Date Warehouse Service

Billing Description

Issue 01

Date 2025-09-23

Contents

1 DWS Billing Overview

DWS supports the yearly/monthly, discount package, and pay-per-use billing modes. The total price of a DWS cluster will be automatically calculated so that you can purchase a cluster with just a few clicks.

Billing Modes

DWS provides three billing modes: yearly/monthly, pay-per-use, and discount package. The longer you use, the less you pay.

- Yearly/Monthly: Recommended for long-term users. You can purchase cloud services in yearly/monthly mode and enjoy a larger discount than in the pay-per-use mode.

- **Pay per use (hourly)**: In this billing mode, you can enable or disable DWS as you like. You are billed by your use duration on an hourly basis (the time is accurate to minutes) and the system generates a bill every natural hour and deducts fees from your account balance.

- **Discount Package**: You can opt for monthly or annual prepayment for cold data storage. This pricing model offers substantial savings compared to the pay-per-use mode. It is ideal when the volume of OBS data storage or data transfer surpasses the purchased package.

For details, see **Billing Modes**. You can also change the billing mode later if it no longer meets your needs. For details, see **Billing Mode Change**.

Billing Items

The billing items of DWS are data warehouse nodes, snapshot storage space, disk storage, cold data storage, public IP address and bandwidth (optional), and database encryption keys (DEK) (optional). For details about the calculation factors and formula of each billing item, see **Item**.

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

Renewal

DWS supports the yearly/monthly, pay-per-use, and discount package billing modes. In the yearly/monthly and discount package billing modes, you make a

one-off payment when purchasing DWS, and no extra fees will be incurred while you use DWS. DWS is available as long as your account balance is sufficient. In pay-per-use billing, fees are deducted every hour. If the balance is insufficient, your account will be in arrears. Otherwise, your resources will be given a retention period. During this period, data will be retained, but clusters will be stopped.

The retention period depends on your level. To renew your package, visit **Renewals**. For details, see **Renewal**.

Bills

To learn about your expenditures, go to **Billing Center** > **Billing**, and view the transactions and billing details related to DWS. 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. To continue using your cloud services, top up your account in time. For details, see **Arrears**.

Stopping Billing

If you no longer need to use your DWS resources, you can unsubscribe from or delete them to stop the billing. For details, see **Stopping Billing**.

Cost Management

DWS costs include costs of ownership and O&M. You can allocate, analyze, and optimize ECS costs to save more money. For details, see **Cost Management**.

Pricing

For details about the pricing details, see **DWS Pricing Details**.

2 Billing Modes

2.1 DWS Billing Modes

DWS provides three billing modes: yearly/monthly, pay-per-use, and discount package. The longer you use, the less you pay. For details about the pricing details, see **DWS Pricing Details**.

- Yearly/Monthly: Recommended for long-term users. You can purchase cloud services in yearly/monthly mode and enjoy a larger discount than in the pay-per-use mode. A purchased cloud service is bound to a cloud service instance that is enabled or used. When the validity period expires, the cloud service enters the retention period (grace period). After the retention period expires, the cloud service is automatically released. You can renew the service to continue using it.

- **Pay per use (hourly)**: In this billing mode, you can enable or disable DWS as you like. You are billed by your use duration on an hourly basis (the time is accurate to minutes) and the system generates a bill every natural hour and deducts fees from your account balance.

- **Discount Package**: You can opt for monthly or annual prepayment for cold data storage. This pricing model offers substantial savings compared to the pay-per-use mode. It is ideal when the volume of OBS data storage or data transfer surpasses the purchased package.

Table 2-1 Billing modes

Billing Mode	Yearly/Monthly	Discount Package	Pay-per-Use
Payme nt	Prepaid Billed by the required duration specified in your order	Prepaid Billed by the required duration specified in your order	Postpaid Billed by service duration.

Billing period	Billed by the required duration specified in your order	You are charged based on the subscription period.	Billed by second and settled by hour
Billing items	Data warehouse nodes, snapshot storage space, disk storage, public IP address and bandwidth (optional), and database encryption key (optional)	Cold data storage	Data warehouse nodes, snapshot storage space, disk storage, public IP address and bandwidth (optional), and database encryption key (optional)
Billing mode change	Can be changed to pay-per-use. The change takes effect only after the yearly/monthly subscription expires.	After the validity period expires, the billing mode changes to pay-per-use.	Can be changed to yearly/monthly.
Specification change	Supported	Not supported	Supported
Application scenario	This cost-effective mode is ideal when the duration of ECS usage is predictable. The yearly/monthly mode is recommended for long-term users.	This mode applies to scenarios where DWS 3.0 clusters are planned to be used for a long time.	This mode is ideal when you want more flexibility and control on ECS usage. For example, customers that require early operation tests, proof of concept, and short-term use.

2.2 Pay-per-use

Pay-per-use is a billing mode in which you pay after using the service. This mode is recommended if you do not need any prepayment or long-term commitment. This section describes the billing rules of pay-per-use DWS resources.

Application Scenarios

The pay-per-use billing mode applies to scenarios where computing resource requirements fluctuate. You can enable and delete computing resources at any time. For example, customers that require early operation tests, proof of concept, and short-term use.

Billed Items

The following billing items support pay-per-use billing:

Table 2-2 Pay-per-use billing items

Item	Description
Data warehouse node	You are charged based on the selected node specifications. For details, see **DWS Pricing Details**.
Snapshot storage space	DWS provides some free-of-charge storage for you to store the snapshot data. However, if you use more space than the free-of-charge storage space, the exceeded part is charged according to OBS billing rules. For details, see the **OBS pricing details**. The free storage space is the total storage space of your cluster, that is, the storage space of a single node (standby node) x number of nodes.
Disk storage	You can customize the storage type and capacity used by the cluster. The storage resources are charged separately. **NOTE** It is the hot storage (including cache) displayed on the cluster details page after a cluster is created, different from OBS storage.
Cold storage	Cold partition data is stored in OBS, which is cost-effective and billed on a pay-per-use basis.
(Optional) Public network bandwidth	When a pay-per-use cluster is configured with an EIP billed by bandwidth, the bandwidth is billed by the Elastic Cloud Server (ECS) service in pay-per-use mode.
(Optional) Elastic load balance (ELB)	When a pay-per-use cluster is used with an existing load balancer, the load balancer is billed by the Elastic Load Balance (ELB) service in pay-per-use mode.
(Optional) Database encryption key	When a pay-per-use cluster works with the database encryption function, keys are billed by the Data Encryption Workshop (DEW) service in pay-per-use mode.

During creation of a DWS cluster, if you enable database encryption and select an EIP billed by bandwidth and an existing ELB. At the bottom of the **Create DWS Cluster** page, you will see the reference price, as shown in the following figure.

Figure 2-1 Example price

The price includes:

- Node fee: The fee is calculated based on the selected node specifications and node quantity.

- Storage fee: disk storage fee of DWS.

- Public network bandwidth fee: The fee is calculated based on the selected bandwidth size and is billed by the ECS service.

- ELB: The fee is calculated based on the size of the selected ELB and is billed by the ELB service.

- DEW: The fee is calculated based on the selected keys and is billed by the DEW service.

Billing Period

Pay-per-use DWS usage is calculated by the second and billed every hour (UTC +8:00). The billing starts when the DWS cluster is successfully created and ends when the cluster is deleted.

> **NOTE**
>
> It takes a certain period of time from cluster creation to cluster startup. The billing starts from the time when the cluster is successfully created, not the time when the cluster starts to be created. You can view the two time points on the **Cluster Details** tab. **Start Time** indicates the time when the cluster is successfully created.

For example, if you create a pay-per-use DWS cluster at 08:45:30 and delete it at 08:55:00, the billing period will be from 08:00:00 to 9:00:00 and the fee will be generated from 08:45:30 to 08:55:00. The billing duration is 600 seconds.

Billing Example

If you create a pay-per-use DWS cluster (node flavor: dwsx2.xlarge; hot data storage on each node: 50 GB) at 9:59:30 on April 18, 2023, and then delete it at 10:45:46 on April 18, 2023, then:

- The first billing cycle is from 09:00:00 to 10:00:00, and the billing duration within the cycle is from 09:59:30 to 10:00:00, which is 30 seconds.

- The second billing cycle is from 10:00:00 to 11:00:00, and the billing duration within the cycle is from 10:00:00 to 10:45:46, which is 2,746 seconds.

You will be billed for both usage periods. DWS resources are billed individually as follows: The price of a resource listed in the product pricing details is per hour, so divide it by 3600 to obtain the price for each second.

