

Date Warehouse Service

Billing Description

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1 GaussDB(DWS) Billing Overview

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

Billing Modes

GaussDB(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 GaussDB(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 GaussDB(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

GaussDB(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 GaussDB(DWS), and no extra fees will be incurred while you use GaussDB(DWS). GaussDB(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 GaussDB(DWS). For details, see [Bills](#).

Arrears

Your account goes into arrears when the balance is less than the bill to be settled. 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 GaussDB(DWS) resources, you can unsubscribe from or delete them to stop the billing. For details, see [Stopping Billing](#).

Cost Management

GaussDB(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 [GaussDB\(DWS\) Pricing Details](#).

2 Billing Modes

2.1 GaussDB(DWS) Billing Modes

GaussDB(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 [GaussDB\(DWS\) 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 GaussDB(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
Payment	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 GaussDB(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

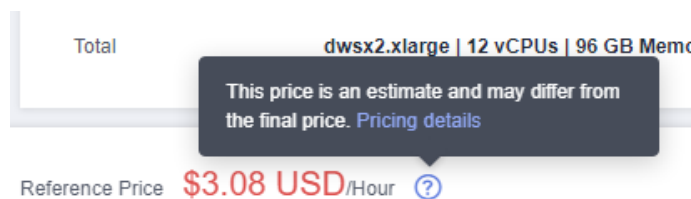
The following billing items support pay-per-use billing:

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 GaussDB(DWS) Pricing Details .
Snapshot storage space	GaussDB(DWS) provides some free-of-charge storage space 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 (backup) 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	You are advised to store cold data in OBS, which is 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 GaussDB(DWS) cluster, if you enable database encryption and select an EIP billed by bandwidth and an existing ELB. At the bottom of the **Create GaussDB(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 GaussDB(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 GaussDB(DWS) usage is calculated by the second and billed every hour. The billing starts from the time when the GaussDB(DWS) cluster is successfully created and ends at the time 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 page. The time when the creation is successful is the **Start Time** on the page.

For example, if you create a pay-per-use GaussDB(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 GaussDB(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 period is from 9:00:00 to 10:00:00. Fees are generated from 9:59:30 to 10:00:00. The billing duration is 30 seconds within the period.
- The second billing period is from 10:00:00 to 11:00:00. Fees are generated from 10:00:00 to 10:45:46. The billing duration is 2746 seconds within the period.

You will be billed for both usage periods. GaussDB(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 GaussDB(DWS) Pricing Details .
Snapshot storage space	Storage unit price x Storage capacity x Billing duration	GaussDB(DWS) provides some free-of-charge storage space 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 GaussDB(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: <ul style="list-style-type: none"> 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" in the ECS Pricing Details or EIP Pricing Details .

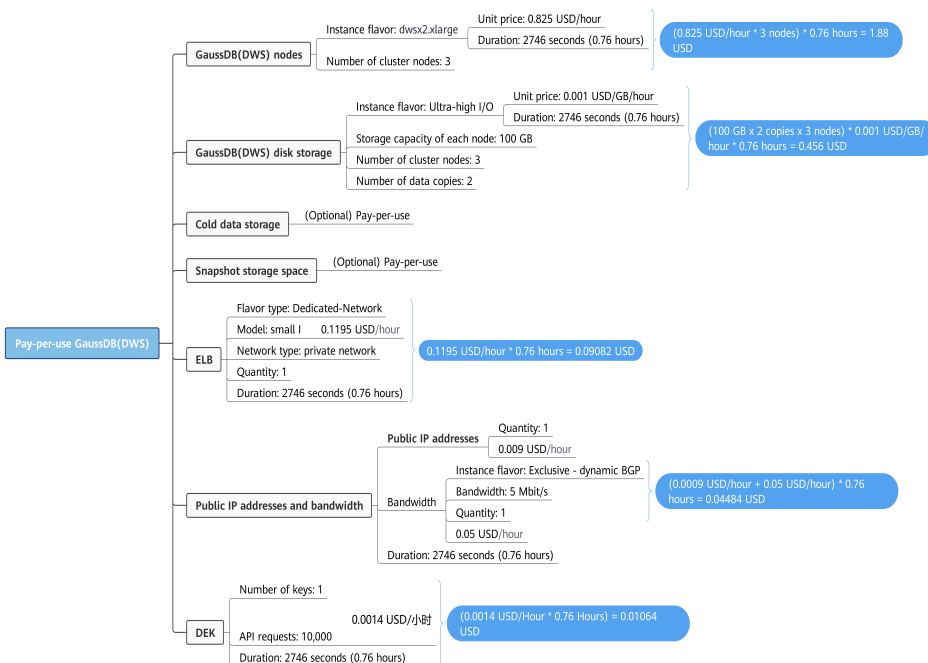
Resource Type	Formula	Resource Unit Price
(Optional) Elastic load balance (ELB)	<p>Fees are charged based on the actual usage duration.</p> <ul style="list-style-type: none"> • LCU fee: You are charged based on the number of loadbalancer capacity units (LCUs) used by a dedicated load balancer per hour. • 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. 	<p>For details, see "Bandwidth Price" in the ELB Pricing Details.</p>
(Optional) Database encryption key	<p>Key Management Service (KMS)</p> <ul style="list-style-type: none"> • 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. 	<p>For details, see "Pricing Details" in the DEW Pricing Details.</p>

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 [GaussDB\(DWS\) Pricing Details](#).

Figure 2-2 Example of calculating GaussDB(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.

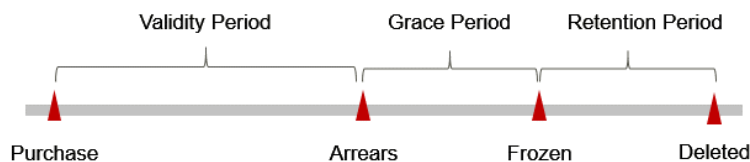
- The first record corresponds to 9:00:00 to 9:30:00. The billing is based on the instance flavor **dwsx2.8xlarge**.
- The second record corresponds to 9:30:00-10:00:00. The billing is based on the instance flavor **dwsx2.16xlarge**.

