Huawei Cloud Flexus

Service Overview

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HUAWEI CLOUD COMPUTING TECHNOLOGIES CO., LTD.

Huawei Cloud Computing Technologies Co., Ltd.

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

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

Contents

1 FlexusL

1.1 What Is FlexusL?

Overview

Flexus L Instance (FlexusL) is a next-generation lightweight cloud server designed for small- and medium-sized enterprises (SMEs) and developers. FlexusL provides a range of images for you to choose from and is suitable for light-load scenarios such as website setup, development and testing environment, enterprise applications, website analysis, and audio and video scenarios. It is secure, cost-effective, and easy-to-use.

FlexusL is suitable for new users of cloud computing services, individual developers, and small and medium-sized enterprises that want to deploy simple applications on cloud servers.

Resources

FlexusL provides compute, network, storage, image installation, and backup capabilities.

Resource	Description
Cloud server	A cloud server packaged in a FlexusL instance uses the x86 architecture and the same underlying hardware resources as an ECS. It delivers the same compute performance as an ECS with the same vCPUs and memory.
Image	FlexusL provides OS images, application images, and private images for you to select.
Network	After a FlexusL instance is created, a fixed elastic IP address (EIP) is assigned and a fixed data package is provided by default.

Resource	Description
Elastic Volume Service (EVS) disk	EVS provides storage space. Volume Backup Service (VBS) provides data backup and restoration.
Cloud server backup	You can back up all EVS disks (including system and data disks) and restore server data from backups.
Host Security Service (HSS)	With intrusion detection, vulnerability management, baseline inspection, and asset management functions, HSS makes it easier to control host security risks.

Billing

FlexusL only supports the yearly/monthly billing mode. Any traffic usage in excess of the package is billed by traffic. For details, see **Billing**.

A FlexusL instance is actually a package of resources. Resources in the package are unsubscribed or renewed together. After a FlexusL instance is created, the data disk, backup vault, and HSS included in the instance package cannot be unsubscribed separately.

Functions

FlexusL functions are listed as follows.

Function	Description	Reference
Cloud server management	After a FlexusL instance is created, you can manage the server in the FlexusL instance, including setting the login password and managing the domain name and security group.	• **Resetting the Password** • **Reinstalling an OS** • **Changing an OS** • **Upgrading a FlexusL Instance** • **Managing Domain Names** • **Managing Security Groups**
EVS disk management	After a FlexusL instance is created, you can view the details and monitoring metrics of the EVS disk attached to it.	**Managing Disks**
Cloud backup management	After a FlexusL instance is created, you can modify the applied backup policy and view the monitoring data.	**Managing Backups**
Host security management	HSS checks the security of FlexusL in real time and generates reports for you to handle risks (if any) in a timely manner.	**Managing Server Security**
Image management	FlexusL provides featured OS images, application images, and private images for you to select. • OS images: only include the necessary OSs to launch servers. • Application images: include applications or preset configurations. • Private images: You can use a private image to quickly create FlexusL instances with the same configurations.	• **Logging In to the Image Application Dashboard** • **Managing Private Images**

1.2 FlexusL Advantages

No Freezing

- Huawei Cloud QingTian architecture (hardware-software synergy) and top-flight AI algorithms provide superb compute performance.
- Huawei Cloud KooVerse delivers ultra-low data transmission latency.

Cost-Effective

- Service packages give you great performance at a price you can afford.
- There are multiple instance specifications, so you can always find a good match for your performance needs without breaking the bank.
- You can benefit from the upgraded technology to reduce your costs.

Easy to Use

- You can purchase a bundle of images and resources with just a few clicks.
- Multiple types of high-quality images come preconfigured with templates and have been tested by Huawei Cloud.
- Automatic orchestration and one-click resource provisioning let you roll out services within minutes.
- A convenient setup wizard makes it easy to get started.

Easy to Manage

- Visual management of topology, resources, and images enable transparent management of the service architecture.
- Service status notifications and one-click resource renewal or unsubscription simplify service management.
- Real-time monitoring of resource loads, security, and usage ensure always-on services.
- There are various security services, including backup and host security services.

1.3 Application Scenarios

FlexusL is designed for lightweight and light-load scenarios, such as small websites, web applications, blogs, forums, and cloud development environments.

- E-commerce store management: quickly setting up and managing e-commerce stores and providing stable, high-quality services for customers around the globe
- Website setup: using application templates to quickly build websites, such as enterprise official websites, news, blogs, forums, and e-commerce websites
- Mini game development: quickly rolling out standalone PC games and casual games with stable performance

- Development and testing: running development and testing projects and scheduled and automatic tasks on the cloud
- Cloud-based learning: conducting experiments, writing papers, and studying on the cloud
- Blog and forum setup: creating blogs and forums for individual developers easily and cost-effectively

1.4 Notes and Constraints on Using FlexusL Instances

This section describes the notes and constraints on using FlexusL.

Item	Description
Quota	- By default, you can create a maximum of five FlexusL instances in total in a region. - You can apply for up to five ICP filings for a FlexusL instance. **NOTE** To increase the quota, **submit a service ticket**.
Package management	- A FlexusL instance package can have only one data disk, one backup vault, and one HSS. - A FlexusL instance is actually a package of resources. Resources in the package are created, unsubscribed, and renewed together. The data disk, backup vault, HSS, and EIP included in the package cannot be unsubscribed separately.
Package expansion	- If a resource of a certain service type has been added to the instance package, no more resources of such service type can be added. For example, if a FlexusL instance has a data disk attached already, no more data disks can be attached to it. - Currently, only data disks can be added on the FlexusL console. To add backup vaults and HSS, you need to go to the CBR and HSS consoles separately. For details, see **Purchasing a Server Backup Vault** and **Accessing HSS**. **NOTE** Data disks can be added only on the FlexusL console. You cannot add and attach data disks to FlexusL instances on the EVS console or attach existing data disks. - Data packages cannot be purchased separately. - The added resources have the same expiration time as the FlexusL instance. They cannot be removed or unsubscribed separately. - Resources can be added only when the FlexusL instance is running or stopped.

Item	Description
Data disk/ backup vault expansion	● Expanding the disk capacity does not affect the existing data on the cloud server, but incorrect operations may lead to data loss or exceptions. You are advised to back up the disk data using CBR before expansion. ● Only data disks can be expanded separately. System disks cannot be expanded separately. You can expand the system disk capacity by upgrading the instance specifications. For details, see **Upgrading a FlexusL Instance**. ● The disk capacity can only be expanded, not reduced. ● The additional capacity has the same expiration time as the FlexusL instance and cannot be unsubscribed from separately. ● The disk can only be expanded when the server is **Running** or **Stopped**.
Backup and restore	FlexusL server data cannot be backed up using EVS disk snapshots. To back up and restore server data, use Cloud Backup and Recovery (CBR). For details, see **Backing Up and Restoring a FlexusL Instance**.
Image	● If a FlexusL instance is created using an application image, **ensure that the application has been installed from the image and running properly on the instance** before you reset the instance password, or restart, start, or stop the instance. Otherwise, you may fail to log in to the image application dashboard. ● For details about the restrictions on using a private image to create a FlexusL instance or change the OS, see **Managing Private Images**.
Networking	● Public network – By default, an EIP is assigned for an FlexusL instance. It cannot be changed and will not be retained after the instance is released. – IPv6 addresses cannot be configured for FlexusL. ● Private network – The VPC cannot be changed. – By default, a private IP address is assigned for an FlexusL instance. The assigned private IP address cannot be changed and will not be retained after the instance is released.

1.5 Instance Specifications

This section describes the resources contained in a FlexusL service package.

Instance Specifications

📖 **NOTE**

> A cloud server packaged in a FlexusL instance uses the x86 architecture and the same underlying hardware resources as an ECS. It delivers the same compute performance as an ECS with the same vCPUs and memory.

Instance specifications include vCPUs and memory, a system disk, a data package, and an EIP. You can associate EVS disks, HSS, or cloud backup vaults with your FlexusL instance as needed.

For details, see **Resource Configuration for FlexusL Instances**.

Table 1-1 Instance specifications

vCPU | Memory	System Disk Capacity | Type	Peak Bandwidth | Data Package	(Optional) Associated Service Resources
2 vCPUs | 1 GiB	40 GiB | General Purpose SSD	30 Mbit/s | 2084 GB	The following service resources can be purchased together with FlexusL instances:
2 vCPUs | 2 GiB	60 GiB | General Purpose SSD	30 Mbit/s | 3072 GB	● Data disk: General Purpose SSD V2 | Custom capacity
2 vCPUs | 4 GiB	80 GiB | General Purpose SSD	30 Mbit/s | 4096 GB	● HSS: Basic edition
2 vCPUs | 8 GiB	160 GiB | General Purpose SSD	30 Mbit/s | 5120 GB	● CBR: Server backup | Custom vault capacity
4 vCPUs | 8 GiB	240 GiB | General Purpose SSD	30 Mbit/s | 6144 GB	
4 vCPUs | 16 GiB	320 GiB | General Purpose SSD	30 Mbit/s | 7168 GB	

EVS Disk

In a service package, an EVS disk is attached to a FlexusL instance and is detached, renewed, or unsubscribed together with the instance.

EVS Disk	Type	Constraints
System disk	General Purpose SSD	● Each FlexusL instance can only have one system disk attached. ● The system disk cannot be expanded or detached, and no more system disks can be attached.

EVS Disk	Type	Constraints
Data disk	General Purpose SSD V2	• Each FlexusL instance can only have one data disk attached. • Data disks can only be attached or expanded on the FlexusL console. Existing data disks cannot be attached to FlexusL instances. • Data disks cannot be detached.

For details about EVS disks, see **Disk Types and Performance**.

