Billing

Billing - International

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Huawei Cloud Computing Technologies Co., Ltd.

Address: Huawei Cloud Data Center Jiaoxinggong Road
Qianzhong Avenue
Gui'an New District
Gui Zhou 550029
People's Republic of China

Website: https://www.huaweicloud.com/intl/en-us/

Contents

1 Billing Overview

In this document, you will learn about how IoT Device Access (IoTDA) is billed, how you can renew subscriptions, and what happens if your account goes into arrears.

- **Billing Modes**

  IoTDA provides two billing modes: yearly/monthly and pay-per-use. Yearly/Monthly: You pay upfront for the amount of time you expect to use a resource for. You will need to make sure you have a top-up account with a sufficient balance or have a valid payment method configured first. Pay-per-use: You can use the service first, and will be billed for the messages generated or your usage duration. For details about the two billing modes, see **Overview**.

- **Billing Items**

  IoTDA is billed based on the instance specifications and usage duration. For details about the billing factors and formulas for each billing item, see **Billing Items**.

  For details about the billing samples in different scenarios and the billing process for each billing item in different billing modes, see **Billing Examples**.

- **Renewal**

  Yearly/Monthly instances cannot be used after they expire. If you want to continue using IoTDA, you need to renew the instance within the specified period. Otherwise, the instance will be automatically released and data may be lost. Renewals can be done manually or automatically, depending on your needs. For details about renewal, see **Overview**.

- **Viewing Bills**

  You can choose **Billing Center** > **Billing** to check the IoTDA transactions and bills. For details, see **Bills**.

- **Arrears**

  If there is not a sufficient account balance to pay for your bill and there is no other payment method configured, your account will go into arrears. If you want to continue using your cloud services, you will need to top up your account in a timely manner. For details, see **Arrears**.

- **Stopping Billing**

  If you no longer need to use your cloud service, you can unsubscribe from or delete it to stop the billing. For details, see **Billing Termination**.

- **Managing Costs**

  You can manage costs from cost composition, allocation, analysis, and optimization. For details, see **Cost Management**.

2 Billing Modes

2.1 Overview

There are yearly/monthly and pay-per-use billing modes to meet your requirements.

- Yearly/Monthly billing is a prepaid mode in which you pay for the service before using it. Your bill is generated based on the required duration you specify in the order. The longer the subscription term, the higher the discount. This mode is generally suitable for mature businesses with long-term stable equipment needs.
- Pay-per-use is a postpaid billing mode. You pay as you go and just pay for what you use. This allows you to adjust resource usage easily.

Table 2-1 compares the two billing modes.

Table 2-1 Billing mode

Billing Mode	Yearly/Monthly	Pay-per-use
Payment Method	Prepaid	Postpaid
Billing Method	Billed for your subscription duration	Standard edition instance: billed by day
Billed Item	Standard edition instance	Standard edition instance
Specifications Change	Supported	Supported
Scenario	Recommended for long-term use. Suitable and price-friendly for scenarios where the resource usage duration can be estimated.	Recommended if you want more flexibility. Suitable for scenarios where resource demands fluctuate.

2.2 Yearly/Monthly Billing

If you expect to use resources for a longer period, you can save money with yearly/monthly billing. This section describes the billing rules of yearly/monthly IoTDA.

Scenarios

If you want to ensure resource stability over a certain period of time, yearly/monthly billing is a good choice for the following types of workloads:

- Long-term workloads with stable resource requirements, such as official websites, online malls, and blogs
- Long-term projects, such as scientific research projects and large-scale events
- Workloads with predictable traffic bursts, for example, e-commerce promotions or festivals.
- Workloads with high data security requirements.

Billing Items

The following billing items support yearly/monthly billing.

Table 2-2 Billing items

Billing Item	Description
Standard instance	You are billed based on the instance specifications and required duration.

Billing Method

A yearly/monthly IoTDA resource is billed by the subscription duration. The billing cycle begins when you activate or renew your subscription and ends at 23:59:59 on the expiration date of the following calendar month or year. To determine the expiration date, you can increment the month or year by 1.

Example:

- If you subscribed to a standard instance for one month on March 8, 2023, 15:50:04, the billing period is from March 8, 2023, 15:50:04 to April 8, 2023, 23:59:59.
- If you subscribed to a standard instance for one month on February 8, 2023, 15:50:04, the billing period is from February 8, 2023, 15:50:04 to March 8, 2023, 23:59:59.
- If you subscribed to a standard instance for one year on February 8, 2024 (leap year), 15:50:04, the billing period is from February 8, 2024, 15:50:04 to February 8, 2025, 23:59:59.

Billing Examples

Assume that you subscribed to a standard S1 unit at 15:50:04 on March 8, 2023. If you manually renew the subscription for one month before the subscription expires:

- Billed usage period 1: March 8, 2023, 15:50:04 to April 8, 2023, 23:59:59

- Billed usage period 2: April 9, 2023, 00:00:00 to May 8, 2023, 23:59:59

You must prepay for each billing cycle. **Table 2-3** shows the billing formula.

Table 2-3 Formula

Resource	Formula	Price
IoTDA standard instance	Unit price x Unit quantity x Purchase duration	Visit **Price Calculator**. Select **Yearly/Monthly** for **Billing Mode**, select **Standard** for **Instance Edition**, and select the unit type, quantity, and required duration. The estimated price is displayed in the lower part of the page.

Impact on Billing After Specifications Change

If the specifications of a yearly/monthly instance no longer meet your needs, you can change the specifications on the console. The system will recalculate the price and either bill or refund you the difference.

- If you upgrade the specifications, you need to pay the difference in price.
- If you downgrade the specifications, Huawei Cloud will refund you the difference.

Assume that you subscribed to one low-frequency unit S1 of the standard instance on April 8, 2023 for one month. You plan to change the specifications to intermediate frequency unit S2 on April 18, 2023, the number of units is 1. The price for the old specifications is 800/month, and that for the new specification is 3,000/month. The calculation formula is as follows:

Price difference for the specifications upgrade = Price for the new specifications × Remaining period - Price for the original specifications × Remaining period

The remaining period in the formula is the number of days remaining in each calendar month divided by the maximum number of days in that month. In this example, the remaining period=12 (the remaining days in April, excluding the change day)/30 (the maximum number of days in April) + 8 (the remaining days in May)/31 (the maximum number of days in May)=0.6581. Cost of specification upgrade = 3,000 × 0.6581 - 800 × 0.6581=1447.82.

For details, see **Pricing of a Changed Specification**.

Impact of Expiration

Figure 2-1 shows the statuses of a yearly/monthly IoTDA resource in each phase. After a resource is purchased, it enters a valid period and runs normally during this period. If the resource is not renewed after it expires, it first enters a grace period and then a retention period.

Figure 2-1 Lifecycle of yearly/monthly IoTDA resources
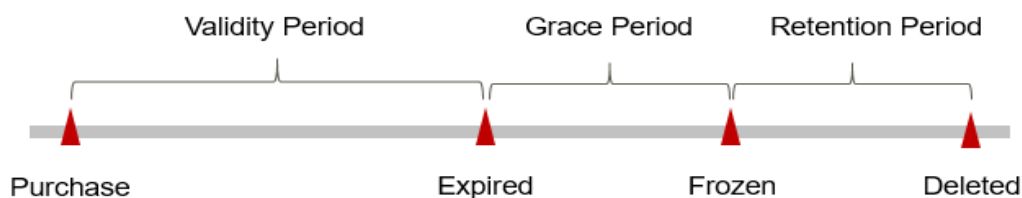
- Expiration warning: The system will send you a reminder (by email, SMS, or in-app message) 7 days before a yearly/monthly IoTDA resource expires to remind you to renew the subscription.

- Impact of expiration:
  - If your yearly/monthly IoTDA resource is not renewed after it expires, it changes to the **Expired** status and enters a grace period. During the grace period, you can use IoTDA.
  - If the yearly/monthly IoTDA resource is not renewed after the grace period ends, its status turns to **Frozen** and it enters a retention period. You cannot perform any operations on the resource while it is in the retention period.
  - After the retention period expires, if the yearly/monthly IoTDA resource is not renewed, the resource will be released, and data cannot be restored

📖 **NOTE**

- For details about the renewal, see **Overview**.