Impact of Arrears

The following figure shows the status of pay-per-use GaussDB(DWS) resources in each phase. After a GaussDB(DWS) resource is purchased, it enters the valid

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

Figure 2-3 Lifecycle of GaussDB(DWS) resources charged in pay-per-use mode



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

Your account is in arrears if your balance is less than the fee generated. In arrears, the pay-per-use resource continues rendering service but the resource enters 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 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 GaussDB(DWS) resources billed in the yearly/monthly mode.

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.

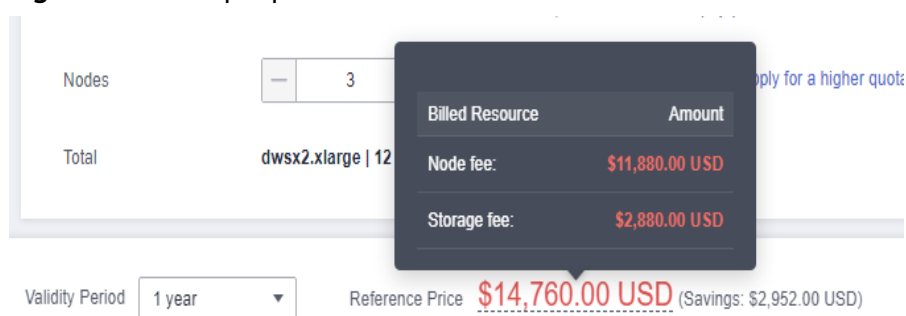
Table 2-4 Billing items

Item	Constraint
Data warehouse node	You are charged based on the node flavor on a yearly/monthly basis. For details, see GaussDB(DWS) Pricing Details .
Snapshot storage space	GaussDB(DWS) provides some free-of-charge storage space 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 (backup) x number of nodes .

Item	Constraint
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.
Cold storage	You are advised to store cold data in OBS, which is billed on a pay-per-use 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.

If during creation of a GaussDB(DWS) cluster, you set **Hot Data Storage** to 50 GB per node, and select an EIP charged in yearly/monthly mode. At the bottom of the **Create GaussDB(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 GaussDB(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 GaussDB(DWS) instance is billed for the purchased duration. 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 GaussDB(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 GaussDB(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. GaussDB(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 "Flavor Price" in the GaussDB(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 "Flavor Price" in the GaussDB(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" in the ECS Pricing Details or EIP Pricing Details .
Elastic Load Balance (ELB) (Optional)	In pay-per-use mode, billed by the ELB service.	For details, see "Bandwidth Price" in the ELB Pricing Details .

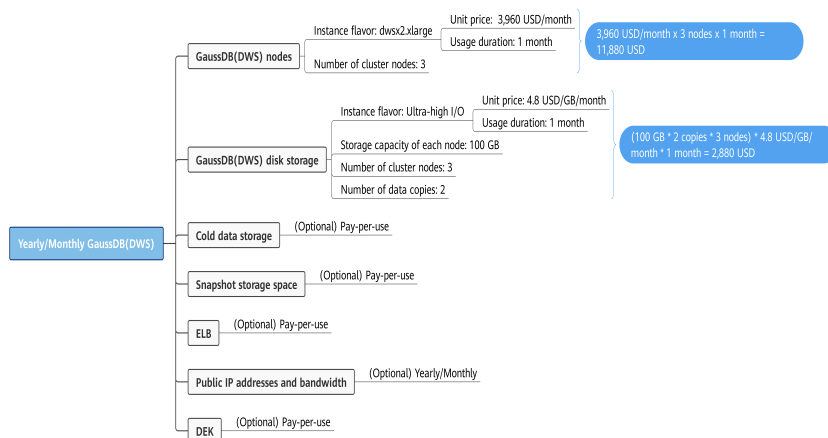
Resource Type	Formula	Resource Unit Price
(Optional) Database encryption key	In pay-per-use mode, billed by the ELB service.	For details, see "Pricing Details" in the DEW Pricing Details .

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 in the [GaussDB\(DWS\) Pricing Details](#).

Figure 2-5 Example of calculating GaussDB(DWS) fees in yearly/monthly billing mode



Billing After Specification Change

If the specifications of the current yearly/monthly GaussDB(DWS) resources do not meet your requirements, you can modify the specifications on the GaussDB(DWS) console. The system will calculate the GaussDB(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. The following is an example of upgrading resource specifications without any discount. If you create a standard data warehouse whose node flavor is **dwsx2.xlarge.m7n** on April 8, 2023 and the subscription duration is one month, and you upgrade the flavor to **dwsx2.8xlarge** on April 18, 2023. The price of the old configuration is 3960 USD/month. The price of the new configuration is 30840 USD/month. The formula is as follows:

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

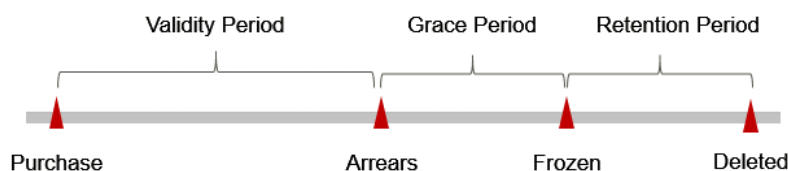
The remaining period in the formula is the remaining days of each calendar month divided by the maximum days of the corresponding calendar month. In this example, Remaining period = 12 (Remaining days in April)/ 30 (Maximum number of days in April) + 8 (Remaining days in May)/ 31 (Maximum number of days in May) = 0.6581 . Cost of upgrade = $30840 \times 0.6581 - 3960 \times 0.6581 = 17689.73$ USD

For more information, see [Pricing of a Changed Specification](#).

Impact of Expiration

Figure 2-3 shows the status of yearly/monthly GaussDB(DWS) resources in each phase. 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 GaussDB(DWS) cluster



Expiration Reminder

The system will send you a reminder (by email, SMS, or in-app message) 7 days before a yearly/monthly GaussDB(DWS) expires to remind you to renew the subscription. to the creator of the Huawei Cloud account by email, SMS, and internal message.

Impact of Expiration

If your yearly/monthly GaussDB(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 GaussDB(DWS) but cannot:

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

If the yearly/monthly GaussDB(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 ECS while it is in the retention period.

After the retention period expires, if the yearly/monthly GaussDB(DWS) resources are not renewed, the GaussDB(DWS) node resources and storage resources will be released and cannot be restored.

