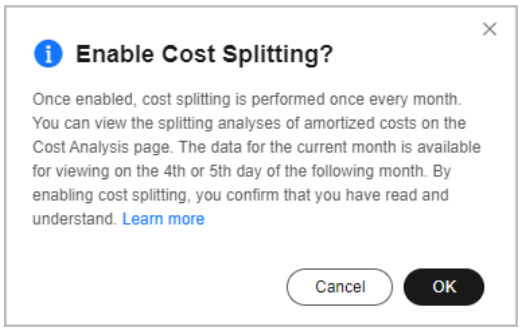
You can split CDN costs by domain name if they are billed by traffic, 95 peak bandwidth, or daily average peak bandwidth. As of May, 2023, in addition to the enterprise project for the domain name, the cost tag associated with the domain name is also displayed in the cost splitting results.

Step 1: Enabling Cost Splitting

Step 1 Log in to Cost Center.

Step 2 Choose **Preferences**.

Step 3 Turn on the toggle for cost splitting. In the displayed dialog box, click **OK**.



----End

Step 2: Viewing Costs by Cost Tag or Enterprise Project for a Specific Domain Name

NOTE

When you enable shared cost splitting, Huawei Cloud processes your cost data once a month, and you can view the splitting result for each month after the 4th day of the following month.

Step 1 Log in to Cost Center.

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

Step 3 Under **Advanced Settings**, select **Amortized costs (amortized amount due)** or **Net amortized costs (amortized actual payments)** from the **Cost Type** drop-down list.

Step 4 View costs by enterprise project for a specific domain name.

1. View the CDN cost allocation from October 2022 to December 2022 by enterprise project.

   In this example, the **prod-hc** enterprise project incurred the highest costs.

2. View the cost data split by domain name in the **prod-hc** enterprise project.

   In this example, the **www.hws.com** domain name incurred the highest costs.

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Step 5 View costs by cost tag for a specific domain name.

1. View the CDN cost allocation for February, 2023 by cost tag.

2. View the cost data split by domain name for resources with the tag value (**value1** as an example).

   In this example, the resources for the domain name **A** incurred the highest costs.

----End

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Step 3: Obtaining CDN Cost Allocation Details

Step 1 Log in to Cost Center.

Step 2 Choose **Cost Analysis**.

Step 3 Click **export records**.

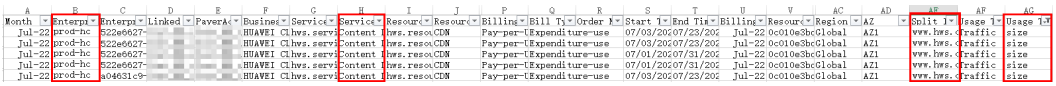
Step 4 Set **Cost Type** to **Amortized costs** and specify the period and scope, and click **OK** to export details of amortized costs.

View the CDN cost allocation details in the file %Account name %_AmortizedCostDetail_*YYYY-MM*.

In this file:

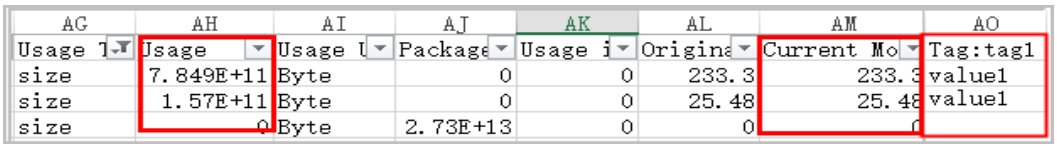
- **Enterprise Project**: enterprise project that incurred the cost
- **Service Type**: Content Delivery Network (CDN)
- **Split Item**: domain name
- **Usage Type**: Currently, you can split costs of CDN resources billed by traffic, 95th percentile bandwidth, or average daily peak bandwidth. The usage type may be traffic, 95th percentile bandwidth, or average daily peak bandwidth in or outside the Chinese mainland.
- **Usage**: monthly CDN usage of CDN
- **Current Month Amortized**: monthly amortized cost of CDN. Current month amortized = CDN usage/monthly usage x Total costs
- **Tag**: cost tag attached to the resources.

Figure 3-1 CDN cost allocation details (part 1)



A	B	C	D	E	F	G	H	I	J	P	Q	R	S	T	U	V	AC	AD	AE	AF	AG
Month	Enterpr	Enterpr	Linked	PayerA	Busines	Service	Service	Resour	Resour	Billing	Bill Ty	Order I	Start T	End Tim	Billing	Resour	Region	AZ	Split I	Usage T	Usage T
Jul-22	prod-hc	522e6627-			.HUAWEI	Clhws.servi	Content I	hws.resou	CDN	Pay-per-U	Expenditure-use		07/03/20	07/23/202	Jul-22	0c010e3bc	Global	AZ1	www.hws.c	Traffic	size
Jul-22	prod-hc	522e6627-			.HUAWEI	Clhws.servi	Content I	hws.resou	CDN	Pay-per-U	Expenditure-use		07/03/20	07/23/202	Jul-22	0c010e3bc	Global	AZ1	www.hws.c	Traffic	size
Jul-22	prod-hc	522e6627-			.HUAWEI	Clhws.servi	Content I	hws.resou	CDN	Pay-per-U	Expenditure-use		07/01/20	07/31/202	Jul-22	0c010e3bc	Global	AZ1	www.hws.c	Traffic	size
Jul-22	prod-hc	522e6627-			.HUAWEI	Clhws.servi	Content I	hws.resou	CDN	Pay-per-U	Expenditure-use		07/01/20	07/31/202	Jul-22	0c010e3bc	Global	AZ1	www.hws.c	Traffic	size
Jul-22	prod-hc	a04631c9-			.HUAWEI	Clhws.servi	Content I	hws.resou	CDN	Pay-per-U	Expenditure-use		07/03/20	07/23/202	Jul-22	0c010e3bc	Global	AZ1	www.hws.c	Traffic	size

Figure 3-2 CDN cost allocation details (part 2)



AG	AH	AI	AJ	AK	AL	AM	AO
Usage T	Usage	Usage U	Package	Usage i	Origina	Current Mo	Tag:tag1
size	7.849E+11	Byte	0	0	233.3	233.3	value1
size	1.57E+11	Byte	0	0	25.48	25.48	value1
size	0	Byte	2.73E+13	0	0	0	

----End

3.7 Mapping Cost Allocation Methods to Cost Category Rules

Example

Suppose you assign cloud services to specific enterprise projects and manage costs by enterprise project. In this case, the enterprise projects are business units that you allocate your costs to, and each of them maps to a cost category rule you defined. When you create a cost category, you can use an existing enterprise project as a category rule.

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A VPC is generally shared by multiple enterprise projects and its costs are regarded as shared costs. You can allocate the shared costs to enterprise projects based on the rules you defined so each enterprise project is accountable for its own costs.

Creating a Cost Category

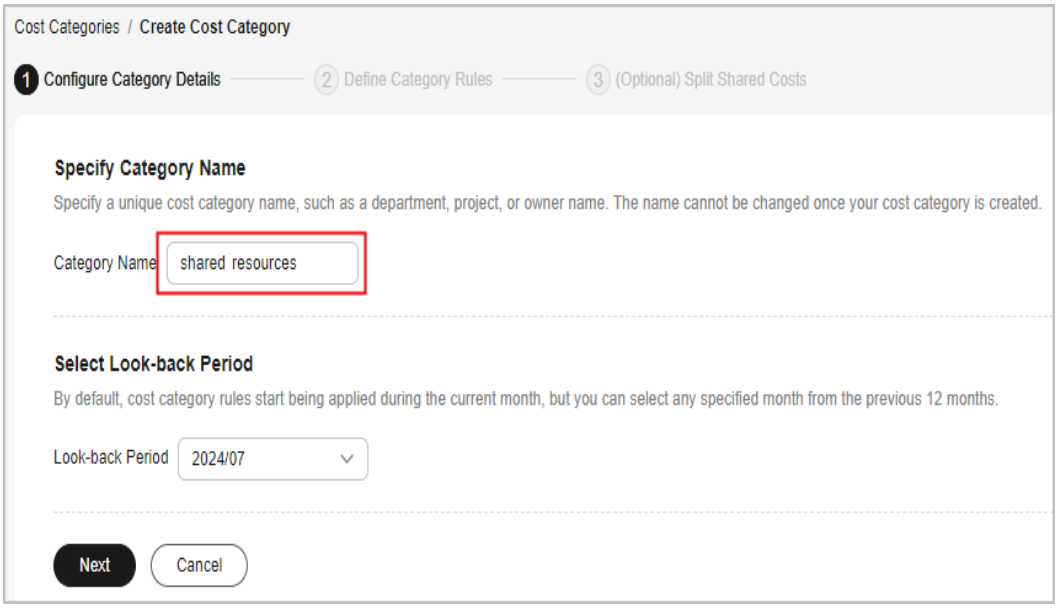
Step 1 Log in to Cost Center.

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

Step 3 Click **Create Cost Category**.

1. Configure basic information.

   You can enter a cost category name (**shared resources** as an example) and set a look-back period for applying the cost category rules.



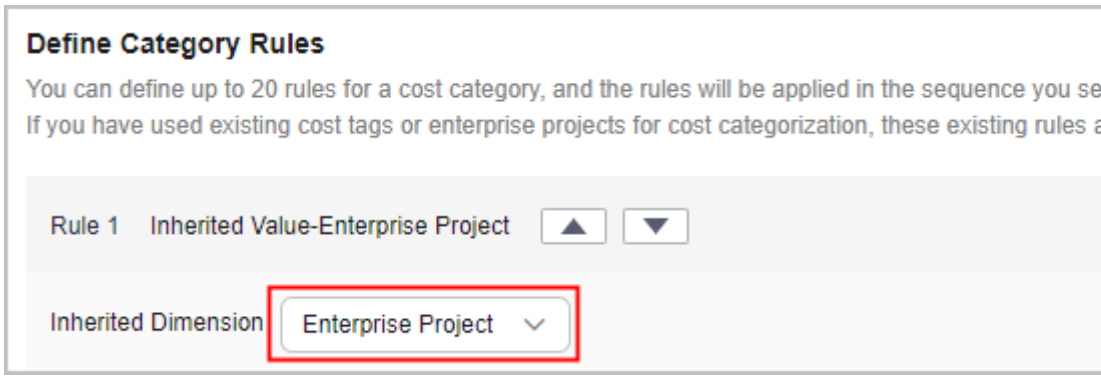
2. Define cost category rules.

   a. You can use an existing cost allocation method (**Enterprise Project** as an example) to quickly create cost category rules. In this example, since you have enterprise projects A, B, and C, the following rules will be created:

      Rule 1: Enterprise project A

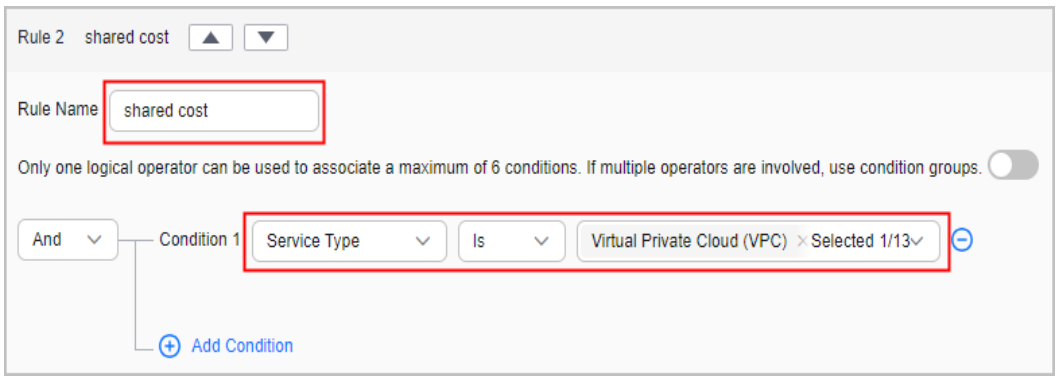
      Rule 2: Enterprise project B

      Rule 3: Enterprise project C



b. Define rules for shared costs.