Network

Network Setting	Description

Private network	• After a FlexusL instance is created, a fixed VPC is configured for it by default. You cannot customize the VPC.
	• By default, FlexusL instances created by the same account in the same region are located in the same VPC. They can communicate with each other over a private network.
	When cloud resources (such as ECSs and cloud databases) created by the same account in the same region are located in the same VPC (vpc-default-smb) as FlexusL instances, they can communicate with each other over a private network. If they are not in the same VPC, they can communicate with each other through peering connection. For details, see **VPC Peering Connection Usage Examples**.
	• FlexusL instances that are created by different accounts or located in different regions are located in different VPCs and they cannot communicate with each other over a private network. To access FlexusL instances and cloud resources in other VPCs, you can use the following methods:
	  – Cloud Connect: enables cross-account or cross-region access with other FlexusL instances or cloud resources (such as ECSs and cloud databases). For details, see **Cloud Connect**.
	  – Peering connection: enables intra-account or cross-account access with other FlexusL instances or cloud resources in the same region. For details, see **VPC Peering Connection Usage Examples**.
	• The private IP address of a FlexusL instance cannot be changed.

EIP	After a FlexusL instance is created, a fixed elastic IP address (EIP) is assigned by default. The EIP has the following constraints: • The EIP of the FlexusL instance cannot be unbound or changed. • The EIP will not be retained after the FlexusL instance is released. • IPv6 addresses cannot be configured for FlexusL instances.

Network Setting	Description
Data package	A monthly data package is included in the FlexusL instance. Any traffic usage in excess of the package is billed on a pay-per-use basis. Data packages cannot be purchased or upgraded separately. ● EIPs are billed by traffic. You cannot change the EIP billing mode. ● Only outbound traffic (originating from your server) will be billed. ● The data package included in the FlexusL service package is a monthly package. A monthly data package starts on the date of purchase and ends at 23:59:59 on the same day of the next month. For example, if you purchase a FlexusL instance at 10:00:00 on June 5, the expiration time of the package is at 23:59:59 (the last second of the day) on July 5. The package for the next month starts from 23:59:59 on July 5 to 23:59:59 on August 5. ● Service traffic is preferentially deducted from the data package. Any traffic usage in excess of the package is billed by traffic. The excess traffic is billed based on a tiered pricing model, and the unit price varies in different regions. ● The traffic quota is reset each month. Any unused portion of the data package cannot be rolled over to the next month. ● After you unsubscribe from or stop a FlexusL instance, the excess traffic will no longer generate costs.

Peak EIP bandwidth	● Outbound peak bandwidth
	  – The peak bandwidth in the FlexusL service package refers to the outbound peak bandwidth, that is, the maximum bandwidth for the FlexusL instance to access the Internet.
	  – The peak bandwidth cannot be changed separately.
	    NOTE
	    The peak bandwidth is not used as a service commitment and is only used as a reference for the bandwidth upper limit. If resource contention occurs, the peak bandwidth may be limited.
	● Inbound peak bandwidth
	  – If the outbound peak bandwidth of a package is not greater than 10 Mbit/s, the inbound peak bandwidth is 10 Mbit/s.
	  – If the outbound peak bandwidth of a package is greater than 10 Mbit/s, the inbound peak bandwidth is the same as the outbound peak bandwidth.

HSS

HSS basic edition provides intrusion detection, vulnerability management, and baseline inspection. For details, see **HSS Editions and Features**.

CBR

You can back up all EVS disks (including system and data disks) and restore data from backups.

- You can automatically back up data based on the backup policy or manually back up data at any time. For details, see **Backing Up a FlexusL Instance**.

- You can restore data from backups when necessary. For details, see **Restoring from a Cloud Server Backup**.

1.6 Images Supported by FlexusL Instances

Image Types

FlexusL provides OS images, application images, and private images for you to choose from.

Image Type	Description
OS Images	OS images only include the necessary OSs to launch servers, without any application data or environment configurations. After a server is created from an OS image, the server runs on an OS without any applications installed. You can install applications based on your service requirements. For details about how to create a FlexusL instance from an OS image, see **Creating an Nginx Server Using the CentOS Image**.
Application Images	An application image contains not only the underlying OS (Ubuntu 22.04), but also application software, initialization data, and runtime environment required by the application. You can use application images to quickly deploy applications out-of-the-box, minimizing the need for separate upload and installation. For details on how to perform operations on application images, see **Managing Application Images**.
Private Images	You can use a private image to quickly create a FlexusL instance with the same configuration as the image, or use a private image to change the OS. Private images are created from servers on cloud platforms or downloaded from third party platforms. They can be used by FlexusL only after being created or imported using **Image Management Service (IMS)**. For details, see **Managing Private Images**.

OS Images

The following table lists the OS images supported by FlexusL.

Image Name	Description
Huawei Cloud EulerOS	Huawei Cloud EulerOS (HCE OS) is a Linux distribution based on the open-source community openEuler developed by Huawei. It provides a cloud-native, high-performance, secure, and stable execution environment for developing and running applications.
CentOS	CentOS is a popular open-source Linux distribution based on Red Hat Enterprise Linux (RHEL) source code.
Ubuntu	Ubuntu is a popular Linux distribution based on Debian. It is free, stable, easy to use, and has a vast array of community resources available.
Debian	Debian is a stable, convenient Linux distribution. It provides a more powerful software package management tool than most Linux distributions and is one of the preferred OSs for website building.

Application Images

The following table lists the application images supported by FlexusL. The supported application images vary depending on the region. For details, see the applications images displayed on the management console.

For details on how to perform operations on application images, see **Managing Application Images**.

Image Name	Description
WordPress, an enterprise website setup system	WordPress was initially a blogging platform, but it gradually evolved into a free content management system (CMS) and website setup platform. It has earned a reputation for ease of use, scalability (plug-ins, templates, and secondary development), powerful functions, and friendly search engines.
BT panel, a visual Linux panel	BT panel is a popular tool for PHP integrated environment management and server O&M. It supports web-based management, security management, task scheduling, file management, one-click creation of websites, FTP, databases, and SSL, and coexistence and switchover of multiple PHP versions.

Image Name	Description
Odoo, an enterprise ERP system	Odoo is a global open-source ERP/CRM software developed using Python and PostgreSQL and has more than 730 partners and 2 million users. It has a powerful, flexible system architecture that enables fast iteration. The version difference lies in the user interface and functional modules. You can modify, upgrade, and add functions in modules without modifying the core code. Common modules include procurement management, sales management, inventory management, financial management, goods management, marketing management, customer relationship management, production management, personnel management, service support, e-commerce, and website building. Odoo is great for industries like manufacturing, retail chain, e-commerce, and international trade.
PrestaShop, an e-commerce system	PrestaShop is an open source e-commerce platform written in the PHP programming language with support for the MySQL database management system. More than 40,000 online stores around the world have been deployed using Prestashop. Prestashop uses Smarty for programming and is highly scalable. It supports multiple languages, currencies, and payment methods. Prestashop is a good choice for international trade websites.
Superset, a data exploration and visualization platform	Apache Superset (formerly known as Panoramix and Caravel) is an open-source data analysis and visualization platform. This tool provides a quick way to intuitively visualize datasets by allowing you to create and share interactive dashboards. It is also an enterprise-level intelligent business web application.
Portainer, a Docker visual runtime environment	Portainer is a graphical management tool for Docker. It is compiled using GO and offers a range of functions such as status display, quick deployment of application templates, basic operations on Docker (containers, images, networks, and database logical volumes), log display, and a container console.
Nextcloud, an enterprise cloud disk	Nextcloud is an open-source cloud storage software for self-built private web disks. It was developed using PHP and MySQL and provides multiple clients to support access from different devices. You can easily synchronize data with and share data stored on servers. You can also synchronize data from other sources such as Dropbox, FTP, OpenStack Object Storage, SMB, WebDAV, and SFTP.

Image Name	Description
GitLab, a one-stop DevOps platform	GitLab was initially an open source code repository management project designed to help teams collaborate on software development. Now it is a DevOps platform that provides a complete solution for software development and operations. GitLab delivers a range of functions, including project management, planning, creation, validation, packaging, release, configuration, monitoring, and protection of applications.
Matomo, a network statistics and analysis platform	Matomo is a powerful open-source network analysis platform that has full data ownership, while also helping ensure compliance with General Data Protection Regulation (GDPR) and California Consumer Privacy Act (CCPA). Matomo's advanced search engine optimization and conversion optimization significantly improve your digital marketing capabilities, particularly for commercial software.
SRS, a real-time video server	SRS is a simple and efficient real-time video server that supports various real-time streaming media protocols, such as RTMP, WebRTC, HLS, HTTP-FLV, and SRT. Based on coroutine technology without async callback problem, SRS is also cloud native (docker image, k8s deploy, telemetry, metrics, etc). It is focused on real-time streaming gateways and supports streaming protocols such as RTMP, HLS, WebRTC, HTTP-FLV and SRT.

Private Images

- You can use a private image to quickly create FlexusL instances with the same configurations or change the OS.

Operation	Description	Reference
Creating a server from a private image	You can use a private image to quickly create FlexusL instances that have the same configurations as the image.	**Managing Private Images**
Changing the OS to a private image	You can use a private image to change the OS of your FlexusL instance. **NOTE** Only private images of the system disk can be used for the OS change.	

- You can also create a private image from a FlexusL instance.

Operation	Description	Reference
Creating a private image	You can use a FlexusL instance to create a private image. After the image is created, you can use it to create multiple FlexusL instances with the same configurations or create other servers.	• **Creating a System Disk Image** • **Creating a Data Disk Image from an ECS** • **Creating a Full-Server Image**
Sharing a private image	After creating a private image from a FlexusL instance, you can share the image with other accounts in the same region.	**Sharing Images**
Replicating a private image	After an image is created from a FlexusL instance: • You can use the in-region image replication function to convert an encrypted image to an unencrypted image, or the other way around. • You can replicate the private image to accounts in other regions.	• **Replicating Images Within a Region** • **Replicating Images Across Regions**
Exporting a private image	After a private image is created from a FlexusL instance, you can export it to a standard OBS bucket and then download it to your local PC.	**Exporting an Image**
Deleting a private image	You can delete a private image if you no longer need it.	**Deleting Images**

1.7 Comparison Between FlexusL and ECS

Overview

FlexusL simplifies the purchase of cloud servers. You can get a package of resources such as network configurations, EVS disks, backup vaults, and HSS at one stop and deploy your applications easily and quickly.

> 📖 **NOTE**
>
> FlexusL instances use the same underlying hardware resources as Elastic Cloud Servers (ECSs) and deliver the same compute performance as ECS instances with the same flavors.