2.3 Pay-per-Use Billing

Pay-per-use billing is a postpaid mode in which you pay for what you use. This billing mode requires no upfront or long-term commitments. This section describes the billing rules for pay-per-use IoTDA resources.

Scenario

Pay-per-use is suitable for applications or services that cannot be interrupted when facing temporary or sudden traffic increases or unpredictable demands, such as e-commerce flash sales, testing, and scientific computing.

Billing Items

You are billed for the following resources on a pay-per-use basis.

Table 2-4 Billing items

Billing Item	Description
Standard instance	Billed by instance specifications and usage duration

Billed Usage Period

The usage of pay-per-use IoTDA resources is billed on a daily basis. If a resource is used for less than a full day, the fee is calculated based on the actual duration of usage. Billing is settled at 00:00 every day (UTC+08:00), and a new billing cycle begins thereafter. The billing starts from the time when the standard instance is successfully created and ends at the time when the instance is deleted.

Billing Examples

Assume you subscribed to a standard SU1 instance at 09:59:30 on April 18, 2023 and then deleted it at 11:45:46 on April 20, 2023. The following usage periods will be billed:

- The first billing cycle spans from April 18, 2023, 00:00:00 to April 19, 2023, 00:00:00. Fees are incurred from April 18, 2023, 09:59:30 to April 19, 2023, 00:00:00, resulting in a billing duration of 50,400 seconds.

- The second billing cycle spans from April 19, 2023, 00:00:00 to April 20, 2023, 00:00:00. Fees are incurred throughout this period, resulting in a billing duration of 86,400 seconds.

- The third billing cycle spans from April 20, 2023, 00:00:00 to April 21, 2023, 00:00:00. Fees are incurred from April 20, 2023, 00:00:00 to April 20, 2023, 11:45:46, resulting in a billing duration of 42,346 seconds.

You need to pay for each billing cycle. **Table 2-5** lists the billing formula. The prices displayed in the pricing details is per day, so you need to divide it by 86,400 to obtain the price for each second and then multiple the per-second price by the total number of seconds.

Table 2-5 Formulas for billing pay-per-use IoTDA resources

Resource	Formula	Unit Price
IoTDA standard instance	Unit price x Unit quantity x Purchase duration	To make a purchase, please refer to the **IoTDA Price Calculator** and select the desired unit type. By default, the number of units is set to 1 and the duration is set to one day. The configuration fee displayed at the bottom of the page represents the daily price of the instance.

Impact on Billing After Specifications Change

If you change the specifications of a pay-per-use instance, the original order will become invalid and a new order will be placed. You will be billed based on the new specifications.

If you change the instance configuration within one day after the purchase, the billing cycle information is generated based on the new configuration.

For example, if you subscribed to a standard SU1 unit at 09:00:00 on April 18, 2023 and upgraded it to a SU2 unit at 09:30:00 on April 18, 2023, two billing records are generated in the billing cycle on that day.

- The first record corresponds to the period from April 18, 2023 09:00:00 to April 18, 2023 9:30:00. The instance specifications are charged based on one SU1.

- The second record corresponds to the period from April 18, 2023 09:30:00 to April 19, 2023 00:00:00. The instance specifications are billed based on one SU2 unit.

A standard instance can be configured with multiple units of the same type, for example, five SU1 units, but cannot be configured with different types of units, for example, two SU1 units and three SU2 units. You can change the number and type of units at any time. For example, you can upgrade two SU1 units to five SU1 units or two SU1 units to two SU2 units. A free SUF unit can be upgraded to an SU1, SU2, SU3, or SU4 unit. After the upgrade, the original SUF unit is no longer retained.

Impact of Arrears

Figure 1 shows the statuses a pay-per-use IoTDA instance can have throughout its lifecycle. After an IoTDA instance is purchased, it enters the valid period and runs normally during this period. If your account goes into arrears, the IoTDA instance enters a grace period and then a retention period.

Figure 2-2 IoTDA instance lifecycle
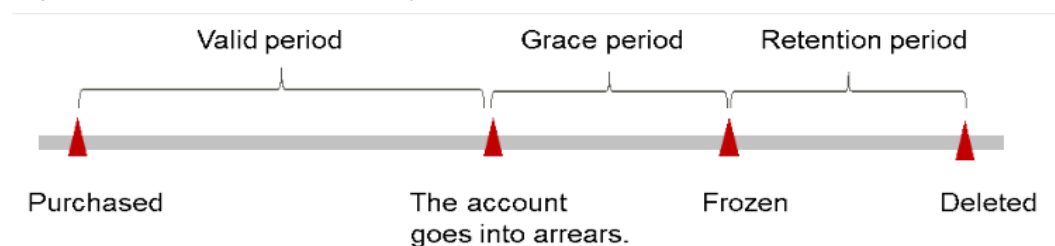
- The system deducts fees from your account balance for pay-per-use resources at the end of each billing cycle. When your account is in arrears, you will be notified by email, SMS, and internal message.

- Impact of arrears

  – If your account is insufficient to pay your amount, your account goes into arrears. However, your resources will not be stopped immediately; instead, they enter the grace period. You will need to pay for the fees incurred during the grace period, which you can see on the **Billing &**

Costs > **Billing Center** > **Overview** page of the Huawei Cloud console. Huawei Cloud will automatically deduct this amount when you top up.

–   If you do not pay the arrears within the grace period, your resources will enter the retention period and become frozen. You cannot perform any operations on the pay-per-use resources during this period.

–   If you do not bring your account balance current before the retention period ends, your resource will be released and the data cannot be restored.

📖 **NOTE**

● Both the grace period and retention period for Huawei Cloud International are 15 days.

● For details about top-up, see **Top-Up and Repayment**.

3 Billing Items

Billing Description

For details about the billing items of IoTDA, see **Table 3-1**.

Table 3-1 IoTDA billing items

Instance Type	Billing Item	Billing Mode	Formula
Standard edition	Instance specifications (unit type and quantity) and required duration	Pay-per-use and yearly/monthly billing	Unit price x Unit quantity x Purchase duration

Table 3-2 specifies the billing rules about daily messages and message TPS.

Table 3-2 IoTDA message billing

Message Type	Description	Billing Mode
Device messages	Messages sent by devices by calling the MQTT PUB interface	The number of messages is billed.
	Messages received by devices by calling the MQTT SUB interface	
	Messages sent by devices by calling the LwM2M Update/Notify interface	
	Response messages received by devices by calling the LwM2M Update interface	
	Messages and properties reported by devices by calling the HTTP interface	

Message Type	Description	Billing Mode
	Command messages sent by the platform by calling the LwM2M Read/Write/Write-Attributes/Execute interface and response messages reported by devices	
	MQTT Connect messages called by devices	● Standard edition: free of charge
	LwM2M Register messages called by devices	
Application messages	Messages sent by applications by calling platform APIs	The number of messages is billed.
Messages forwarded by rules	Messages forwarded to other Huawei Cloud services using rules	If there are fewer forwarded messages than messages sent from devices to the cloud, the forwarded messages are free of charge. If not, the excess forwarded messages are charged. Example: ● If 1 million messages are reported and 1.1 million messages are forwarded, the number of billed messages is calculated as 1.1 million. ● If 1 million messages are reported and 900,000 messages are forwarded, the number of billed messages is calculated as 1 million.

Message Type	Description	Billing Mode
	Message pushed by IoTDA to the third-party applications	The number of messages is billed.
Protocol messages	Logout messages Heartbeat messages ACK messages at the protocol layer Subscription messages Unsubscription messages	Free
OTA upgrade	You will be billed for using OBS to store upgrade packages. For details, see **Software/ Firmware Package Upload**.	The OTA upgrade is provided free of charge. However, utilizing the OBS service may incur charges.

4 Billing Examples

Yearly/Monthly Billing

A user purchased a monthly IoTDA instance of the standard edition at 15:30:00 on March 18, 2023. The instance configuration is as follows:

- Service unit type: SU1
- Number of service units: 5
- Required duration: 5 months

After a period of time, the user found that the current instance specifications no longer met service requirements and updated the instance specifications to ten SU2 units at 9:00:00 on May 22, 2023. What is the total cost after the five-month subscription period expires?