Table 2-3 Billing formulas

Resource Type	Formula	Resource Unit Price
Data warehouse node	Unit price of a node x Billing duration	For details, see "Pricing Details" in the **DWS Pricing Details**.
Snapshot storage space	Storage unit price x Storage capacity x Billing duration	DWS provides some free-of-charge storage for you to store the snapshot data. However, when you use more storage space than the free-of-charge storage space, the excessive space usage will be billed based on OBS billing standards on a pay-per-use basis. The free-of-charge space is the same as the size of the total storage space of your cluster. (**Free-of-charge space = Storage space of a single node x Number of nodes**) For details, see "Pricing Details" in **OBS Pricing Details**.
Disk Storage	Hot data storage capacity unit price x Hot data storage capacity x Number of nodes Number of data copies x Billing duration	For details, see "Hot Data Storage Resources" in the **DWS Pricing Details**.
Cold storage	Cold data storage capacity unit price x Cold data storage capacity x Number of nodes Number of data copies x Billing duration	You are advised to store cold data in OBS, which is billed on a pay-per-use basis.
(Optional) Public network bandwidth	Tiered billing based on the fixed bandwidth: • 0 Mbit/s to 5 Mbit/s (included): billed at a fixed unit price per Mbit/s • Greater than 5 Mbit/s: billed at a different price per Mbit/s	For details, see "Bandwidth Price" on **ECS Pricing Details** or **EIP Pricing Details**.
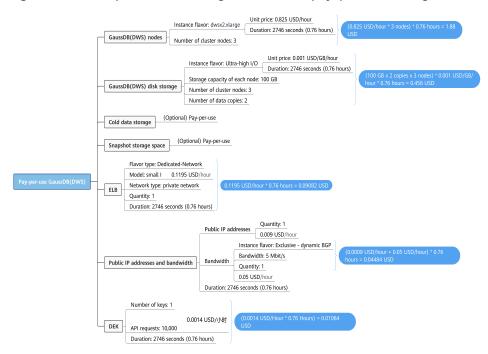
Resource Type	Formula	Resource Unit Price
(Optional) Elastic load balance (ELB)	Fees are charged based on the actual usage duration. • LCU fee: You are charged based on the number of loadbalancer capacity units (LCUs) used by a dedicated load balancer per hour. • Instance fee: You are charged for the duration that each dedicated load balancer is running. If the load balancer is used for less than 1 hour, you will be charged for the actual duration, accurate to seconds.	For details, see "Bandwidth Price" in the **ELB Pricing Details**.
(Optional) Database encryption key	Key Management Service (KMS) • Number of keys: Key instances that have been successfully created or imported are billed on a pay-per-use basis. Prices are calculated by hour, and no minimum fee is required. • Number of API requests: The first 20,000 API requests are free of charge. Additional API calls are charged. The unit is 10,000 calls.	For details, see "Pricing Details" in the **DEW Pricing Details**.

The following figure shows how the fee is calculated.

> **NOTICE**
>
> The price in the figure is for reference only. The actual calculation is based on the price listed in the **DWS Pricing Details**.

Figure 2-2 Example of calculating DWS fees in pay-per-use billing mode

Billing After Specification Change

If you change the specifications after creating a pay-per-use cluster, a new order is generated and you are charged based on the price of the new configuration. The old order automatically becomes invalid.

If you change the node specifications within one hour, multiple billing records will be generated. The start time and end time of each billing record correspond to when different configurations took effect within the hour.

For example, if you create a pay-per-use cluster whose node flavor is **dwsx2.8xlarge** at 9:00:00 and upgrade the node flavor to **dwsx2.16xlarge** at 9:30:00, two pieces of billing information will be generated between 9:00:00 and 10:00:00.

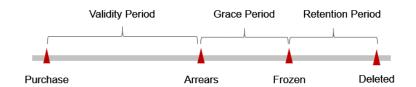- The first record corresponds to 9:00:00 to 9:30:00. The billing is based on the instance flavor **dwsx2.8xlarge**.
- The second record corresponds to 9:30:00-10:00:00. The billing is based on the instance flavor **dwsx2.16xlarge**.

Impact of Arrears

The following figure shows the status of pay-per-use DWS resources in each phase. After a DWS cluster is purchased, it enters the valid period and works

normally during this period. If your account goes into arrears, the cluster enters a grace period and then a retention period.

Figure 2-3 Lifecycle of pay-per-use DWS resources

Arrears Alert

The system will deduct fees for pay-per-use resources upon the end of each billing period. If your account goes into arrears, we will notify you by email, SMS, or in-app message.

Arrears Impact

If your configured payment method is unable to pay a bill for pay-per-use DWS clusters, the clusters enter a 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 balance as needed.

If you do not pay the arrears within the grace period, the resource enters the retention period and its status turns to **Frozen**. You cannot perform any operations on pay-per-use resources in the retention period.

After the retention period ends, the storage resources and EIPs will be released and cannot be restored.

> 📖 **NOTE**
>
> ● For details about recharge, see **Topping Up an Account**.

Billing for a Stopped Cluster

In pay-per-use billing mode, you can stop a cluster to save costs. The system settles the fees by hour for the pay-per-use mode. You can use the service as long as your account balance is sufficient. To reduce costs:

● Choose **More** > **Stop** in the **Operation** column to stop the cluster. After a cluster is stopped, only basic resources (vCPUs and memory) are not charged. The public IP address and bandwidth assigned to the cluster are still charged.

● Delete the purchased clusters if you will not be needing them, and create new ones when needed.

● Switch to the yearly/monthly mode that allows you to use the service within the specific period of time without additional fees.

2.3 Yearly/Monthly

In the yearly/monthly billing mode, you pay before using resources. It is suitable if you need stable resources and want lower costs. By selecting the yearly/monthly mode, you can pre-purchase cloud service resources and gain certain price discounts. This section describes the billing rules of DWS resources billed on a yearly/monthly basis.

Application Scenarios

In yearly/monthly mode, you need to first pay for a certain duration. This mode is suitable for services with the following characteristics:

- Running for a long time with constant resources: For example, enterprise official websites, online malls, and blogs. Yearly/Monthly billing provides higher cost-efficiency.

- Long-term: For example, scientific research projects and large-scale events. Yearly/Monthly billing ensures stable resource supply throughout the project period.

- Service peak estimation: e-commerce promotion season, festivals, holidays, and others. Resources insufficiency can be avoided by pre-purchasing resources for peak demands.

- High data security: For services that require high data security, yearly/monthly billing facilitates continuous usage of the resources.

Billing Items

You are billed for the following items on a yearly/monthly basis.

Table 2-4 Billing items

Item	Constraint
Data warehouse node	You are charged based on the node flavor on a yearly/monthly basis. For details, see **DWS Pricing Details**.
Snapshot storage space	DWS provides some free-of-charge storage for you to store the snapshot data. However, if you use more space than the free-of-charge storage space, the exceeded part is charged according to OBS billing rules. For details, see the **OBS pricing details**. The free storage space is the total storage space of your cluster, that is, the storage space of a single node (standby node) x number of nodes.
Disk Storage	For a yearly/monthly cluster, you can customize the storage type and storage capacity of your cluster. Storage resources are charged separately in yearly/monthly mode. **NOTE** It is the hot storage (including cache) displayed on the cluster details page after a cluster is created, different from OBS storage.

Item	Constraint
Cold storage	Cold partition data is stored in OBS, which is cost-effective and billed on a yearly/monthly basis.
(Optional) Public network bandwidth	When a yearly/monthly cluster is configured with an EIP billed by bandwidth, the bandwidth is billed by the Elastic Cloud Server (ECS) service in yearly/monthly mode.
(Optional) Elastic load balance (ELB)	When a yearly/monthly cluster is used with an existing load balancer, the load balancer is billed by the Elastic Load Balance (ELB) service in pay-per-use mode.
(Optional) Database encryption key	When a yearly/monthly cluster works with the database encryption function, keys are billed by the Data Encryption Workshop (DEW) service in pay-per-use mode.

Assume that you want to create a DWS cluster, the hot data storage is 50 GB per node and a yearly/monthly EIP is selected. At the bottom of the **Create DWS Cluster** page, you can view the fee details, as shown in the following figure.

Figure 2-4 Example price

The price includes:

- Node fee: The fee is calculated based on the selected node specifications and node quantity.

- Storage fee: disk storage fee of DWS.

- Public network bandwidth fee: The fee is calculated based on the selected bandwidth size and is billed by the ECS service.