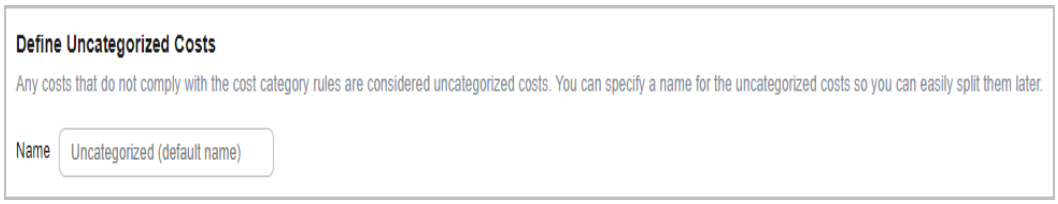
In this example, the rule name is **shared cost** and the condition is that the service type is Virtual Private Cloud (VPC).



c. Define uncategorized costs.

Costs that do not comply with any cost category rules are named **Uncategorized (default name)**.

Generally, if you have finished group costs by using cost category rules, you can treat uncategorized costs as shared costs.



NOTE

Your cost management maturity rating is based on how thoroughly your costs are allocated.

3. Split shared costs.

a. Select a split source. In this example, **Source Value** is set to **shared cost**, which you specified when creating the cost category.

b. Select split targets. In this example, **Target Value** is each of the enterprise projects you used when creating the cost category.

NOTE

You need to set the splitting rules for shared costs 4 hours after you inherit the existing cost allocation methods.

c. Select an allocation method. In this example, the method **Evenly** is selected. You can also select **Custom** to allocate your costs based on a custom percentage for each target value. Then you will see how your costs of shared resources are split across your target values.

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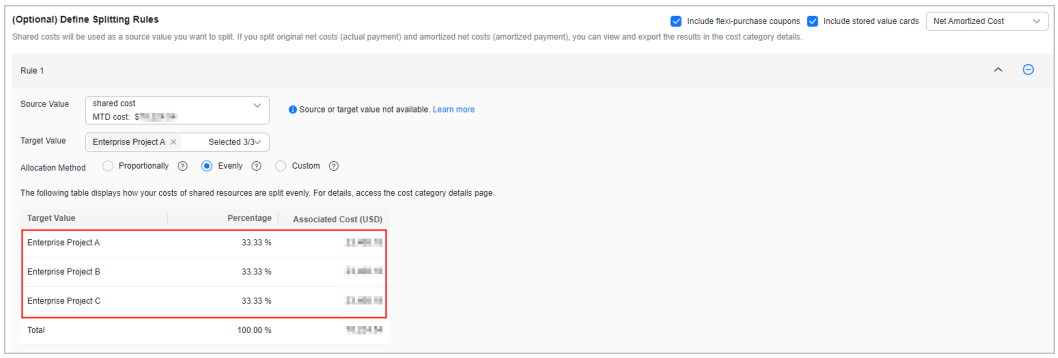


d. You can create multiple splitting rules for your use case. In this example, your uncategorized costs can be treated as shared costs and split to each enterprise project. You can follow the preceding steps to define splitting rules for uncategorized costs.

Step 4 Click **Create**.

----End

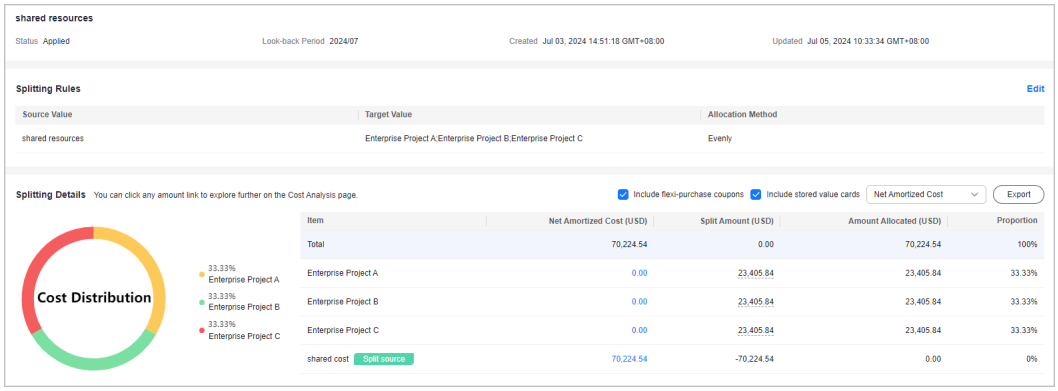
Viewing Cost Breakdowns by Cost Category

Before you start, you must have created a cost category.

Step 1 Log in to Cost Center.

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

Step 3 Click the cost category name to view its details.



The cost category details page provides an overview of your costs for each category value.

1. Basic information:

Table 3-2 Fields for basic information

Field	Description
Status	Status of the cost category rule.
Look-back Period	Period during which a cost category rule is applied.

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Field	Description
Created	Time when the cost category rule was created.
Updated	Time when the cost category rule was last updated.

2. Splitting rules for shared costs

Table 3-3 Fields for splitting rules

Field	Description
Source Value	The shared costs you want to split. There are two types: – Costs that have been categorized but have not met the splitting requirements, for example, the costs of the **default** enterprise project – Costs that are not captured by your cost category rules
Target Value	The cost category values you want to split your costs across
Allocation Method	How you want your shared costs split among your targets. You can choose from the following methods: – **Proportionally**: Costs are allocated across your targets based on the proportional weighted cost of each target. For example, if the value of target B is $800 USD and the value of target C is $200 USD, the ratio of target B to target C is 4:1. In this case, 80% of the source value will be allocated to target B and 20% to target C. – **Evenly**: Costs are allocated evenly across all targets. For example, if there are two targets (A and B), then 50% of the costs will be allocated to target A and 50% to target B. – **Custom**: Costs are allocated across your targets based on a custom percentage for each target. The percentages must add up to 100%.

3. Splitting details

Table 3-4 Fields for splitting details

Field	Description
Item	Rules you defined for the cost category.
Net Amortized Cost	Net amortized cost after the cost splitting rules are applied. You can change the cost type in the upper right corner. In this example, **Net Amortized Cost** is chosen.

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Field	Description
Split Amount	The amount of the split source. If the amount is negative, the costs will be allocated to the split targets. If an item is not a split source or a split target, **0** will be displayed.
Amount Allocated	The amount actually allocated to each cost category. Amount Allocated = Net Amortized Cost + Split Amount
Proportion	Proportion of an allocated cost to the total cost allocated. You can see your cost breakdowns by proportion.

----End

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4 Making Cost Analysis to Explore Costs and Usage

4.1 Introduction

To accurately control and optimize your costs, you need a clear understanding of what parts of your enterprise incurred different costs.

Cost Center visualizes your original costs or amortized costs in various dimensions and using different display filters for cost analysis so that you can analyze the trends and drivers of your service usage and costs from a variety of perspectives or within different defined scopes.

- Original costs are those recorded when the expenditures are generated.
- Amortized costs are those recorded when the revenues are obtained or the costs are generated.

You can also forecast your costs and usage to plan ahead.

For details about cost and usage information, access **Billing Center** and choose **Billing** > **Bills**, or access **Cost Analysis** in Cost Center.

Common cost analysis methods include:

Preconfigured Analysis Reports

Custom Analysis Reports

Cost Tags

Cost Details

Forecasting

4.2 Preconfigured Analysis Reports

Cost Center comes with several report types preconfigured with commonly used data display filters. You can review these reports but cannot modify them.

Navigation Path for Viewing Preconfigured Reports

Cost Center > **Cost Insights** > **Cost Analysis**

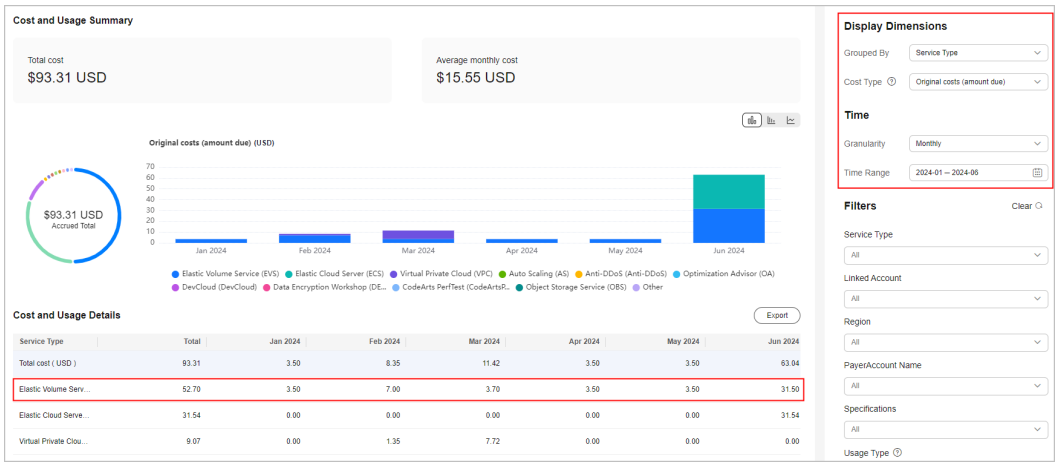
Cost and Usage Reports

Cost and usage reports visualize your costs across Huawei Cloud services.

Table 4-1 Cost and usage reports

Report Name	Description
Monthly Costs by Service Type	Types of services with high original costs in the last 6 months
Monthly Costs by Linked Account	Linked accounts with high original costs in the last 6 months
Daily Costs	Daily original costs over the last three months and in the following month
Monthly Amortized Costs	Monthly trend of amortized costs in the last 6 months
Pay-Per-Use ECS Monthly Costs and Usage	Monthly original costs and usage of a pay-per-use ECS in the last six months

Monthly Costs by Service Type



Monthly Costs by Linked Account

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Daily Costs

Monthly Amortized Costs

Amortized costs reflect the prepaid amounts amortized on a daily basis. For details about the amortization rules, see **Cost Amortization Rules**. Before the billing date, amortized costs displayed are only estimates.

