Huawei Cloud Flexus

Best Practices

Issue	02
Date	2024-06-04

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Contents

1 Best Practices for FlexusL..... 1
2 Migrating Servers Using Server Migration Service (SMS)..... 3
3 Using Windows Server to Set Up a Cross-Border E-Commerce Store..... 16
3.1 Overview..... 16
3.2 Procedure..... 18
4 Building a WordPress Website..... 26
4.1 Overview..... 26
4.2 Purchasing and Configuring a FlexusL Instance..... 27
4.3 Initializing WordPress..... 32
4.4 Setting up WordPress..... 35
5 Managing Servers Using the BT Panel..... 41
5.1 Overview..... 41
5.2 Purchasing and Configuring a FlexusL Instance..... 42
5.3 Initializing the BT Panel..... 47
5.4 Deploying the BT Panel..... 49
6 Analyzing Website Data Using the Matomo Application Image..... 51
6.1 Overview..... 51
6.2 Purchasing and Configuring a FlexusL Instance..... 52
6.3 Initializing Matomo..... 56
6.4 Using Matomo to Monitor Websites..... 59
7 Visualizing Docker Management Using Portainer..... 61
7.1 Overview..... 61
7.2 Purchasing and Configuring a FlexusL Instance..... 62
7.3 Initializing Portainer..... 66
7.4 Using Portainer to Deploy a MySQL Container..... 68
8 Using GitLab to Manage Teams and Projects..... 71
8.1 Overview..... 71
8.2 Purchasing and Configuring a FlexusL Instance..... 72
8.3 Initializing GitLab..... 77
8.4 Using GitLab..... 78

9 Using PrestaShop to Build an E-Commerce Website..... 85
9.1 Overview..... 85
9.2 Purchasing and Configuring a FlexusL Instance..... 86
9.3 Initializing PrestaShop..... 91
9.4 Deploying PrestaShop..... 93
10 Using Odoo to Build an ERP System..... 97
10.1 Overview..... 97
10.2 Purchasing and Configuring a FlexusL Instance..... 98
10.3 Initializing Odoo..... 102
10.4 Deploying Odoo..... 104
11 Using Superset to Obtain Data from MySQL Databases for Analysis..... 110
11.1 Overview..... 110
11.2 Purchasing and Configuring a FlexusL Instance..... 111
11.3 Initializing Superset..... 116
11.4 Obtaining Data from MySQL Databases for Analysis..... 117
12 Using Nextcloud to Build an Enterprise Web Disk System..... 121
12.1 Overview..... 121
12.2 Purchasing and Configuring a FlexusL Instance..... 122
12.3 Initializing Nextcloud..... 127
12.4 Deploying Nextcloud..... 128
13 Pushing PC Desktop Streams to SRS Using OBS..... 130
13.1 Overview..... 130
13.2 Purchasing and Configuring a FlexusL Instance..... 131
13.3 Learning About the SRS Working Interface..... 136
13.4 Pushing Local PC Desktop Streams to SRS Using OBS..... 137
14 Change History..... 141

1 Best Practices for FlexusL

After purchasing a FlexusL instance, you can build environments, websites, or applications on it. This section summarizes the best practices of using application images to create FlexusL instances.

Table 1-1 Best practices

Item	Description
Migrating Servers Using Server Migration Service (SMS)	Use Server Migration Service (SMS) to migrate other cloud servers to Huawei Cloud FlexusL instances in the same region or across regions.
Building a WordPress Website	Use the WordPress application image to quickly set up a website.
Managing Servers Using the BT Panel	Use the BT panel application image to quickly deploy and manage your servers.
Analyzing Website Data Using the Matomo Application Image	Use the Matomo application image to quickly deploy servers and analyze website data.
Visualizing Docker Management Using Portainer	Use the Portainer application image to quickly deploy servers and visualize Docker management.

Item	Description
Using GitLab to Manage Teams and Projects	Use the GitLab application image to quickly deploy servers and manage teams and projects.
Using PrestaShop to Build an E-Commerce Website	Use the Prestashop application image to set up an e-commerce website.
Using Odoo to Build an ERP System	Use the Odoo application image to quickly deploy servers and build enterprise ERP.
Using Superset to Obtain Data from MySQL Databases for Analysis	Use the Superset application image to quickly deploy servers and obtain data from the MySQL data source for analysis.
Using Nextcloud to Build an Enterprise Web Disk System	Use the Nextcloud application image to quickly deploy servers and build an enterprise network disk system.
Pushing PC Desktop Streams to SRS Using OBS	Use the SRS application image to quickly deploy servers and use OBS to push streams from a local PC to SRS.

2 Migrating Servers Using Server Migration Service (SMS)

Application Scenarios

This section describes how to use Server Migration Service (SMS) to migrate other cloud servers to Huawei Cloud FlexusL instances in the same region or across regions.

Precautions

- Once the migration starts, do not perform operations on the FlexusL instances, including but not limited to stopping the instances, changing the OS, or reinstalling the OS. Otherwise, the migration will be interrupted or fail.
- If you want to migrate incremental data after the full migration is complete, do not reinstall or change the OS for the FlexusL instances, or the migration will fail.

Constraints

- Only x86 servers can be migrated to FlexusL instances.
- SMS migrates entire servers. It cannot only migrate system or data disks of servers.
- Only servers with one data disk can be migrated. The paired FlexusL instances must have system and data disks at least as large as the source servers.

For more information, see **SMS Precautions** and **SMS Constraints**.

Resource Planning and Costs

Resource	Data Planning	Description	Cost
Source server	Server name: source-server OS: CentOS 7.9	The source server can be in Huawei Cloud, another cloud platform, or an on-premises environment.	If the source server has no EIP bound, you need to configure one for the source server. You need to pay for the EIP.
Target server	Server name: destination_server OS: Huawei Cloud EulerOS 2.0	The target server is a Huawei FlexusL instance.	You need to pay for the FlexusL instance.
SMS	-	SMS is available for free.	You need to pay for the pay-per-use migration resources (including EVS disks, EVS snapshots, and traffic) used during the migration. For details, see **SMS Billing**.