- ELB: The fee is calculated based on the size of the selected ELB and is billed by the ELB service.

- DEW: The fee is calculated based on the selected keys and is billed by the DEW service.

Billing period

A yearly/monthly DWS instance is billed for the purchased duration (UTC+8:00). The billing period starts from the time you activate or renew your subscription (precise to seconds), and ends at 23:59:59 on the expiration date.

For example, if you create a DWS cluster whose duration is one month at 2023/03/08 15:50:04, the billing period is from 2023/03/08 15:50:04 to 2023/04/08 23:59:59.

Billing Example

If you create a yearly/monthly DWS cluster at 2023/03/08 15:50:04 (node flavor: dwsx2.xlarge; hot data storage: 100 GB per node; yearly/monthly public IP address). Charged resources include node fees and storage fees. The subscription is for one month, and you manually renew it for one month before it expires:

- The first billing period: Mar 08, 2023, 15:50:04–Apr 08, 2023, 23:59:59

- The second billing period: Apr 08, 2023, 23:59:59–May 08, 2023, 23:59:59

You will be billed for both usage periods. DWS resources are billed individually as follows:

Table 2-5 Billing formulas

Resource Type	Formula	Resource Unit Price
Node	Unit price of node flavor x Billing duration x Number of nodes	For details, see "Pricing Details" in the **DWS Pricing Details**.
Storage	Data storage capacity unit price x Hot data storage capacity x Number of data copies x Number of nodes x Billing duration	For details, see "Pricing Details" in the **DWS Pricing Details**.
(Optional) Public network bandwidth	You are charged by the ECS service based on the fixed bandwidth and subscription duration.	For details, see "Bandwidth Price" on **ECS Pricing Details** or **EIP Pricing Details**.
(Optional) Elastic load balance (ELB)	In pay-per-use mode, billed by the ELB service.	For details, see "Bandwidth Price" in the **ELB Pricing Details**.
(Optional) Database encryption key	In pay-per-use mode, billed by the ELB service.	For details, see "Pricing Details" in the **DEW Pricing Details**.

The following figure shows how the fee is calculated.

> **NOTICE**
>
> The price in the figure is for reference only. The actual calculation is based on the price listed in the **DWS Pricing Details**.

Figure 2-5 Example of calculating DWS fees in the yearly/monthly billing

Billing After Specification Change

If the specifications of the current yearly/monthly DWS resources do not meet your requirements, you can modify the specifications on the DWS console. The system will calculate the DWS fee based on the following rules:

- Specification upgrade: You need to pay the price difference.
- Specification downgrade: Huawei Cloud will refund you the price difference.

Downgrading resource specifications affects performance. Therefore, you are not advised to perform this operation. Assume that you created a storage-compute cluster with the node flavor **dwsx2.xlarge.m7** on April 8, 2023 and purchased the cluster for one month, the flavor will be changed to dwsx2.8xlarge on April 18, 2023. The price of the old configuration is $3,960 USD/month. The price of the new configuration is $30,840 USD/month. The formula is as follows:

Specification upgrade fee = New specification price × Remaining period – Old specification price × Remaining period

The remaining period in the formula is the remaining days of each calendar month divided by the maximum days of the corresponding calendar month. In this example, Remaining period = 12 (Remaining days in April)/30 (Maximum number of days in April) + 8 (Remaining days in May)/31 (Maximum number of days in May) = 0.6581. Cost of upgrade = 30,840 x 0.6581-3,960 x 0.6581 = $17,689.73 USD
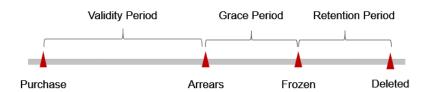
For more information, see **Pricing of a Changed Specification**.

Impact of Expiration

The following figure shows the status of a yearly/monthly DWS cluster in different stages. After an ECS is purchased, it enters the valid period and runs normally

during this period. If the ECS is not renewed after it expires, before being deleted, it first enters a grace period and then a retention period.

Figure 2-6 Lifecycle of a yearly/monthly DWS cluster

Expiration Reminder

The system will send you a reminder (by email, SMS, or in-app message) before a yearly/monthly DWS cluster expires to remind you to renew the subscription.

- The system will send you a reminder 30 days, 15 days, 7 days, 3 days, and 1 day before a yearly resource expires.
- The system will send you a reminder 15 days, 7 days, 3 days, and 1 day before a monthly resource expires.

Impact of Expiration

If your yearly/monthly DWS is not renewed after it expires, it changes to the **Expired** state and enters a grace period. During the grace period, you can access DWS but cannot:

- Re-size a cluster.
- Add or delete CN nodes.
- Add nodes.
- Add disk capacity.

If the yearly/monthly DWS 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 DWS while it is in the retention period.

If the yearly/monthly DWS resources are not renewed after the retention period ends, the DWS node resources and storage resources will be released and data cannot be restored.

📖 **NOTE**

- For details about renewals, see **Overview**.

2.4 Discount package

DWS also supports discount packages. You can make a one-off payment according to the purchased service duration. The service duration ranges from one month to three years.

Application scenario
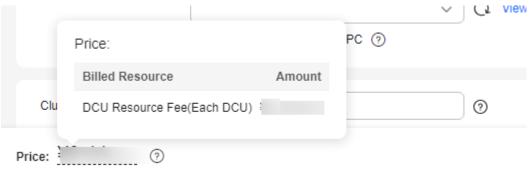
The discount packages include the following:

Cold data storage: applies to DWS 3.0 that have been or need to be used. It is used when the amount of OBS data to be stored or the data volume exceeds the package capacity.

Billing items

The discount packages support the following billing items:

Table 2-6 Billing items supported by discount packages

Item	Description
Cold storage	You can choose both the storage type and capacity for a cluster using discount packages. Please note that the storage resource discount package incurs separate charges. To learn more, see the **DWS pricing details**.

The configuration fee includes the cold data storage fee.

Purchasing a Discount Package

Step 1 Go to the **discount package purchase** page.

Step 2 On the displayed page, select a region.

Table 2-7 Region parameters

Parameter	Description	Example Value
Region	Select the AZ for the cluster nodes to run. Discount packages in different regions are isolated. For more information about regions, visit **Regions and Endpoints**.	CN-Hong Kong

Step 3 (Optional) If you select **Cold data storage**, configure the specifications, quantity, and required duration. The estimated price will be displayed. Choose this if the data volume or OBS storage used in your cluster exceeds the package you purchased.

Table 2-8 Description

Name	Description	Example Value
Storage Size	Package size. **NOTE** Multiple packages can be used together. If used resources exceed the package size, the excess part will be charged on a pay-per-use basis.	-
Purchase Quantity	Number of packages.	3
Validity Period	Validity period of a package. Before the package expires, the storage can be deducted from the package first. Excess usage will be charged on a pay-per-use basis.	-

Step 4 Click **Next** to switch to the **Confirm** page.

Step 5 Confirm the order information and click **Pay Now**.

Step 6 Select a payment method and complete the payment as prompted.

After the payment is successful, the order takes effect about 5 minutes later. You can use the purchased package only after the order takes effect. You can choose **Billing Center > My Orders** in the upper right corner of the console to go to the **My Orders** page and view the order status.

No cluster will be automatically created after you purchase a discount package. If no cluster has been created, go to the DWS console to create one.

After the order takes effect, if you create a data warehouse cluster with the same flavor as the package cluster flavor you purchased, the cluster is automatically associated with the discount package. The nodes within the discount package range will not be charged during the validity period and the extra nodes will be charged on the pay-per-use basis.

----End

Viewing Resource Package Details

After purchasing a discount package, you can monitor its utilization via the DWS console and decide on continuing the subscription based on your consumption patterns. For details, see **Discount Package Resources**.

Procedure

Step 1 On the DWS console, choose **Management** > **Resource Packages** in the navigation pane on the left.

Step 2 Locate the row of the resource package to be viewed, in which you can view the **Package specification**, **Region**, **Status**, **Remaining Capacity/Total Capacity**, **Logs From Time**, **Logs to Time**, **Order ID**, and **Usage Details**.

Figure 2-7 Viewing resource package details

----End

Billing Period

The billing period of DWS resources is determined based on the duration you purchased (UTC+8). The billing period starts from the time you activate or renew your subscription (precise to seconds), and ends at 23:59:59 on the expiration date.

For example, if you purchase a cold hot data package at 2023/03/08 15:50:04, the billing period is from 2023/03/08 15:50:04 to 2023/04/08 23:59:59.