Pay-Per-Use ECS Monthly Costs and Usage

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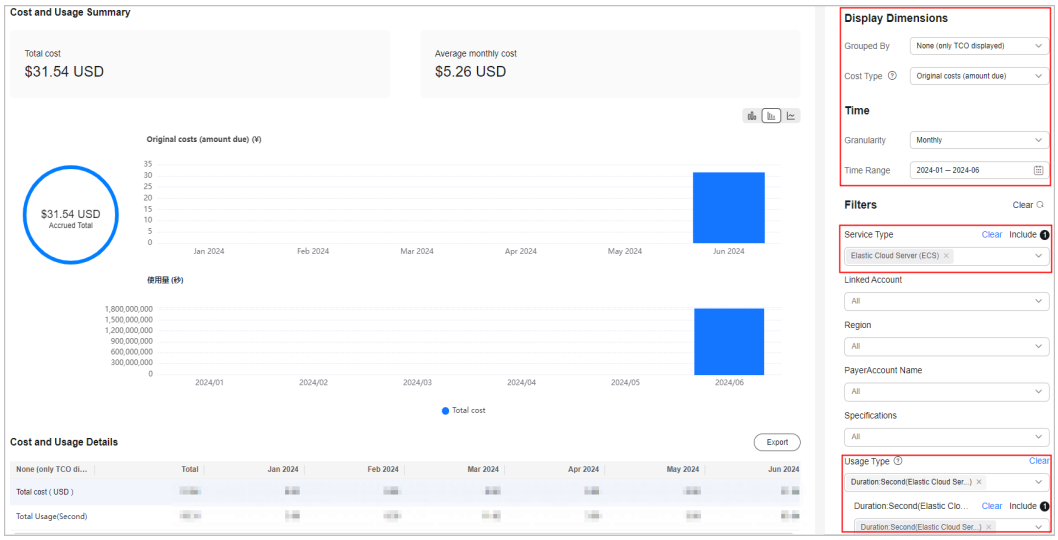

Reserved Instances

RI reports show an intuitive display of your RI utilization and coverage.

Table 4-2 RI reports

Report Name	Description
ECS RI Coverage	Combined coverage across all of your RIs, and how much of your RI usage is covered by reservations
ECS RI Utilization	Combined usage across all of your RIs, and how much you have saved by using RIs

ECS RI Utilization

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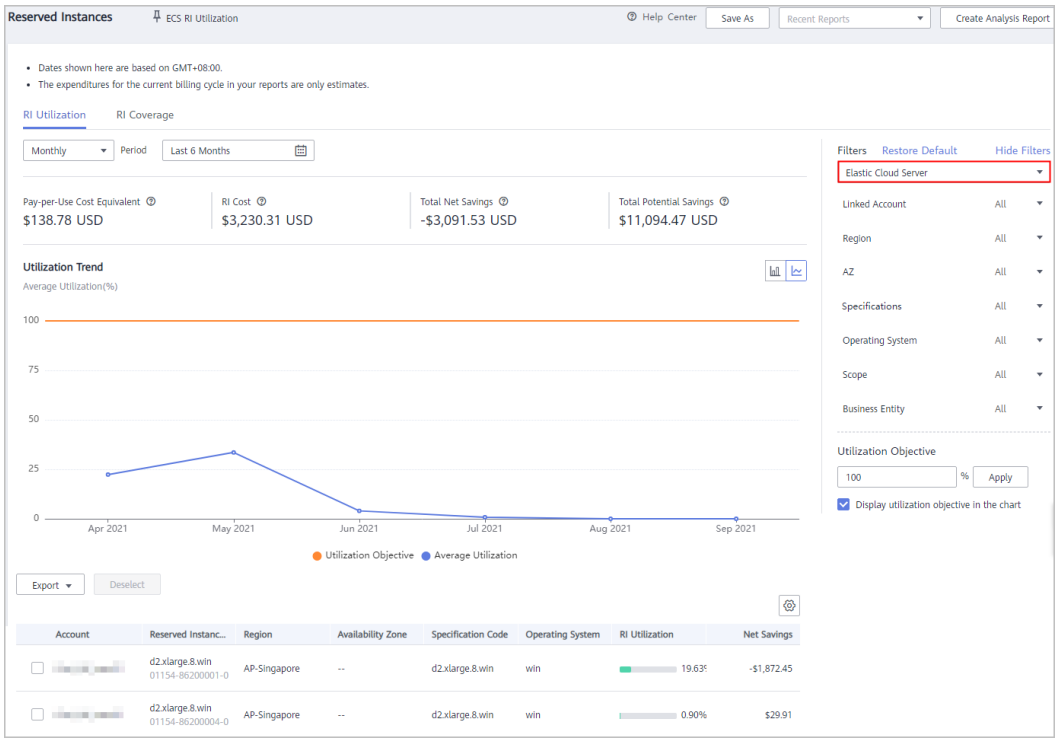
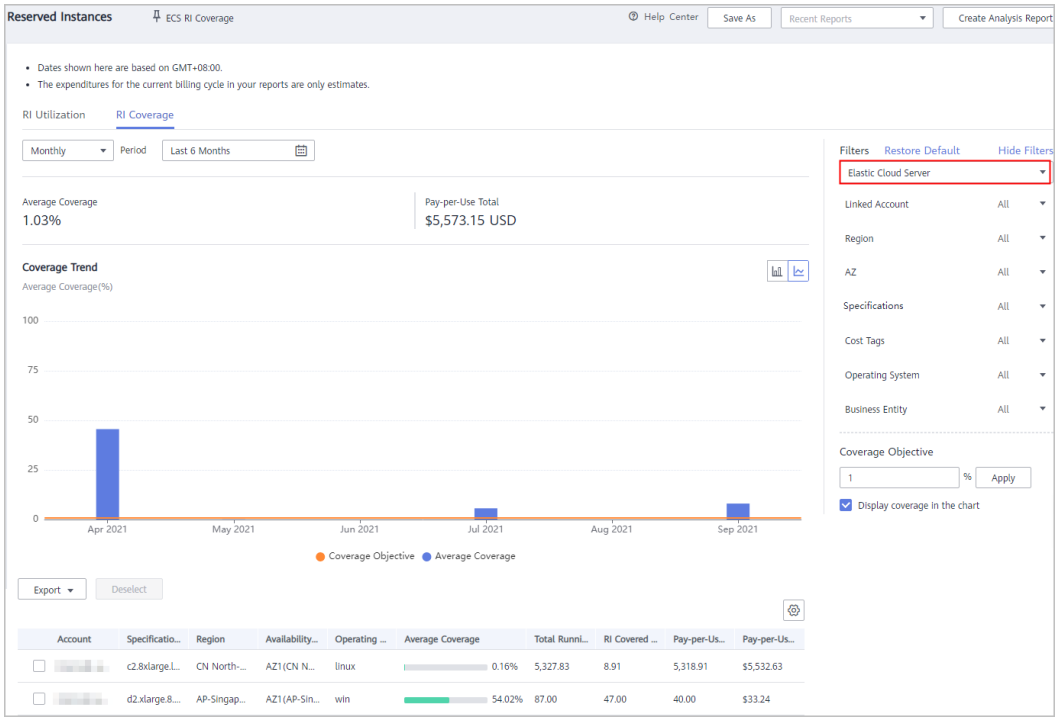


ECS RI Coverage



4.3 Custom Analysis Reports

You can save your analysis results in a custom report so that you can run the same analysis again later if needed. If the preconfigured reports cannot meet your

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requirements, you can create custom reports by choosing a specific period of time, the aspects measured, display filters, and cost types.

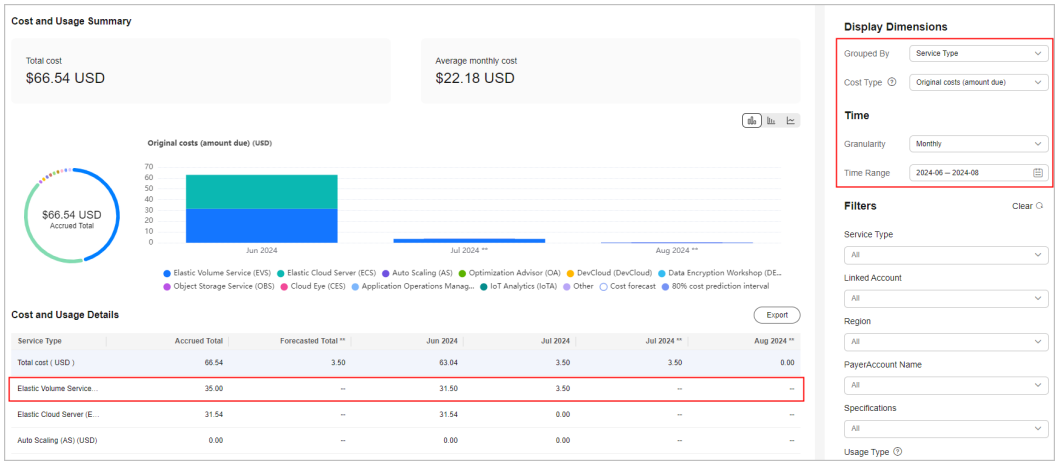
Procedure

Access the **Cost Analysis** page in Cost Center. For details, see **Viewing Cost Analysis**.

Example

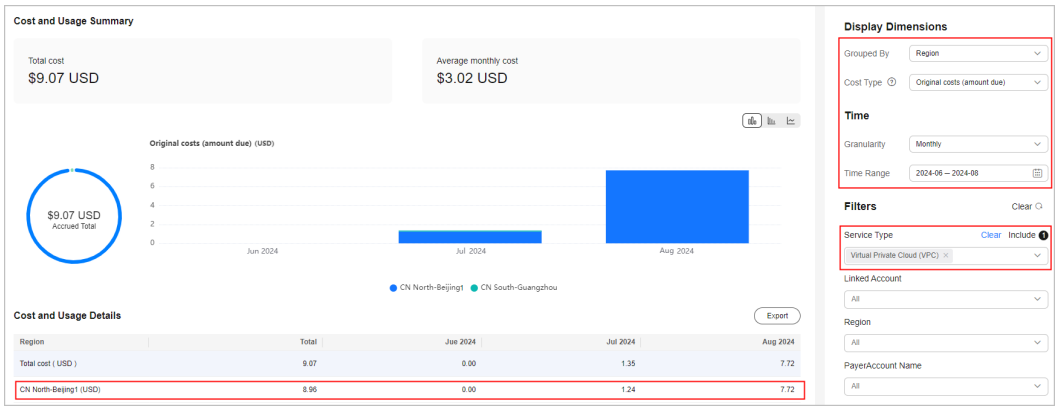
Step 1 View the monthly cost data (June to August) by service type.

In this example, EVSs incurred the highest costs.



Step 2 View the VPC costs by region.

In this example, most of the costs are from the CN North-Beijing1 region.



Step 3 View the VPC costs by billing mode in a specific region (CN North-Beijing1).

In this example, most of the costs are from the pay-per-use billing mode.