Process

Procedure	Description
Making Preparations	Prepare accounts, obtain required permissions, and prepare source and target servers.
Step 1 Installing and Starting the Agent on the Source Server	Install and start the Agent on the source server. To start the Agent, you must enter the AK/SK pair of the Huawei Cloud account the FlexusL instance belongs to. After the Agent is started, it reports information about the source server to SMS.
Step 2: Configuring the Target Server on the SMS Console	Configure the target server which will receive data migrated from the source server.
Step 3: Starting the Migration	Start the migration to replicate all data from the source server to the target server. The replication speed depends on the outbound bandwidth of the source server or the inbound bandwidth of the target server, whichever is smaller.

Procedure	Description
Step 4: Viewing the Migration Result	Check whether the source server is successfully migrated, and install the one-click password reset plug-ins and the HSS Agent on the target server.
Step 5: Creating a Private Image and Changing the OS of the FlexusL instance	Create a private image for the FlexusL instance and use the image to change the OS for the instance. In this way, the OS name of the FlexusL instance can be displayed in the instance card, and reinstalling the OS for the FlexusL instance will not roll back its OS to that before the migration.

Making Preparations

Prepare accounts, obtain required permissions, and prepare source and target servers.

1. **Register a HUAWEI ID and enable Huawei Cloud services**.

   NOTE

   Real-name authentication is required for migration to regions within the Chinese mainland.

2. Obtain required permissions for your HUAWEI ID.

   If you use an HUAWEI ID for migration, you have the required permissions by default. If you use an IAM user for migration, you need to obtain the required permissions. For more information, see **Creating a User Group and Assigning Permissions**.

3. Obtain an AK/SK pair for your target account.

   The AK/SK pair will be used for authentication during the migration. To learn how to obtain an AK/SK pair, see **How Do I Obtain an AK/SK Pair for an Account?**

   CAUTION

   SMS does not support AK/SK-based authentication for federated users (virtual users).

4. Note the username and password for logging in to the source server.

   If your source server is not in Huawei Cloud, note the username and password of the source server. The username and password are required when you install the one-click password reset plug-ins on the target server after the migration is complete. If you forget the username and password, the plug-ins installation process will be complex.

5. Confirm that the source server OS is supported by SMS.
   - See **Supported Windows OSs** or **Supported Linux OSs**.
   - A target server must run the same type of OS as the source server.

6. Ensure that the following network requirements are met:

   a. The source server can connect to the Huawei Cloud API Gateway over TCP port 443. For more information, see **Connecting Source Servers to Huawei Cloud API Gateway**. For details about how to control traffic into and out of a security group, see **Adding a Security Group Rule**.

      NOTE

      It is recommended that all outbound ports on the source server be opened.

   b. The source server can connect to the target server. For more information, see **Connecting Source Servers to Target Servers**.

      In this practice, EIP is used for connection. You need to purchase and configure EIPs for both the source and target servers. A FlexusL instance has an EIP bound by default.

   c. The following ports are enabled in the security group of the target server to allow traffic to these ports:

      - Windows: TCP ports 8899, 8900, and 22
      - Linux: TCP port 22 for file-level migration, and ports 8900 and 22 for block-level migration

      For details about how to control traffic into and out of a security group, see **Adding a Security Group Rule**.

      CAUTION

      - For security purposes, you are advised to only allow traffic from the source servers over these ports.
      - The firewall of the target server must allow traffic to these ports.

7. Ensure that the following source server requirements are met:

   Available Space

   - Windows: at least 320 MB of available space on a partition not smaller than 600 MB, and at least 40 MB of available space on a partition smaller than 600 MB
   - Linux: at least 200 MB of available space on the root partition

   Source Environment

   - The system time of the source server must be consistent with the local standard time to avoid Agent registration failures.
   - If the source server runs Linux, **rsync** must be installed on it. You can run the **rsync -v** command to check whether **rsync** is installed.

     If it is not, install it by running the following command:

     - CentOS: **yum -y install rsync**
     - Ubuntu: **apt-get -y install rsync**
     - Debian: **apt-get -y install rsync**

- SUSE: **zypper install rsync**
- Other distributions: Refer to the official website documentation.

  NOTE

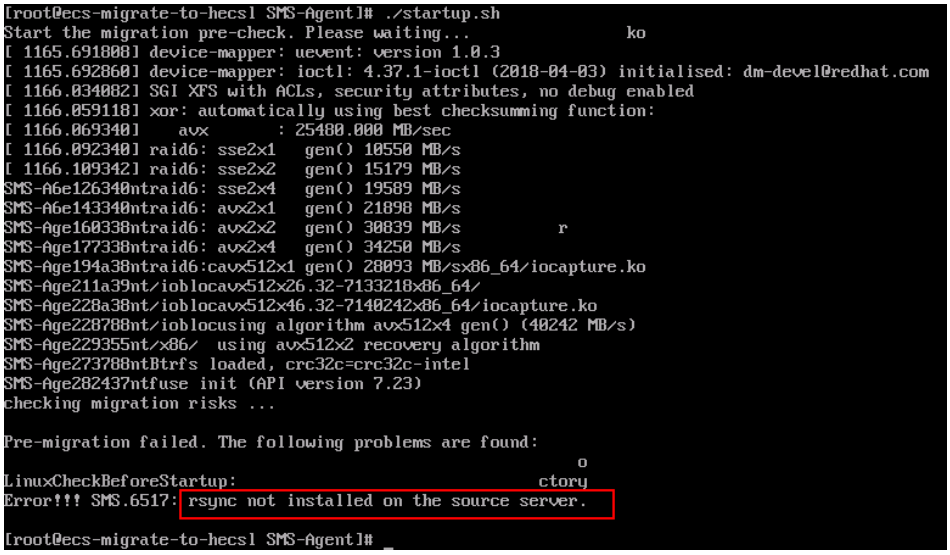
  rsync comes preinstalled on most distributions by default.

Step 1 Installing and Starting the Agent on the Source Server

- If the source server runs a Linux OS, see **Installing the Agent on Linux**.
- If the source server runs a Windows OS, see **Installing the Agent on Windows**.