Billing Example

Assume that you purchased a cold data package (DWS 3.0 storage: 100 GB; quantity: 1) at 2023/03/08 15:50:04. Assume that the subscription is for one month, and you manually renewed it for one month before it expires:

● The first billing period: Mar 08, 2023, 15:50:04–Apr 08, 2023, 23:59:59

● The second billing period: Apr 08, 2023, 23:59:59–May 08, 2023, 23:59:59

You will be billed for both usage periods. DWS resources are billed individually as follows:

Table 2-9 Billing formulas

Resource Type	Formula	Resource Unit Price
Cold storage	**Cold data storage capacity (GB) x cold data storage capacity price x Billing duration (hour) x Purchase quantity**	For details, see "Pricing Details" in the **DWS Pricing Details**.

The following figure shows how the fee is calculated.

NOTICE

The price in the figure is for reference only. The actual calculation is based on the price in **DWS Pricing Details**.

Figure 2-8 Fee calculation example of DWS discount packages

Impact on Billing After Specification Change

You cannot change the type of a purchased discount package. For example, you cannot change a monthly package to a yearly package. When you existing package is about to expire, you can purchase a package of another type, or the new resources will be billed per use.

Impact of Expiration

Expiration Reminder

The system will send you a reminder (by email, SMS, or in-app message) 15 days, 7 days, 3 days, and 1 day before a discount package expires to remind you to renew the subscription.

Impact of Expiration

If you do not renew the DWS resources in your discount package when they expire, the resources are automatically billed based on a pay-per-use basis and the cluster is not automatically released.

3 Item

Billing Description

To use Huawei Cloud DWS, you only need to pay for the data warehouse node flavor you choose and corresponding resources you use. For details, see **Table 3-1**. For details about the pricing details, see **DWS Pricing Details**.

Table 3-1 DWS billing items

Billing Item	Description	Billing Mode	Formula
Data warehouse node	You pay for the node flavor you choose. To learn more, see the **DWS Pricing Details**. For details about the preceding billing modes, see **Billing Modes**.	Yearly/Monthly and pay-per-use	**Unit price of a node x Billing duration**
Snapshot storage space	DWS provides some free-of-charge storage for you to store the snapshot data. However, if you use more space than the free-of-charge storage space, the exceeded part is charged according to OBS billing rules. For details, see the **OBS pricing details**. The free-of-charge space is the same as the size of the total storage space of a cluster (storage space of a single node x number of nodes).	Pay-per-use	**Storage unit price x Storage capacity x Billing duration**

Billing Item	Description	Billing Mode	Formula
Disk Storage	You can customize the storage type and capacity used by the cluster. The storage resources are charged separately. To learn more, see the **DWS Pricing Details**. **NOTE** It is the hot storage (including cache) displayed on the cluster details page after a cluster is created, different from OBS storage.	Yearly/ Monthly and pay-per-use	**Hot data storage capacity unit price x Hot data storage capacity x Number of nodes x Number of data copies x Billing duration**
Cold storage	You can customize the storage type and capacity used by the cluster. The storage resources are charged separately based on the discount packages.	Discount package	**Cold data storage capacity (GB) x cold data storage capacity price x Billing duration (hour) x Purchase quantity**
Cold storage	OBS is used to store cold data, which is cost-effective. The storage fees of pay-per-use clusters are charged per use.	Yearly/ Monthly and pay-per-use	**Cold data storage capacity unit price x Cold data storage capacity x Number of nodes x Number of data copies x Billing duration**
(Optional) EIP and bandwidth	• Bind an EIP to a DWS cluster. The EIP is billed based on per VPC EIP pricing rules. To learn more, see the **EIP Pricing Details**. • You are not billed for the traffic generated by the DWS cluster on the Huawei Cloud internal network.	Yearly/ Monthly and pay-per-use	**Tiered billing based on the fixed bandwidth:** • 0 Mbit/s to 5 Mbit/s (included): billed at a fixed unit price per Mbit/s • Greater than 5 Mbit/s: billed at a different price per Mbit/s

Billing Item	Description	Billing Mode	Formula
(Optional) Elastic load balance (ELB)	Fees are charged based on the actual usage duration. For details, see **Elastic Load Balance Pricing Details**: • LCU fee: You are charged based on the number of loadbalancer capacity units (LCUs) used by a dedicated load balancer per hour. • Instance fee: You are charged for the duration that each dedicated load balancer is running. If the load balancer is used for less than 1 hour, you will be charged for the actual duration, accurate to seconds.	Pay-per-use	**Fees are charged based on the actual usage duration.** • LCU fee: You are charged based on the number of loadbalancer capacity units (LCUs) used by a dedicated load balancer per hour. • Instance fee: You are charged for the duration that each dedicated load balancer is running. If the load balancer is used for less than 1 hour, you will be charged for the actual duration, accurate to seconds.

Billing Item	Description	Billing Mode	Formula
(Optional) Database encryption key	If the **Encrypt DataStore** function is enabled when you create a DWS cluster, keys of Key Management Service (KMS) are required to encrypt and decrypt the database. The keys are billed according to DEW billing rules. For details, see the **DEW Pricing Details**.	Pay-per-use	**Key Management Service (KMS) enabled:** • Number of keys: Key instances that have been successfully created or imported are billed on a pay-per-use basis. Prices are calculated by hour, and no minimum fee is required. • Number of API requests: The first 20,000 API requests are free of charge. Additional API calls are charged. The unit is 10,000 calls.

4 Billing Examples

Scenario

A user created a pay-per-use DWS cluster at 15:30:00 on March 18, 2023. The specifications are as follows:

- Node flavor: dwsx2.xlarge
- Hot data storage: 100 GB/node
- Number of nodes: 3
- Data disk: SSD cloud disk

After a period of time, the user found that the current cluster flavors cannot meet service requirements and changed the flavor to **dwsx2.8xlarge (96 vCPUs | 2,400.00 GB)** at 9:00:00 on March 20, 2023. The storage remains unchanged. The user wanted to use the cluster for a long time. So at 10:30:00 on March 20, 2023, the user changed the billing mode to yearly/monthly with a subscription of one month. How much is the total fee generated by the cluster from March to April?

Billing Analysis

The usage of the DWS cluster can be divided into two phases based on the billing mode: pay-per-use from Mar 18, 2023, 15:30:00 to Mar 20, 2023, 10:30:00, and yearly/monthly from Mar 20, 2023, 10:30:00 to Apr 20, 2023, 23:59:59.

Pay-per-Use

From Mar 18, 2023, 15:30:00 to Mar 20, 2023, 09:00:00, the cluster with the flavor dwsx2.xlarge was used for 41.5 hours. The fees are calculated as follows:

From Mar 20, 2023, 09:00:00 to Mar 20, 2023, 10:30:00, the cluster with the flavor dwsx2.8xlarge was used for 1.5 hours. The fees are calculated as follows:

Yearly/Monthly

From Mar 20, 2023, 10:30:00 to Apr 20, 2023, 23:59:59, the billing mode is yearly/monthly, and the billing period is for one month. The fees are calculated as follows:

From March to April, the total fee of the DWS cluster is $115,725.52 USD (127.61 + 37.91 + 115,560).

5 Billing Mode Change

5.1 Introduction

You can also change the billing mode later if it no longer meets your needs. The following table lists the changeable DWS billing items.

Table 5-1 Changeable DWS billing items

Item	Change Description	Reference
Data warehouse node	Changing the billing mode of node flavors: • You can change the billing mode of DWS cluster node flavors from pay-per-use to yearly/monthly to get a certain discount. • You can change the billing mode of DWS cluster node flavors from yearly/monthly to pay-per-use to use DWS resources more flexibly and save the costs of unnecessary resources. **NOTE** • Pay-per-use billing is only applied after the yearly/monthly subscription expires. • If the specifications of a yearly/monthly resource do not meet your service requirements, you can change them on the cloud service console and pay for the new specifications. For details, see **Pricing of a Changed Specification**.	• **Pay-per-Use to Yearly/Monthly** • **Yearly/Monthly to Pay-per-Use**