 NOTE

- For details about renewals, see [Overview](#).

2.4 Discount package

GaussDB(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:

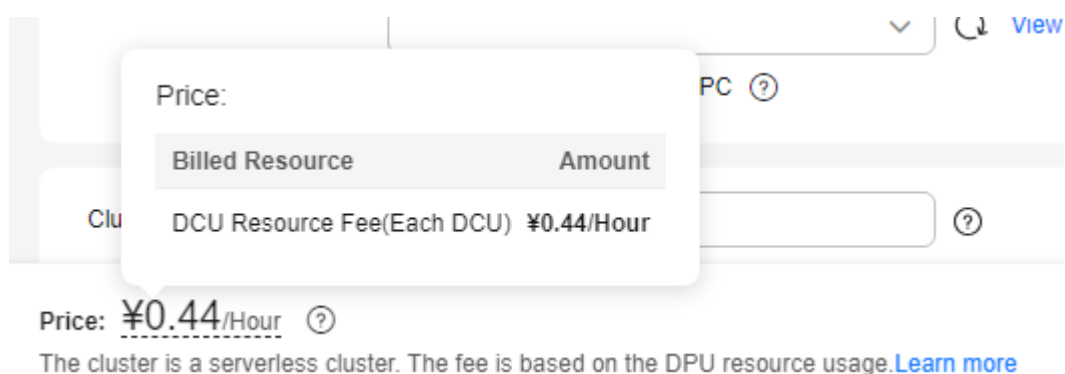
Cold data storage: applies to DWS 3.0 that have been or need to be used. It is used when the amount of OBS data to be stored or the data volume exceeds the package capacity.

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 GaussDB(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 GaussDB(DWS) management 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 GaussDB(DWS) management console and decide on continuing the subscription based on your consumption patterns. For details, see [Discount Package Resources](#).

Procedure

- Step 1** On the GaussDB(DWS) management console, click **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

Package Specification	Region	Status	Remaining Capacity	Logs From Time	Logs To Time	Order ID	Operation
DWS3.0 Cold Hot Data Package	China North-3	C	1 amount	C	C	CC20230308155004	Usage Details
DWS3.0 Cold Hot Data Package	China North-3	C	1 amount	C	C	CC20230308155004	Usage Details

----End

Billing Period

The billing period of GaussDB (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 need to pay for each billing cycle in advance. Each GaussDB(DWS) resource is charged separately. Table 2-3 describes the charging formula.

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 "Flavor Price" in the GaussDB(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 [GaussDB\(DWS\) Pricing Details](#).

Figure 2-8 Fee calculation example of GaussDB(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 your 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 pushes expiration warning messages to users 15 days, 7 days, 3 days, and 1 day before the GaussDB(DWS) resources in the discount package expire. The warning messages are sent to the creator of the Huawei Cloud account by email, SMS, and internal message.

Impact of Expiration

If you do not renew the GaussDB(DWS) resources in your discount package when they expire, the resources are automatically changed to the pay-per-use billing mode and the cluster is not automatically released.

3 Item

Billing Description

To use Huawei Cloud GaussDB(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 [GaussDB\(DWS\) Pricing Details](#).

Table 3-1 GaussDB(DWS) billing items

Billing Item	Description	Billing Mode	Formula
Data warehouse node	Pay for the node flavor you choose. To learn more, see the GaussDB(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	GaussDB(DWS) provides some free-of-charge storage space 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	<p>You can customize the storage type and capacity used by the cluster. The storage resources are charged separately. To learn more, see the GaussDB(DWS) pricing details.</p> <p>NOTE It is the hot storage (including cache) displayed on the cluster details page after a cluster is created, different from OBS storage.</p>	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.	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	<ul style="list-style-type: none"> Bind an EIP to a GaussDB(DWS) cluster. The EIP is billed according to VPC EIP pricing rules. To learn more, see the EIP pricing details. You are not billed for the traffic generated by the GaussDB(DWS) cluster on the Huawei Cloud internal network. 	Yearly/ Monthly and pay-per-use	<p>Tiered billing based on the fixed bandwidth:</p> <ul style="list-style-type: none"> 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)	<p>Fees are charged based on the actual usage duration. For details, see Elastic Load Balance Pricing Details:</p> <ul style="list-style-type: none"> • 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	<p>Fees are charged based on the actual usage duration.</p> <ul style="list-style-type: none"> • 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 GaussDB(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: <ul style="list-style-type: none"> • 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 GaussDB(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

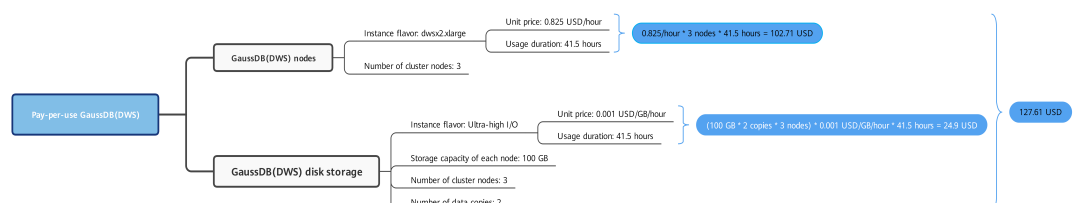
After a period of time, the user found that the current cluster specifications cannot meet service requirements and changed the flavor to **dwsx2.8xlarge (96 vCPUs | 2,400.00 GB)** at 9:00:00 on March 20, 2023. The storage remains unchanged. The user wanted to use the cluster for a long time. So at 10:30:00 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

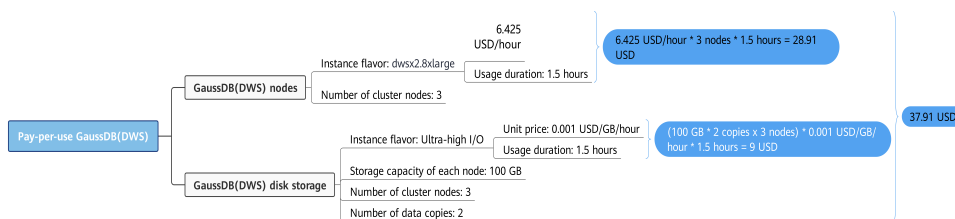
The usage of the GaussDB(DWS) instance can be divided into two phases based on the billing mode: pay-per-use from Mar 18, 2023, 15:30:00 to Mar 20, 2023, 10:30:00, and yearly/monthly from Mar 20, 2023, 10:30:00 to Apr 20, 2023, 23:59:59.