FAQ

1. If an error message indicating that rsync is not installed is displayed when you install Agent on the Linux source server, install rsync based on **Installing Rsync** and then reinstall the Agent.



2. If the following error message is displayed, check whether the access key is correctly entered or deleted.

Figure 2-1 Error message

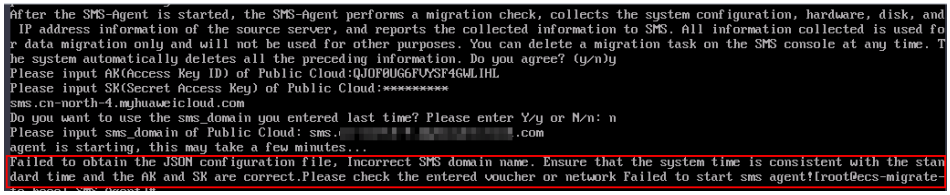
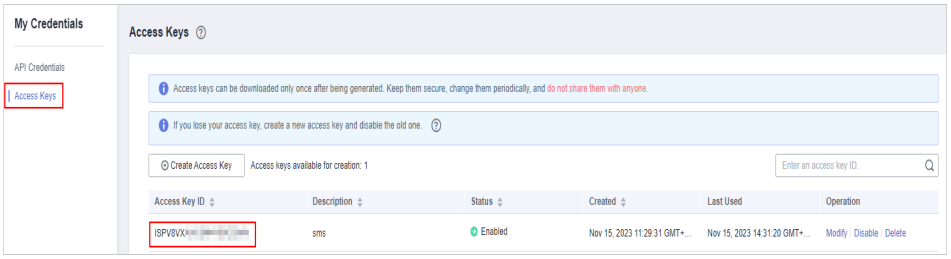


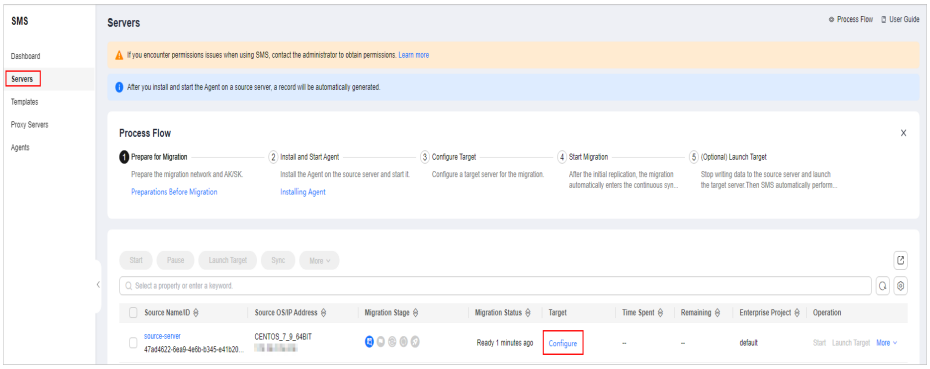
Figure 2-2 Access key



Step 2: Configuring the Target Server on the SMS Console

1. Log in to the **SMS console** using the Huawei Cloud account that owns the FlexusL instance and choose **Servers** on the left.
2. On the **Servers** page, locate the source server to be migrated and click **Configure**.

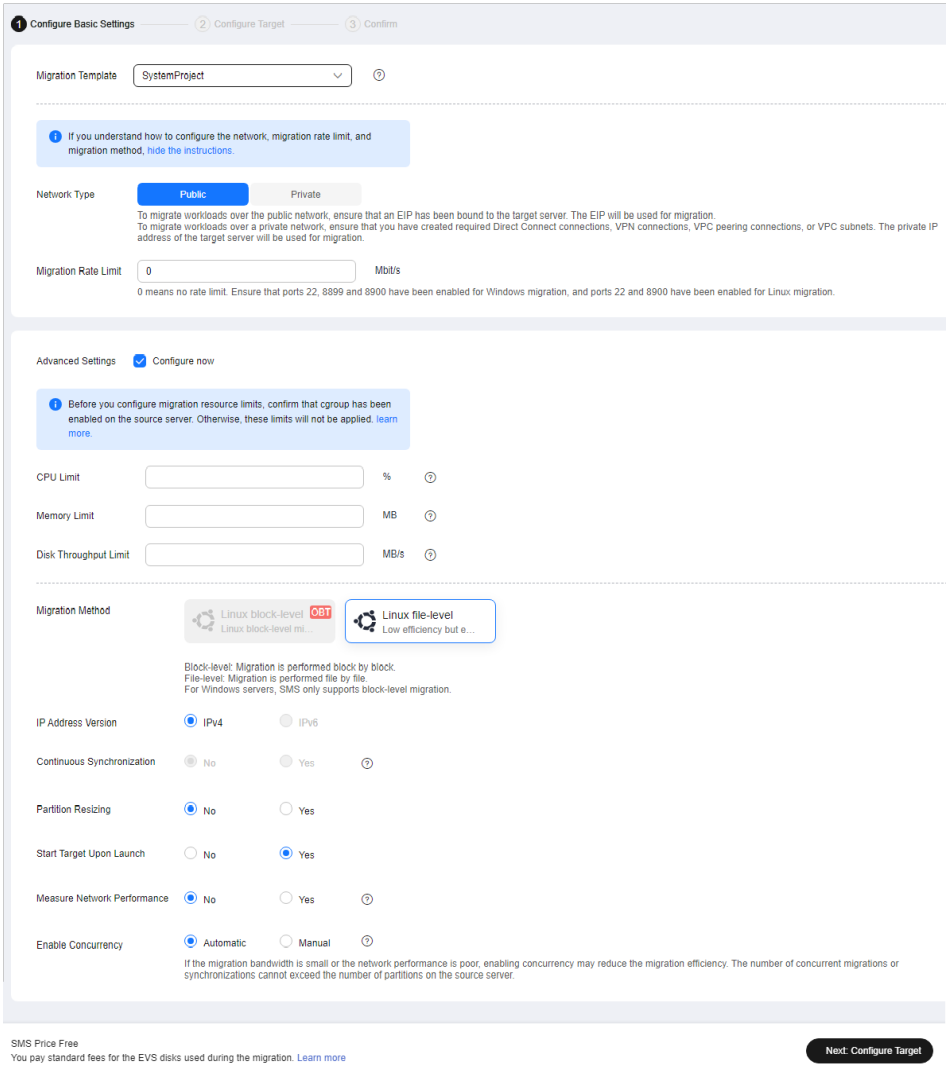
   After step 1 is complete, you can see the source server record on the **Servers** page of the SMS console.