Their major differences are described as below:

- FlexusL helps you quickly set up simple applications. It is sold as a package and suitable for lightweight, light-load applications.

- ECS provides a variety of billing modes, flavors, image types, and disk types. You can customize your ECS configurations for different service scenarios.

📖 **NOTE**

For high-load applications, you are advised to use ECS for more stable performance.

Comparison Details

Category	Item	FlexusL	ECS
Scenarios	Application scenario	Low-load scenarios such as website setup, development and testing environments, small and medium-sized enterprise applications, and applets	Full-scenario coverage, typically high-load scenarios such as website applications, enterprise e-commerce, graphics rendering, data analysis, and high-performance computing
Billing	Billing mode	Yearly/monthly package. Any traffic usage in excess of the package is billed on a pay-per-use basis.	• Yearly/Monthly • Pay-per-use • Spot pricing
Specifications	Flavor	Packaged with different allocations of vCPUs and memory	A variety of instance types and specifications
	Disk	• System disk type: General Purpose SSD • Data disk type: General Purpose SSD V2	Multiple disk types For details about disk types supported by ECS, see **Disk Types and Performance**.
	Network	• An EIP is automatically assigned and cannot be changed. • The EIP uses the Border Gateway Protocol (BGP) type by default (subject to what the console displays). • Bandwidth is billed by traffic.	• You can choose whether to bind an EIP. • You can select an EIP type. • Bandwidth is billed by bandwidth, traffic, or shared bandwidth.
User experience	Advantage	Easy setup and O&M, cost-effective, and secure	Stable, reliable, scalable, secure, and hardware-software synergy
	Image	Mainstream images, including public images and application images	Various types of images, including public images, private images, shared images, and KooGallery images
	Login mode	Password	Password or key pair

Categ ory	Item	FlexusL	ECS
	Combin ed purchas e	- HSS - EVS - CBR	- HSS - Cloud Eye

1.8 Billing

This section describes the billing modes, billing items, package pricing, expiration or arrears, renewal, and unsubscription of FlexusL.

Billing Modes

FlexusL instances only support the yearly/monthly billing mode. Yearly/Monthly is a prepaid mode. You need to pay first, and will be billed based on the required duration in your order. You will need to make sure you have a top-up account with a sufficient balance or have a valid payment method configured first.

A FlexusL instance is actually a package of resources. The package includes compute resources, network resources, images, EVS disks, backup vaults, and HSS. Resources included in the package cannot be unsubscribed separately.

A FlexusL instance comes with a monthly data package. The traffic usage in excess of the package will be billed on a pay-per-use basis. Pay-per-use is a postpaid billing mode. You pay as you go and just pay for what you use.

FlexusL Billing Items

Billing Item	Description	Billin g Mode	Price
FlexusL	A FlexusL instance is actually a package of resources. The package includes compute resources, network resources, images, EVS disks, backup vaults, and HSS. **NOTE** - Only outbound traffic (originating from your server) will be billed. - The data package included in the FlexusL service package is a monthly package. A monthly data package starts on the date of purchase and ends at 23:59:59 on the same day of the next month. For example, if you purchase a FlexusL instance at 10:00:00 on June 5, the expiration time of the package is at 23:59:59 (the last second of the day) on July 5. The package for the next month starts from 23:59:59 on July 5 to 23:59:59 on August 5.	Yearly / Mont hly	Monthly package price x Required duration

Billing Item	Description	Billing Mode	Price
Excess traffic (optional)	Service traffic is preferentially deducted from the data package. Any traffic usage in excess of the package is billed by traffic. The excess traffic is billed based on a tiered pricing model, and the unit price varies in different regions.	Pay-per-use	Unit price of traffic x Excess traffic volume For details about the unit price of traffic, see **EIP Pricing Details**. The EIP type is dynamic BGP.
Intra-VPC communications	By default, FlexusL instances created by the same account in the same region are located in the same VPC. They can communicate over a private network for free.	Free	None

The following provides some billing examples to help you understand the billing rules. The listed prices are for reference only. The actual pricing is subject to the console.

Table 1-2 Billing example

Scenario	Description	Price
No excess traffic	Instance specification price (including a 4,096 GB/month data package): $41.78 USD/month Data disk capacity: 20 GiB Data disk unit price: $0.91 USD/10 GiB Required duration: 2 months	Monthly instance price = Monthly instance specification price + Monthly data disk price = $41.78 USD/month + 20 GiB x $0.91 USD/10 GiB = $43.60 USD Total price = Monthly instance price x Required duration = $43.60 USD x 2 = $87.20 USD

Scenario	Description	Price
Excess traffic generated	10 GB traffic is generated in excess of the 1,024 GB/month monthly data package. The traffic in excess of the package is priced at $0.114 USD/GB.	Excess traffic price = Unit price of excess traffic x Excess traffic volume = $0.114 USD/GB x 10 GB = $1.14 USD Total price = $87.2 USD + $1.14 USD = $88.34 USD

Other Billing Items

Billing Item	Description	Billing Mode	Price
(Optional) SSL certificate	If you purchase an SSL certificate and use it for HTTPS encryption, you need to pay for the SSL certificate.	One-off payment	See **Cloud Certificate Manager Service Pricing Details**.
(Optional) Filing	Huawei Cloud provides you ICP filing for free.	Free	None
(Optional) DNS server	Huawei Cloud provides DNS for free to help resolve your website domain names for FlexusL.	Free	None

Specifications Upgrade

You can upgrade your FlexusL instance specifications on the console as your services grow, but you will need to pay the difference in price.

◻ **NOTE**

Specifications cannot be degraded.

For example, if you purchased a one-month yearly/monthly FlexusL instance (2 vCPUs, 2 GiB memory, and 60 GiB system disk) on April 8, 2023 and plan to upgrade the specifications to 2 vCPUs, 4 GiB memory, and 80 GiB system disk on April 18, 2023. The price for the original specification is $17.21 USD/month, and that for the new specification is $41.78 USD/month. The price difference will be calculated as follows:

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

The remaining period is the remaining days of each calendar month divided by the maximum number of days in each 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

specifications upgrade = $41.78 USD/month x 0.6581 – $17.21 USD/month x 0.6581 = $16.1695 USD

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

Expiration and Arrears

- The following describes the impacts if your FlexusL instances expire or if your account is in arrears.

Phase	Impact
Grace period	After a FlexusL instance expires or your account is in arrears, the instance enters a grace period. Within the grace period, you can still access and use the FlexusL instance.
Retention period	If you do not renew your FlexusL instance or pay off the arrears before the grace period expires, the instance enters a retention period. During this retention period, you cannot access or use FlexusL instance, but it is still retained.

After a FlexusL instance enters a grace period or retention period, Huawei Cloud will notify you of this by email or text message. If you do not complete the renewal or payment before the retention period ends, your instance will be released. To avoid impacting your services, **renew the instance in a timely manner**.

- Arrears

FlexusL instances come with data packages. Any traffic usage in excess of the package is billed on a pay-per-use basis and settled periodically. If you do not have a valid payment method configured or your account balance is insufficient, your account will fall into arrears.

Renewal

FlexusL instances cannot be used after they expire. If you want to continue using them, renew them before the **retention period** ends. Otherwise, your resources will be released and cannot be recovered.

FlexusL is provided as a package. Resources in the package are renewed together.

Unsubscription

FlexusL is provided as a package. Resources in the same package are unsubscribed together.

Suppose you purchased a yearly/monthly FlexusL instance with a 40 GB backup vault. When you unsubscribe from the FlexusL instance, the 40 GB backup vault included in the package will be unsubscribed together with the instance. The backup vault cannot be unsubscribed separately.

For details, see **Unsubscription Rules**.

2 FlexusX

2.1 What Is Flexus X Instance?

Flexus X Instance (FlexusX) is a next-generation flexible cloud server service designed for small- and medium-sized enterprises (SMEs) and developers. FlexusX provides functions similar to what ECS provides. In addition, with FlexusX, you can flexibly configure vCPU to memory ratios to match your specific needs and change server specifications without service interruptions.

Application Scenarios

- E-commerce livestreaming: building e-commerce transaction platforms on FlexusX instances to handle spikes and lulls in the e-commerce market
- Enterprise website setup: helping enterprises set up platforms such as blogs, forums, and websites to communicate, share, and spread information
- Individual development and testing: building development and testing environment on FlexusX instances easily and cost-effectively
- Game servers: creating game servers with robust computing power to support 1,000+ players online at the same time, smooth scaling to handle the sudden increase of online players, and strong network acceleration capability to improve user experience.

Advantages

- A variety of public images and versions are provided for you to choose from.
- Service changes can be intelligently detected and specifications can be dynamically adjusted, allowing for a higher workload range.
- vCPU and memory specifications can be flexibly customized.
- FlexusX instances support the flexible pay-per-user billing mode and provide intelligent recommendations for instance specifications.

Billing Modes

FlexusX instances support the yearly/monthly and pay-per-use billing modes to meet your requirements in different scenarios. You can change the billing mode from yearly/monthly to pay-per-use, and vice versa.

Resource Configuration

FlexusX instances provide resources covering compute (vCPUs/memory and images), networking (VPCs and EIPs), storage (EVS disks), security (HSS), and Cloud Eye. You can flexibly configure resources based on service requirements.

- For details about specifications provided by FlexusX instances, see **FlexusX Instance Specifications**.

- For details about images provided by the FlexusX instances, see **Images Supported by FlexusX Instances**.

Differences Among FlexusL, FlexusX, and ECS

- A FlexusL instance is a package of resources that include cloud servers, EVS disks, EIPs, CBR vaults, and HSS. Resources in the package are created and managed together. FlexusL instances provide various featured application images to help you quickly set up service environments. FlexusL instances are easy to use and friendly to beginners in cloud computing.

- FlexusX provides functions similar to what ECS provides. It simplifies the purchase process of cloud servers. It has its own features, such as custom vCPU/memory ratios and live specification change. Compared with FlexusL, FlexusX provides more flexible specifications and functions and have fewer constraints.

- An ECS instance is a server that supports high-load scenarios. It provides multiple billing modes, flavor types, image types, and disk types. You can customize ECS configurations for different service scenarios.