Pay-per-Use

From Mar 18, 2023, 15:30:00 to Mar 20, 2023, 09:00:00, the billing is based on dwsx2.xlarge.cluster x 3 for 41.5 hours. The fees are calculated as follows:

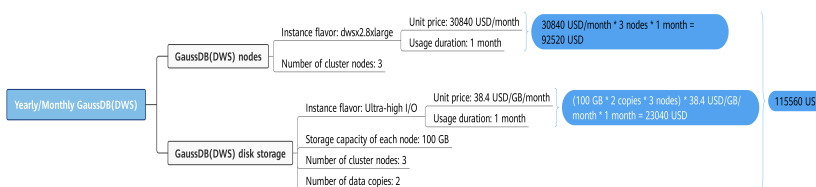


From Mar 20, 2023, 09:00:00 to Mar 20, 2023, 10:30:00, the billing is based on dwsx2.8xlarge.cluster x 3 for 1.5 hours. The fees are calculated as follows:



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 for the ECS is 127.61 + 37.91 + 115560 = 115725.52 USD.

5 Billing Mode Change

5.1 Introduction

If the current billing mode cannot meet service requirements after a GaussDB(DWS) cluster is created, you can change the billing mode. The following table lists the GaussDB(DWS) billing items that support billing mode change.

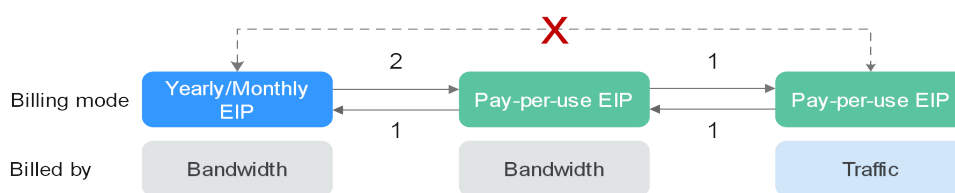
Table 5-1 GaussDB(DWS) billing items whose billing mode can be changed

Item	Change Description	Reference
Data warehouse node	<p>Changing the billing mode of node flavors:</p> <ul style="list-style-type: none"> You can change the billing mode of GaussDB(DWS) cluster node flavors from pay-per-use to yearly/monthly to get a certain discount. You can change the billing mode of GaussDB(DWS) cluster node flavors from yearly/monthly to pay-per-use to use GaussDB(DWS) resources more flexibly and save the costs of unnecessary resources. <p>NOTE The pay-per-use mode takes effect only after a yearly/monthly period expires.</p>	<ul style="list-style-type: none"> Pay-per-Use to Yearly/Monthly Yearly/Monthly to Pay-per-Use

Item	Change Description	Reference
Snapshot storage space	<p>GaussDB(DWS) provides some free-of-charge storage space 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.</p> <p>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).</p>	<ul style="list-style-type: none"> ● Pay-per-Use to Yearly/Monthly ● Yearly/Monthly to Pay-per-Use
Disk Storage	<p>Changing the billing mode of hot data storage:</p> <ul style="list-style-type: none"> ● You can change the billing mode of GaussDB(DWS) hot data storage from pay-per-use to yearly/monthly to get a certain discount. ● You can change the billing mode of GaussDB(DWS) hot data storage from yearly/monthly to pay-per-use to use GaussDB(DWS) resources more flexibly and save the costs of unnecessary resources. 	<ul style="list-style-type: none"> ● Pay-per-Use to Yearly/Monthly ● Yearly/Monthly to Pay-per-Use
Cold storage	<p>Changing the billing mode of cold data storage:</p> <ul style="list-style-type: none"> ● You can change the billing mode of GaussDB(DWS) cold data storage from pay-per-use to yearly/monthly to get a certain discount. ● You can change the billing mode of GaussDB(DWS) cold data storage from yearly/monthly to pay-per-use to use GaussDB(DWS) resources more flexibly and save the costs of unnecessary resources. 	<ul style="list-style-type: none"> ● Pay-per-Use to Yearly/Monthly ● Yearly/Monthly to Pay-per-Use

Item	Change Description	Reference
EIP	<ul style="list-style-type: none"> 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. <p>For details, see Table 5-1.</p>	<ul style="list-style-type: none"> Pay-per-Use to Yearly/Monthly Yearly/Monthly to Pay-per-Use
ELB	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Pay-per-Use to Yearly/Monthly Yearly/Monthly to Pay-per-Use

Figure 5-1 EIP billing mode change



1: The change takes effect immediately.
 2: The change takes effect only after the yearly/monthly subscription period expires.
 X: The billing mode cannot be changed.

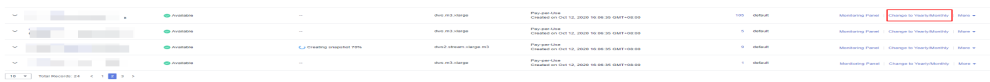
5.2 Pay-per-Use to Yearly/Monthly

Prerequisites

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

Procedure

- Step 1** Log in to the GaussDB(DWS) management console.
- Step 2** Choose **Clusters**. All clusters are displayed by default.
- Step 3** In the **Operation** column of a cluster, click **Change to Yearly/Monthly**.



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

Cloud Service Orders [Select Discounts/Coupons](#)

Order No.	Product Name	Service Provider	Order Amount	Total
	Data Warehouse Service	HUAWEI CLOUD	¥5,614.53	¥5,614.53

Select Payment Method [Request a contract](#) Payable: ¥5,614.53

Payment Options

Pay with balance Use account balance to pay ¥ (Top-Up Balance: 4405,626.05)
Your account balance will be used to pay for pay-per-use and auto-renewal resources. Ensure sufficient account balance for uninterrupted resource usage.

Pay online

Pay with balance **¥5,614.53**

Pay

- Step 5** Confirm the information and click **Pay** to pay for the order.