The fees can be divided into two parts: those for the old specifications and those for the specifications upgrade.

Price difference for the specifications upgrade = Price for the new specifications × Remaining period - Price for the original specifications × Remaining period

- Fee of the old specifications: 50 × 5 × 5 = USD1,250 (five SU1 units for five months).
- Upgrade fee:
  - The user upgraded the specifications at 09:00:00 on May 20, 2023. Remaining period = 11 (the remaining days in May, excluding the change day)/31 (the maximum number of days in May) + 2 (June and July) + 18/31 (the remaining days in August/the maximum number of days in August) = 2.9355 months
  - Price of the new specifications: 350 × 10 = 3,500
  - Price of the old specifications: 50 × 5 = 250
  - Upgrade fee: (3,500 - 250) x 2.9355 = USD9540.38
- Total fee: Old specifications fee + Upgrade fee = 1250 + 9540.38 = USD10790.38

Pay-per-Use Billing

A user purchased a pay-per-use IoTDA instance of the standard edition at 15:30:00 on March 18, 2023. The instance configuration is as follows:

- Service unit type: SU1
- Number of service units: 5

After a period of time, the user found that the current instance specifications no longer met service requirements and updated the instance specifications to ten SU2 units at 9:00:00 on March 22, 2023 15:30:00. How much is the total cost by the end of March?

The fee can be divided into two parts.

- From March 18, 2023, 15:30:00 to March 22, 2023, 15:30:00, the usage duration is 4 days, and the billing is based on 5 SU1 units: 0.81 (per unit per day) × 5 × 4 = USD16.2.
- From March 22, 2023, 15:30:00 to March 23, 2023, 00:00:00, the usage duration is 8.5 hours, and the billing is based on 10 SU2 units: 5.32 (per unit per day) × 10 × (8.5/24) = USD18.84.
- From March 23, 2023 00:00:00 to April 1, 2023 00:00:00, the usage duration is 9 days, and the billing is based on 10 SU2 units: 5.32 (per unit per day) × 10 × 9 = USD478.8.

Therefore, the total cost is: 16.2 + 18.84 + 478.8 = USD513.84.

5 Billing Mode Change

You can change the billing mode if it no longer meets your needs.

5.1 From Pay-per-Use to Yearly/Monthly

If you want to use IoTDA standard instances for a long time, you can change the billing mode to yearly/monthly to reduce costs. By doing so, a new order is generated and the yearly/monthly resource takes effect immediately after you pay the order.

📖 **NOTE**

Assume that you bought a pay-per-use IoTDA SU1 instance on April 18, 2023, 15:29:16, and you changed the billing mode to yearly/monthly on April 19, 2023, 16:30:30 (a change-to-yearly/monthly order generated). After you paid the order, the IoTDA instance immediately entered the yearly/monthly billing mode. On the **Billing Center** > **Billing** page, three line items were generated:

- Pay-per-use expenditures for 15:29:16 to 00:00:00 on April 18, 2023
- Pay-per-use expenditures for 00:00:00 to 16:30:30 on April 19, 2023
- Yearly/monthly expenditure for the period from April 19, 2023, 16:30:30

Constraints

- Currently, only standard edition instances support changing the billing mode from pay-per-use to yearly/monthly.
- The specifications cannot be changed when the billing mode is being changed to yearly/monthly.
- You cannot change the billing mode of an instance to yearly/monthly if there is an unpaid order for changing the billing mode from pay-per-use to yearly/monthly.
- Pay-per-use resources that are being frozen or deleted cannot be changed to yearly/monthly.

Prerequisites

The billing mode of the IoTDA instance is pay-per-use.

Procedure

Step 1 Log in to the console.

Step 2 In the navigation pane, click ☰ and choose **IoT** > **IoT Device Access**.

Step 3 Choose **IoTDA Instances** and confirm the standard edition instance to be changed to yearly/monthly.
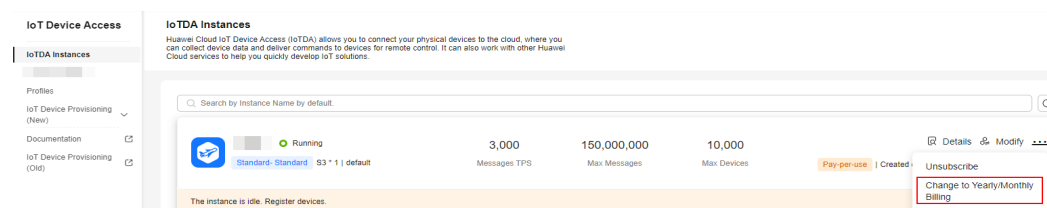
Step 4 Click ⋯ on the right of the instance and select **Change to Yearly/Monthly Billing**.

Figure 5-1 IoTDA instance - Changing to yearly/monthly billing

Step 5 Select the required duration, determine whether to enable auto-renewal, confirm the expected expiration date and price, and click **Pay**.

Figure 5-2 IoTDA instance - Changing the billing mode from pay-per-use to yearly/monthly
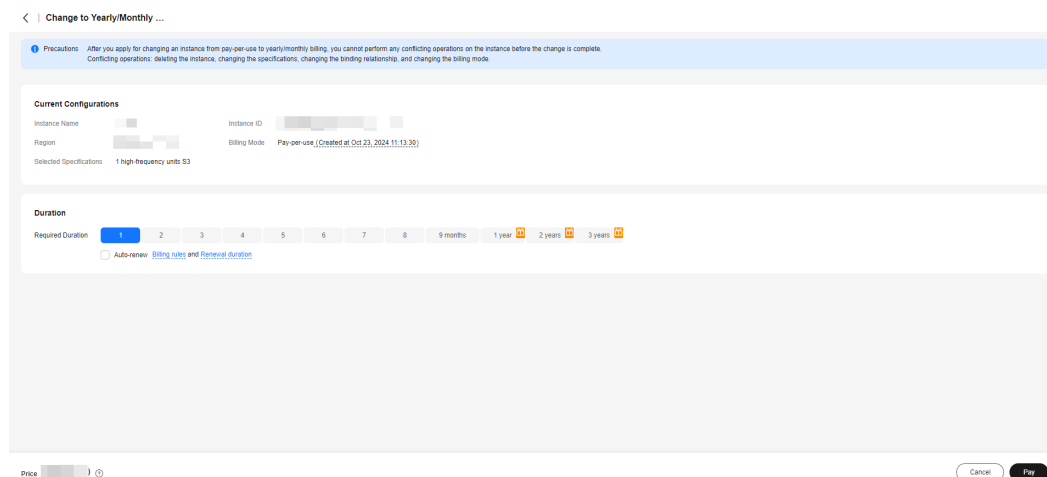
Step 6 Select a payment method and make your payment. Once the order is paid, the billing mode becomes yearly/monthly.

----End

5.2 From Yearly/Monthly to Pay-per-Use

After purchasing a yearly/monthly IoTDA instance, you can change the billing mode to pay-per-use to reclaim some costs and use the instance more flexibly.

📖 **NOTE**

You can change the billing mode from yearly/monthly to pay-per-use in either of the following ways:

- Change to pay-per-use immediately: The pay-per-use billing mode takes effect immediately.

- Change to pay-per-use upon expiration: The pay-per-use billing mode takes effect only after the yearly/monthly subscription has expired.

Constraints

- Currently, only standard edition instances support the change from yearly/monthly to pay-per-use.

- You have passed real-name authentication.

- You can change the billing mode from yearly/monthly to pay-per-use only for in-use IoTDA instances on the renewal page.

- Yearly/Monthly IoTDA instances that are in the grace period or retention period cannot be changed to pay-per-use.

Prerequisites

Change to pay-per-use immediately: This operation can be performed only on the IoTDA console. Change to pay-per-use upon expiration: This operation can be performed only on the renewal page of Billing Center.

Procedure for Changing to Pay-per-Use Immediately

Step 1 Log in to the console.

Step 2 In the navigation pane, click ☰ and choose **IoT** > **IoT Device Access**.