Item	Change Description	Reference
Snapshot storage space	DWS provides some free-of-charge storage for you to store the snapshot data. However, if you use more space than the free-of-charge storage space, the exceeded part is charged according to OBS billing rules. For details, see the **OBS pricing details**. The free-of-charge space is the same as the size of the total storage space of a cluster (storage space of a single node x number of nodes).	● **Pay-per-Use to Yearly/Monthly** ● **Yearly/Monthly to Pay-per-Use**
Disk Storage	Changing the billing mode of hot data storage: ● You can change the billing mode of DWS hot data storage from pay-per-use to yearly/monthly to get a certain discount. ● You can change the billing mode of DWS hot data storage from yearly/monthly to pay-per-use to use DWS resources more flexibly and save the costs of unnecessary resources.	● **Pay-per-Use to Yearly/Monthly** ● **Yearly/Monthly to Pay-per-Use**
Cold storage	Changing the billing mode of cold data storage: ● You can change the billing mode of DWS cold data storage from pay-per-use to yearly/monthly to get a certain discount. ● You can change the billing mode of DWS cold data storage from yearly/monthly to pay-per-use to use DWS resources more flexibly and save the costs of unnecessary resources.	● **Pay-per-Use to Yearly/Monthly** ● **Yearly/Monthly to Pay-per-Use**

Item	Change Description	Reference
EIP	- A yearly/monthly EIP can be changed to a pay-per-use EIP billed by bandwidth after the yearly/monthly subscription ends. - A pay-per-use EIP billed by bandwidth can be changed to a yearly/monthly EIP. - Pay-per-use EIPs billed by bandwidth can be changed to pay-per-use EIPs billed by traffic, and pay-per-use EIPs billed by traffic can be changed to pay-per-use EIPs billed by bandwidth. For details, see **Table 5-1**.	**Pay-per-Use to Yearly/Monthly** **Yearly/Monthly to Pay-per-Use**
ELB	- The billing periods of load balancers whose billing mode is changed to yearly/monthly in batches must be the same. - You can change the billing mode of a purchased dedicated load balancer from pay-per-use to yearly/monthly. Changing the billing mode from pay-per-use to yearly/monthly does not interrupt services.	**Pay-per-Use to Yearly/Monthly** **Yearly/Monthly to Pay-per-Use**

5.2 Pay-per-Use to Yearly/Monthly

If you have a pay-per-use DWS cluster that you expect to use for a long time, you can change it to yearly/monthly billing to cut costs. If you change the billing mode from pay-per-use to yearly/monthly, a new order is generated. The yearly/monthly resource takes effect immediately when you make the payment.

Suppose you bought a pay-per-use DWS cluster at 15:29:16 on April 18, 2025 and changed it to yearly/monthly billing at 16:30:30 on the same day. After you paid the order, the DWS cluster immediately entered the yearly/monthly billing mode. On the **Billing Center** > **Bills** page, three bills are generated as follows:

- Pay-per-use expenditures for the period from 15:29:16 to 16:00:00 on April 18, 2025

- Pay-per-use expenditures for the period from 16:00:00 to 16:30:30 on April 18, 2025

- Yearly/monthly expenditure for the period from April 18, 2025, 16:30:30
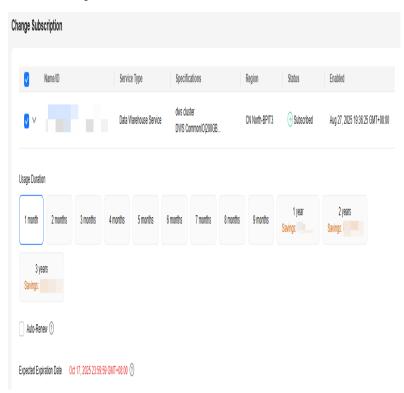
Prerequisites

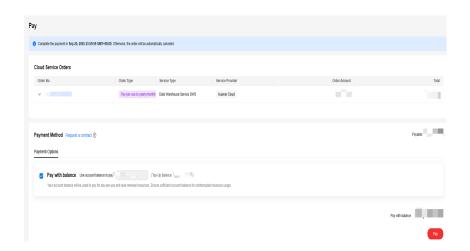The billing mode of the cluster is pay-per-use.

Procedure

Step 1 **Log in to the DWS console.**

Step 2 Choose **Cluster** > **Cluster List**. All clusters are displayed by default.

Step 3 In the cluster list, locate the row that contains the target cluster, choose **More** > **Change to Yearly/Monthly** in the **Operation** column.

Step 4 On the displayed page, set **Renew Duration**, configure **Auto-Renew** as needed, and click **Pay**.

Step 5 On the displayed page, confirm the information and click **Pay** to pay for the order.

Step 6 Return to the cluster list and click . The billing mode of the pay-per-use cluster will change to yearly/monthly.

----End

5.3 Yearly/Monthly to Pay-per-Use

After creating a yearly/monthly DWS cluster, you can change the billing mode to pay-per-use to reclaim some costs and use the cluster more flexibly.
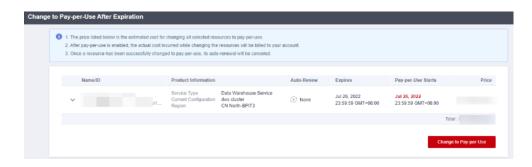
📖 **NOTE**

When a yearly/monthly cluster is in the grace period or retention period, it cannot be changed to a pay-per-use cluster.

Prerequisites

- The cluster billing mode is yearly/monthly.

- The pay-per-use billing mode will take effect after the original yearly/monthly subscription has expired.

- To change the billing mode from yearly/monthly to pay-per-use, click **Billing** in the upper part of the console and choose **Orders** > **Renewals**. This change can be performed only on clusters in the **Provisioned** state.

Procedure

Step 1 **Log in to the DWS console.**

Step 2 Choose **Cluster** > **Cluster List**. All clusters are displayed by default.

Step 3 In the cluster list, locate the row that contains the target cluster, choose **More** > **Change to Pay-per-use** in the **Operation** column.

Step 4 On the displayed page, click **Change to Pay-per-Use**.

Step 5 Return to the cluster list and click [⟳]. The billing mode of the yearly/monthly cluster will change to pay-per-use after the yearly/monthly subscription expires.

----End

6 Renewal

6.1 Overview

Renewal Introduction

After a yearly/monthly DWS cluster expires, it cannot run properly. If you want to continue using it, you need to renew the DWS cluster subscription within a specified period. Otherwise, resources, such as CPUs, memory, and EVS disks, will be automatically released, and data will be lost and cannot be restored.

Only yearly/monthly DWS cluster and discount package subscriptions can be renewed. If you use a pay-per-use DWS cluster, just ensure that your account has a valid payment method configured or a top-up account with a sufficient balance.

If you renew the cluster before it expires, resources will be retained and you can continue using the cluster. For details about DWS cluster statuses after they have expired and the associated impacts, see **Impact of Expiration**.
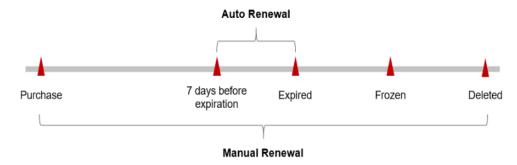
Renewal Functions

Table 6-1 describes the functions related to the renewal of yearly/monthly DWS clusters.

Table 6-1 Renewal functions

Function	Description
7.2 Manual Renewal	You can renew a yearly/monthly DWS cluster on the console anytime before it is automatically deleted.
7.3 Auto-Renewal	You can enable auto-renewal to automatically renew a DWS cluster before it expires. This prevents resources from being deleted in case you forget to renew a subscription.

You can select a method to renew a yearly/monthly DWS cluster based on the phase the cluster is currently in.

Figure 6-1 DWS cluster Lifecycle

- A DWS cluster is in the **Running** state after it is provisioned.
- When a subscription expires, the status will change from **Running** to **Expired**.
- If the DWS cluster 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**.
- If you do not renew the subscription before the retention period expires, the corresponding resources will be automatically deleted.

  You can enable auto-renewal anytime before a DWS cluster expires. By default, the system will make the first attempt to charge your account for the renewal at 03:00 seven days before the expiration 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 the auto-renew payment date as required.
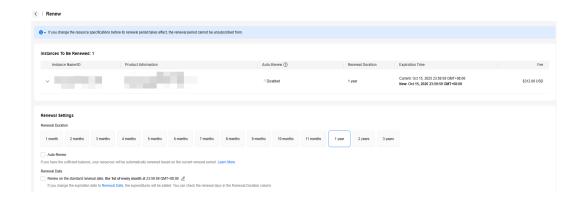
6.2 Manual Renewal

You can renew a yearly/monthly DWS cluster on the console anytime before it is automatically deleted.

Procedure

Step 1 **Log in to the DWS console.**

Step 2 Choose **Cluster** > **Cluster List**. All clusters are displayed by default.

Step 3 In the cluster list, locate the row that contains the target cluster, choose **More** > **Renew** in the **Operation** column.

Step 4 On the displayed page, confirm the information and pay for the order.