> **NOTE**
>
> - FlexusX instances use the same underlying hardware resources as ECS instances and deliver the same compute performance as ECS instances with the same specifications.
> - For high-load applications, you are advised to use ECS for more stable performance.

For details about the differences among them, see **Table 2-1**.

Table 2-1 Differences among FlexusX, FlexusL, and ECS

Item	FlexusL	FlexusX	ECS
Target customer	Small- and medium-sized enterprises and developers with low service loads and requiring fast deployment	Small- and medium-sized enterprises and developers with medium service loads and requiring flexible configurations	High-load and full-service scenarios, such as website applications, enterprise e-commerce, graphics rendering, data analysis, and high-performance computing.

Item	FlexusL	FlexusX	ECS
Feature	Various built-in solutions and images, quick environment setup, easy service management	Custom specifications, stable and robust performance, and flexible pay-per-use billing	Flexible vCPU, memory, and bandwidth configuration; reliable, secure, and efficient application environments
CPU architecture	x86	x86	x86 or Arm
Billing mode	Yearly/Monthly FlexusL instances are sold and managed as packages. Resources created with FlexusL instances cannot be disassociated, deleted, or unsubscribed from separately.	● Pay-per-use ● Yearly/Monthly	● Yearly/Monthly ● Pay-per-use ● Spot pricing
Specifications	● Multiple instance specifications are available. ● Instance specifications can only be upgraded.	● vCPU to memory ratios can be customized. For details, see **Instance Specifications**. ● Instance specifications can be upgraded or degraded.	● Multiple instance specifications are available. ● Instance specifications can be upgraded or degraded.

Item	FlexusL	FlexusX	ECS
Disk	Each FlexusL instance has a system disk with a fixed capacity by default and supports one data disk at most. Data on FlexusL instances cannot be restored using snapshots on the console. ● System disk: General Purpose SSD ● Data disk: General Purpose SSD V2	System disk specifications can be customized. Supported disk types: ● System disk: common I/O, high I/O, General Purpose SSD, ultra-high I/O, and General Purpose SSD V2 ● Data disk: common I/O, high I/O, General Purpose SSD, ultra-high I/O, and General Purpose SSD V2	System disk specifications can be customized. ● System and data disks: All disk types are supported. For details about disk types supported by ECS, see **Disk Types and Performance**.
Network	● A fixed EIP is assigned by default. ● EIP bandwidth is billed by traffic. A FlexusL instance comes with a monthly data package. ● The VPC, private IP address, and public IP address of a FlexusL instance cannot be changed.	● You can choose whether to bind an EIP. ● You can select an EIP type. ● Bandwidth is billed by bandwidth, traffic, or shared bandwidth.	● You can choose whether to bind an EIP. ● You can select an EIP type. ● Bandwidth is billed by bandwidth, traffic, or shared bandwidth.
Advantage	Easy setup and O&M, cost-effective, and secure	● Easy setup and O&M, cost-effective, and secure ● FlexusX instances that use the Huawei Cloud EulerOS 2.0 public image support Nginx, Redis, and MySQL application acceleration.	Stable, reliable, scalable, secure, and hardware-software synergy

Item	FlexusL	FlexusX	ECS
Image	• Five types of mainstream system images provided • Various application images provided • Private system disk images supported	• Various public images provided • Private images shared images supported	• Various public images provided • Private images, shared images, and KooGallery images supported
Login mode	Password	Password or key pair	Password or key pair
Associated Service	• HSS (basic edition) • CBR	• HSS (basic and enterprise editions) • Cloud Eye • CBR	• HSS (all editions) • Cloud Eye • CBR

Access Methods

You can access FlexusX instances using a web-based management console.

If you have already signed up to Huawei Cloud, log in to the management console and choose **Compute** > **Huawei Cloud Flexus** from the service list to access the FlexusX console.

If you have not signed up for Huawei Cloud, see **Registering a HUAWEI ID and Enabling Huawei Cloud Services**.

2.2 Notes and Constraints on Using FlexusX Instances

To ensure that your FlexusX instances run properly, read the following notes and constraints before using them.

General Constraints

- Private images are regional resources. FlexusX instances only can use private images that are in the same region as them.
- FlexusX instances use the x86 architecture and do not support private images created using Arm servers.
- FlexusX instances do not support nested virtualization.
- Do not install external hardware devices, such as encryption dongles or USB flash drives on FlexusX instances.

Precautions

When using FlexusX instances, comply with the precautions listed below.

General Precautions

- Do not use FlexusX instances as unauthorized servers for any illegal or violation service, such as gambling or cross-border VPN.
- Do not use FlexusX instances for fraudulent transactions, such as click farming on e-commerce websites.
- Do not use FlexusX instances to initiate network attacks, such as DDoS attacks, CC attacks, web attacks, brute force cracking, or spreading of viruses and Trojan horses.
- Do not use FlexusX instances for traffic transit.
- Do not use FlexusX instances for web crawling.
- Do not use FlexusX instances to detect other systems like scanning or penetration unless otherwise being authorized.
- Do not deploy any illegal websites or applications on FlexusX instances.
- Do not uninstall drivers from the hardware of FlexusX instances.
- Do not change the MAC address of NICs.
- The authentication mechanism of certain software may require that software licenses be associated with the physical server hosting FlexusX instances. Once a FlexusX instance is migrated from one physical server to another, the associated licenses may become invalid.
- A FlexusX instance may need to stop or restart when it is migrated from a faulty host. For high service availability, deploy applications in a cluster or on FlexusX instances working in active/standby mode, or configure automatic startup upon a host failure or startup.
- Back up data for FlexusX instances where core applications are deployed.
- Monitor application metrics on FlexusX instances.
- Do not change the default DNS server address. If you need to configure a public DNS server address, configure both a public and a private DNS address for your FlexusX instance.

Precautions for Using Windows FlexusX Instances

- Do not stop system processes if you are not sure about the consequences. Otherwise, blue screen of death (BSOD) or a restart may occur on FlexusX instances.
- Ensure that there is at least 2 GiB of idle memory. Otherwise, BSOD, freezing, or service failures may occur.
- Do not modify the registry. Otherwise, the system startup may fail. If the modification is mandatory, back up the registry before modifying it.
- Do not modify the clock settings. Otherwise, DHCP lease may fail, leading to the loss of IP addresses.
- Do not delete the CloudResetPwdAgent or CloudResetPwdUpdateAgent process. Otherwise, one-click password reset will become unavailable.
- Do not disable virtual memory. Otherwise, system performance may deteriorate, or system exceptions may occur.

- Do not delete the VMTool program, or an exception may occur on FlexusX instances.

Precautions for Using Linux FlexusX Instances

- Do not modify the **/etc/issue** file. Otherwise, the OS distribution will not be identified.

- Do not delete system directories or files. Otherwise, the system may fail to run or start.

- Do not change the permissions for or names of system directories. Otherwise, the system may fail to run or start.

- Do not upgrade the kernel of the Linux unless necessary.

    When you have to upgrade the Linux kernel, follow the instructions provided in **How Can I Upgrade the Kernel of a Linux ECS?**

- Do not delete the CloudResetPwdAgent or CloudResetPwdUpdateAgent process. Otherwise, one-click password reset will become unavailable.

- Do not change the default **/etc/resolv.conf** of the DNS server. Otherwise, software sources and NTP may be unavailable.

- Do not modify default intranet configurations, such as the IP address, subnet mask, or gateway address of a FlexusX instance. Otherwise, network exceptions may occur.

- Manually specified IP addresses for Linux FlexusX instances are generally static IP addresses. To avoid network exceptions caused by conflicts between NetworkManager and internal network services, do not enable NetworkManager when not required, such as when installing Kubernetes.

2.3 FlexusX Instance Specifications

You can learn about vCPUs/memory, images, EVS disks, VPCs, EIPs, Cloud Eye, and HSS provided by FlexusX instances.

Instance Specifications

- Overview

    – vCPU/Memory ratio: flexible custom ratios to meet your specific needs with low-cost resources

    – vCPU/Memory ranges: 2 to 16 vCPUs and 2 to 128 GiB memory

    – Processor: 3rd Generation Intel® Xeon® Scalable Processor

    – Basic/Turbo frequency: 2.8 GHz/3.5 GHz

    ☐ NOTE

    - FlexusX instances use the x86 architecture.
    - The vCPU and memory ranges of FlexusX instances vary slightly in different regions. For details, see the specifications displayed on the console.

- Detailed instance specifications

    Table 1 lists the vCPU specifications of FlexusX instances.

Table 2-2 Specifications

vCPU	Assured/ Max. Intranet Bandwidth (Gbit/s)	Max. Intranet PPS (10,000)	Max. NIC Queues	Max. NICs	Max. Supplement ary NICs
2	0.2/2	30	2	2	8
4	0.4/3	50	2	2	16
6	0.6/4	60	2	2	24
8	0.8/6	80	2	2	32
12	1.2/8	90	4	3	48
16	1.6/12	100	4	3	64

⚲ **NOTE**

The intranet bandwidth and PPS of a FlexusX instance are determined by the instance specifications.

- Assured intranet bandwidth: the guaranteed bandwidth allocated to a FlexusX instance when there is a network bandwidth contention in the entire network

- Maximum intranet bandwidth: the maximum bandwidth that can be allocated to a FlexusX instance when the instance does not compete for network bandwidth (other instances on the host do not have high requirements for network bandwidth)

- Maximum intranet PPS: the maximum capability of FlexusX instances in sending and receiving packets. PPS stands for Packets per Second, indicating the number of packets sent per second. It is usually used to measure the network performance.

- Maximum NIC queues: allocates NIC interrupt requests to multiple vCPUs for higher PPS performance and bandwidth. For instructions about how to enable NIC multi-queue, see **Enabling NIC Multi-Queue**.

- Maximum NICs: the maximum number of NICs that can be attached to a Flexus X instance. An NIC is an elastic network interface. For details, see **Elastic Network Interface**.

- Maximum supplementary NICs: the maximum number of supplementary NICs that can be attached to a FlexusX instance. A supplementary NIC is a supplement to NICs. If the number of NICs that can be attached to your instance cannot meet your requirements, you can use supplementary NICs. For details, see **Supplementary Network Interface**.