Step 3 Choose IoTDA Instances and confirm the standard edition instance to be changed to pay-per-use.

Step 4 Click ··· on the right of the instance and select **Change to Pay-per-Use**.

Figure 5-3 IoTDA instance - Changing to pay-per-use billing
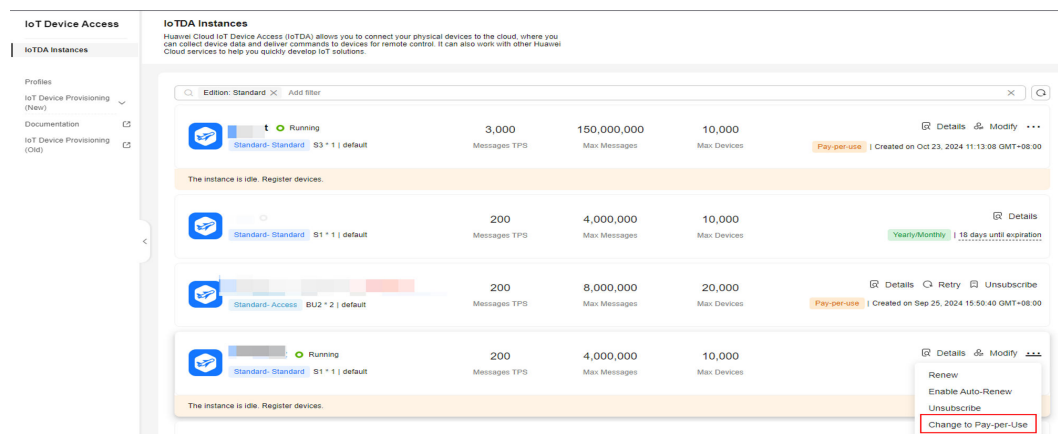
Step 5 Click OK. Then you are switched to Billing Center.

Figure 5-4 IoTDA instance - Confirming to change to pay-per-use billing
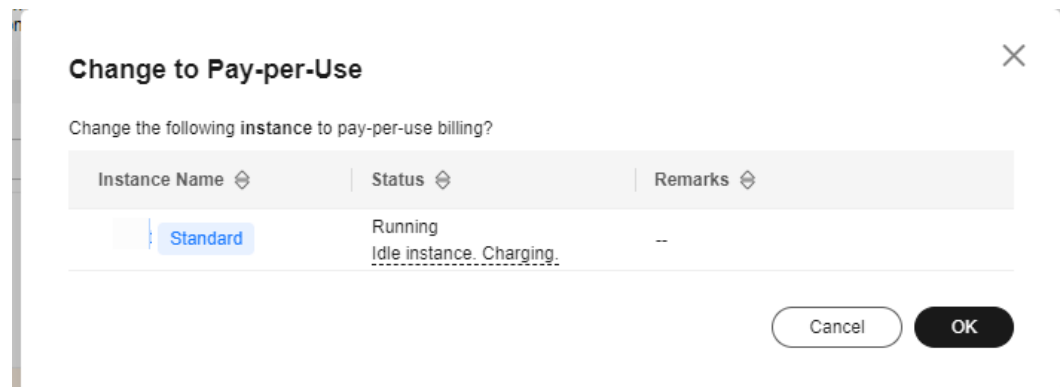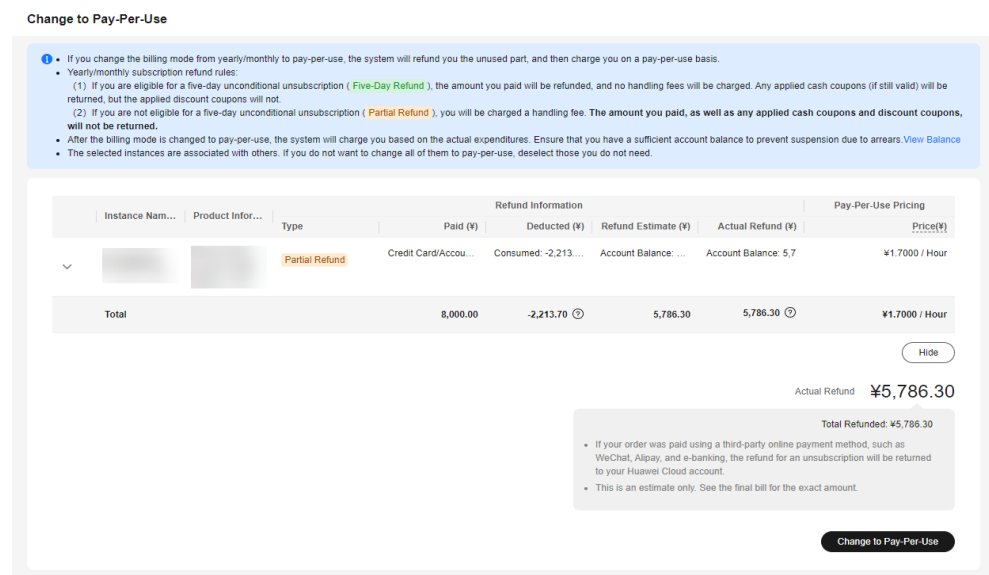

Figure 5-5 Changing from yearly/monthly to pay-per-use billing

Step 6 Confirm the refund information, select **I understand a handling fee will be charged for this unsubscription**, and click the button to complete the change.

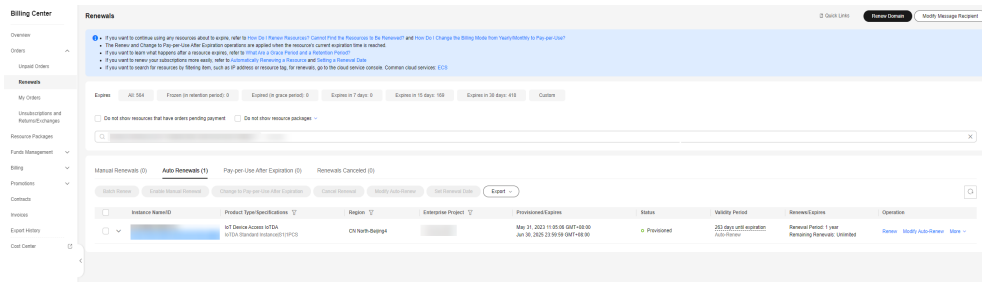**----End**

Procedure for Changing to Pay-per-Use upon Expiration

Step 1 Log in to the console.

Step 2 On the top navigation bar, choose **Billing** > **Renewal**.

Step 3 Search for the IoTDA instance to be changed to pay-per-use based on the instance ID or name.

Step 4 Click **More** > **Change Billing Upon Expiration** in the **Operation** column.

Figure 5-6 Changing to pay-per-use in billing center

Step 5 Confirm the change details and click **Change to Pay-per-Use**.

Figure 5-7 Changing the billing mode to pay-per-use billing upon expiration
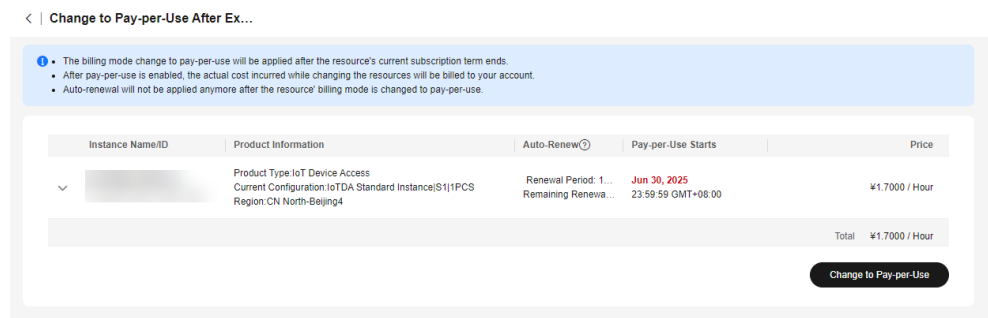
----End

6 Renewal

6.1 Overview

Introduction

If an IoTDA instance is about to expire but you want to continue using it, renew the subscription within a specified period. Otherwise, resources will be automatically released, and data will be lost and cannot be restored.