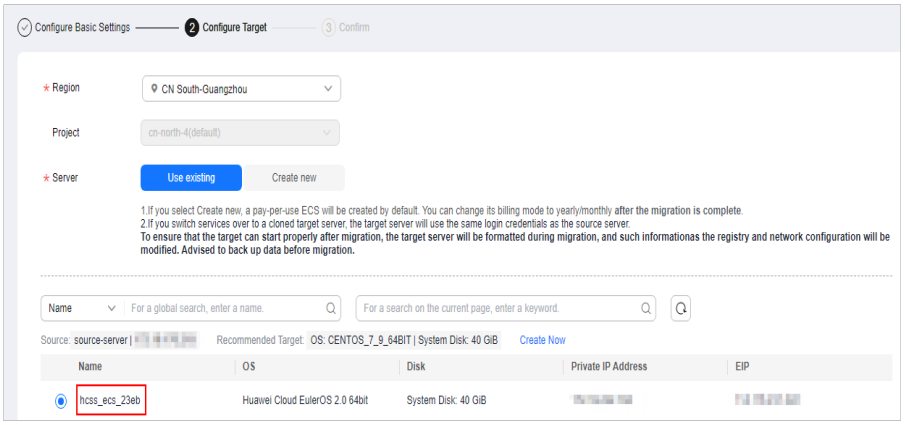
3. Configure the basic settings.

   Retain the default settings on this page.

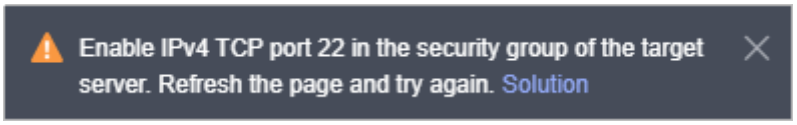
   For details about the parameters, see **Configuring the Target Server**.



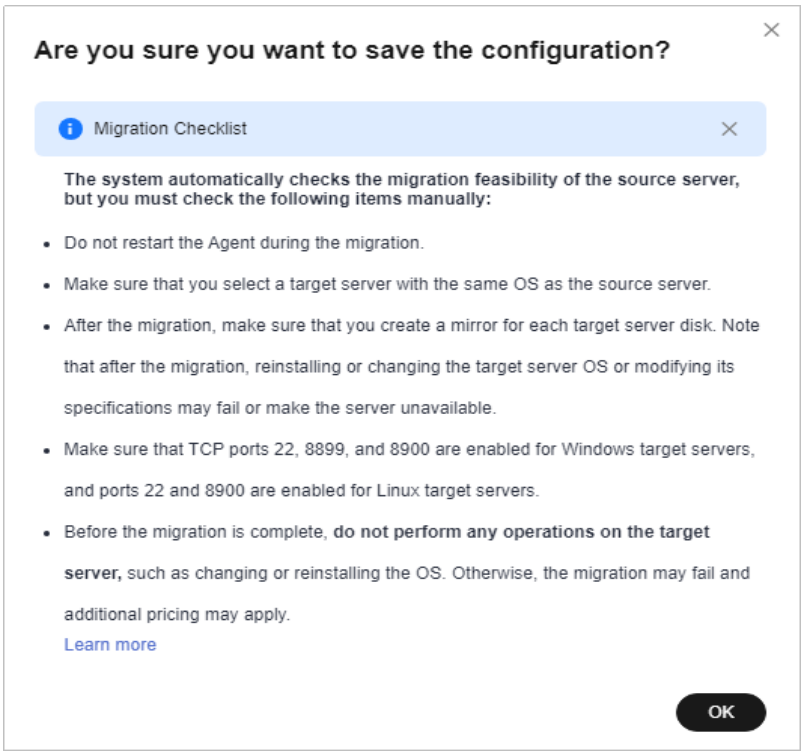
4. Configure the target server and click **Next: Confirm** in the lower right corner.
   - **Region**: Select the region where the purchased FlexusL instance is located.
   - **Server**: Select **Use existing** and choose the purchased FlexusL instance.
     - Only servers with one data disk can be migrated. The paired FlexusL instances must have system and data disks at least as large as the source servers.
     - The target server must run the same type of OS as the source server.
     - The security group of the target server must be correctly configured. It must be configured to allow access on TCP ports 8899, 8900, and 22 for a Windows migration, or on port 22 for a Linux migration.



If the following information is displayed when you perform this step, allow traffic over the prompted port, refresh the page, and repeat this step.



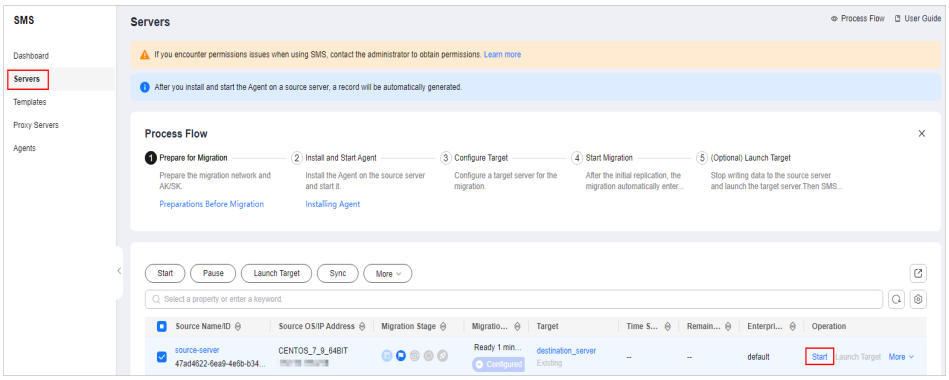
5. On the **Confirm** page, confirm the information and click **Save** or **Save and Start**.
   - If you select **Save**, read the migration checklist carefully and click **OK**. Then **start the migration**.
   - If you select **Save and Start**, read the migration checklist carefully and click **OK**. The migration starts automatically. **View the migration status and details**.