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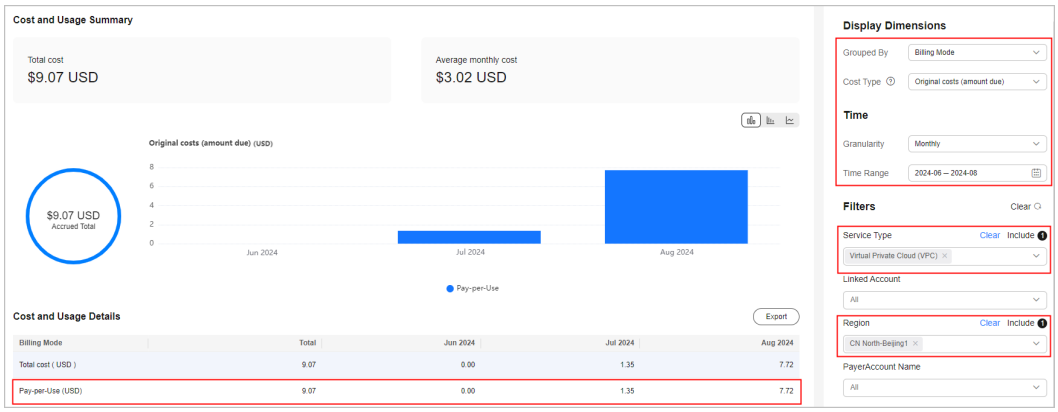


Step 4 View other aspects of your cost data if needed.

NOTE

You can save the cost analyses summarized by different dimensions as custom reports.

----End

Saving a Custom Report

Step 1 Log in to Cost Center.

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

Step 3 Configure filters on the **Cost Analysis** page.

For example, if you want to view the cost data of VPCs in CN North-Beijing1 grouped by billing mode, use the following configurations:

- Service Type: Virtual Private Cloud (VPC)
- Region: CN North-Beijing1
- Grouped By: Billing Mode

Step 4 Click **Save Report**.

Step 5 Set the report name to **VPC-CN North-Beijing1** and click **OK**.

----End

Using a Custom Report

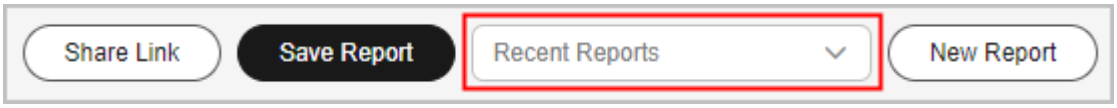
Step 1 Log in to Cost Center.

Step 2 Choose **Reports**.

Step 3 Click the link of **VPC-CN North-Beijing1**.

NOTE

You can also select **VPC-CN North-Beijing1** from the **Recent Reports** drop-down list in the upper right corner of the **Cost Analysis** page.



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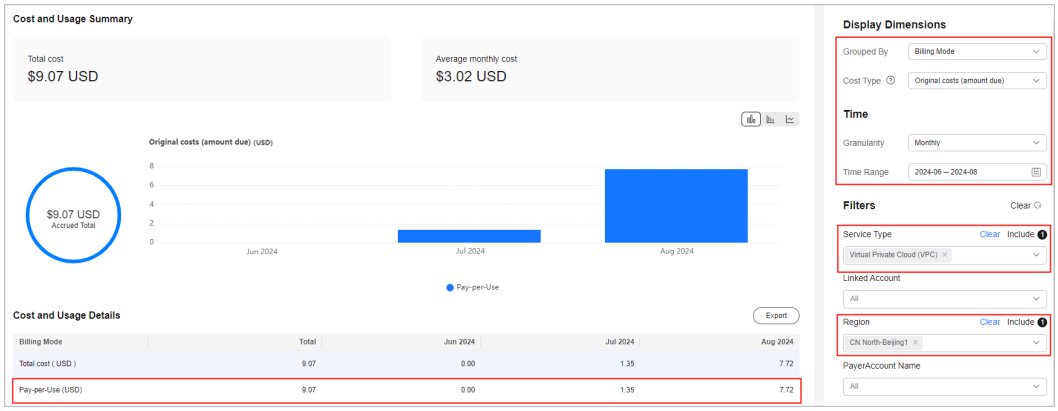
Step 4 Access the **Cost Analysis** page. The latest cost data is displayed based on the filter criteria in your report.



----End

4.4 Cost Tags

You or Huawei Cloud assigns tags to your cloud resources so the resources can be sorted in different ways, for example, by purpose, owner, or environment. You can use cost tags to manage resources and activate them to track your cloud costs.

Step 1: Adding Tags to Cloud Resources

Adhere to the tag naming principles specified in **Principles for Naming Tags**.

Add tags to cloud resources by referring to **Adding Tags**.

If you want to associate tags with cloud resources in batches, see **Adding Tags to Resources**.

Generally, tags appear on the **Cost Tags** page 24 hours after their associated resources have generated expenditures.

Step 2: Activating Tags

Activate tags by referring to **Activating Cost Tags**. Only the activated tags can be viewed on the **Cost Analysis** and **Budgets** pages.

If you activate any cost tags, they can only be used for cost data incurred afterwards. If you want to use tags to analyze the cost data generated before tag activation, export the bill details file and analyze the data based on the **Resource Tag** field in the file.

Step 3: Viewing Costs by Cost Tag

Step 1 Log in to Cost Center.

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

Step 3 Set **Grouped By** to **Cost Tags**.

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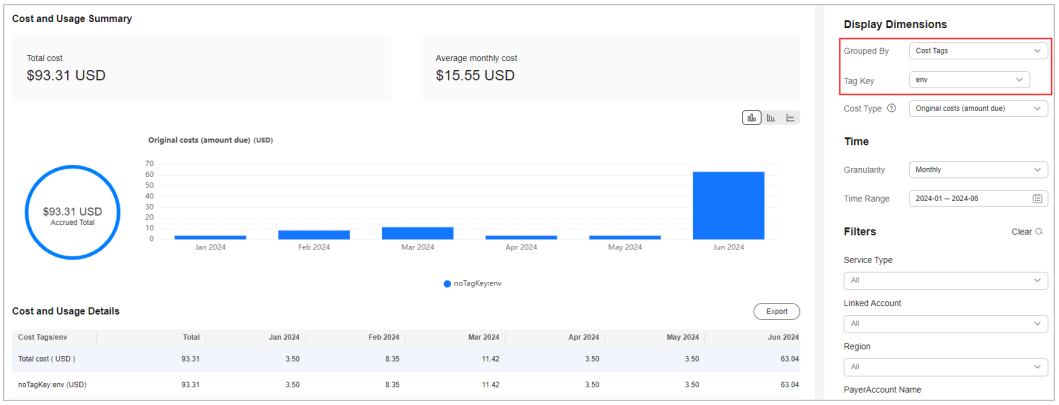
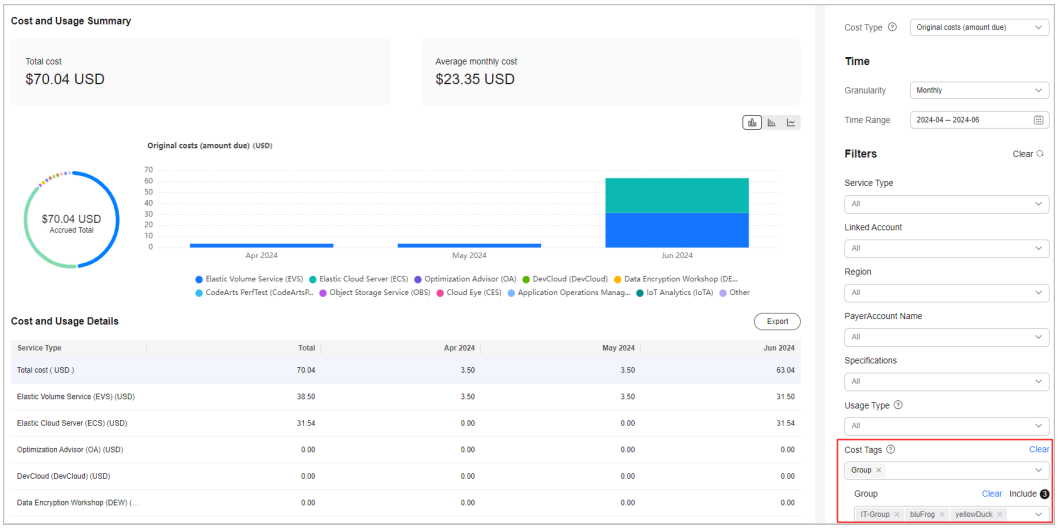
- Cost data grouped by cost tag



- Cost data filtered by cost tag



----End

4.5 Cost Details

You can check the data scope for exporting cost details in Cost Center. For details, see **Data Scope**.

Step 1: Exporting Cost Details

Step 1 Log in to Cost Center.

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

Step 3 Select the cost type and specify the period, and click **Export**.

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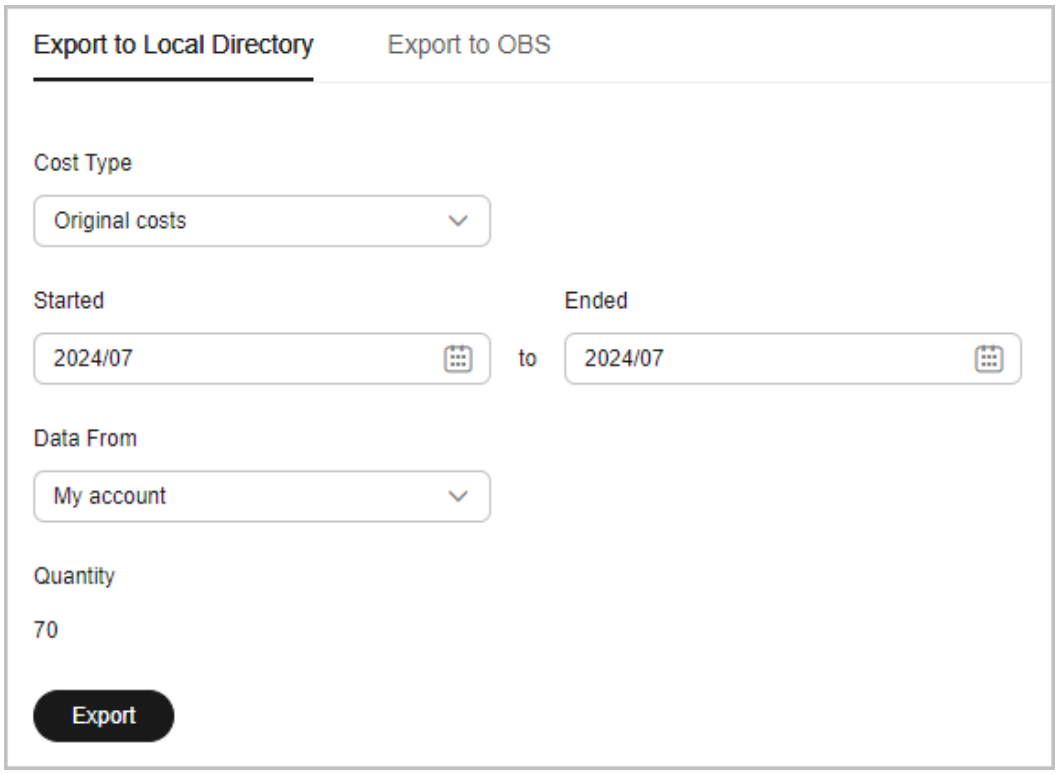


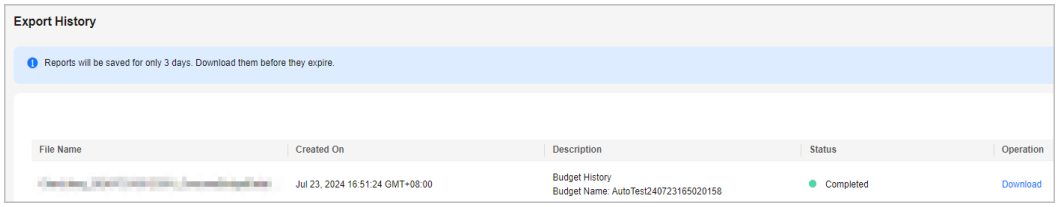
----End

Step 2: Obtaining the Exported File

Step 1 Log in to Cost Center.