EVS Disks

EVS offers scalable block storage for FlexusX instances. With high reliability and performance, EVS disks can be used to meet service requirements in various application scenarios. For more information about EVS disk performance, see **Disk Types and Disk Performance**.

System and data disks of FlexusX instances support the following EVS disk types: common I/O, high I/O, General Purpose SSD, ultra-high I/O, and General Purpose

SSD V2. By default, a FlexusX instance has a system disk attached. You can configure the type and capacity of the system and data disks based on service requirements.

Networks

FlexusX instances provide the following networking services:

- Virtual Private Cloud (VPC): allows you to create customized virtual networks in your logically isolated AZ. These networks are dedicated zones that are logically isolated for your FlexusX instances. You can define security groups and IP address segments for a VPC. This facilitates internal network configuration, management, and change. You can also customize the cloud server access rules within a security group and between security groups to strengthen cloud server security protection.

- Elastic IP: consists of a public IP address and public network outbound bandwidth. After an EIP is bound to a FlexusX instance, the instance can directly access the Internet. FlexusX instances cannot access the Internet if they only have private IP addresses assigned.

Network Setting	Description	Billing Mode
VPC	- You can customize the VPC for FlexusX instances. - In the same region of the same account, all FlexusX instances can communicate with each other over a private network only when they are in the same VPC. - FlexusX instances created by different accounts or in different regions are located in different VPCs. They cannot communicate with each other over a private network by default. - FlexusX instances in the same region can communicate with each other through **VPC Peering Connection**, and those in different regions can communicate with each other through **Cloud Connect**.	Free
EIP	You can purchase an EIP during the instance creation or after the instance is created. - You can bind an EIP to or unbind an EIP from a FlexusX instance. - The EIP will not be retained after the FlexusX instance is released. - FlexusX instances support IPv6 addresses.	- Yearly/Monthly and pay-per-use billing modes are supported. - EIPs can be billed by bandwidth, traffic, or shared bandwidth. - The bandwidth size can be changed.

Services Integrated On the FlexusX Console

The FlexusX console integrates Cloud Eye, Host Security Service (HSS), and Cloud Backup and Recovery (CBR). You can purchase them together with FlexusX instances on the FlexusX console.

Service	Description	Reference
Cloud Eye	Cloud Eye is a multi-dimensional resource monitoring service. You can use Cloud Eye to monitor resource utilization and service running status, and generate alarms to notify you of service exceptions in a timely manner. For more information, see **What Is Cloud Eye?**	**Managing Server Monitoring**
Host Security Service (HSS)	HSS improves the overall security of FlexusX instances. After HSS is enabled, it scans for weak passwords, system vulnerabilities, brute-force attacks, and unauthorized logins. For more information, see **What Is HSS?**	**Managing Server Security**
Cloud Backup and Recovery (CBR)	CBR enables you to back up FlexusX instances and disks with ease. In case of a virus attack, accidental deletion, or software or hardware fault, you can restore data to any point in the past when the data was backed up. For more information, see **What Is CBR?**	**Managing Backups**

☐ NOTE

Whether Cloud Eye and HSS are displayed on the FlexusX console depends on the selected images. Certain public images do not support Cloud Eye or HSS.

2.4 Images Supported by FlexusX Instances

What Is an Image?

An image is a cloud server template that contains mandatory software, such as the operating system (OS). It may also contain application software, such as database software and proprietary software. You can use images to quickly create cloud servers with the same configurations.

- To learn more about images, see **What Is Image Management Service?**
- To learn how to use images to create or switch FlexusX instances, or how to create images from FlexusX instances, see **Managing Images**.

Image Types

FlexusX supports public, private, and shared images.

Image Type	Description
Public images	A public image is a widely used, standard image. It contains an OS and pre-installed public applications and is visible to all users. Public images are very stable and their OS and any included software have been officially authorized for use. If a public image does not contain the environments or software you need, you can use a public image to create a cloud server and then deploy the required environments or software on the server. You can install applications based on your service requirements. If you are familiar with system and application environment configurations, select a public image.
Private images	A private image is created by yourself. A private image can be a system disk image, data disk image, or full-server image. ● A system disk image contains an OS and preinstalled software for various services. You can use a system disk image to create a cloud server and migrate your services to the cloud. ● A data disk image contains only service data. You can use a data disk image to create EVS disks and use them to migrate your service data to the cloud. ● A full-server image contains an OS, pre-installed application software, and service data. It is created using differential backups and the creation takes less time than creating a system or data disk image that has the same disk capacity. You can use a private image to quickly create FlexusX instances with the same configurations as the private image, eliminating the need to configure multiple FlexusX instances repeatedly. For more information, see **Creating a FlexusX Instance from a Private Image or Using a Private Image to Change the OS**.
Shared images	A shared image is a private image shared by another user with you. For more information, see **Sharing Images**.

Supported Images

- Public images: Huawei Cloud EulerOS, CentOS, Ubuntu, EulerOS, Debian, openSUSE, AlmaLinux, Rocky Linux, CentOS Stream, CoreOS, openEuler, and FreeBSD
- Shared images and private images of the following types:
  - System disk images, data disk images, and full-server images
  - Linux private images created using x86 servers

2.5 Billing

This section describes the billing details of FlexusX instances. For more information, see **FlexusX Price Calculator**.

Billing Modes

FlexusX instances support the yearly/monthly and pay-per-use billing. You can change the billing mode from yearly/monthly to pay-per-use, and vice versa.

- Yearly/Monthly is a prepaid billing mode. You pay in advance for a subscription term, and in exchange, you get a discounted rate. The longer the subscription term, the higher the discount. Yearly/Monthly billing is a good option for long-term, stable services.

- Pay-per-use is a postpaid billing mode. You pay as you go and just pay for what you use. FlexusX instances are calculated by the second but billed every hour. This mode allows you to adjust resource usage easily. You do not need to prepare resources in advance, and will not have excessive or insufficient preset resources. Pay-per-use billing is a good option for scenarios where there are sudden traffic bursts, such as e-commerce promotions.

Table 2-3 lists the differences between these billing modes.

Table 2-3 Differences between billing modes

Billing Mode	Yearly/Monthly	Pay-per-use
Payment	Prepaid Settled based on the subscription term you purchase	Postpaid Billed by the usage duration
Billing Method	Billed by the subscription term you purchase	Calculated by the second but billed every hour
Billing for Stopped Instances	Billing stops after the subscription expires.	Basic resources (vCPUs, memory, and image) are not billed after the instance is stopped. Other resources (such as EVS disks, EIPs, and bandwidth) associated with the instance will continue to be billed.
Changing the Specifications	Supported	Supported
ICP Filing	Supported The subscription term must be at least three months, including all time covered by subscription renewals.	Not supported
Application Scenarios	Recommended for resources expected to be in use over the long term. Recommended for resources expected to be in use in the long term	Recommended when the resource demands are likely to fluctuate and you want more flexibility

FlexusX Instance Billing Items

Table 2-4 FlexusX instance billing items

Billing Item	Description	Billing Mode	Formula
*Instance	Computing and storage capabilities vary by the number of vCPUs and memory size. Billed by vCPU and memory	Yearly/ monthly and pay-per-use	Unit price x Required duration The unit price of an instance is that displayed on the console.

*Image	The billing modes of images are the same as those of instances.
	
	• Public images: provided by Huawei Cloud and free of charge
	
	• Private images:
	
	  – System disk images and data disk images can be used for free.
	
	  – If a full-server image is created using Cloud Server Backup Service (CSBS) or Cloud Backup and Recovery (CBR), you will be billed for the storage and cross-region replication traffic on a pay-per-use basis. For details, see **CBR Billing Items**.
	
	  – If a private image is created using a cloud server created from a KooGallery image, the image will be billed based on the KooGallery image pricing details.
	
	• Shared images: System disk images, data disk images, and full-server images shared by others are private images. They are billed based on the **private image pricing details**. Shared images are only shared within a given region, so they do not generate cross-region replication traffic costs.
		Yearly/ Monthly and pay-per-use	Unit price x Required duration
			
			The unit price of an image is that displayed on the purchase page and KooGallery.

Billing Item	Description	Billing Mode	Formula
*EVS disk (system disk)	When you purchase a FlexusX instance, a 40 GiB system disk is selected by default. You can select a higher capacity as required. Regardless of whether you use the disk, you will be billed right away after purchasing it. Billed by EVS disk type and capacity	Yearly/ monthly and pay- per-use	Unit price x Required duration The unit price of an EVS disk is that displayed on the console.
EVS disk (data disk)	If you have additional storage requirements, you need to purchase more data disks. Billed by EVS disk type and capacity	Yearly/ monthly and pay- per-use	Unit price x Required duration The unit price of an EVS disk is that displayed on the console.
Bandwid th	An EIP is required if the FlexusX instance needs to access the Internet. Billed by bandwidth, traffic, and the EIP reservation price ● EIP for a yearly/monthly FlexusX instance: billed by bandwidth ● EIP for a pay-per-use FlexusX instance: billed by bandwidth, traffic, or shared bandwidth. You are also billed for EIP reservation if you do not bind the EIP to any instance. **NOTE** If the EIP has been bound to a FlexusX instance, the EIP reservation price is 0.	Yearly/ monthly and pay- per-use	Tiered pricing based on 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 The unit price of the EIP bandwidth is that displayed on the console.
Host Security Service (HSS)	You can enable HSS to protect your FlexusL instances. You can use the HSS basic edition for free for one month or the HSS enterprise edition at additional costs. For details, see **HSS Pricing Details**.	Yearly/ monthly and pay- per-use	HSS unit price x Required duration The unit price of HSS is that displayed on the console.

Billing Item	Description	Billing Mode	Formula
CBR	You can purchase a backup vault to store backups of your FlexusX instance. You are billed based on the vault capacity. For details, see **CBR Pricing Details**.	Yearly/monthly and pay-per-use	Unit price x Required duration The unit price of CBR is that displayed on the console.

Expiration and Arrears

- Pay-per-use FlexusX instances are settled periodically. If you do not have a valid payment method configured or your account balance is insufficient, your account will fall into arrears.