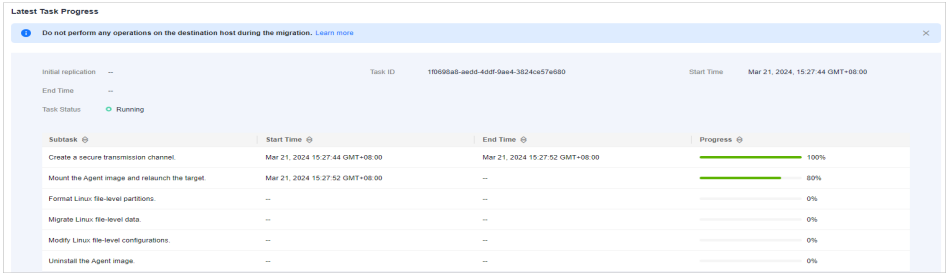
Step 3: Starting the Migration

1. Log in to the **SMS console** using the Huawei Cloud account that owns the FlexusL instance and choose **Servers** on the left.
2. On the **Servers** page, locate the source server to be migrated and click **Start** in the **Operation** column.

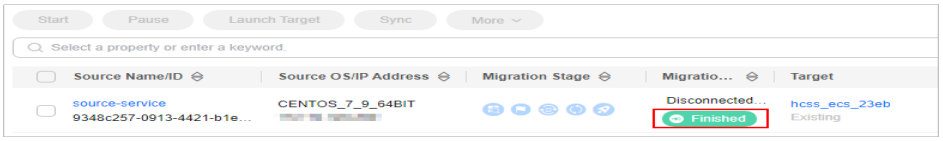
   Alternatively, select the server to be migrated and click **Start** above the server list.



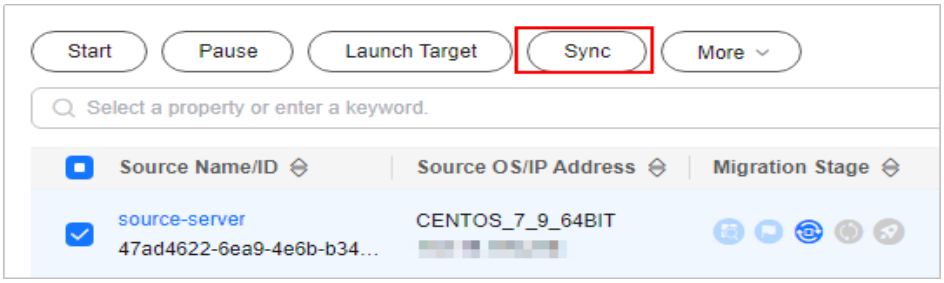
3. After the migration starts, click the name of the source server to view the migration status and details.



4. Check whether the **Status** changes to **Finished**. If it changes, the target server has been launched, and the migration is complete.



5. (Optional) If incremental data is generated on the source server after the full migration is complete, synchronize the incremental data from the source server to the target server.



NOTE

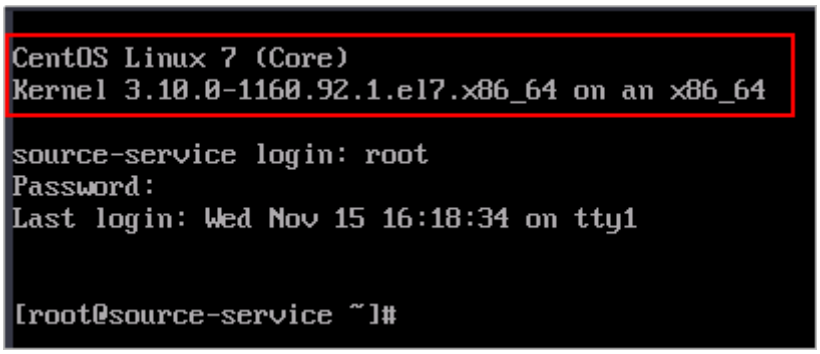
If you want to migrate incremental data after the full migration is complete, do not reinstall or change the OS for the target server, or the migration will fail.

Step 4: Viewing the Migration Result

1. Check the OS on the FlexusL instance.

   Click **Remote Login** in the FlexusL instance card. If the OS and kernel information of the source server is displayed, the migration is successful.

   Enter the username and password of the source server to log in to the FlexusL instance.

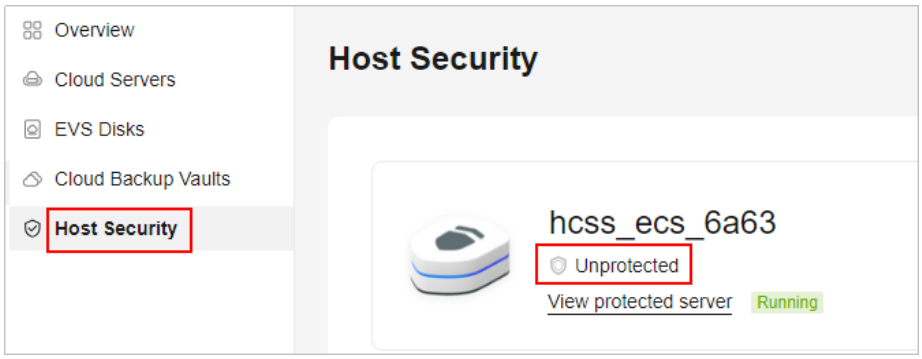
2. (Optional) Install the one-click password reset plug-in on the FlexusL instance.

   If your source server was not created from a Huawei Cloud image, install the one-click password reset plug-in on the FlexusL instance. With the plug-in, you can reset your instance password.

   - If you know the password of your source server, install the plug-in by referring to **Installing the One-Click Password Reset Plug-in**.
   - If you forget the password of your source server, install the plug-in by referring to **Setting the Password and Installing the One-Click Password Plug-in**.