Only yearly/monthly IoTDA instances can be renewed. Pay-per-use IoTDA instances can run as long as you have sufficient account balance.

If your subscription is renewed before it expires, all resources are retained and your instances are not affected. For details about the statuses of an IoTDA instance after it expires, see **Impact of Expiration**.

Renewal Methods

You can renew a yearly/monthly IoTDA instance manually or automatically.

Table 6-1 Renewal methods

Method	Description
Manual renewal	To use a yearly/monthly IoTDA instance longer, renew the subscription anytime on the console as long as the instance is not automatically deleted due to expiration.
Auto-renewal	After auto-renewal is enabled, IoTDA instances are automatically renewed before the subscription expires. This prevents resources from being automatically deleted in the event that you forget to manually renew the subscription.

You can renew your subscription across the lifecycle of your IoTDA instance, as shown in **Figure 6-1**.

Figure 6-1 Lifecycle of an IoTDA instance
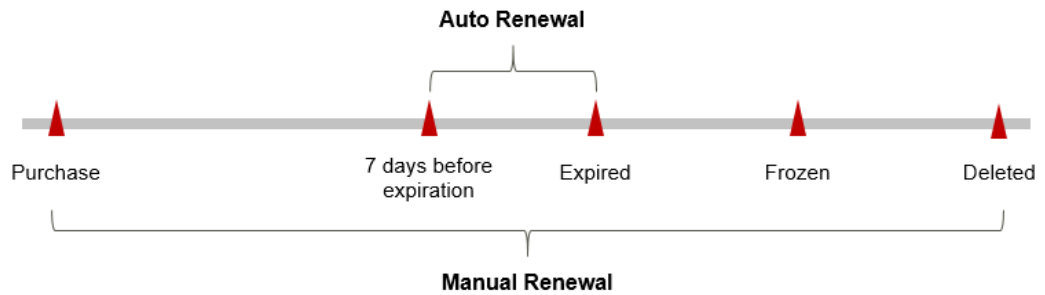
1. An IoTDA instance is in the **Running** status from the time when it is purchased to the time when it expires. After the instance expires, its status changes to **Expired**.

2. If the instance is not renewed upon expiration, it enters the grace period. If it is not renewed after the grace period ends, the status changes to **Frozen**.

3. If you do not renew your subscription after the grace period ends, your resource enters a retention period. If you do not renew the subscription within the retention period, your resource is automatically deleted.

☐ NOTE

Both the grace period and retention period for Huawei Cloud International are 15 days.

You can enable auto-renewal anytime before an IoTDA instance expires. By default, the system will make the first attempt to charge your account for the renewal at 03:00, seven days before the expiry date. If this attempt fails, it will make another attempt at 03:00 every day until the subscription is renewed or expires. By default, renewal charges are deducted from your account seven days before the new expiration date. You can change this auto-renew payment date as required.

6.2 Manual Renewal

Renewing on the Console

Step 1 Log in to the console.

Step 2 In the navigation pane, click ☰ and choose **IoT** > **IoT Device Access**.

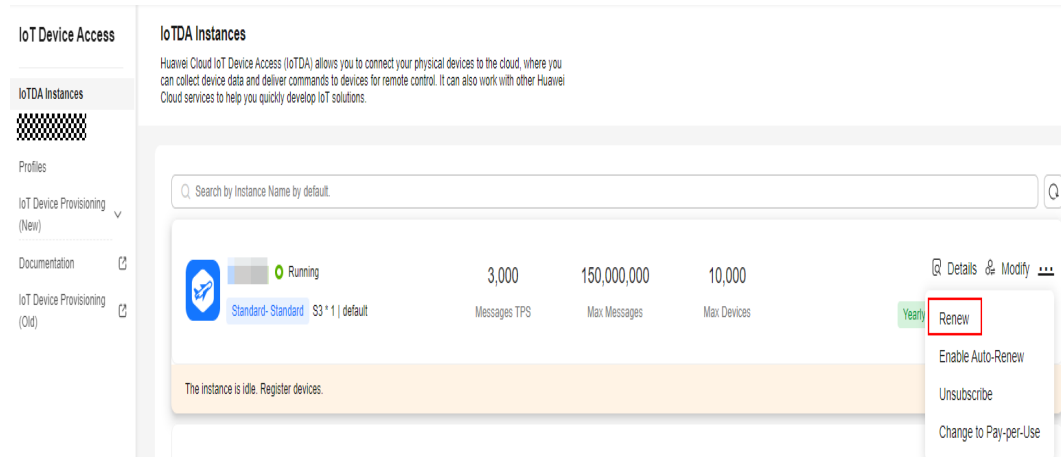**Step 3** On the IoTDA instance list page, select the IoTDA instance to be renewed.

Step 4 Click ⋯ on the right of the instance and select **Renew**. Confirm the instance to be renewed and go to the Billing Center of **Step 5** to pay for the renewal.
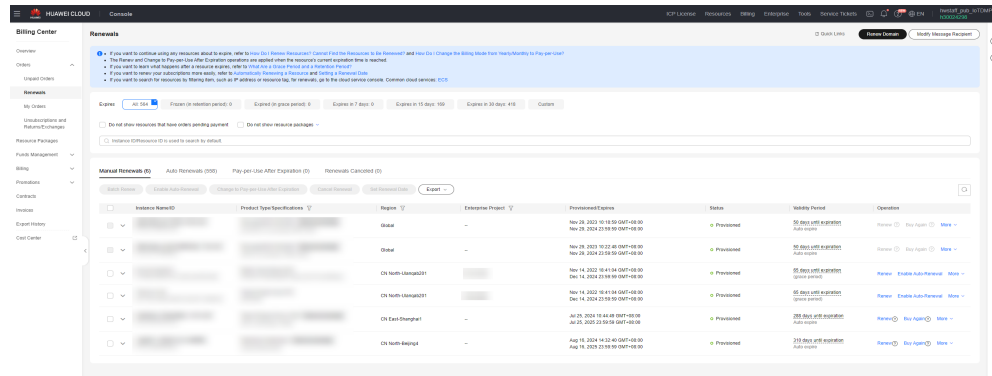
Figure 6-2 IoTDA instance - Renewal

----End

Renewing in Billing Center

Step 1 Log in to the console.

Step 2 On the top navigation bar, choose **Billing** > **Renewal**.

Step 3 Customize the filter criteria.

On the **Manual Renewals**, **Auto Renewals**, **Pay-per-Use After Expiration**, and **Renewals Canceled** tab pages, you can view the resources to be renewed.
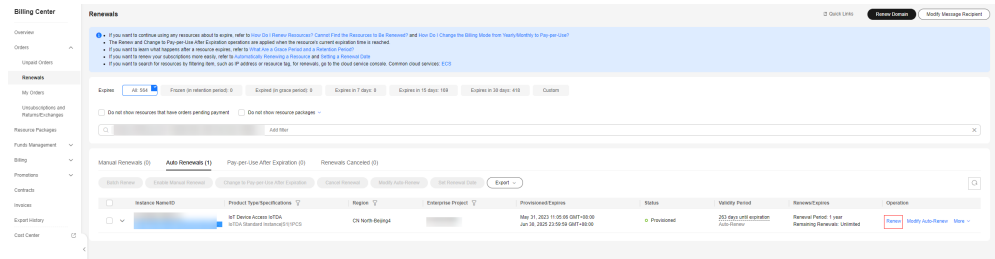
Figure 6-3 Renewal management

You can move all resources that need to be manually renewed to the **Manual Renewals** tab. For details, see **Restoring to Manual Renewal**.
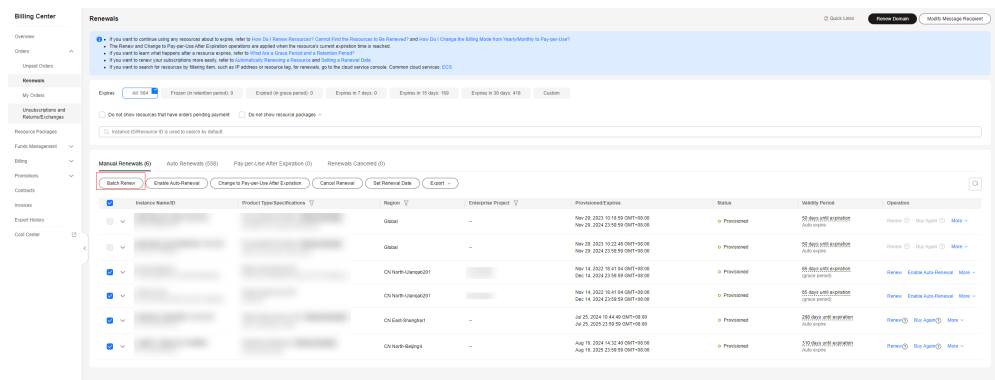
Step 4 Manually renew the resources.