Step 2 Choose **Export History**.

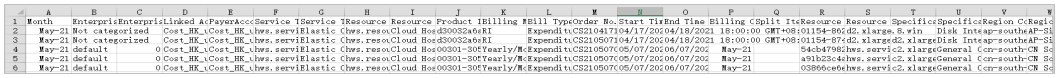
Step 3 Click **Download** in the **Operation** column.



----End

Step 3: Viewing Cost Details

For details about the fields, see **Fields in Exported Amortized Cost Details** and **Fields in Exported Original Cost Details**.



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4.6 Forecasting

Cost Center helps you forecast costs and usage based on your historical Huawei Cloud costs and usage.

Example

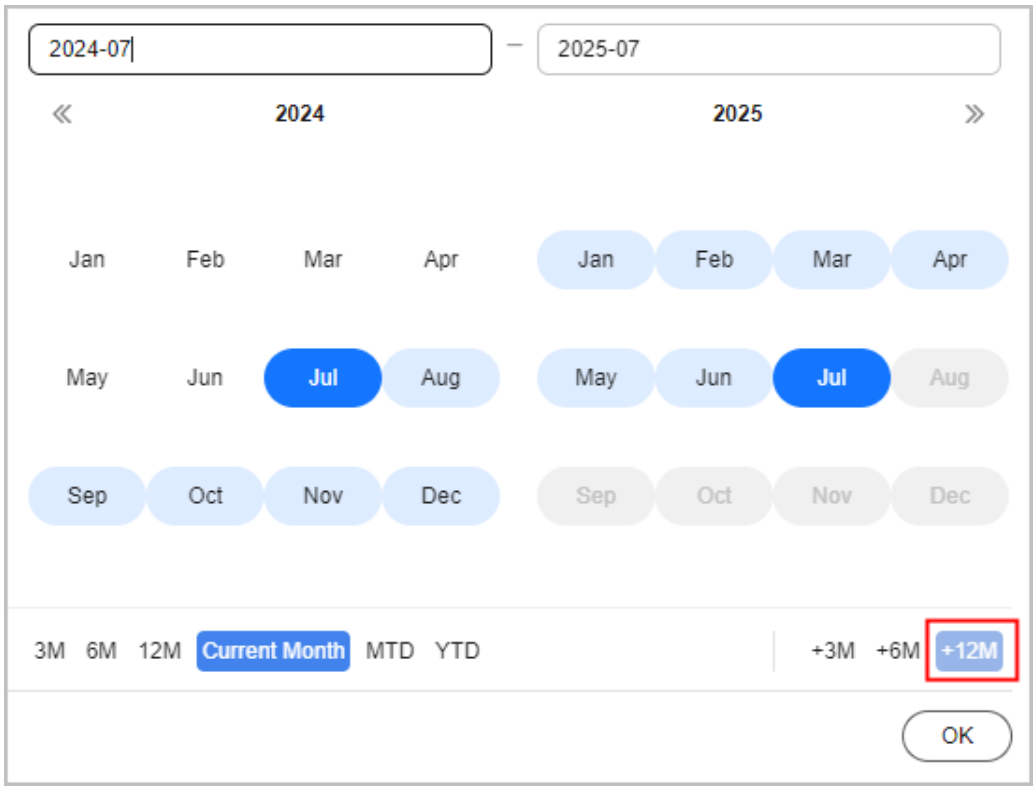
Suppose that you want to view the forecasted cost and usage data in next 12 months. As forecasts are only a best guess estimate of future costs, the forecasted billing amounts may differ from your actual expenditures for each billing cycle. For details, see **Cost and Usage Forecasting**.

Viewing Forecasted Data

Step 1 Log in to Cost Center.

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

Step 3 Set **Period** to **+12M**.



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

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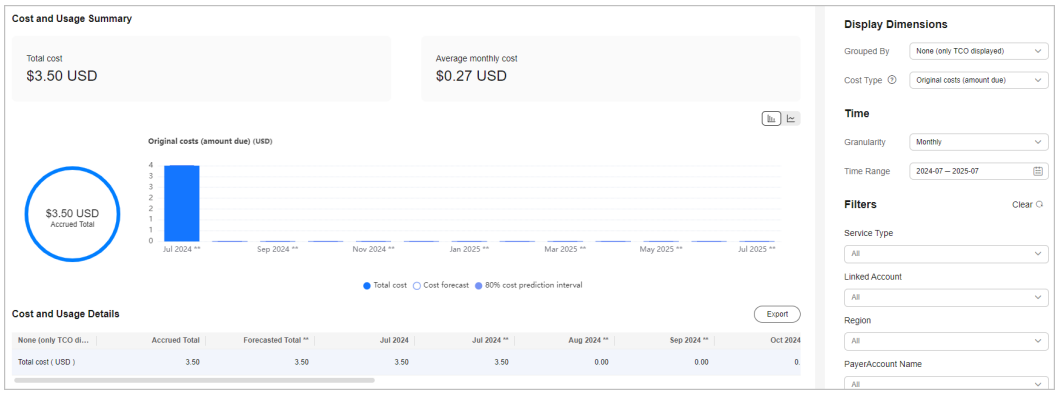

The white bars represent the forecasted cost data for the next few months (including the current month). **Forecasted Total** indicates the total forecasted cost in the following 12 months.

----End

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5 Creating Forecasts and Budgets to Track Costs and Usage

5.1 Introduction

In Cost Center, you can create different types of budgets on the **Budgets** page to track your costs against the budgeted amount. If your actual or forecasted costs have exceeded the alert thresholds configured for your budget, the recipients you specified will receive budget alerts. You can also create budget reports and specify recipients to receive budget alerts on a schedule you set.

The following describes common methods that use budgets to track costs and usage:

- **Creating Budgets and Configuring Alerts**
- **Using Reports to Track Your Budget**

5.2 Creating Budgets and Configuring Alerts

You can set budget thresholds and configure alerts to track your daily, monthly, quarterly, and yearly costs or resource usage.

Example

Suppose that you want to create a monthly budgeted amount of $1,200 USD for pay-per-use ECSs, and to receive an alert if the forecasted amount exceeds 80% of the budgeted amount.

NOTE

Enable forecasting before creating a forecasting-based budget. For details, see **Forecasting**.

Step 1: Creating a Budget

Step 1 Log in to Cost Center.

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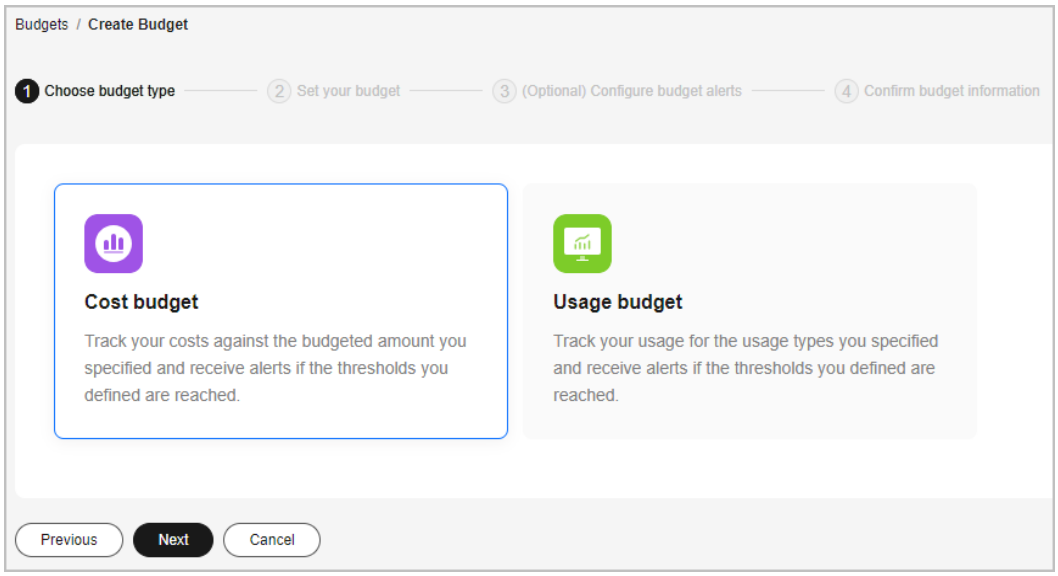
Step 2 Choose **Budget Management** > **Budgets**.

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 budget details.

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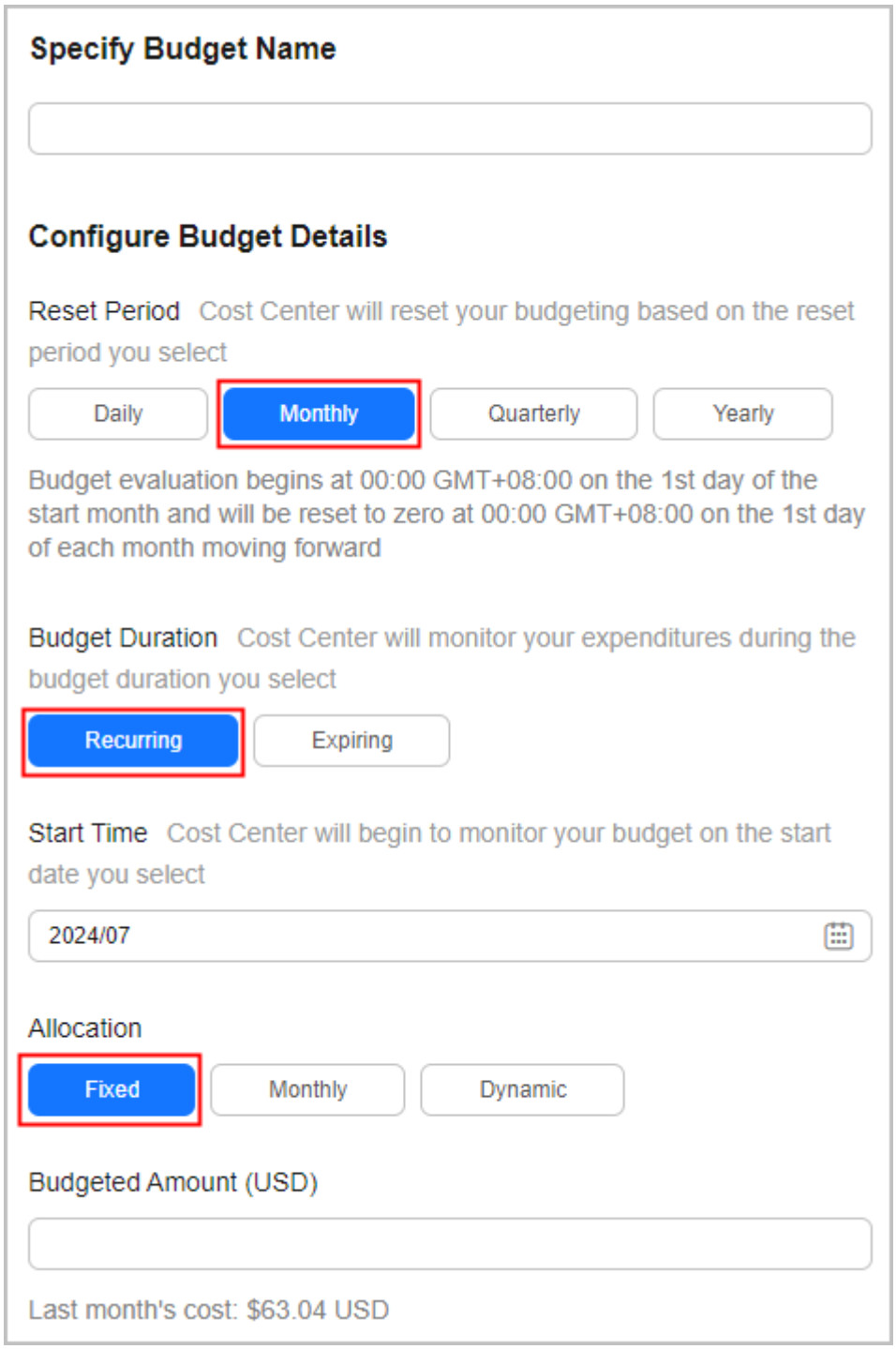

Step 7 Define the budget scope and click **Next**.