Cloud Service Orders [Select Discounts/Coupons](#)

Order No.	Product Name	Service Provider	Order Amount	Total
	Data Warehouse Service	HUAWEI CLOUD	¥5,614.53	¥5,614.53

Select Payment Method [Request a contract](#) Payable: ¥5,614.53


Payment Options

Pay with balance Use account balance to pay ¥ (Top-Up Balance: 4405,626.05)
Your account balance will be used to pay for pay-per-use and auto-renewal resources. Ensure sufficient account balance for uninterrupted resource usage.

Pay online

Pay with balance **¥5,614.53**

Pay

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

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.

NOTE

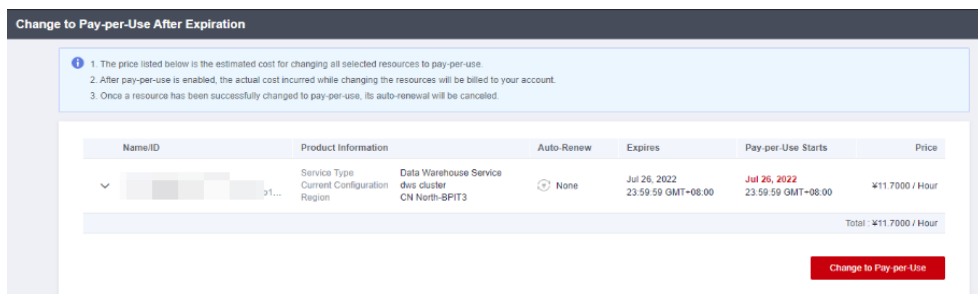
Yearly/Monthly clusters cannot be changed to pay-per-use clusters within the grace period and retention period.

Procedure

- Step 1** Log in to the GaussDB(DWS) management console.
- Step 2** Choose **Clusters**. 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.

Cluster Name	Cluster Status	Task Submitter ID	Node Flavor	Billing Model	Resource Category	Subscription Product	Operation
[Redacted]	Running	-	dw2.large	Pay-As-You-Go [Link]	1	Default	Modify Billing Mode
[Redacted]	Running	-	dw2.xlarge	Pay-As-You-Go [Link]	1	Default	Modify Billing Mode
[Redacted]	Running	-	dw2.xlarge.4UL	Pay-As-You-Go [Link]	1	Default	Modify Billing Mode
[Redacted]	Running	Redacted	dw2.xlarge.m3	Pay-As-You-Go [Link]	1	Default	Modify Billing Mode
[Redacted]	Running	Redacted	dw2.xlarge.m3	Pay-As-You-Go [Link]	1	Default	Modify Billing Mode
[Redacted]	Running	-	dw2.xlarge.m3	Pay-As-You-Go [Link]	1	Default	Modify Billing Mode

----End

6 Renewal

6.1 Overview

Renewal Introduction

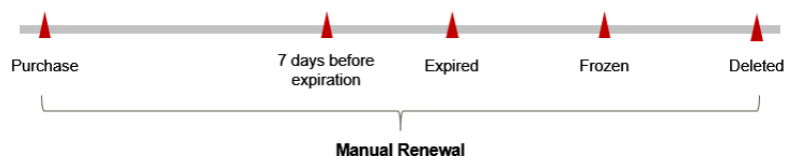
Currently, GaussDB(DWS) supports the pay-per-use billing mode and yearly/monthly billing mode.

- In yearly/monthly mode, you pay only once when purchasing the service and no extra fees will be charged during your use of the service. After a yearly/monthly subscription expires, the resources will enter a retention period. If you want to continue using the resources, renew the subscription. For details, see [Resource Expiration Description](#).
- Pay-per-use mode: The system settles the fees by hour. You can use the service as long as your account balance is sufficient. If your account balance is insufficient, it will be in arrears. Top up your account in a timely manner.

Cloud service lifecycle

[Figure 6-1](#) shows the lifecycle of a yearly/monthly ECS in different phases.

Figure 6-1 Selecting a renewal method based on ECS's current phase



- An ECS is in the **Running** state after it is provisioned.
- After the gateway expires, its status changes to **Expired**.
- If an expired ECS is not renewed, it enters a grace period. If it is not renewed by the time the grace period expires, the ECS will be frozen and enter a retention period.

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

6.2 Manual Renewal

Pay-per-Use

To top up your account, perform the following steps:

- Step 1** Log in to the management console.
- Step 2** Choose **Billing Center > Renewal** in the upper right of the page.
- Step 3** In the navigation pane on the left, click **Overview**. Then click **Top Up** so your balance is sufficient to continue services.

----End

Yearly/Monthly

- Step 1** Log in to the GaussDB(DWS) management console.
- Step 2** Choose **Clusters**. All clusters are displayed by default.
- Step 3** In the **Operation** column of a cluster, click **Renew**.



- Step 4** The CBC renewal page is displayed. Confirm the information and pay for the order.

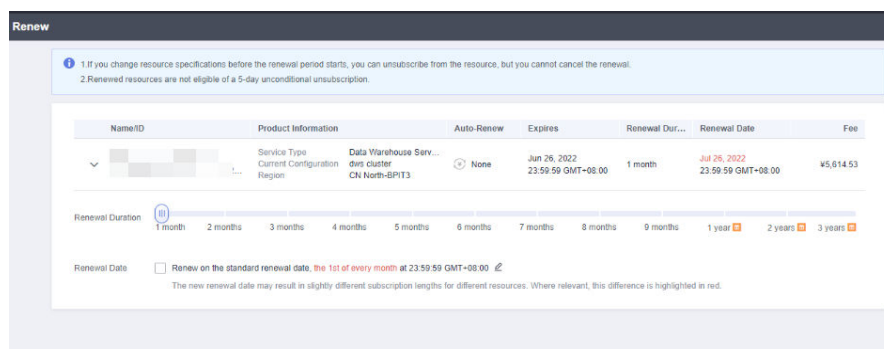


Table 6-1 Renewal parameters

Parameter	Description
Renewal duration	Select the renewal duration.