3. (Optional) Check the HSS service status.
   - If your FlexusL instance does not contain the HSS service, skip this step.
   - If your FlexusL instance contains the HSS service, but the service is not enabled, enable HSS by referring to **What Do I Do If HSS Is Not Started After I Use a Private Image to Create a FlexusL Instance or Change the OS of an Instance?**

   Figure 2-3 HSS Unprotected status

Step 5: Creating a Private Image and Changing the OS of the FlexusL instance

After the migration is complete, the original OS name (Huawei Cloud EulerOS 2.0) is still displayed in the FlexusL instance card, as shown in figure **Figure 2-4**. If you choose to reinstall the OS for the FlexusL instance after the migration is complete, the OS will actually be rolled back to the original OS Huawei Cloud EulerOS 2.0 rather than CentOS 7.9, and the OS data migrated from the source server will be lost.

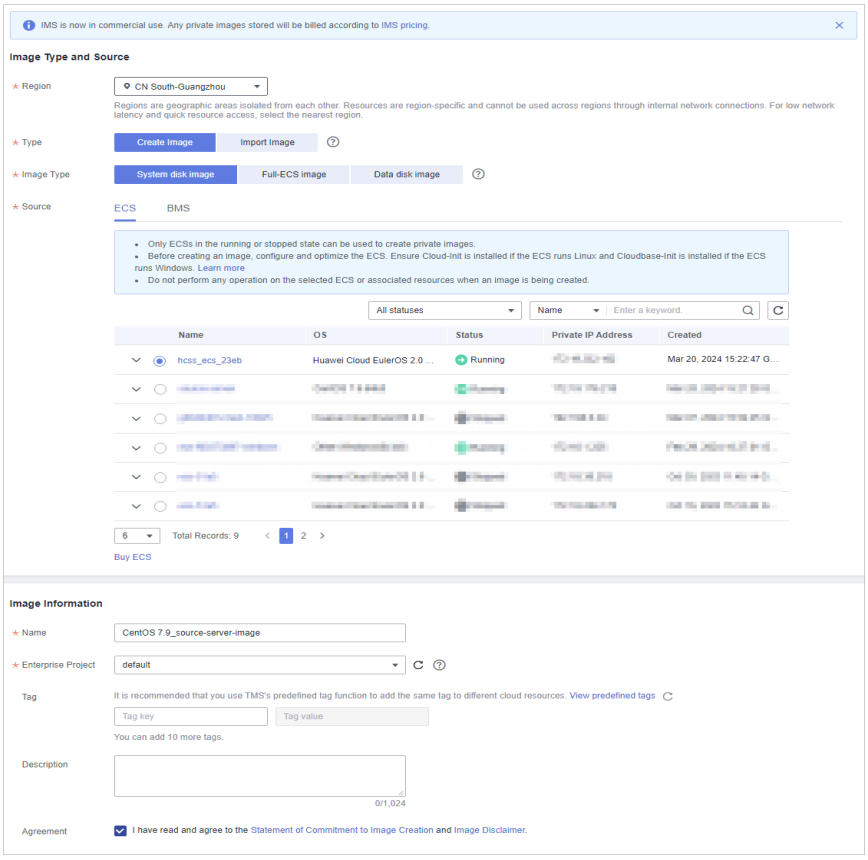
Create a private image for the FlexusL instance. Then use the image to change the OS for the instance. After the OS is changed, the above two problems can be solved.

NOTICE

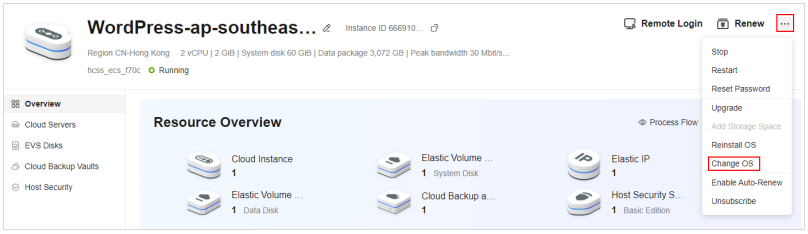
If the OS is changed, incremental data on the source server cannot be synchronized. Ensure that no incremental data needs to be synchronized before changing the OS.

Figure 2-4 Image name of the FlexusL instance

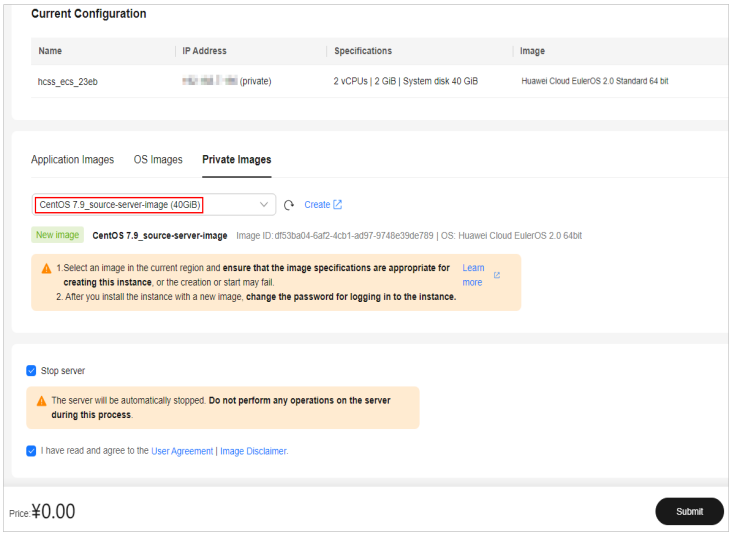
1. Log in to **IMS console**, choose **Create Image**, and configure the following parameters:
   - **Region**: Retain the default value.
   - **Type**: Retain the default value.
   - **Image Type**: Retain the default value.
   - **Source**: Select the FlexusL instance.
   - **Name**: Enter an image name that is easy to identify, for example, **CentOS 7.9_source-server-image**.
   - **Agreement**: Read the agreements and select the **Agreement** option.



2. Click **Next**, confirm the information, and click **Submit**.
3. Go back to the FlexusL console, click the FlexusL instance, and choose **Change OS** in the upper right corner.



4. Configure the parameters for changing the OS and click **Submit**.
   - Select the private image **CentOS 7.9_source-server-image** created in **1**.
   - Stop the instance first or select **Stop server** on the **Change OS** page.
   - Read and agree to the agreements.