Step 5 Return to the cluster list and click to refresh it.

----End

Setting a Fixed Renewal Date for Yearly/Monthly Resources

If the DWS clusters have different expiry dates or the DWS clusters and attached EVS disks have different expiry dates, you can set the same renewal day, for example, the first day of each month, to make it easier to manage renewals.

For details, see **Setting a Renewal Date**.

Renewing a Discount Package on the DWS Console

Perform the following operations to renew your account:

Step 1 **Log in to the DWS console.**

Step 2 In the navigation pane, choose **Management** > **Resource Packages**.

Step 3 Select the discount package order to be renewed and click **Renew** above the list. The renewal page is displayed.

Step 4 Complete the renewal as prompted.

- You cannot change the billing mode of an order during renewal.

- After you pay for a new order, it takes effect only after the old order expires.

----End

6.3 Auto-Renewal

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

- The auto-renewal period of a DWS cluster varies depending on how you enable auto-renewal.

- You can enable auto-renewal anytime before a DWS cluster expires. By default, the system will make the first attempt to charge your account for the renewal at 03:00 seven days before the expiration 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 manually renew the cluster if you want to. After a manual renewal is completed, auto-renewal is still valid, and the renewal charge will be deducted from your account seven days before the new expiration date.

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

For more information about auto-renewal rules, see **Auto-Renewal Rules**,

Prerequisites

The yearly/monthly DWS cluster has not expired.

Enabling Auto-Renewal When Creating a DWS Cluster

You can enable auto-renewal on the page for creating a DWS cluster. For more information about creating a DWS cluster, see **Creating a DWS Cluster**.

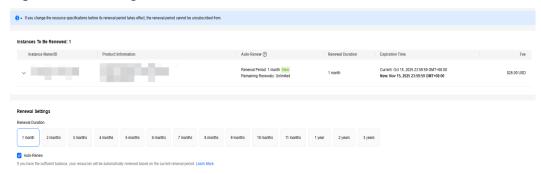**Figure 6-2** Enabling auto-renewal

If you enable auto-renewal when creating a DWS cluster, the auto-renewal periods are as follows:

- Monthly subscriptions are renewed for a month each time.
- Yearly subscriptions are renewed for a year each time.

Enabling Auto-Renewal in the Cluster List Page

Step 1 **Log in to the DWS console.**

Step 2 Choose **Cluster** > **Cluster List**. All clusters will be displayed by default.

Step 3 In the cluster list, locate the row that contains the target cluster, choose **More** > **Enable Auto-Renewal** in the **Operation** column.

Step 4 On the **Enable Auto-Renewal** page, set the renewal duration and the number of auto-renewal times as required.
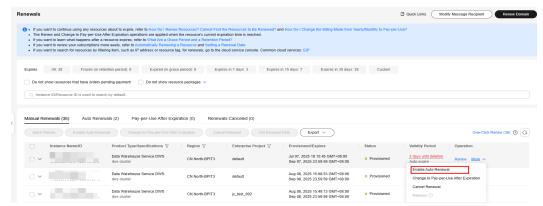
Figure 6-3 Enabling auto-renewal

Step 5   Click **Pay**.

----End

Enabling Auto-Renewal on the Renewals Page

Step 1   **Log in to the DWS console.**

Step 2   In the upper right corner of the page, choose **Billing** > **Renewal**. The **Renewals** page is displayed.

Step 3   Set the search criteria.

- On the **Auto Renewals** page, you can check the resources for which auto-renewal has been enabled.

- You can enable auto-renew for resources on the **Manual Renewals**, **Pay-per-Use After Expiration**, and **Renewals Canceled** tabs.

Step 4   Enable auto-renewal for yearly/monthly clusters.

- Enabling auto-renewal for a single cluster: Select the target cluster and click **Enable Auto-Renew** in the **Operation** column.

Figure 6-4 Enabling auto-renewal for a single cluster

- Batch auto-renewal: Select the desired DWS clusters and click **Enable Auto-Renewal** above the list.
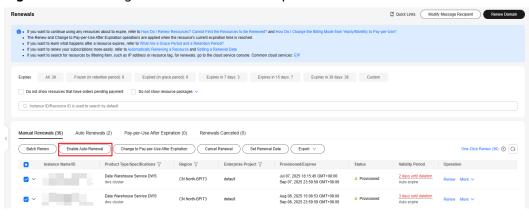
Figure 6-5 Enabling auto-renewal for multiple clusters

Step 5 Select a renewal period, specify the auto-renewal times, and click **Pay**.

If auto-renewal is enabled on the **Renewals** page, the auto-renewal period is subject to the selected renewal period and number of auto-renewals. For example, if you set the **New Auto-Renew Period** to **3 months** and **Auto-renewals** to **Unlimited**, your subscription is automatically renewed for three months before it expires.

----End

7 Bills

You can view the bill of a resource in the **Billing** section of Billing Center to learn about its usage and billing information in a certain period.

Bill Reporting Period

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 products can be settled by hour, day, or month based on the usage type. For details about the fee deduction rules, see **Bill Run for Pay-per-Use Resources**. Pay-per-use DWS clusters are settled by hour.

The fee deduction time of pay-per-use resources may be later than the settlement period. For example, if an ECS (settled by hour) is deleted at 08:30, the fees generated during 08:00 to 09:00 are usually deducted at about 10:00. In the **Billing Center**, choose **Billing** > **Expenditure Items**. **Expenditure Time** in the bill indicates the time when the pay-per-use repository 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 DWS console.**

Step 2 Click the icon shown in the following figure to copy the cluster ID.

Figure 7-1 Obtaining the cluster ID

Step 3 On the top menu bar, choose **Billing & Costs** > **Bills**. The **Bills** page is displayed.

Step 4 Choose **Billing** > **Expenditure Details** > **Resource Name or ID**, select **Resource ID** as the filter, enter the copied cluster ID, and click 🔍 .

Figure 7-2 Querying a resource bill

By default the bill details are displayed by usage and billing cycle. You can choose other display options as required. For details, see **Usage Details**.

----End

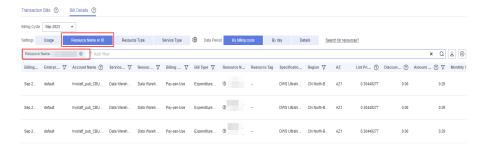**Example 2: Use the resource name to search for a bill.**

Step 1 **Log in to the DWS console.**

Step 2 Click the icon shown in the following figure to copy the cluster name.

Figure 7-3 Obtaining the cluster name

Step 3 On the top menu bar, choose **Billing & Costs** > **Bills**. The **Bills** page is displayed.

Step 4 Choose **Billing** > **Expenditure Details** > **Resource Name or ID**, select **Resource Name** as the filter, enter the copied cluster name, and click 🔍 .

Figure 7-4 Querying a resource bill

You can see that the data warehouse cluster charges fees for three types of resources: data warehouse service disk storage, data warehouse nodes, and data warehouse clusters. This depends on the data warehouse billing modes and billing items. For details, see **1 Billing Overview**.

For details about the parameters for querying bills, see **Usage Details**.

----End

Scenario Example: Checking Whether the Resource Usage in the Bill Is Consistent with the Actual Resource Usage

Assume that a user created a DWS cluster (dwsx2.xlarge | 12 vCPUs | 96 GB memory | 300 GB hot data storage) at 14:00:00 on June 19, 2023 and deleted the cluster at 16:57:21 on June 19, 2023.

- DWS transaction bills

  Pay-per-use DWS resources are billed by second and are settled on the hour. You can check whether the information about each billing cycle in the transaction bill is consistent with the actual information. For details, see the following table.

Table 7-1 Node fee bill details

Service Type	DWS
Resource Type	DWS cluster
Billing Mode	Pay-per-use
Expenditure Time	From 2023/06/19 14:00:00 to 2023/06/19 16:57:21, the billing system generates three transaction bills for each billing period. • 2023/06/19 14:00:00–2023/06/19 15:00:00 • 2023/06/19 15:00:00–2023/06/19 16:00:00 • 2023/06/19 16:00:00–2023/06/19 16:57:21
List Price	List price on the official website = Usage x Unit price x Capacity In this example, the hot data capacity usage in the first billing period is 3,054 seconds. You can query the unit price on the **DWS Price Calculator** page. For example, if the hot data capacity usage is $0.825 USD/node per hour and the number of nodes is 3, the official website price will be 3 x 0.825 x (3054/3600) = $2.0997 USD. Similarly, you can calculate the list price for other billing periods.
Discounted Amount	Discounts offered for cloud services, for example, commercial discounts, partner authorized discounts, and promotional discounts. It is the discounted amount based on the list price.
Truncated Amount	Huawei Cloud bills a resource with the price 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.