Parameter	Description
Renewal date	<p>Select a renewal date. By default, a subscription expires on the last day of every month. You can choose whether to change the expiry date to the first day of every month.</p> <p>NOTE The new renewal date may extend the subscription of some resources based on the current subscription.</p>

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



----End

Discount Packages

Perform the following operations to renew your account:

- Step 1** Log in to the GaussDB(DWS) management console and click **Resource Packages** in the navigation pane on the left.
- Step 2** Select the discount package order to be renewed and click **Renew** above the list. The renewal page is displayed.
- Step 3** 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

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 [Periodic Settlement of Pay-per-Use Products](#). The pay-per-use billing mode of GaussDB(DWS) is settled by hour.

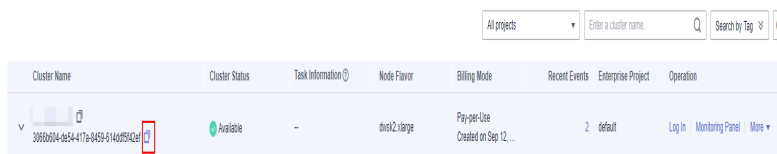
The fee deduction time of pay-per-use resources may be later than the settlement period. For example, if an ECS (settled by hour) is deleted at 08:30, the fees generated during 08:00 to 09:00 are usually deducted at about 10:00. On the **Billing Center > Billing > Transactions and Detailed Bills > Transaction 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 management console and choose **Analytics > Data Warehouse Service**. The GaussDB(DWS) cluster list page is displayed.
- Step 2** Click the icon shown in the following figure to copy the cluster ID.

Figure 7-1 Obtaining the cluster ID



Cluster Name	Cluster Status	Task Information	Node Flavor	Billing Mode	Recent Events	Enterprise Project	Operation
<input type="checkbox"/> <input type="checkbox"/> 20006004-d854-417e-9459-914d0592e1e1	Available	-	dws2.large	Pay-per-Use Created on Sep 12, ...	2	default	Log In Monitoring Panel More

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


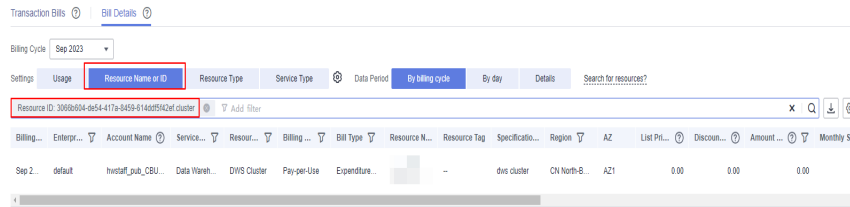
Step 4 Choose **Billing > Expenditure Details > Resource Name or ID**, select **Resource ID** as the filter, enter the copied cluster ID, and click .

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](#).

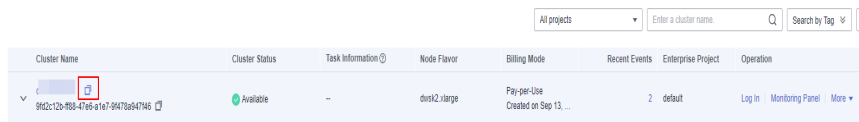
----End

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

Step 1 Log in to the management console and choose **Analytics > Data Warehouse Service**. The GaussDB(DWS) cluster list page is displayed.

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.


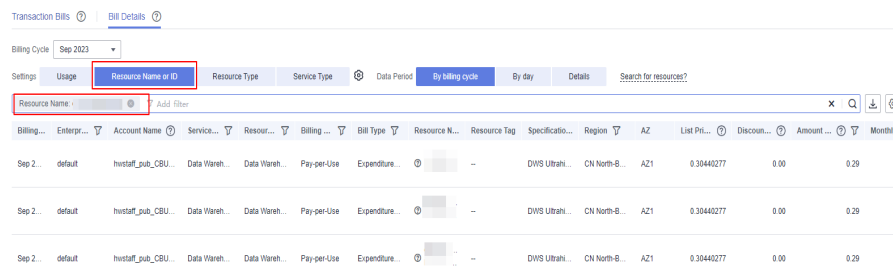
Step 4 Choose **Billing > Expenditure Details > Resource Name or ID**, select **Resource Name** as the filter, enter the copied cluster name, and click .

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 data warehouse service 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.

- GaussDB (DWS) transaction bills
Pay-per-use GaussDB(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	GaussDB(DWS)
Resource Type	GaussDB(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. <ul style="list-style-type: none"> • 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 3054 seconds. You can query the unit price in GaussDB(DWS) Pricing Details . For example, if the hot data capacity usage is 0.825 USD/node and the number of nodes is 3, the official website price is 3 x 0.825=2.475 USD. Similarly, you can calculate the EVS list price for the other 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	GaussDB(DWS)
Resource Type	GaussDB(DWS) cluster
Billing Mode	Pay-per-use
Resource Name/ID	Name and ID of GaussDB(DWS) Example: dws-272f, 4cdeb1cd-7071-4890-9ce4-e6c2299e960e
Specifications	DWS type and capacity Example: General-purpose SSD with 100 GB capacity
Usage Type	The usage type of GaussDB(DWS) billed in pay-per-use mode 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 GaussDB(DWS) instances on the GaussDB(DWS) Pricing Details page.
Unit	Unit price queried in GaussDB(DWS) Pricing Details : 0.001 USD/node
Usage	The usage is displayed by the resource's unit price, which is USD/GB/hour for a GaussDB(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 Based on the queried unit price, if the capacity is 100 GB and the usage is 2 hours, the price should be 3 x 0.001 x 100 x 2 (backup) = 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.

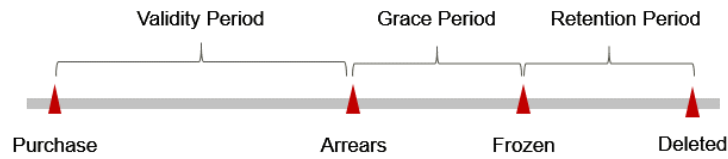
Arrears Reason

You have not purchased a package, and your account balance in pay-per-use billing mode is insufficient.

Arrears Impact

- Yearly/Monthly
For yearly/monthly GaussDB(DWS) resources, you have paid for the resources in advance. Therefore, if your account is in arrears, you can still use the existing yearly/monthly GaussDB(DWS) resources. However, you cannot perform operations that require payments, such as purchasing GaussDB(DWS), upgrading GaussDB(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 balance cannot cover the GaussDB(DWS) resource fees, you account is in arrears. In arrears, the pay-per-use resource continues rendering service but the resource enters 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, 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 pay the arrears after the retention period expires, GaussDB(DWS) resources will be released and data cannot be restored.