5. Check whether the image name on the console is changed.

3 Using Windows Server to Set Up a Cross-Border E-Commerce Store

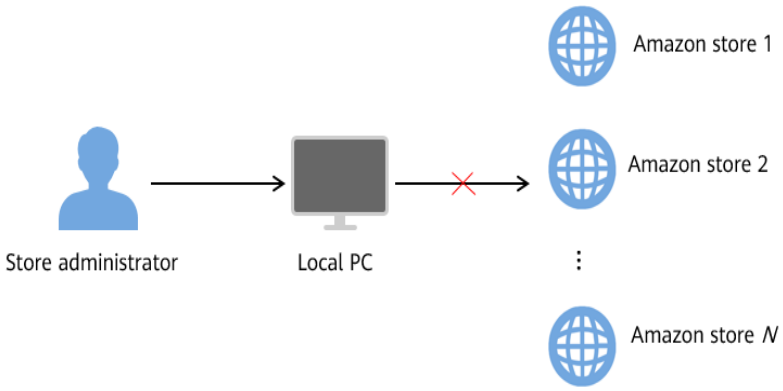
3.1 Overview

Application Scenario

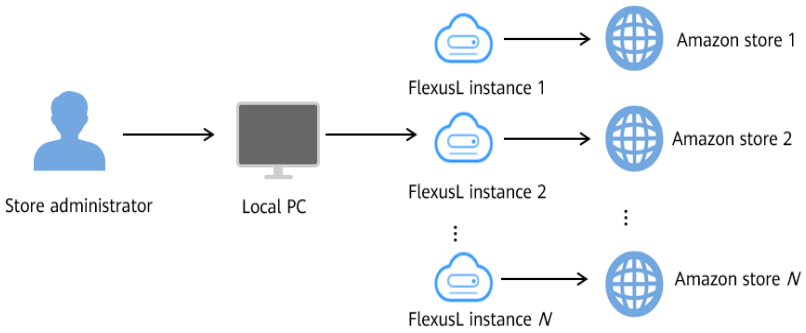
You can use FlexusL instances to manage multiple e-commerce stores. The following uses Amazon stores as an example to show how to manage multiple e-commerce stores on FlexusL instances.

Solution Architecture

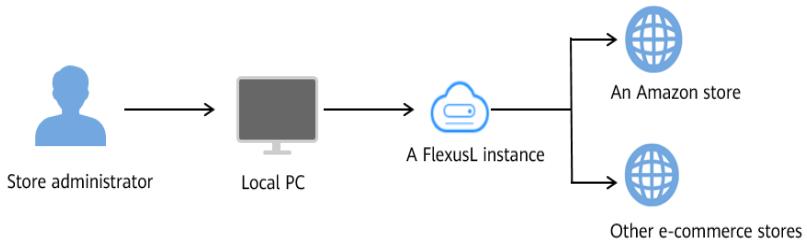
On the Amazon platform, a seller cannot manage multiple accounts from the same public IP address. This can raise red flags and may lead to account suspension or other consequences.



With FlexusL instances, you can log in to different stores from the same host without worrying about account issues.



You can also use the same FlexusL instance to manage stores on other e-commerce platforms.



Resource Planning and Costs

Table 3-1 Resource planning and costs

Resource	Type	Description	Cost
Cloud server	• vCPUs: 2 • Memory: 2 GiB	FlexusL instances are easy to provision and manage. In this example, three FlexusL instances are created, each with 2 vCPUs and 2 GiB memory. You can select proper FlexusL instance flavors based on service requirements. The FlexusL instance names are **MyShop_1**, **MyShop_2**, and **MyShop_3**, respectively.	You need to pay for resources packed in the FlexusL instances. Windows private images are free.
EIP	Automatically assigned	An EIP can be used for Internet access. By default, one fixed EIP is assigned to a FlexusL instance.	
Data disk	10 GiB	Data disks are used to store data except the operating system. They are like drive D, drive E, and drive F in a PC.	
CBR	70 GiB	Cloud Backup and Recovery (CBR) can back up data in system and data disks of FlexusL instances and restore data if instances fail.	

Resource	Type	Description	Cost
HSS	Host security	Host Security Service (HSS) is designed to improve the overall security of FlexusX instances. It helps you eliminate risks and defend against intrusions and web page tampering. There are also advanced protection and security operations functions available to help you easily detect and handle threats.	
Image	Windows Server 2019	Windows Server 2019 is used.	

3.2 Procedure

Process

Procedure	Description
Preparations	Upload the Windows Server 2019 private image created from the Windows Server 2019 image to the IMS console so that you can select the Windows Server 2019 private image when purchasing FlexusL instances.
Step 1: Purchase FlexusL Instances	Purchase a FlexusL instance and select the Windows Server 2019 private image.
Step 2: Configure Security Groups	Configure inbound rules for a security group to ensure that the FlexusL instance can be accessed.
Step 3: Log In to a FlexusL Instance Server	Set a password and log in to the FlexusL instance server.
Step 4: Remove the Session Time Limit	Set the session time and remove the session time limit to avoid repeated logins due to session timeout.
Step 5: Open Stores	After the preceding steps are complete, you have obtained a complete Windows Server FlexusL instance with a fixed EIP bound. You can create accounts, and open and manage stores on e-commerce websites.

Preparations

To use the Windows Server 2019 image, create a private image from it on the IMS console first.