- Individual renewal: Click **Renew** in the **Operation** column for the desired resource.

Figure 6-4 Renewing a single resource

- Batch renewal: Check the boxes for the desired resources, and click **Batch Renew** in the upper left corner.

Figure 6-5 Batch renewal

Step 5 Select a renewal duration and optionally select **Renew on the standard renewal date**. For details, see **Setting the Same Renewal Day for Yearly/Monthly Resources**. Confirm the price and click **Pay**.

Figure 6-6 Confirming renewal
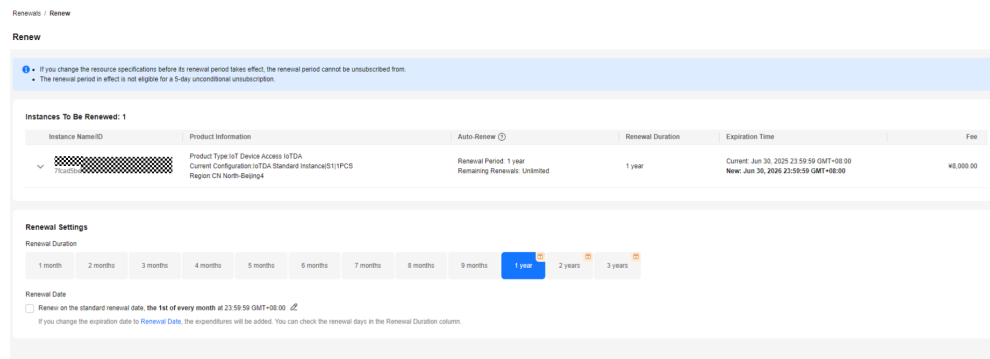
Step 6 Select a payment method and confirm the payment. After you pay the order, the renewal is complete.

----End

Setting the Same Renewal Day for Yearly/Monthly Resources

If you have multiple IoTDA instances with different expiration dates, you can set a fixed expiration date to facilitate routine management and renewal.

In **Figure 6-7**, a user renews two resources that will expire at different time for one month and sets a fixed renewal date.

Figure 6-7 Setting a fixed renewal date
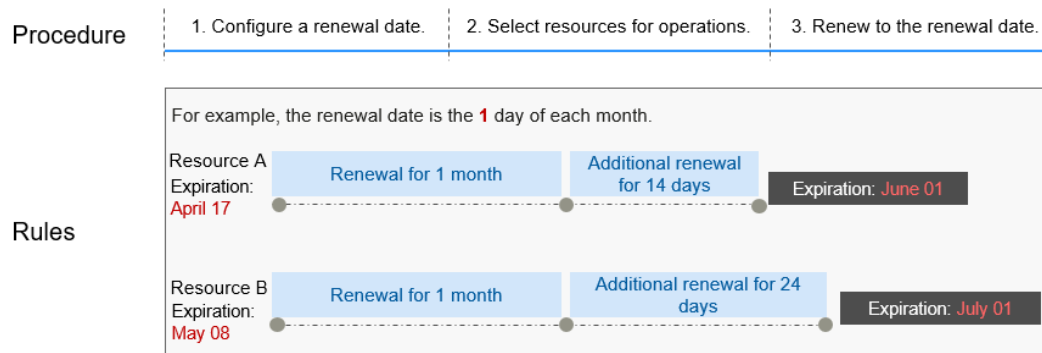
For details, see **Setting a Renewal Date**.

6.3 Auto-Renewal

Auto-renewal can prevent IoTDA instances from being automatically deleted if you forget to manually renew them. The auto-renewal rules are as follows:

- The auto-renewal period of an IoTDA instance varies depending on how you enable auto-renewal.

- You can enable auto-renewal anytime before an IoTDA instance expires. By default, the system will make the first attempt to charge your account for the renewal at 03:00, seven days before the expiry date. If this attempt fails, it will make another attempt at 03:00 every day until the subscription is renewed or expires.

- After auto-renewal is enabled, you can still renew the IoTDA instance manually if you want to. After a manual renewal is complete, auto-renewal is still valid, and the renewal expenditure will be deducted from your account seven days before the new expiry date.

- By default, the renewal expenditure is deducted from your account seven days before the new expiry date. You can change this auto-renewal payment date as required.

For details about auto-renewal rules, see **Auto-Renewal Rules**.
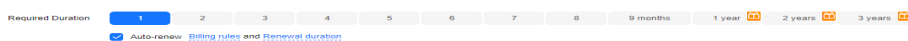
Prerequisites

The yearly/monthly IoTDA instance has not expired.

Enabling Auto-Renewal During Instance Purchase

You can enable auto-renewal on the IoTDA instance purchase page, as shown in **Figure 6-8**.

Figure 6-8 IoTDA instance - Auto-renewal configuration

The auto-renewal periods are as follows:

- Monthly subscriptions renew each month.
- Yearly subscriptions renew each year.
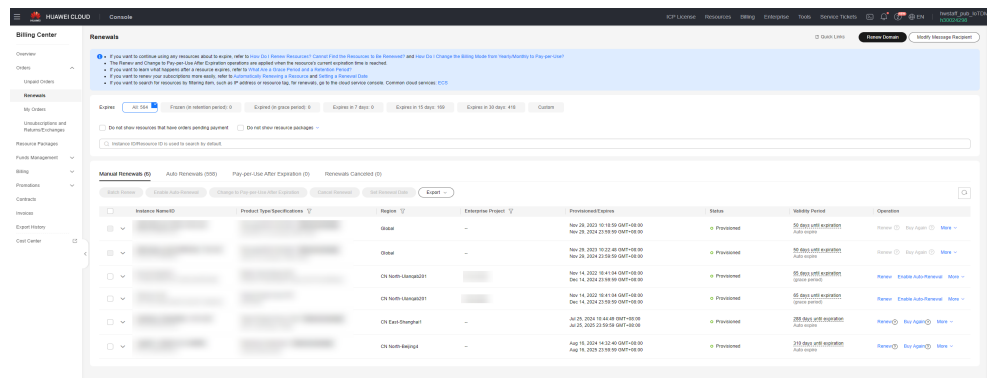
Enabling Auto-renewal on the Renewals Page

Step 1 Log in to the console.

Step 2 On the top menu bar, choose **Billing** > **Renewal**.

Step 3 Set the search criteria.

- Click **Auto Renewals**. On this tab, you can view the resources for which auto-renewal has been enabled.
- On the **Manual Renewals**, **Pay-per-Use After Expiration**, and **Renewals Canceled** page, you can enable auto-renewal for resources.
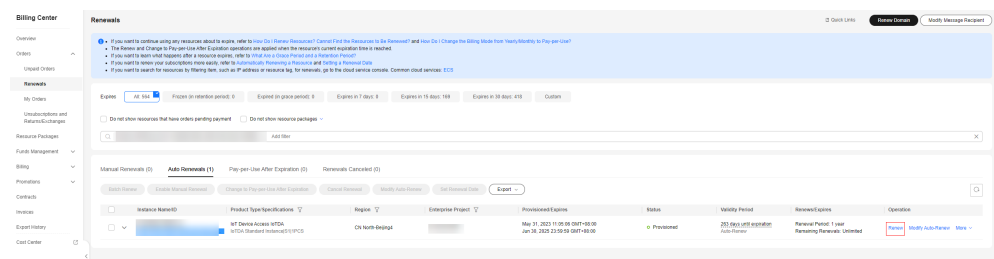
Figure 6-9 Renewal management

**Step 4** Enable auto-renewal for yearly/monthly resources.

- Enabling auto-renewal for a single resource: Select the IoTDA instance for which you want to enable auto-renewal and click **Enable Auto-Renewal** in the **Operation** column.