Figure 8-1 Lifecycle of GaussDB(DWS) resources billed in the pay-per-use mode



Avoiding and Handling Arrears

For details about how to top up your account, see [Topping Up an Account](#).

If data stored in the OBS is no longer used, you can delete it to avoid further 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 a GaussDB(DWS) cluster that is in pay-per-use mode, delete it and its resources to stop the billing. To do so, log in to the GaussDB(DWS) management console and go to the **Clusters** page.

Table 1 GaussDB(DWS) billing items outlines the charges applicable after a GaussDB(DWS) cluster is deleted. To halt charges temporarily, you may stop the cluster; charges will resume upon restart. 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 GaussDB(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 GaussDB(DWS) management 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
		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
	Bare Metal Server (BMS)	Disk	No	Yes

Yearly/Monthly Billed Resources

For a GaussDB(DWS) cluster billed in yearly/monthly mode, you only need to pay once before the cluster expires. The cluster automatically stops servicing after it expires.

If a user wants to terminate a package in advance, the payment will be refunded in full amount, but the used coupons cannot be returned. Each account can request five-day unconditional full refund for 10 times within a calendar year (starting from January 1st). If the number of times exceeds the threshold, the amount will be deducted. 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

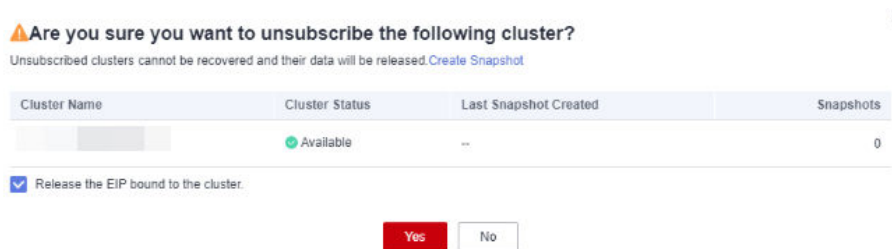
- Yearly/Monthly clusters cannot be unsubscribed from during the grace period or retention period. You can click to release these clusters on the **Renewals** page of the Billing Center.
- A yearly/monthly cluster is frozen during the retention period. Snapshots are frozen together with the cluster and will be automatically deleted after the retention period expires.
- 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.
- To change the billing mode of a yearly/monthly cluster to pay-per-use before a renewal period takes effect, you can only unsubscribe from the cluster, but cannot cancel the renewal.

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

Step 1 Log in to the GaussDB(DWS) management 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 CBC unsubscription page, select a reason for unsubscription, 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 GaussDB(DWS) management console and click **Resource Packages** in the navigation pane on the left.
- Step 2** Select the discount package and click **Unsubscribe** above the list. The unsubscription page is displayed.
- Step 3** 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

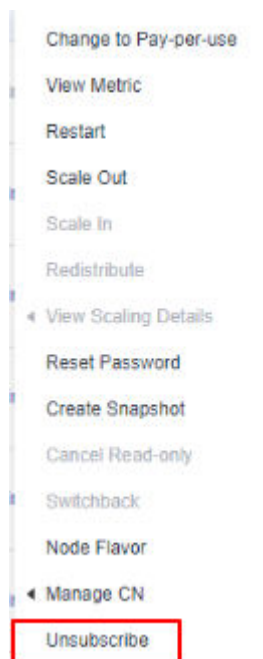
To ensure that all related resources are deleted, you can search the billing records by resource ID, and then delete the resources you identify in this way. To do so, perform the following operations:

- Step 1** On the top menu bar, choose **Billing & Costs > Bills**.
The **Bills** page is displayed.
- Step 2** 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

Billing Mode	Account Name	Service	Resource Name/ID	Resource Tag	Specifications	Region	AZ	Usage Type	Unit Price	Unit	Total			
Step 2	default	huawei_psh_CBU	Data Wareh.	Pay-per-Use	Expenditure	00001193-2021-432-0	---	DWS Ultra	CN North-0	AZ2	Duration	0.0035	YUANGONG	16.00K
Step 2	default	huawei_psh_CBU	Data Wareh.	Pay-per-Use	Expenditure	00001193-2021-432-0	---	DWS Ultra	CN North-0	AZ2	Duration	0.0035	YUANGONG	16.00K
Step 2	default	huawei_psh_CBU	Data Wareh.	Pay-per-Use	Expenditure	00001193-2021-432-0	---	DWS Ultra	CN North-0	AZ2	Duration	0.0035	YUANGONG	16.00K

- Step 3** Log in to the management console and choose **Analytics > Data Warehouse Service**. The cluster list is displayed.
- Step 4** 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.



 **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

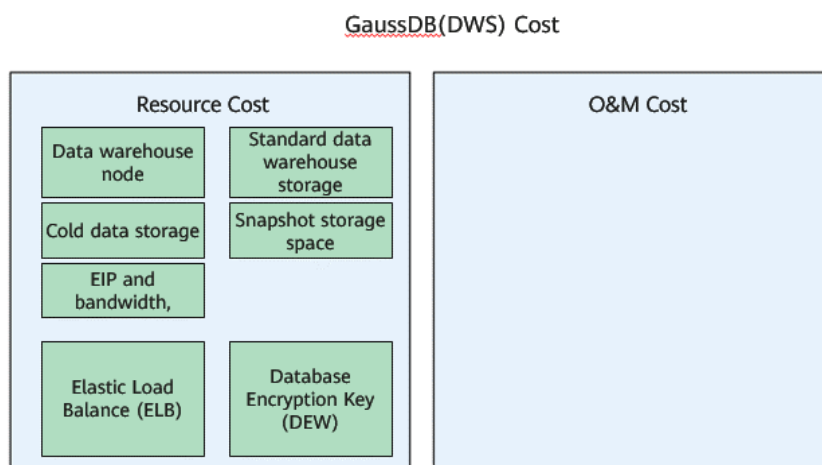
As you migrate more of your services to the cloud, managing cloud costs becomes more important. Cost management can reduce your financial burden. The following describes how to manage costs from four dimensions: cost composition, allocation, analysis, and optimization, to help maximize return on your investment.