Amount Due	Amount due = List price – Discount amount – Truncated amount

Table 7-2 Storage fee bill details

Service Type	DWS
Resource Type	DWS cluster
Billing Mode	Pay-per-use
Resource Name/ID	Name and ID of DWS Example: dws-272f, 4cdeb1cd-7071-4890-9ce4-e6c2299e960e
Specifications	Type and capacity of the DWS cluster Example: General-purpose SSD with 100 GB capacity
Usage Type	The usage type of DWS billed at a pay-per-use basis is **Hot data storage**.
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. You can search for the unit price for pay-per-use DWS clusters on the **DWS Pricing Details** page.
Unit	Unit price queried in **DWS Pricing Details**: $0.001 USD/GB-hour
Usage	The usage is displayed by the resource's unit price, which is USD/GB-hour for a DWS cluster. Therefore, the usage is measured by hour. In this example, the total usage is 2 hours.
Usage Unit	Hour
List Price	List price on the official website = Usage x Unit price x Capacity In this example, the usage duration is 2 hours, and the unit price can be queried on the **DWS Pricing Details** page. For example, if the capacity is 100 GB and the unit price is $0.001 USD/GB-hour, the list price will be 3 x 0.001 x 100 x 2 (standby nodes) = $0.6 USD.
Discounted Amount	Discounts offered for cloud services, for example, commercial discounts, partner authorized discounts, and promotional discounts. It is the discounted amount based on the list price.

Amount Due	Amount that should be paid for used cloud services after discounts are applied.

8 Arrears

When you use cloud services, your account goes into arrears when the balance is less than the bill to be settled. To continue using the cloud services, top up your account in time.

Arrears Reason

No package purchased, and the account balance is insufficient in the pay-per-use mode.

Arrears Impact

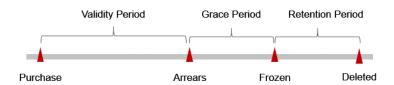- Yearly/Monthly

  This is a prepaid billing mode, so you can continue using yearly/monthly DWS resources even if your account is in arrears. However, you cannot perform operations that require payments, such as purchasing DWS clusters, upgrading DWS specifications, and renewing orders.

- Discount packages: Arrears do not apply to clusters using discount packages. After the validity period expires, the billing mode automatically changes to pay-per-use.

- Pay-per-use

  If your account is insufficient to pay your amount due, your account goes into arrears, and pay-per-use load balancers enter the grace period. You are still responsible for expenditures generated during the grace period. To view the expenditures, choose **Billing Center** > **Overview** and pay any past due balance as needed.

  If you do not pay the arrears within the grace period, the resource enters the retention period and its status turns to **Frozen**. You cannot perform any operations on pay-per-use resources in the retention period.

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

Figure 8-1 Lifecycle of pay-per-use DWS resources

Avoiding and Handling Arrears

For details about how to top up your account, see **Topping Up an Account**.

If data in OBS is no longer required, you can delete it to avoid additional expenditures.

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 time. If the amount of resources you require is stable, you can purchase a resource package to reduce resource costs. For details, see **Yearly/Monthly**.

9 Stopping Billing

The following describes how to stop the pay-per-use, yearly/monthly and discount package billing.

Pay-per-Use Resources

If you no longer use DWS cluster billed at a pay-per-use basis, delete it and its resources to stop the billing. You can **log in to the DWS console** and go to the **Clusters** page to delete a cluster.

For details about the billing items after a DWS cluster is deleted, see **Table 9-1**. You can also stop a cluster to temporarily stop billing. After the cluster is started, billing will be resumed. Note that after stopping a cluster, only the basic resources (vCPUs and memory) are free of charge. However, resources such as associated public IP addresses and bandwidth continue to incur costs, as detailed in **Table 9-2**. Billing details about clusters in frozen and unfrozen states are described in **Table 9-3**.

◻ **NOTE**

> Please be aware that Yearly/Monthly subscription clusters incur charges even when stopped. For instructions on stopping billing, refer to **Yearly/Monthly Billed Resources**.

Table 9-1 DWS billing items

Billing Item	Description
Data warehouse node	The billing will be stopped after the cluster is deleted. For details about how to delete a cluster, see **Deleting a Cluster**.
Snapshot storage space	When a cluster is deleted, its automated snapshots are deleted, but its manual snapshots are retained. After you delete the manual snapshots, the billing is stopped. To delete the manual snapshots, log in to the DWS console and go to the **Clusters** page. If the manual snapshots are still retained after the cluster is deleted and the total snapshot size exceeds the free space, the excess part will be billed based on the OBS billing rate.

Billing Item	Description
Disk storage	When a cluster is deleted, the storage resources related to the cluster are automatically deleted.
Cold storage	When a cluster is deleted, the storage resources related to the cluster are automatically deleted.
(Optional) EIP and bandwidth	If a cluster has an EIP, select **Release the EIP bound to the cluster.** when deleting the cluster. The billing will stop when the EIP is released. If you do not release the EIP, it will be billed based on the EIP pricing rule of VPC.
(Optional) Elastic load balance (ELB)	If a cluster is bound to an ELB, the ELB will not be deleted when the cluster is deleted. You need to manually delete the ELB on the ELB console to release resources. If you do not release the ELB, the ELB will still be billed based on the ELB billing rules.
(Optional) Database encryption key (DEW)	If you have enabled the **Encrypt DataStore** function for a cluster and purchased a key on DEW, the key is not deleted after you delete the cluster. Manually unsubscribe from and delete the key to stop billing. To do this, log in to the DEW management console and choose **Data Encryption Workshop > Key Pair Service**.

Table 9-2 Billing items of a stopped cluster

Billing Mode	Data Warehouse Type	Billing Item	Stop Billing
Pay-per-use	Pass-through disk (coupled storage and compute)	Node	Yes
	Cloud disk VM (decoupled storage and compute)	Node	No
		Disk	Yes
	Bare Metal Server (BMS)	Node	No
	Serverless cluster	Node	No
		Disks	No
Yearly/ Monthly	Pass-through disk (coupled storage and compute)	Node	Yes

Billing Mode	Data Warehouse Type	Billing Item	Stop Billing
	Cloud disk VM (decoupled storage and compute)	Node	Yes
		Disk	Yes
	Bare Metal Server (BMS)	Node	Yes

Table 9-3 Billing items of a cluster in frozen (stopped) and unfrozen states

Billing Mode	Data Warehouse Type	Billing Item	Charge When Frozen	Charge When unfrozen
Pay-per-use	Pass-through disk (coupled storage and compute)	Node	No	Yes
	Cloud disk VM (decoupled storage and compute)	Node	No	No
		Disk	No	Yes
	Bare Metal Server (BMS)	Node	No	No
	Serverless Clusters	Node	No	No
		Disk	No	No
Yearly/ Monthly	Pass-through disk (coupled storage and compute)	Node	No	Yes
	Cloud disk VM (decoupled storage and compute)	Node	No	Yes
	Bare Metal Server (BMS)	Disk	No	Yes

Yearly/Monthly Billed Resources

When you purchase a yearly/monthly DWS cluster, you make a one-time up-front payment. By default, the billing automatically stops when the purchased subscription expires.

If you no longer need a resource, but the subscription has not yet expired, you can unsubscribe from it. Depending on what coupons were used for the purchase, Huawei Cloud may issue you a refund. For details, see **Unsubscriptions**. To unsubscribe from a yearly/monthly package, perform the following steps: If you do not unsubscribe from the package, the system does not refund the fees.

📖 **NOTE**

- Yearly/Monthly clusters cannot be unsubscribed from during the grace period or retention period. You can click to release these clusters on the **Renewals** page of the Billing Center.

- A yearly/monthly cluster is frozen during the retention period. Snapshots are frozen together with the cluster and will be automatically deleted after the retention period expires.

- An idle node of a yearly/monthly cluster cannot be deleted during the retention period. The node can be manually deleted after the retention period expires.

- A yearly/monthly cluster that has been unsubscribed from cannot be restored. The user data and automated snapshots in the cluster are automatically deleted and cannot be accessed anymore. The manual snapshots of a yearly/monthly cluster will not be deleted when you unsubscribe from the cluster.

Steps to unsubscribe from resources billed in the yearly/monthly mode

Step 1 **Log in to the DWS console.**

Step 2 Choose **Clusters**. All clusters will be displayed by default.