- Yearly/Monthly FlexusX instances will expire after their validity periods end.

The following describes the impacts if your FlexusX instances expire or if your account is in arrears.

Phase	Impact
Grace period	After a FlexusX instance expires or your account is in arrears, the instance enters a grace period. During the grace period, you can still access and use the FlexusX instance.
Retention period	If you do not renew your FlexusX instance or pay off the arrears before the grace period expires, the instance enters a retention period. During the retention period, you cannot access or use the FlexusX instance, but it is still retained.

After a FlexusX instance enters a grace period or retention period, Huawei Cloud will notify you of this by email or text message. If you do not complete the renewal or payment before the retention period ends, your instance will be released. To avoid impact on your services, renew your subscription or top up your account in a timely manner.

Renewal and Top-up

FlexusX instances cannot be used after they expire or if your account is in arrears. If you want to continue using them, renew them before the **retention period** ends. Otherwise, your resources will be released and cannot be recovered.

◻ NOTE

> Pay-per-use is a postpaid billing mode. Pay-per-use FlexusX instances are automatically settled by the hour. You will need to make sure you have a top-up account with a sufficient balance or have a valid payment method configured first. Yearly/Monthly is a prepaid billing mode. To use yearly/monthly FlexusX instances, you also need to renew your subscription before they expire.

Unsubscription and Deletion

If you no longer need FlexusX instances, unsubscribe from or delete them to avoid unnecessary costs.

For details, see **Unsubscription Rules**.

⚲ **NOTE**

> For yearly/monthly FlexusX instances that are no longer used, unsubscribe from them. For pay-per-use FlexusX instances that are no longer used, delete them.
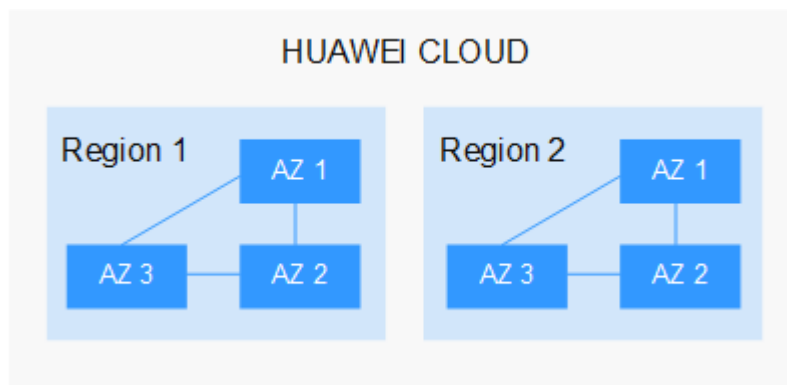
2.6 Region and AZ

Concept

A region and availability zone (AZ) identify the location of a data center. You can create resources in a specific region and AZ.

- Regions are divided based on geographical location and network latency. Public services, such as Elastic Cloud Server (ECS), Elastic Volume Service (EVS), Object Storage Service (OBS), Virtual Private Cloud (VPC), Elastic IP (EIP), and Image Management Service (IMS), are shared within the same region. Regions are classified into universal regions and dedicated regions. A universal region provides universal cloud services for common tenants. A dedicated region provides specific services for specific tenants.

- An AZ contains one or more physical data centers. Each AZ has independent cooling, fire extinguishing, moisture-proof, and electricity facilities. Within an AZ, computing, network, storage, and other resources are logically divided into multiple clusters.

Figure 2-1 shows the relationship between regions and AZs.

Figure 2-1 Regions and AZs

Huawei Cloud provides services in many regions around the world. You can select a region and an AZ based on requirements. For more information, see **Huawei Cloud Global Regions**.

Regions Supported by FlexusX Instances

FlexusX instances are only available in the CN-Hong Kong, AP-Bangkok, AP-Singapore, ME-Riyadh, and LA-Sao Paulo1 regions.

Selecting a Region

When selecting a region, consider the following factors:

- Location

  It is recommended that you select the closest region for lower network latency and quick access.

  – If your target users are in Asia Pacific (excluding the Chinese mainland), select the **CN-Hong Kong**, **AP-Bangkok**, or **AP-Singapore** region.

  – If your target users are in Africa, select the **AF-Johannesburg** region.

  – If your target users are in Latin America, select the **LA-Santiago** region.

    ☐ NOTE

      The **LA-Santiago** region is located in Chile.

- Resource price

  Resource prices may vary in different regions. For details, see **Product Pricing Details**.

Selecting an AZ

When deploying resources, consider your applications' requirements on disaster recovery (DR) and network latency.

- For high DR capability, deploy resources in different AZs within the same region.
- For lower network latency, deploy resources in the same AZ.

3 FlexusRDS

3.1 What Is FlexusRDS?

Huawei Cloud Flexus is a next-generation out-of-the-box cloud service family designed for small- and medium-sized enterprises (SMEs) and developers. Huawei Cloud Flexus RDS (FlexusRDS) is a product in the Huawei Cloud Flexus family.

Based on the open-source MySQL kernel, FlexusRDS is a lightweight relational database service developed for startups and individuals. It allows you to easily set up and manage DB instances and frees you to focus on your core business.

How to Use FlexusRDS

A web-based **management console** is provided for you to manage your FlexusRDS DB instances.

FlexusRDS supports MySQL 8.0 and 5.7. For details about how to buy a FlexusRDS DB instance, see **Buying and Connecting to a FlexusRDS Instance**.

For more information, see the community documentation at **https://dev.mysql.com/doc/**.

Basic Concepts

- DB Instance

  The smallest management unit of FlexusRDS is a DB instance. A DB instance is an isolated database environment on the cloud. You can create and manage FlexusRDS DB instances on the console.

- DB Engine

  FlexusRDS supports the MySQL DB engine.

- DB Instance Type

  FlexusRDS DB instances are classified into single instances and primary/standby instances.

Table 3-1 DB instance types

Type	Description	Notes
Single	Uses a single-node architecture. It is less expensive than a primary/standby DB pair.	If a fault occurs on a single-node instance, the instance cannot recover in a timely manner.
Primary/Standby	Uses an HA architecture. The primary and standby instances share the same IP address and can be deployed in different AZs.	• When a primary instance is being created, a standby instance is provisioned synchronously to provide data redundancy. The standby instance is invisible to you after being created. • If the primary instance fails, a failover occurs, during which database connection is interrupted. If there is a replication delay between the primary and standby instances, the failover takes an extended period of time. The client needs to be able to reconnect to the instance.

- Instance Class

  You can choose one of several database plans based on the vCPUs, memory, storage, and DB instance type you require. The following database plans are available:

Table 3-2 Database plans

Instance Class	DB Instance Type
Standard 2U4G, 120 GB of storage	Single
Standard 2U8G, 240 GB of storage	Single
Standard 4U8G, 240 GB of storage	Single
High-availability 2U4G, 120 GB of storage	Primary/Standby
High-availability 2U8G, 240 GB of storage	Primary/Standby
High-availability 4U8G, 240 GB of storage	Primary/Standby

- Automated Backup

Automated backup is enabled by default when you create a FlexusRDS DB instance. The backup policy cannot be modified after instance creation.

- Manual Backup

Manual backups are user-initiated full backups of DB instances. You can download and delete manual backup as needed. Or if you want, you can keep the manual backups until you unsubscribe from your instance.

Differences Between FlexusRDS and RDS for MySQL

Table 3-3 Differences between FlexusRDS and RDS for MySQL

Item	FlexusRDS	RDS for MySQL
Instance class	Minimum: 2 vCPU and 4 GB of memory Maximum: 4 vCPU and 8 GB of memory	More high instance classes are supported. For details, see **RDS for MySQL Instance Classes**.
Scalability	- Read replicas are not supported. - The storage can autoscale up to 4 TB for an instance.	- Up to five read replicas can be added for a DB instance. The time required for adding read replicas depends on the data volume. Adding read replicas require additional storage. - The storage can autoscale up to 4 TB for an instance.
Backup and restoration	- Data can be restored to a specific point in time using full backups and binlog playback. - Data can be restored to a new DB instance or the original DB instance.	- Data can be restored to a specific point in time using full backups and binlog playback. - Data can be restored to a new DB instance, the original DB instance, or any existing DB instance other than the original one. - Database- and table-level recovery to any point in time is supported.
DB engine version	MySQL 5.7 and 8.0	MySQL 5.6, 5.7, and 8.0
Operation logs	Operation logs can be viewed on the FlexusRDS console.	Operation logs cannot be viewed on the RDS console. For details about task records, see **Task Center**.

Product Advantages

- Quick Setup

You can create a FlexusRDS DB instance anytime you want to on the console. You are advised to use Data Admin Service (DAS) to connect to your DB

instance. DAS enables you to manage databases on a web-based console and provides you with database development, O&M, and intelligent diagnosis to make it easy to use and maintain your databases.

- Solid Reliability

  FlexusRDS automatically backs up data every day and stores backups as packages in Object Storage Service (OBS). Automated backups are retained for seven days and can be used to restore data within that period. This can meet your requirements for data restoration in most cases.

  Point-in-time recovery (PITR) is supported. You can restore data to a new or original instance.

- Storage Autoscaling

  Storage autoscaling is disabled by default. You can enable it after purchasing a DB instance. With storage autoscaling enabled, FlexusRDS automatically scales up the storage of your instance when the storage usage reaches your preset limit. You can configure the upper limit and increment for autoscaling to keep up with your workload growth at a low cost.

- High Security

  FlexusRDS is protected by multiple layers of firewalls to defend against various malicious attacks, such as DDoS attacks and SQL injections.

- Simplified O&M

  With a web-based console, you can reboot DB instances, reset passwords, modify parameters, view error logs and slow query logs, and restore data. Instance metrics like CPU usage, IOPS, connections, and storage usage are monitored in real time, and an alarm is reported once any of the metrics becomes abnormal. You can always keep aware of your instance health.

3.2 Permissions

If you need to assign different permissions to personnel in your enterprise to access your FlexusRDS resources, Identity and Access Management (IAM) is a good choice for fine-grained permissions management. IAM provides identity authentication, permissions management, and access control, helping you to securely access your Huawei Cloud resources.