Figure 6-10 Renewing a single resource

- Enabling auto-renewal for multiple resources at a time: Select the IoTDA instances for which you want to enable auto-renewal and click **Enable Auto-Renewal** above the list.

Figure 6-11 Enabling auto-renew for multiple resources
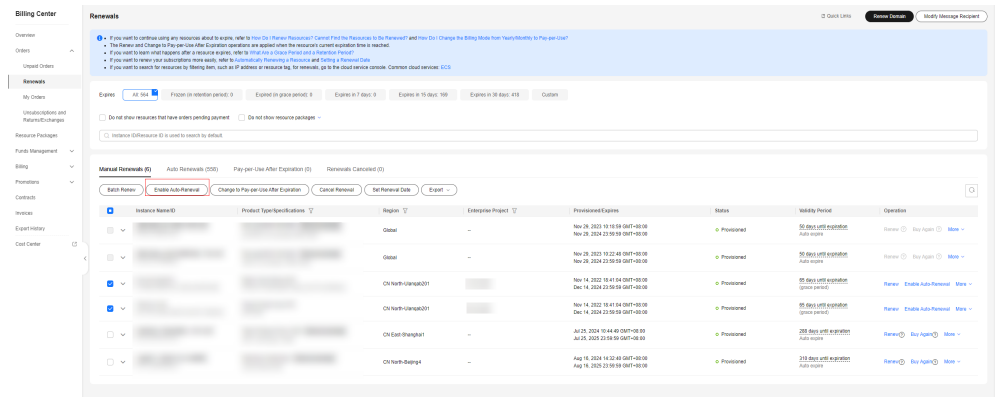
Step 5 Select a renewal period, specify the auto-renewal times, and click **OK**.

The auto-renew period is subject to the selected renewal period and auto-renew times. For example, if you select three months as the renewal period and do not select **Preset Auto-renewals**, your subscription is automatically renewed for three months before each expiration.

Figure 6-12 Enabling auto-renewal
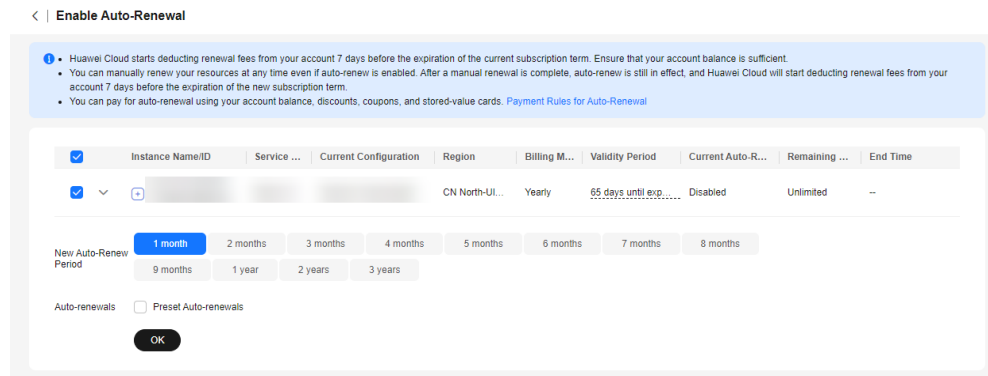
----End

7 Bills

To learn about your expenditures, go to the bills page, and check the transactions and detailed bills.

Bill Generation

After yearly/monthly resources are paid, a bill is reported to the billing system for settlement.

The usage of pay-per-use resources is reported to the billing system at a fixed interval. Pay-per-use IoTDA resources are settled by day.

You are not billed immediately after a record is generated. On the **Billing Center** > **Billing** > **Transactions and Detailed Bills** > **Transaction Bills** page, **Expenditure Time** indicates the time when a pay-per-use product is used.

## Viewing Bills of a Specific Resource

Example 1: Use the resource ID to search for the bill. The resource ID is the same as that in the bill.

Step 1 Log in to the console, choose **IoT** > **IoTDA Device Access** in the navigation pane. Go to the IoTDA instance list page and go to the details page of the target instance.

Step 2 Copy the resource ID as shown in the figure.

Figure 7-1 IoTDA instance - Obtaining the resource ID
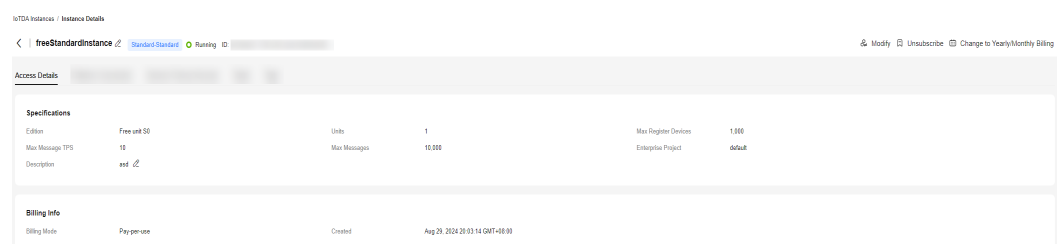
Step 3 On the top menu bar, choose **Billing** > **Bills**.

Step 4 Choose **Transactions and Detailed Bills** > **Bill Details**. On the displayed page, select **Resource ID** as the filter condition, paste the resource ID copied in **Step 2**, and search for the bill of the resource.

Figure 7-2 Querying resource bills
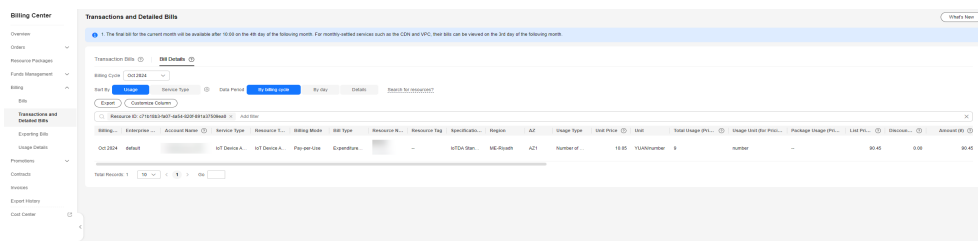
By default, bill details are displayed by usage and billing cycle. You can also select other statistical dimensions or periods.

----End

Check the Consistency of the Actual Usage and Billed Usage

Assume that you purchased two IoTDA SU1 units at 10:09:06 on April 8, 2023, and delete the them at 10:09:06 on April 10, 2023.

● IoTDA transaction bills

Pay-per-use IoTDA instances are billed by day and settled at 00:00 (UTC +08:00) every day. You can check the transaction records against the actual information. For details, see **Table 7-1**.

Table 7-1 IoTDA transaction bills

Service	IoTDA
Produc t	IoTDA standard instance
Billing Mode	Pay-per-use billing
Expend iture Time	From 10:09:06 on April 8, 2023 to 10:09:06 on April 10, 2023, 3 transaction bills were generated: ● April 8, 2023, 10:09:06 to April 9, 2023, 00:00:00 ● April 9, 2023, 00:00:00 to April 10, 2023, 00:00:00 ● April 10, 2023, 00:00:00 to April 10, 2023, 10:09:00
List Price	List price = Usage x Unit price In this example, you use IoTDA for 36,546 seconds in the first billing cycle. You can query the unit price on the **IoTDA Pricing Details** page. For example, if the daily price is USD0.81 for a SU1 unit and the number of units is 2, the list price is USD0.6852375. Calculation: (36,546/86,400) × 2 × 0.81 = USD0.6852375.

Discounted Amount	Discounts offered for cloud services, for example, commercial discounts, partner authorized discounts, and promotional discounts. Discounts are based on the list prices.
Truncated Amount	Huawei Cloud bills a resource with the price (USD) accurate to the 8th decimal place. However, the amount due is truncated to the 2nd decimal place, while the third and later decimal places are referred to as the truncated amount. Taking the first billing cycle as an example, the truncated amount is USD0.0052375.
Amount Due	Amount due = List price – Discount amount – Truncated amount Take the first period as an example. If the discount amount is 0, the amount due is USD0.68 (0.6852375 – 0 – 0.0052375).