Cost Composition

The cost of using GaussDB(DWS) includes the following two aspects:

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

Figure 10-1 GaussDB(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](#).

- **Allocate costs 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.

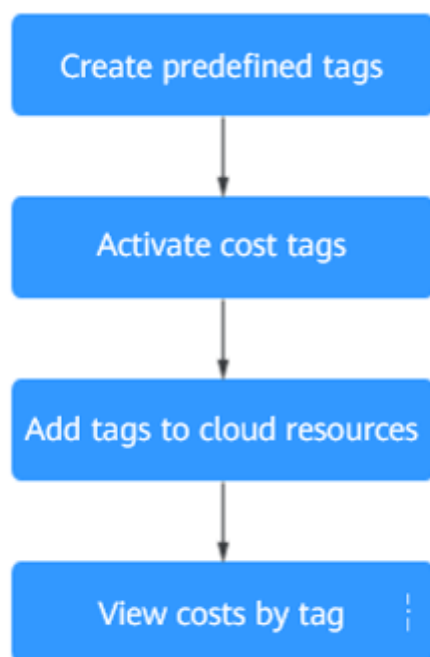
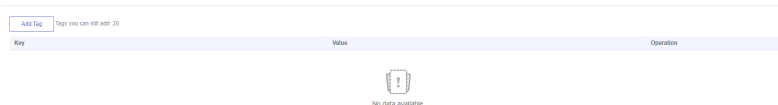


Figure 10-2 Adding tags to GaussDB(DWS)



For details, see [Viewing Costs by Cost Tag](#).

- **Allocate costs 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 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 [EPerforming 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 that you want to create a monthly budgeted amount of 2000 USD for a pay-per-use GaussDB(DWS) instance, and 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

Specify your budget details, including the reset period and budgeted amount. You can also define the budget scope to have your budget monitoring more accurate.

Budget Details

- * Budget Name:
- * Reset Period: Daily Monthly Quarterly Yearly Budget evaluation begins at 00:00 GMT+08:00 on the 1st day of the start month and will be reset to zero at 00:00 GMT+08:00 on the 1st day of each month moving forward.
- * Budget Duration: Recurring Expiring
- * Start Time:
- * Allocation: Fixed Monthly Dynamic
- * Budgeted Amount: Last month's cost: \$1,968.19 USD (USD)

Figure 10-4 Budget scope

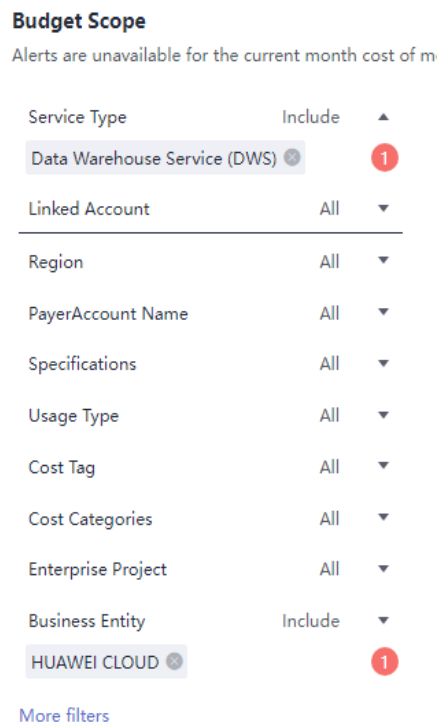
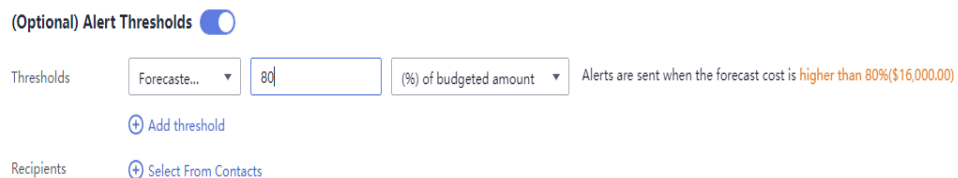


Figure 10-5 Budget alerts



For details, see [Enabling Forecasting and Creating Budgets to Track Cost 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 How Can I Try Out GaussDB(DWS) for Free?

Only new users can participate in the free trial campaign. If your account has never created a data warehouse cluster but passed the real-name authentication, you are eligible for a one-month free trial of GaussDB(DWS).

To apply for the free trial, log in to the GaussDB(DWS) management console and click **Apply for free trial**. Free trial packages cannot be used across regions. Select the region based on your requirements.

After subscribing to a free trial package, you can log in to the GaussDB(DWS) management console to create a cluster with the corresponding region, node flavor, and node quantity within the free trial period. The system will not bill you for the created cluster. If you choose to use other node types, you will be charged at the standard pay-per-use rate. For details, see [GaussDB \(DWS\) Pricing Details](#).

When the one-month free trial ends, you can delete the cluster to avoid extra expenses. Alternatively, you can keep the cluster, but you will pay for it at the standard pay-per-use rate.

11.2 Why Was I Deducted Fees After My GaussDB(DWS) Free Trial Expired?

As stated on the GaussDB(DWS) activity page, the cluster you created will not be automatically released when the free trial expires. If you do not delete the cluster manually, the system will charge you for that cluster.

To avoid additional fees, log in to the GaussDB(DWS) management console and go to the **Clusters** page to delete your cluster if you do not want to use it after the trial period ends. If the cluster has an EIP, select **Release the EIP bound to the cluster** on the **Delete Cluster** dialog box. If you do not release the EIP, it will be billed as per VPC EIP pricing rule.

11.3 Why Can't I See a Cluster After I Subscribe to a Free GaussDB(DWS) Trial?

The system does not automatically create a cluster after you subscribe to a free trial. Log in to the GaussDB(DWS) management console to manually create one.

11.4 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.

11.5 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.

11.6 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**.

11.7 Can I Freeze or Shut Down a GaussDB(DWS) Cluster to Stop Billing?

Yes. To cease incurring charges, you may stop the GaussDB(DWS) cluster. If the cluster becomes unnecessary, it is recommended to either stop or permanently delete the cluster along with its resources.