With IAM, you can create IAM users and assign permissions to control their access to specific resources. For example, if you want some software developers in your enterprise to use FlexusRDS resources but do not want them to delete FlexusRDS instances or perform any other high-risk operations, you can create IAM users and grant permission to use FlexusRDS instances but not permission to delete them.

If your Huawei account does not require individual IAM users for permissions management, you can skip this section.

IAM is a free service. You only pay for the resources in your account. For more information about IAM, see **IAM Service Overview**.

FlexusRDS Permissions

New IAM users do not have any permissions assigned by default. You need to first add them to one or more groups and attach policies or roles to these groups. The

users then inherit permissions from the groups and can perform specified operations on cloud services based on the permissions they have been assigned.

FlexusRDS is a project-level service deployed in specific physical regions. When you set **Scope** to **Region-specific projects** and select the specified projects (for example, **cn-north-1**) in the specified regions (for example, **CN North-Beijing1**), the users only have permissions for FlexusRDS instances in the selected projects. If you set **Scope** to **All resources**, the users have permissions for FlexusRDS instances in all region-specific projects. When accessing FlexusRDS instances, the users need to switch to the authorized region.

You can grant permissions by using roles and policies.

- Roles: A coarse-grained authorization strategy provided by IAM to assign permissions based on users' job responsibilities. Only a limited number of service-level roles are available for authorization. Cloud services depend on each other. When you grant permissions using roles, you also need to attach any existing role dependencies. Roles are not ideal for fine-grained authorization and least privilege access.

- Policies: A fine-grained authorization strategy that defines permissions required to perform operations on specific cloud resources under certain conditions. This type of authorization is more flexible and is ideal for least privilege access. For example, you can grant users only permissions to manage database resources of a certain type.

Table 3-4 lists all the system-defined permissions for FlexusRDS.

Table 3-4 System-defined permissions for FlexusRDS

Role/Policy Name	Description	Type	Dependencies
RDS FullAccess	Full permissions for FlexusRDS	System-defined policy	To purchase a yearly/monthly DB instance, configure the following actions:
			bss:order:update
			bss:order:pay
			To use storage autoscaling, configure the following actions for IAM users:

			● Creating a custom policy:
			  – iam:agencies: listAgencies
			  – iam:agencies: createAgency
			  – iam:permissi ons:listRolesF orAgencyOn Project
			  – iam:permissi ons:grantRol eToGroupOn Project
			  – iam:roles:list Roles
			  – cors:productI nstance:creat eDefault
			● Adding system role **Security Administrator**: Select a user group to which the user belongs.
			Click **Authorize** in the **Operation** column.
			Add the **Security**

Role/Policy Name	Description	Type	Dependencies
			Administrator role.
RDS ReadOnlyAccess	Read-only permissions for FlexusRDS resources	System-defined policy	N/A
RDS ManageAccess	Database administrator permissions for all operations except deleting FlexusRDS resources	System-defined policy	N/A
RDS Administrator	Administrator permissions for FlexusRDS	System-defined role	**Tenant Guest** and **Server Administrator** roles, which must be attached in the same project as the **RDS Administrator** role

Table 3-5 lists the common operations supported by system-defined permissions for FlexusRDS.

Table 3-5 Common operations supported by system-defined permissions

Operation	RDS FullAccess	RDS ReadOnlyAccess	RDS ManageAccess	RDS Administrator
Creating a FlexusRDS instance	√	x	√	√
Deleting a FlexusRDS instance	√	x	x	√
Querying FlexusRDS instances	√	√	√	√

Table 3-6 Common operations and supported actions

Operation	Actions	Remarks
Creating a DB instance	rds:instance:create rds:param:list	To select a VPC, subnet, and security group, configure the following actions: vpc:vpcs:list vpc:vpcs:get vpc:subnets:get vpc:securityGroups:get To purchase a yearly/monthly DB instance, configure the following actions: bss:order:update bss:order:pay cors:productInstance:createDefault
Rebooting a DB instance	rds:instance:restart	N/A
Querying a DB instance list	rds:instance:list	N/A
Querying DB instance details	rds:instance:list	If the VPC, subnet, and security group are displayed in the DB instance list, you need to configure vpc:*:get and vpc:*:list.
Changing a DB instance password	rds:password:update	N/A
Changing a DB instance name	rds:instance:modify	N/A
Binding or unbinding an EIP	rds:instance:modifyPublicAccess	To query public IP addresses, configure the following actions: vpc:publicIps:get vpc:publicIps:list
Modifying parameters in a parameter template	rds:param:modify	N/A
Creating a manual backup	rds:backup:create	N/A

Operation	Actions	Remarks
Obtaining the link for downloading a backup file	rds:backup:download	N/A
Deleting a manual backup	rds:backup:delete	N/A
Querying the restoration time range	rds:instance:list	N/A
Restoring data to a new DB instance	rds:instance:create	To select a VPC, subnet, and security group, configure the following actions: vpc:vpcs:list vpc:vpcs:get vpc:subnets:get vpc:securityGroups:get cors:productInstance:createDefault
Restoring data to the original DB instance	rds:instance:restoreInPlace	N/A
Obtaining a database backup file list	rds:backup:list	N/A
Querying a database error log	rds:log:list	N/A
Querying a database slow log	rds:log:list	N/A
Submitting an order for a yearly/monthly DB instance	bss:order:update	To purchase a yearly/monthly DB instance, configure the following actions: bss:order:pay
Managing a tag	rds:instance:modify	Tag-related operations depend on the tms:resourceTags:* permission.

Operation	Actions	Remarks

Configuring autoscaling	rds:instance:extendSpace	To enable autoscaling, configure the following actions for the IAM users instead of your Huawei account:
		
		● Creating a custom policy
		  – iam:agencies:list Agencies
		  – iam:agencies:crea teAgency
		  – iam:permissions:l istRolesForAgen- cyOnProject
		  – iam:permissions: grantRoleToGrou pOnProject
		  – iam:roles:listRole s
		
		● Adding system role **Security Administrator**: Select a user group to which the user belongs.
		
		Click **Authorize** in the **Operation** column.
		
		Add the **Security Administrator** role.

3.3 Constraints

The following tables list the constraints designed to ensure the stability and security of FlexusRDS instances.

Specifications

Table 3-7 Specifications

Item	Constraints	Description
Storage space	The purchased storage space depends on the selected instance class.	You can enable storage autoscaling for your instance after the instance is created. Storage can autoscale to no more than 4 TB.

Quotas

Table 3-8 Quotas

Item	Constraints	Description
Tags	A maximum of 20 tags can be added for a DB instance.	For more information, see **Managing Tags**.
Free backup space	FlexusRDS provides free backup space of the same size as your purchased storage space.	After you pay for the storage space of your instance, you will get a backup space of the same size for free. For more information, see **How Is FlexusRDS Backup Data Billed?**
Retention period of automated backups	The default value is seven days and cannot be changed.	7-day retention can meet your requirements in most cases. If you want to retain backups for more than seven days, create manual backups.
Log retention period	• Error log details: 30 days • Slow query log details: 7 days	For more information, see **Logs**.

Naming

Table 3-9 Naming

Item	Constraints
Instance name	4 to 64 characters long - Must start with a letter. Only letters (case sensitive), digits, hyphens (-), underscores (_), and periods (.) are allowed.
Backup name	- Must be 4 to 64 characters long. - Must start with a letter. Only letters (case sensitive), digits, hyphens (-), and underscores (_) are allowed.

Security

Table 3-10 Security

Item	Constraints
root permissions	Only the administrator account **root** is provided on the instance creation page. For details about the supported permissions, see **root Permissions**. **NOTE** 　Running **revoke**, **drop user**, or **rename user** on **root** may cause service interruption. Exercise caution when running any of these statements.
root password	8 to 32 characters long - Must contain at least three types of the following characters: uppercase letters, lowercase letters, digits, and special characters (~ ! @ # $ % ^ * - _ = + ? , ( ) & . |). For more information, see **Resetting the Administrator Password**.
Database port	3306

Item	Constraints
System account	To provide O&M services, the system automatically creates system accounts when you create FlexusRDS instances. These system accounts are unavailable to you. ● **rdsAdmin**: a management account with the highest permission. It is used to query and modify instance information, rectify faults, migrate data, and restore data. ● **rdsRepl**: a replication account, used to synchronize data from the primary instance to the standby instance. ● **rdsBackup**: a backup account, used for backend backup. ● **rdsMetric**: a metric monitoring account used by watchdog to collect database status data.

Instance Operations

Table 3-11 Instance operations

Item	Description
Storage engine	Only the InnoDB storage engine is supported.
Instance deployment	Cloud servers where DB instances are deployed are not directly visible to you. You can only access the DB instances through IP addresses and database ports.
Data migration	Data Replication Service (DRS) can be used to migrate data. It is easy to use and can complete a migration task in minutes. DRS facilitates data transfer between databases, helping you reduce DBA labor costs and hardware costs.
Primary/Standby replication	FlexusRDS uses a primary/standby dual-node replication cluster. You do not need to set up replication additionally. The standby instance is not visible to you and therefore you cannot access it directly.
Rebooting a DB instance	FlexusRDS instances cannot be rebooted through commands. They must be rebooted on the management console.
Viewing backups	You can download automated and manual backups for local storage. To download a backup, you can use OBS Browser+, the current browser, or the download URL. For more information, see **Downloading a Full Backup**.
Log management	● Logging is enabled by default and cannot be disabled. ● Binary logging is enabled by default.

root Permissions

Table 3-12 root permissions

Permission	Level	Description	Supported
Select	Table	Query permissions	Yes
Insert	Table	Insert permissions	
Update	Table	Update permissions	
Delete	Table	Delete permissions	
Create	Database, table, or index	Permissions of creating databases, tables, or indexes	
Drop	Database or table	Permissions of deleting databases or tables	
Reload	Server management	Permissions of running the following commands: flush-hosts, flush-logs, flush-privileges, flush-status, flush-tables, flush-threads, refresh, and reload	
Process	Server management	Permissions of viewing processes	
Grant	Database, table, or stored program	Permissions of granting access control	
References	Database or table	Foreign key operation permissions	
Index	Table	Index permissions	
Alter	Table	Permissions of altering tables, such as adding fields or indexes	
Show_db	Server management	Permissions of viewing database connections	
Create_tmp_table	Server management	Permissions of creating temporary tables	

Permission	Level	Description	Supported
Lock_tables	Server managem ent	Permissions of locking tables	
Execute	Stored procedure	Permissions of executing storage procedures	
Repl_slave	Server managem ent	Replication permissions	
Repl_client	Server managem ent	Replication permissions	
Create_view	View	Permissions of creating views	
Show_view	View	Permissions of viewing views	
Create_routine	Stored procedure	Permissions of creating storage procedures	
Alter_routine	Stored procedure	Permissions of altering storage procedures	
Create_user	Server managem ent	Permissions of creating users	
Event	Database	Event triggers	
Trigger	Database	Triggers	
Super	Server managem ent	Permissions of killing threads	No **NOTE** For more information, see **Why Does the Root User Not Have the Super Permission?**
File	File on the server	Permissions of accessing files on database server nodes	No
Shutdown	Server managem ent	Permissions of shutting down databases	
Create_tablespace	Server managem ent	Permissions of creating tablespaces	

3.4 Billing

FlexusRDS supports only yearly/monthly billing.