- IoTDA bill details

  Bill details can display in multiple ways. By default, the bill details of a resource are displayed by usage and by billing cycle. **Table 7-2** illustrates the IoTDA bill details, which can be used to check against the actual usage.

  Table 7-2 IoTDA bill details

Service	IoTDA
Product	IoTDA standard instance
Billing Mode	Pay-per-use billing
Resource Name/ID	Name and ID of an IoTDA instance. Example: iotda-test-instance, 4cdeb1cd-7071-4890-9ce4-e6c2299e960e
Specifications	Example: IoTDA standard instance | Small package SU1
Usage type	Duration
Unit Price	In the pay-per-use billing mode, the unit price is provided only when the amount is equal to the usage multiplied by the unit price. No unit price is provided in other pricing modes, for example, tiered pricing. For details about the unit price of pay-per-use IoTDA instances, see **IoTDA Pricing Details**.
Price Unit	Unit price in **IoTDA Pricing Details**: USD/day.

Usage	The usage is displayed by the unit price, which is USD/day for IoTDA. The usage is measured by day. In this example, the usage duration from 10:09:06 on April 8, 2023 to 10:09:06 on April 10, 2023 is two days, and the number of units is 2. Therefore, the total usage is 4 (2 x 2).
Usage Unit	day
List Price	List price = Usage x Unit price In this example, the usage is 2 days, and the unit price can be queried in **IoTDA Price Details**. For example, if the price is USD0.81 per unit per day and the number if units is 2, the list price is USD3.24 (0.81 × 2 × 2).
Discounted Amount	Discounts offered for cloud services, for example, commercial discounts, partner authorized discounts, and promotional discounts. Discounts are based on the list prices.
Amount Due	Amount that should be paid for used cloud services after discounts are applied.

8 Arrears

If there is not a sufficient account balance to pay for your bill and there is no other payment method configured, your account will go into arrears. To continue using your cloud services, top up your account in a timely manner.

Arrears Reason

In pay-per-use mode, your account balance is insufficient.

Impact of Arrears

- Yearly/Monthly

  This is a pre-paid billing mode, so you can continue using yearly/monthly resources even if your account is in arrears.

- Pay-per-use

  If your account is insufficient to pay your amount, your account goes into arrears.

  a. However, your resources will not be stopped immediately; instead, they enter the grace period. You are still responsible for expenditures generated during the grace period. You can view the charges on the **Billing Center** > **Overview** page and pay any past due balances as needed.

  b. If you do not bring your account current before the grace period ends, the resource enters a retention period and its status becomes **Frozen**. You cannot perform any operations while it is in the retention period.

  c. If you do not bring your account balance current before the retention period ends, your resource will be released and the data cannot be restored.

Figure 8-1 IoTDA instance lifecycle
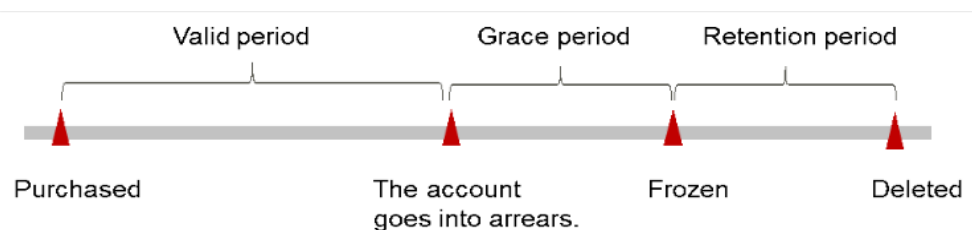
📖 NOTE

> Both the grace period and retention period for Huawei Cloud International are 15 days.

Avoiding and Handling Arrears

If you are in arrears, top up your account in time. For details, see **Top-up and Repayment**..

Configure the **Balance Alert** function on the **Billing Center** > **Overview** page. When the total amount of the available quota, general cash coupons, and cash coupons is lower than the threshold, the system automatically notifies you by SMS or email.

If your account is in arrears, top up your account in a timely manner.

9 Billing Termination

Yearly/Monthly Resources

You pay for a resource billed in yearly/monthly mode, such as a yearly/monthly IoTDA instance, when you purchase it. Billing automatically stops when the subscription expires.

- Unsubscribe from them when no longer in use. The system will then return you a certain amount of money, depending on whether your resources are subject to five-day unconditional unsubscription and whether you have used some cash or discount coupons. For details about unsubscription rules, see **Unsubscription Rules**.
- If you have enabled the auto-renewal function, disable it before the auto-renewal deduction date (seven days before the expiration date by default) to avoid unexpected fees.

Pay-per-Use Resources

If a pay-per-use IoTDA instance is no longer needed, delete it to stop billing.

10 Cost Management

As you migrate more of your services to the cloud, managing cloud costs becomes more important. For example, you may be more concerned with cost management when using IoTDA instances. The following describes how to manage costs from four dimensions: cost composition, allocation, analysis, and optimization, to help maximize return on your investment.

Cost Composition

Huawei Cloud **Cost Center** helps you manage resource costs with ease. However, you need to identify, manage, and optimize O&M costs by yourself.

Cost Allocation

A good cost accountability system is the basis of cost management. It ensures that departments, business teams, and owners are accountable for their respective cloud costs. Allocate costs to different teams or projects so that organizations have a clear picture of their respective costs.

Huawei Cloud **Cost Center** supports cost collection and reallocation with multiple tools for you to choose from.

- **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. For details, see **Viewing Costs by Linked Account**.

- **By cost tag**

  You can use tags to sort your Huawei Cloud resources in a variety of different ways, for example, by purpose, owner, or environment. The following is the process of managing costs by predefined tags (recommended).

Figure 10-1 Adding tags to cloud resources
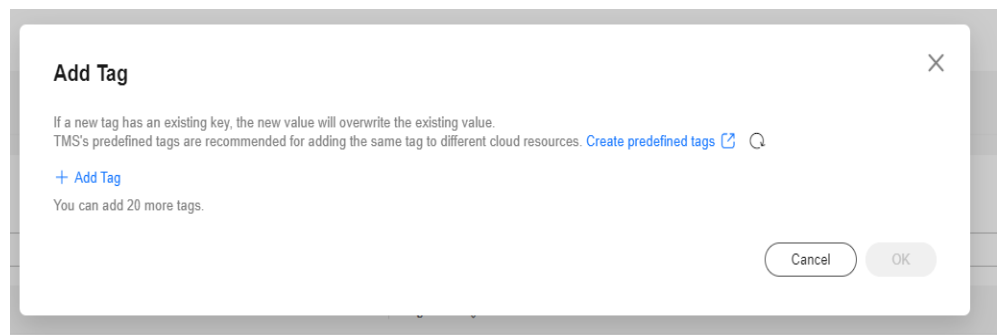
For details, see **Viewing Costs by Cost Tag**.

- **By cost category**

  You can use **Cost Categories** provided by **Cost Center** to split shared costs. Shared costs include the costs for the resources (compute, 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. For details, see **Viewing Cost By Cost Category**.

Cost Analysis

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 using various dimensions and display filters. You can analyze the trends and drivers of your service usage and costs from a variety of perspectives and scopes.

Cost Anomaly Detection provided by **Cost Center** also detects unexpected expenses promptly for tracing, monitoring, and analysis.

For details, see **Performing Cost Analysis to Explore Costs and Usage** and **Enabling Cost Anomaly Detection to Identify Anomalies**.

Cost Optimization

You can create different types of budgets on the **Budgets** page of Cost Center to track your costs against the budgeted amount you specified. If the budget thresholds you defined are reached, Cost Center will send alerts to the recipients you configured. You can also create budget reports and specify recipients to receive budget alerts if any at a frequency you configured.

Suppose you want to create a monthly budget of 2000 for a pay-per-use ECS and expect to receive an alert if the forecasted amount exceeds 80% of the budgeted amount. You can refer to the following budget information.

Figure 10-2 Creating a budget

For details, see **Enabling Forecasting and Creating Budgets to Track Cost and Usage**.