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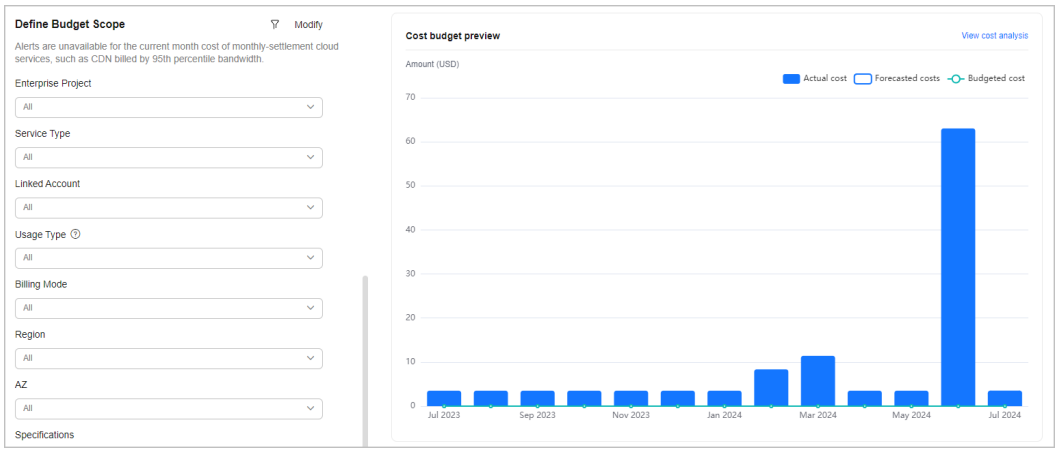
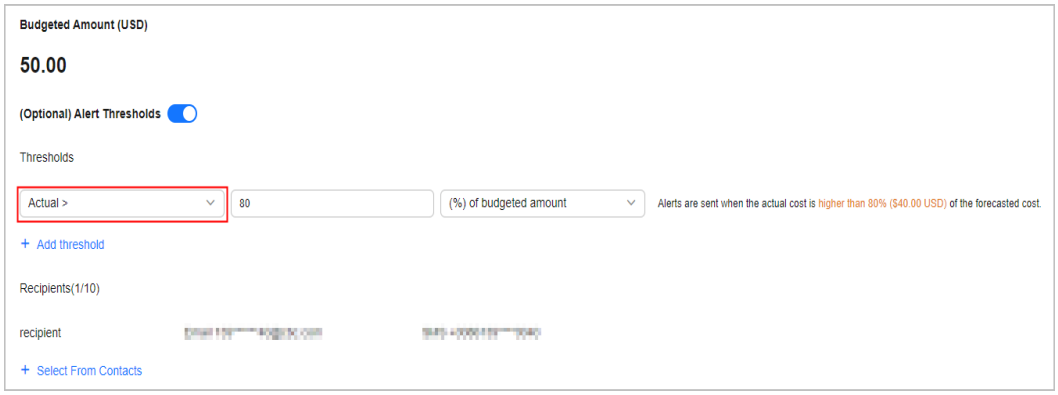


Step 8 Set alert thresholds and recipients, and click **Next**.



- **Actual cost >**: If the actual cost reaches a certain amount or a certain percentage of a budgeted amount, an alert will be reported.
- **Forecasted >**: If the forecasted cost reaches a certain amount or a certain percentage of a budgeted amount, an alert will be reported.

Step 9 Confirm your budget settings and click **Save**.

----End

Step 2: Viewing Alerts

If your forecasted cost exceeds the alert threshold (80% of the budgeted amount), an alert is generated. The following two options are available:

- SMS on the recipient's mobile phone
- Email in the recipient's mailbox

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Dear [redacted],

Your Cost Budget (budget name: [redacted]) has exceeded the budget threshold 80% ($960.00 USD) for the current period.

By Oct 03, 2021 11:58:53 GMT+08:00, your budget information is as follows:

Budget Name	Budget Type	Reset Period	Actual	Budgeted	Budget Threshold
[redacted]	Cost Budget	Monthly	$ 960.49USD	$1200.00 USD	> 80%($960.00 USD)

For details, access the Cost Center at the HUAWEI CLOUD official website www.huaweicloud.com/intl.

Thank you for using HUAWEI CLOUD.

Upon receiving the alert, you can view your budget details:

Log in to Cost Center. Then, choose **Budgets**, and click the budget name link to view the budget details.

View cost analysis by performing the following step:

On the **View Budget** page, click **View cost analysis** to view the cost analyses of data over the time range you selected.

5.3 Using Reports to Track Your Budget

You can create a budget report so that Huawei Cloud will periodically generate and send the report to you on a schedule you set.

Example

Suppose that you want to create a monthly budgeted amount of $1,200 USD for pay-per-use ECSs, and to receive an alert if the forecasted amount exceeds 80% of the budgeted amount.

NOTE

Enable forecasting before creating a forecasting-based budget. For details, see **Forecasting**.

Step 1: Creating a Budget

For details, see **Step 1: Creating a Budget**.

Step 2: 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.

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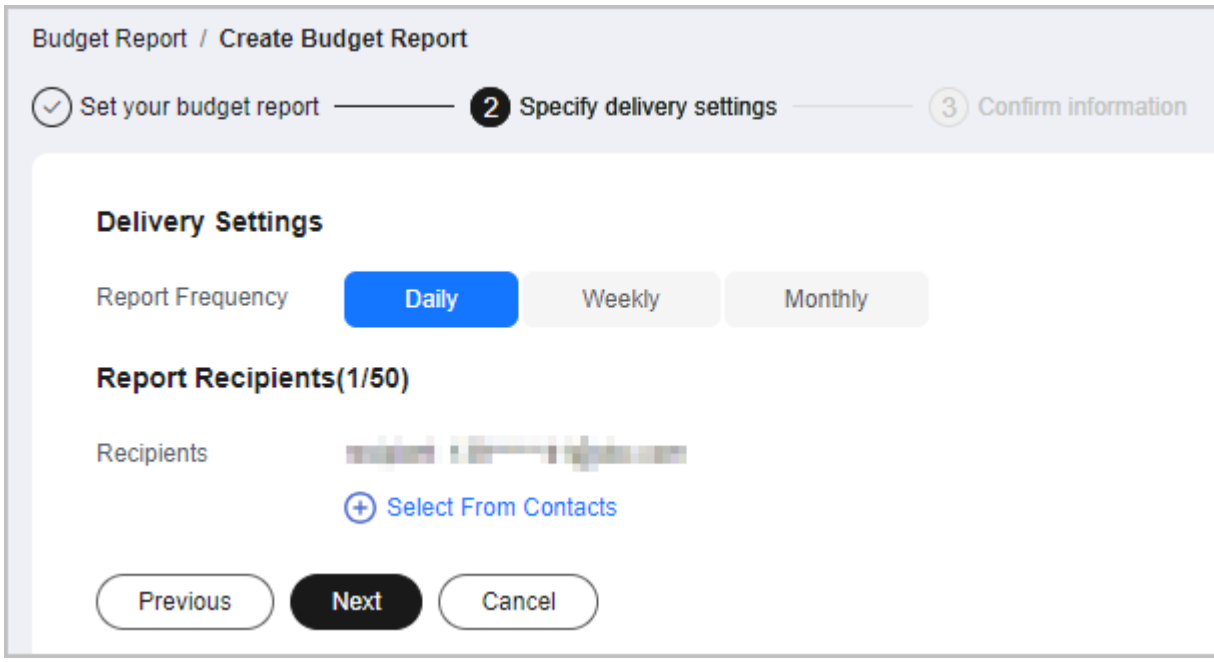
Step 4 Specify the report name, include the budget created in **Step 1: Creating a Budget**, and click **Next**.

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



NOTE

A maximum of 50 contacts can be selected for each alert. If you want to add or modify the recipient information, go to the **Recipient Management** page in the Message Center.

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

----End

Step 3: Viewing the Budget Status

- View the SMS on the recipient's mobile phone.
- Access the recipient's mailbox and view the budget report.

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6 Enabling Cost Anomaly Detection to Identify Anomalies

6.1 Introduction

Cloud costs are variable and cloud resources are scalable. After enterprises migrate their services to Huawei Cloud, one of the challenges they face is how to monitor unexpected expenditure spikes. Cost Center provides Cost Anomaly Detection to help you detect cost anomalies in a timely manner and analyze and track these anomalies when they occur.

6.2 Enabling Cost Anomaly Detection to Identify Anomalies

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 keep to your original plan.

Example

Suppose you want to track anomalies in all your pay-per-use and yearly/monthly expenditures. The following detection rules apply:

- Pay-per-use expenditures: AI algorithms are used to intelligently identify unexpected expenditure spikes based on machine learning.
- Yearly/monthly expenditures: A cost anomaly is identified if the actual growth rate has increased by a certain percent over the previous billing cycle. Actual growth rate = (Actual cost for the current month – Cost for the previous month)/Cost for the previous month

  For example, you can set the percent to 10%.

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NOTE

You can create monitors to monitor your costs by linked account, cost tag, or cost category as needed.

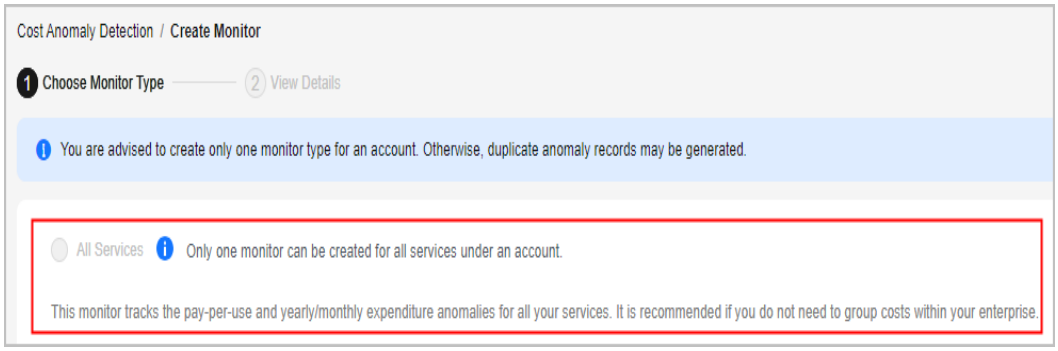
Step 1: Creating a Monitor

Step 1 Log in to Cost Center.