Billing Items

You will be billed for your instance class, backup storage (optional), and public network traffic (optional).

Table 3-13 Billing items

Billing Item	Description
Instance class	Yearly/Monthly billing is used. The actual prices are displayed on the console.
(Optional) Backup storage	FlexusRDS provides free backup storage of the same size as your purchased database storage. If the backup storage usage exceeds your purchased database storage, the billing starts.
(Optional) Public network traffic	FlexusRDS instances are accessible from public networks. Traffic from public networks is billed.

Specification Changes

Autoscaling up storage space: You can enable storage autoscaling as required. You will be billed for new storage space.

Renewal

An upfront payment is required when you purchase yearly/monthly instances. No additional fees are incurred as you use the instances.

To renew a subscription, see **Renewing DB Instances**.

Expiration

When a yearly/monthly instance expires, no operations can be performed on the console. The monitoring, alarm reporting, and other O&M operations will also be unavailable. If your account is not topped up or the resource package is not renewed before the retention period expires, the DB instance will become unavailable and data stored in the DB instance will be deleted and cannot be recovered.

4 FlexusCCI

4.1 What Is FlexusCCI?

Overview

Flexus Container Instance (FlexusCCI) is a lightweight container service that allows you to run containerized applications on the cloud. To run various applications (from simple web applications to multi-layer microservices), you only need to specify the container image and compute resource specifications required by the container service, without the need to manage any underlying infrastructure.

FlexusCCI is designed for students, individual developers, and small- and medium-sized enterprises.

Applications Scenarios

- New Container Users

  FlexusCCI is easy to use. It is the best choice if you are still new to containers.

- Dedicated Game Servers

  You can set up dedicated servers with a few simple steps even if you are using cloud services for the first time. FlexusCCI containers are easy to deploy and operate.

- Cross-Border E-commerce

  Pods with small flavors are suitable for setting up cross-border e-commerce proxies, and EIPs can be bound to container services to handle traffic over the public network.

Product Advantages

- Streamlined experience

  Compared with traditional Kubernetes container services, FlexusCCI simplifies the operations. You can start containerized applications with just a few clicks.

- Minimal cost

  You can start and stop containers at any time if needed, which helps save your money.

- Fast response

  Multiple specifications and templates are provided to simplify configuration parameters and operations. You can create containers and respond to service requirements faster.

Billing Mode

FlexusCCI supports pay-per-use billing.

4.2 Billing

This section describes the billing mode and billed items of FlexusCCI, how to top up your account when your account is in arrears, and how to delete FlexusCCI containers.

Billing Mode

FlexusCCI supports pay-per-use billing.

Pay-per-use is a postpaid billing mode. You pay as you go and just pay for what you use. FlexusCCI is calculated by the second but billed every hour. This mode allows you to adjust resource usage easily. You do not need to prepare resources in advance, and will not have excessive or insufficient preset resources.

Table 4-1 FlexusCCI billing mode

Billing Mode	Pay-per-Use
Payment	Postpayment Billed by how long you use your resources
Billing Method	Calculated by the second but billed every hour
Billing After Containers Are Stopped	You will not be billed after containers are stopped.
Changing the Specifications	Not supported
Filing	Not supported
Application Scenario	Recommended when the resource demands are likely to fluctuate and you want more flexibility.

Billed Items

Table 4-2 FlexusCCI billed items

Billed Item	Description	Billing Mode	Billing Formula
FlexusCCI pod	Compute varies by the number of vCPUs and memory. Billed by vCPUs and memory	Pay-per-use	Unit price × Required duration The unit price of an instance is that displayed on the console.
Public network traffic	An EIP is required for each container service. Billed by traffic and the EIP reservation price **NOTE** If the EIP has been bound to a container service, the EIP reservation price is 0.	Pay-per-use	Traffic The unit price of the public network traffic is that displayed on the console.

Arrears

Pay-per-use FlexusCCI containers are settled periodically. If you do not have a valid payment method configured or your account balance is insufficient, your account will fall into arrears.

The following describes the impacts if your FlexusCCI containers expire or if your account is in arrears.

Phase	Impact
Grace period	The FlexusCCI containers enter the grace period after your account is in arrears. During the grace period, you can still access and use them.
Retention period	If you do not renew your FlexusCCI containers or pay off the arrears before the grace period expires, they enter a retention period. They cannot be accessed or used during the retention period, but they are retained.

After FlexusCCI containers enter a grace period or retention period, Huawei Cloud will notify you of this by email or text message. If you do not complete the renewal or payment before the retention period ends, your FlexusCCI containers will be released. To avoid impacting your services, renew them in a timely manner.

Top-up

If your account is in arrears, FlexusCCI containers cannot be used. If you want to continue using them, renew them before the **retention period** ends, or they will be released and cannot be recovered.

⬜ **NOTE**

Pay-per-use is a postpaid billing mode. Pay-per-use FlexusCCI containers are automatically settled by the hour. You will need to make sure you have a top-up account with a sufficient balance or have a valid payment method configured first.

Unsubscription and Deletion

If you no longer need FlexusCCI containers, delete them to avoid unnecessary costs.

⬜ **NOTE**

You can delete pay-per-use FlexusCCI containers on the console directly.

4.3 Notes and Constraints

To ensure that your FlexusCCI containers run normally, read the following constraints and notes before using them.

Constraints

Table 4-3 FlexusCCI constraints

Item	Description
Container image	• Private images are regional resources. Containers can use private images that are in the same region as them. • FlexusCCI containers use the x86 architecture and do not support private container images of the Arm architecture.
Quota	• The quota of container services is restricted by that of EIPs. A Huawei Cloud account can create up to five container services in a region. • The quota of the private image repositories is restricted by SWR. For details, see the SWR documentation.
Storage	• A 30-GiB system disk is provided for each container service. No additional data disk can be attached. • System disks cannot be expanded.

| Item	Description
Network	- Public network - By default, an EIP needs to be bound to a container service. After a container service is disabled, the EIP will be released. - IPv6 is not supported. - Private network - The VPC cannot be changed after a FlexusCCI pod is created. - ICP licensing - ICP licensing is not supported. - Load balancing - FlexusELB is not supported.
Observability	Retention period of container service monitoring data: 14 days
Container starting and stopping	After FlexusCCI containers are stopped and restarted, the public and private IP addresses will change.
Container update	After a container service is created, its name cannot be changed.
Billing	Billing starts after a container service is created. If the container service is in the **Unready** state for a long time, locate the fault. Common scenarios include incorrect container image setting and insufficient EIPs.

4.4 Regions and AZs

Concept

A region and availability zone (AZ) identify the location of a data center. You can create resources in a specific region and AZ.

- Regions are divided based on geographical location and network latency. Public services, such as Elastic Cloud Server (ECS), Elastic Volume Service (EVS), Object Storage Service (OBS), Virtual Private Cloud (VPC), Elastic IP (EIP), and Image Management Service (IMS), are shared within the same region. Regions are classified into universal regions and dedicated regions. A universal region provides universal cloud services for common tenants. A dedicated region provides specific services for specific tenants.

- An AZ contains one or more physical data centers. Each AZ has independent cooling, fire extinguishing, moisture-proof, and electricity facilities. Within an

AZ, computing, network, storage, and other resources are logically divided into multiple clusters.

Figure 4-1 shows the relationship between regions and AZs.

Figure 4-1 Regions and AZs
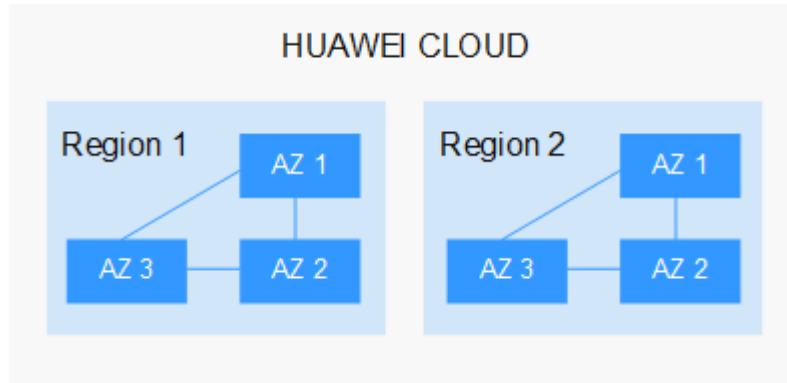
Huawei Cloud provides services in many regions around the world. You can select a region and an AZ based on requirements. For more information, see **Huawei Cloud Global Regions**.

Region Availability

FlexusCCI is only in the AP-Singapore and TR-Istanbul regions.

Selecting a Region

When selecting a region, consider the following factors:

● Location

You are advised to select a region close to you or your target users. This reduces network latency and improves access rate.

● Resource price

Resource prices may vary in different regions. For details, see **Product Pricing Details**.

Selecting an AZ

When deploying resources, consider your applications' requirements on disaster recovery (DR) and network latency.

● For high DR capability, deploy resources in different AZs within the same region.

● For lower network latency, deploy resources in the same AZ.