Step 3 In the **Operation** column of a cluster, choose **More** > **Unsubscribe**.

Step 4 In the displayed dialog box, click **Yes**.

Step 5 On the unsubscription page, select a reason, and click **Confirm**. In the displayed dialog box, click **Unsubscribe**. After the order is submitted, the page will be automatically refreshed.

----End

Discount Package Resources

You can refer to the following steps to unsubscribe from a resource package to avoid further charging.

Step 1 **Log in to the DWS console.**

Step 2 In the navigation pane, choose **Management** > **Resource Packages**.

Step 3 Select the discount package and click **Unsubscribe** above the list. The unsubscription page is displayed.

Step 4 Then, complete the unsubscription as prompted.

When a discount package expires or you unsubscribe from the package, the system will automatically charge you on a pay-per-use basis (by hour). The service will not be interrupted as long as your account balance is sufficient.

----End

Searching for Resources from Bills and Stopping Billing

To ensure that all related resources are deleted, you can search the billing records by resource ID, and then delete the resources you identify in this way. To do so, perform the following operations:

Step 1 **Log in to the DWS console.**

Step 2 On the top menu bar, choose **Billing & Costs** > **Bills**.

The **Bills** page is displayed.

Step 3 On the Bills page of the Billing Center, select the **Bill Details** tab. Click the icon shown in the following figure to copy the resource name.

Figure 9-1 Copying the resource name

Step 4 Return to the DWS console. The cluster list is displayed.

Step 5 Select the region where the resources are located. On the **Clusters** page, locate the data warehouse cluster based on the cluster name, click **More** > **Unsubscribe** in the **Operation** column to delete the cluster. After deletion, check if the cluster is no longer displayed in the list to ensure the deletion is successful.

Change to Pay-per-use

View Metric

Restart

Scale Out

Scale In

Redistribute

◄ View Scaling Details

Reset Password

Create Snapshot

Cancel Read-only

Switchback

Node Flavor

◄ Manage CN

Unsubscribe

NOTE

The system usually deducts fees of the last settlement period within one hour after resources are used. As a result, after a pay-per-use resource is deleted, the bill information may still exist. For example, when you delete a pay-per-use resource at 08:30, the fees generated between 08:00 and 09:00 are usually deducted at about 10:00.

----End

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 DWS. The following describes how to manage costs from four dimensions: cost composition, allocation, analysis, and optimization, to help maximize return on your investment.
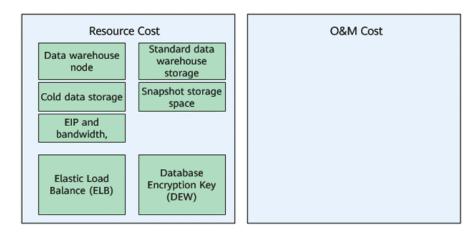
Cost Composition

The DWS costs consist of two parts:

- Resource cost: the cost of each type of resources and resource packages, which depends on the DWS billing items. For details, see **Item**.
- O&M cost: the labor cost generated when DWS is used.

Figure 10-1 DWS costs

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.

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

- **Allocate costs by enterprise project.**

  Before allocating costs, enable Enterprise Project Management Service (EPS) and plan your enterprise projects based on your organizational structure or businesses. Select an enterprise project for a newly purchased cloud resource so that the costs of that resource will be allocated to the selected enterprise project. For details, see **Viewing Costs by Enterprise Project**.

- **By cost tag**

  Huawei Cloud assigns tags to your cloud resources so they can be sorted in different ways, for example, by purpose, owner, or environment. The following is the process of managing costs by predefined tags.

Figure 10-2 Adding tags to DWS

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 **Allocating Costs 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 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.

You can also use **Cost Anomaly Detection** provided by **Cost Center** to detect unexpected expenses in a timely manner. In this way, costs can be monitored, analyzed, and traced.

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

Cost Optimization

- **Cost control**

  You can create different types of budgets on the **Budgets** page of Cost Center to track your costs against the budgeted amount you specified and send alerts to the recipients you configured if the thresholds you defined are reached. You can also create budget reports and Huawei Cloud will periodically generate and send to the recipients you configured on a schedule you set.

  Suppose you want to create a monthly budget of $20,000 USD for pay-per-use DWS clusters and expect to receive an alert if the forecasted amount exceeds 80% of the budgeted amount. Then, you can create a budget as follows:
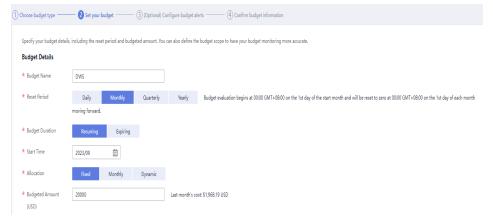
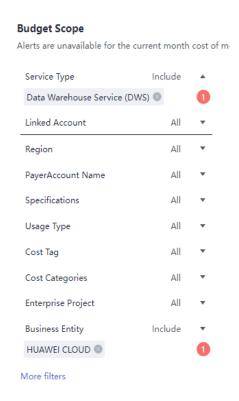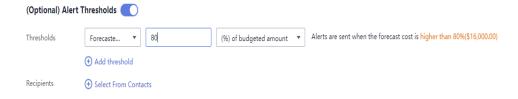 **Figure 10-3** Basic budget information

Figure 10-4 Budget scope

Figure 10-5 Budget alerts

For details, see **Creating Forecasts and Budgets to Track Costs and Usage**.

- **Resource optimization**

  Cost Center analyzes your historical CPU and other resource usage to identify idle ECS resources and generate resource rightsizing recommendations. These rightsizing opportunities are places where you can reduce costs. You can also identify resources with high costs based on the analyses on the Cost Analysis page and use Cloud Eye to monitor resource usage. By doing this, you can determine the causes of high costs and take optimization measures accordingly. You can:

  – Monitor resource usage and evaluate whether the current configuration is too high. For example, you can monitor the usage of CPUs, memory, cloud disks, and bandwidth.

- **Billing mode selection**

Different types of services have different requirements on resource usage periods and therefore require different billing modes to achieve the optimal outcome.

– For mature services that are stable for a long time, use the yearly/monthly billing mode.

– For short-term, unpredictable services that experience traffic bursts and cannot be interrupted, use pay-per-use billing.

● **O&M automation**

Huawei Cloud also provides various O&M products to help you improve O&M efficiency and reduce O&M labor costs. For example:

Cluster scale-out: Add nodes to an existing cluster. The storage size of the added nodes is the same as that of the existing nodes in the cluster. It applies to scenarios where both CPU and storage are insufficient.

Cluster scale-in: Delete nodes from an existing cluster. It applies to scenarios where both computing and storage resources are redundant.

Resize: Upgrade or downgrade the specifications of an existing cluster or migrate the cluster to a new cluster with new specifications. Specification upgrade or downgrade is applicable to scenarios where CPU bottlenecks or redundancy exists. Migration is applicable to re-planning of the entire cluster.

Disk scale-out: Expand the capacity of an existing cluster disk. It applies to scenarios where the cluster storage space is insufficient.

11 Billing FAQs

11.1 Does Pay-per-Use Billing Stop When My Cluster Stops?

Yes. The system settles the fees by hour for the pay-per-use mode. You can use the service as long as your account balance is sufficient. To reduce costs:

- Choose **More** > **Stop** in the **Operation** column to stop the cluster. After a cluster is stopped, only basic resources (vCPUs and memory) are not charged. The public IP address and bandwidth assigned to the cluster are still charged.

- Delete the purchased clusters if you will not be needing them, and create new ones when needed.

- Switch to the yearly/monthly mode that allows you to use the service within the specific period of time without additional fees.

11.2 Why Is the Purchase Button Unavailable When I Create a Cluster?

The possible causes for unavailable purchase button during cluster creation are as follows:

- The flavor to be purchased could be sold out, or the region does not have such a flavor.

  Solution: Before purchasing, check whether the flavor is available in the region, or purchase a package after the cluster is created. After the package, the package is automatically associated with the cluster.

- The account could be in arrears or restricted, so new resources cannot be created.

  Solution: If your balance is insufficient, top up the account to write off the overdue amount.

11.3 How Do I Unfreeze a Cluster?

Cause Analysis

If your account balance is insufficient and fee deduction fails, the retention period starts. During the retention period, the service resources will be frozen and cannot be used, but resources and data are reserved.

Handling Procedure

To unfreeze the clusters, you need to top up your account to ensure that the account balance is not **0**. For details, see **Renewal** After a cluster is unfrozen, the cluster status changes to **Available**.