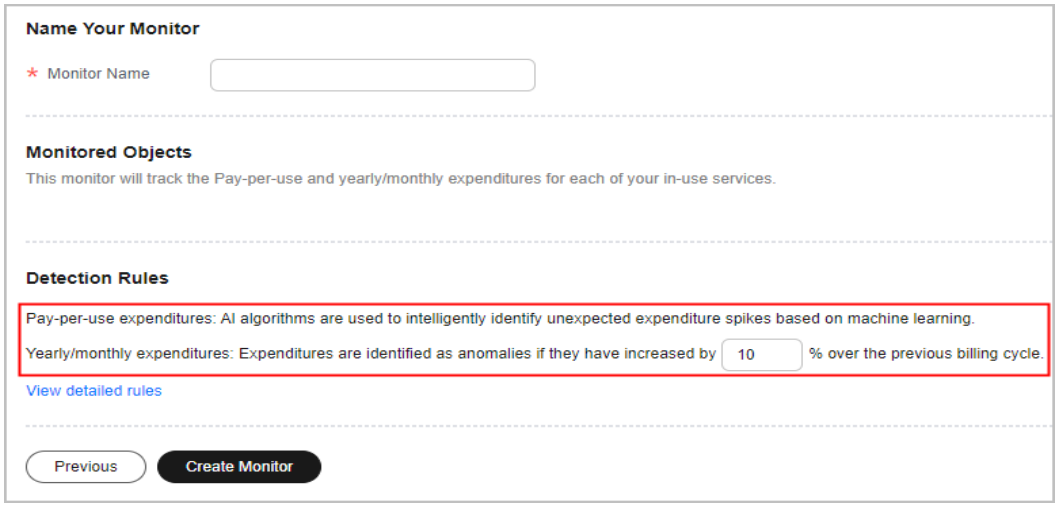
Step 2 Choose **Cost Insights** > **Cost Anomaly Detection**.

Step 3 Click **Create Monitor**.

Step 4 Select **All Services**.



Step 5 Configure detection rules.



----End

Step 2: Viewing Anomaly History

Step 1 Log in to Cost Center.

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

Step 3 View the cost anomalies reported. In the example shown in the following figure, one MTD anomaly has been reported.

To view all reported anomalies, click **View Anomaly History** in the **Operation** column of the monitor.

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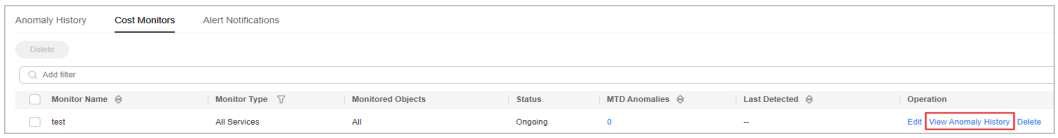
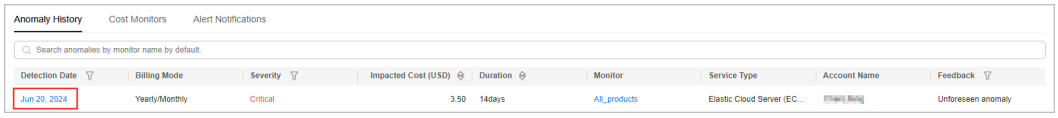
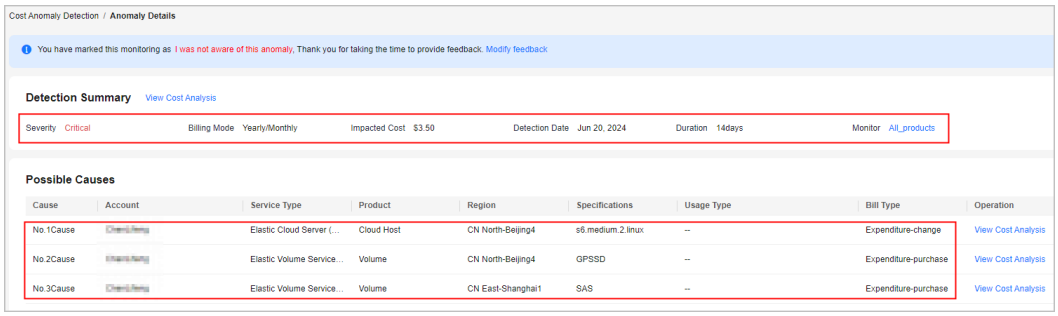


Step 4 View the anomaly details. In this example, a cost anomaly in a yearly/monthly subscription was detected on June 20, 2024. The impact of this anomaly was $3.50 USD, mainly involving Object Storage Service (OBS).

To view details about cost anomalies and the analyses of potential root causes, click the hyperlink of a specific detection date.



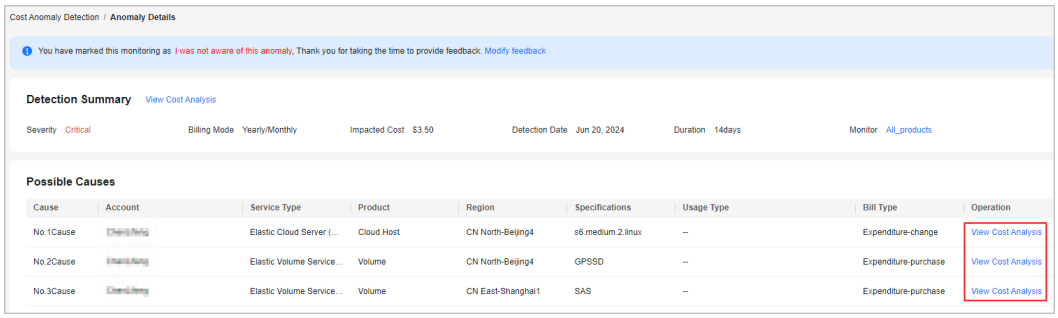
Step 5 View the top 3 services that may cause the anomaly.



----End

Step 3: Analyzing Causes of Cost Anomalies

Step 1 Access the **Anomaly Details** page, click **View Cost Analysis** in the **Operation** column of a possible cause.



Step 2 Navigate to the **Cost Analysis** page. Selected filters are automatically displayed.

In this example, a new purchase order line was generated for Elastic Volume Service (EVS) on June 3, 2024, costing $3.50 USD. You need to check whether the new purchase was identified as an anomaly.

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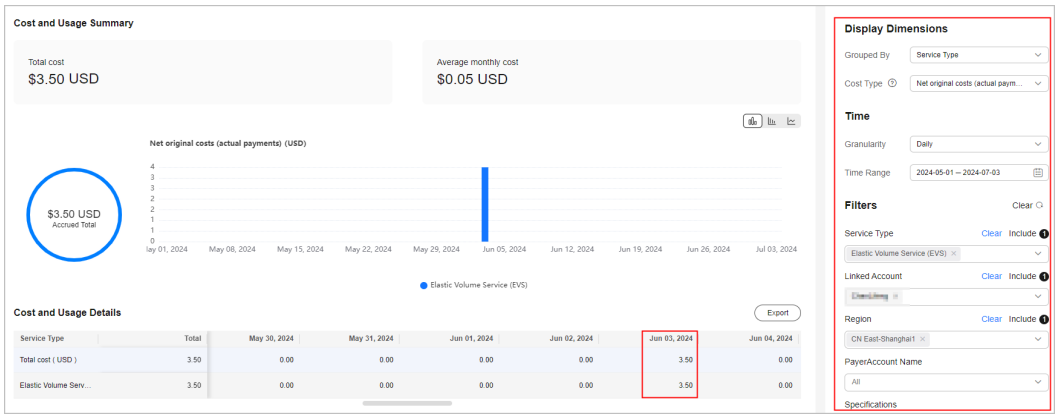
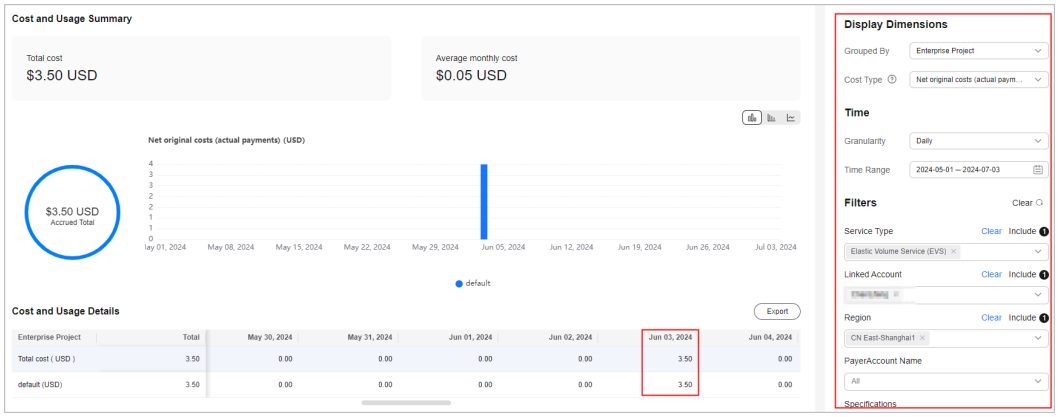


Step 3 Group costs by **Enterprise Project** to view those enterprise projects involving cost anomalies.

In this example, the new purchase (costing $3.50 USD) for Elastic Volume Service (EVS) on June 3, 2024 was not allocated to any specific enterprise project.



----End

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7 Changing Billing Modes to Optimize Costs

7.1 Introduction

The expenditures on cloud resources mainly depend on the unit price and resource usage. You can use advanced billing modes (such as yearly/monthly and reserved instances) to lower the unit price.

Cost Center analyzes the usage of pay-per-use resources and reserved instances and provides cost optimization options to reduce your Huawei Cloud costs.

Common cost optimization options include:

- **Evaluating Cost Optimization Option of Changing the Billing Mode from Pay-per-Use to Yearly/Monthly**
- **Analyzing RI Utilization and Coverage**

7.2 Evaluating Cost Optimization Option of Changing the Billing Mode from Pay-per-Use to Yearly/Monthly

Currently, only ECS, EVS, and RDS service costs can be optimized by changing the billing mode from pay-per-use to 1-month or 1-year subscription.

Procedure

Log in to Cost Center, and choose **Cost Optimization** > **Yearly/Monthly Subscriptions**. For details, see **Yearly/Monthly Subscriptions**.

Viewing Pay-per-Use Resources Suitable for 1-Month Subscription

Set **Subscription Term** to **1-month** to view the amortized costs of all ECS, EVS, and RDS resources whose costs can be optimized by changing the billing mode from pay-per-use to 1-month subscription.

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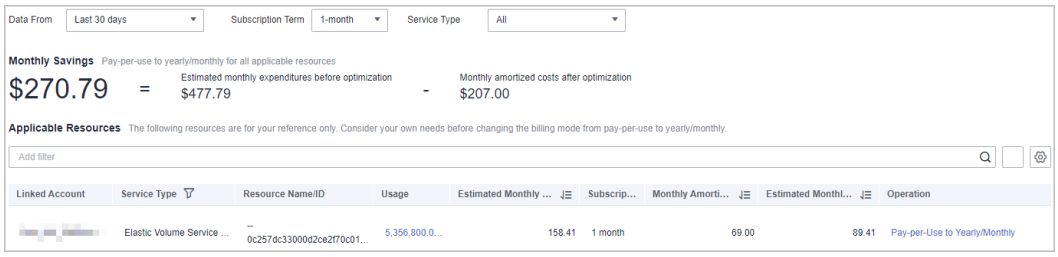


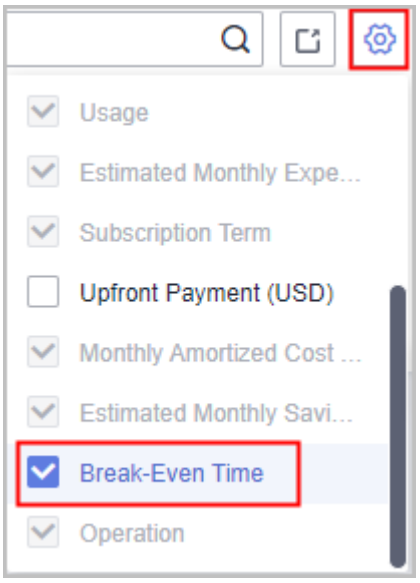
As shown in this figure, the monthly savings (730 hours/month) after the optimization are $270.79 USD.

You can optimize the costs for the applicable resources by performing the following steps:

1. Click **Pay-per-Use to Yearly/Monthly** in the **Operation** column of an applicable resource to access its console.
2. Choose **More** > **Change Billing Mode** in the **Operation** column from the drop-down list.
3. Confirm the resource information as prompted, select the required duration, and pay for the order.

NOTE

1. You can select **Break-Even Time** from the **Customize Column** drop-down list.



2. If the monthly savings are high and the break-even time is short, this cost optimization option is recommended.

Viewing Pay-per-Use Resources Suitable for 1-Year Subscription

Set **Subscription Term** to **1-year** to view the amortized costs of all ECS, EVS, and RDS resources whose costs can be optimized by changing the billing mode from pay-per-use to 1-year subscription.

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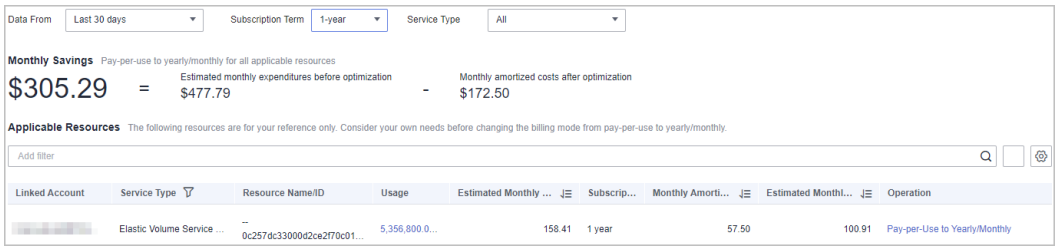


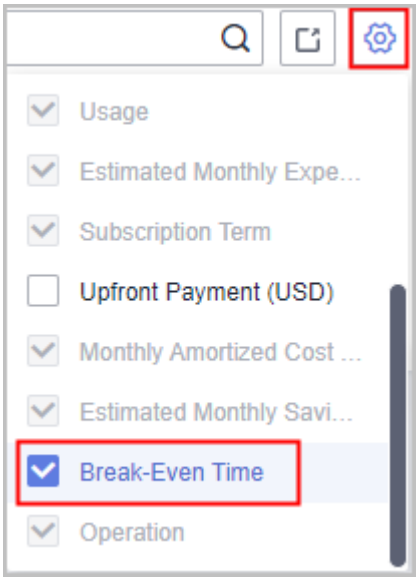
As shown in this figure, the monthly savings (730 hours/month) after the optimization are $305.29 USD.

You can optimize the costs for the applicable resources by performing the following steps:

1. Click **Pay-per-Use to Yearly/Monthly** in the **Operation** column of an applicable resource to access its console.
2. Choose **More** > **Change Billing Mode** in the **Operation** column from the drop-down list.
3. Confirm the resource information as prompted, select the required duration, and pay for the order.

NOTE

1. You can select **Break-Even Time** from the **Customize Column** drop-down list.



2. If the monthly savings are high and the break-even time is short, this cost optimization option is recommended.

7.3 Analyzing RI Utilization and Coverage

Cost Center allows you to view the actual utilization or coverage of reserved instances (RIs) in a specific period so that you can learn about the costs optimized by using RIs, and determine whether the RIs are fully used or whether you have purchased enough RIs.

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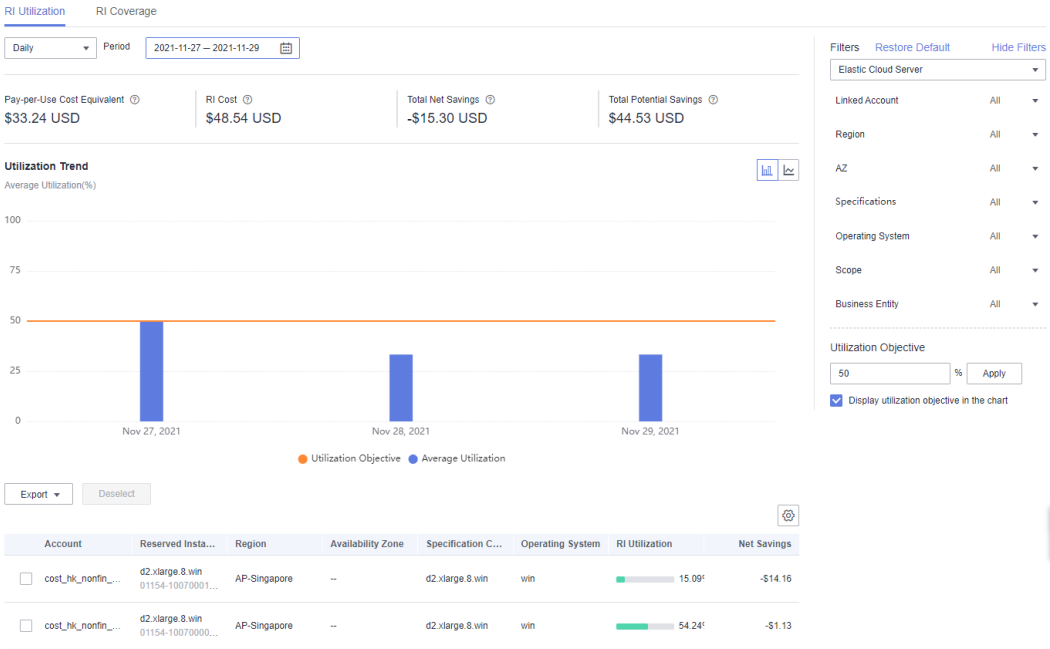
Procedure

Log in to Cost Center, and choose **Cost Optimization** > **Reserved Instances**. For details, see **Reserved Instances**.

Analyzing RI Utilization

Suppose you want to view the usage of ECS RIs in the period from November 26, 2021 to November 29, 2021.



As shown in this figure:

- **Pay-per-Use Cost Equivalent** is **$33.24 USD**, that is, the cost of ECSs billed on a pay-per-use basis is $33.24 USD (calculated based on the list price) during this period.
- **RI Cost** is **$48.54 USD**, that is, the total amortized costs of RIs during this period is $48.54 USD.
- **Total Net Savings** is **$-15.30 USD**, a negative amount, indicating no savings. In the bar chart, the daily RI utilization is less than 50%. To locate the cause, check whether the pay-per-use instance matches the RIs you purchased or whether you have purchased too many RIs.
- **Total Potential Savings** is **$44.53 USD**, indicating that the potential saving is $44.53 USD if all the RIs in this period are used up.

Analyzing RI Coverage

Suppose you want to view the RI coverage of ECSs in the last six months.

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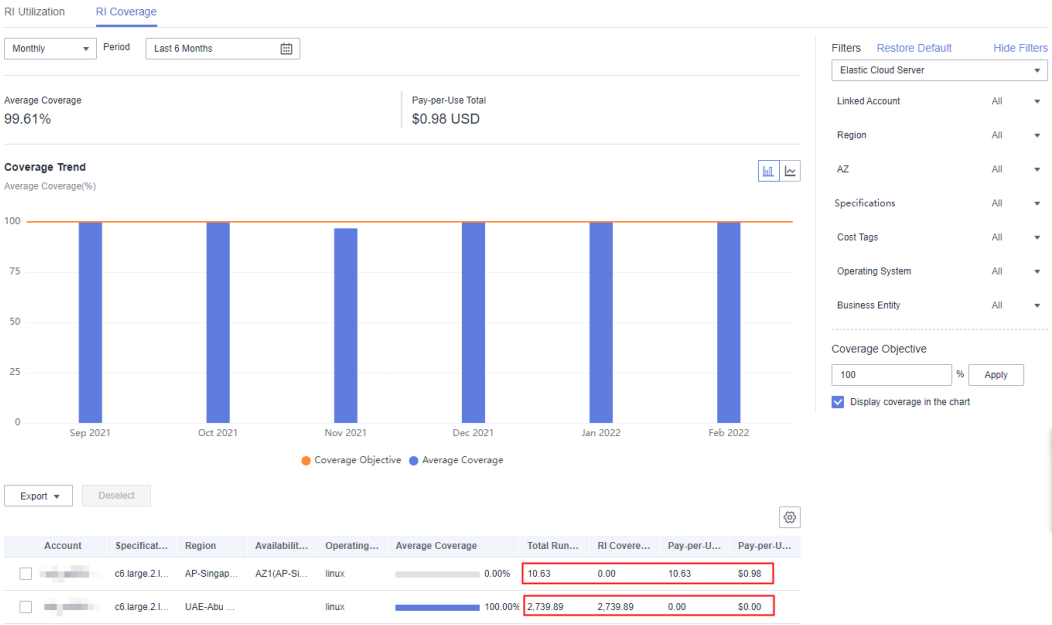

As shown in this figure:

- In the AP-Singapore region, **Total Running Hours** of the pay-per-use resource is **10.63**, and **RI Covered Hours** of the resource is **0.00**. In this case, RI Coverage = RI Covered Hours/Total Running Hours x 100% = 0.00/10.63 x 100% = 0.00%. It indicates that the resource in this region has not been covered by the RIs. You can determine whether to purchase more RIs based on **Total Running Hours** and **Pay-per-Use Hours**. In this example, there is a small number of running hours for the resource in the last six months, and no RIs are needed.
- In the UAE-Abu Dhabi region, **Total Running Hours** of the pay-per-use resource is **2,739.89**, and **RI Covered Hours** of the resource is **2,739.89**. In this case, RI coverage = 2739.89/2739.89 x 100% = 100.00%. It indicates that the resource in this region has been fully covered by RIs.

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