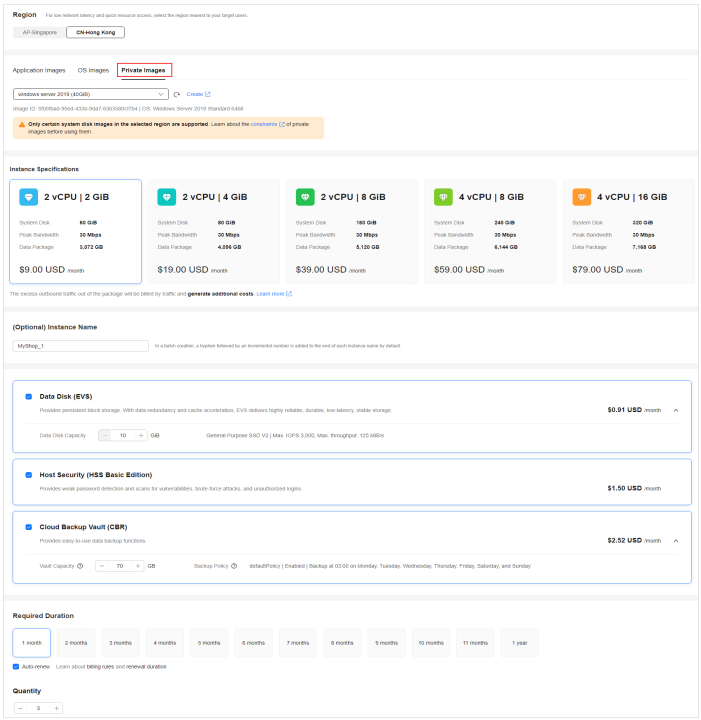
- If your image format is VMDK, VHD, QCOW2, VHDX, QED, VDI, QCOW, or ZVHD, see **Creating a Windows System Disk Image from an External Image File**.
- If your image format is ISO, see **Creating a Windows System Disk Image from an ISO File**.
- If your image format is RAW or ZVHD2, see **Quickly Importing an Image File**.

NOTICE

Images are regional resources. FlexusL instances only can use private images that are in the same region as them. Ensure that the image is in the same region as the FlexusL instance.

Step 1: Purchase FlexusL Instances

1. Log in to the FlexusL console.
2. Click **Buy FlexusL**.
3. Configure parameters required for purchasing a FlexusL instance.



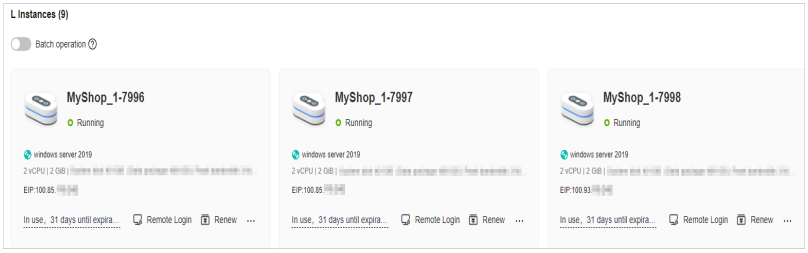
Parameter	Example	Description
Region	CN-Hong Kong	For low network latency and quick resource access, select the region nearest to your target users. After a FlexusL instance is created, the region cannot be changed. Exercise caution when selecting a region.

Parameter	Example	Description
Image	**Windows Server 2019**	In the private image list, select the Windows Server 2019 private image which is in the **same region** (CN-Hong Kong) as the instance and has been uploaded to the IMS console.
Instance Specifications	2 vCPUs | 2 GiB memory and 60 GiB system disk	Select instance specifications as required.
Instance Name	MyShop_1	Customize an instance name that is easy to identify, for example, MyShop_1, MyShop_2, and MyShop_3.
(Optional) Associated Services	• Data disk: 10 GiB • Host security • Cloud backup vault: 70 GiB	You can bundle any of the services to your FlexusL instances as needed: EVS, HSS (basic edition), and CBR.
Required Duration	• 1 month • Enabling auto-renew	The minimum duration of a purchase is one month and the maximum duration is three years. Auto-renew is enabled by default, which means the purchased FlexusL instances will be automatically renewed before they expire. If you do not enable auto-renew during the purchase process, you can still enable it later after the instances are created. Monthly subscription allows you to renew the subscription for one month every time. The number of renewal times is not limited. For more information about auto-renewal rules, see **Auto-Renewal Rules**.
Quantity	3	Set the number of FlexusL instances to be purchased, for example, three in this example.

4. Click **Buy Now**.

   On the displayed page, confirm the order details, read and select the agreement, and click **Submit**.

5. Select a payment method and complete the payment.
6. Go back to the FlexusL console and view the purchased FlexusL instance.

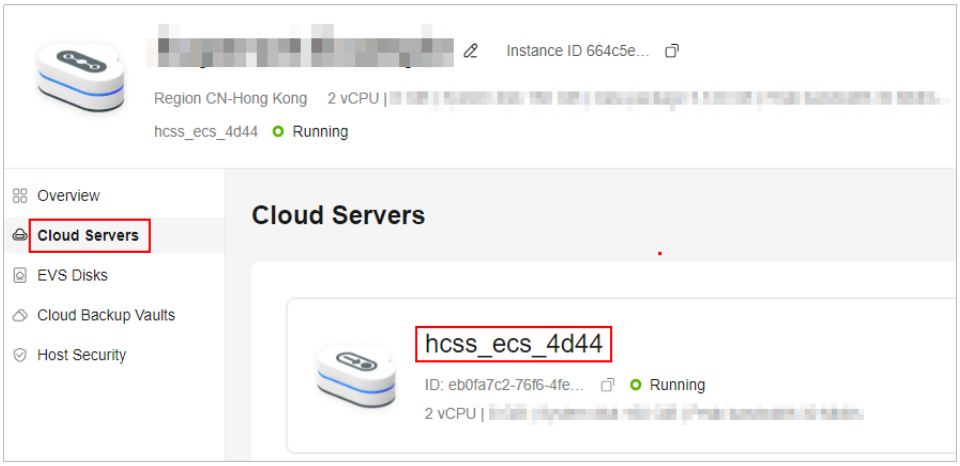


7. Hover the pointer over a resource card, click next to the instance name, and change it to **MyShop_1**, **MyShop_2**, and **MyShop_3**, respectively.

Step 2: Configure Security Groups

Configure inbound rules for security groups to ensure that the FlexusL instance can be accessed.

1. Log in to the **console** and click a resource card to go to the instance details page.
2. In the navigation pane on the left, choose **Cloud Servers** and then click the server name.



3. On the **Security Groups** tab, click **Add Rule**. In the displayed dialog box, add rules displayed in the following figure and click **OK**.

   The following figure only displays common rules. You can add more rules as needed.

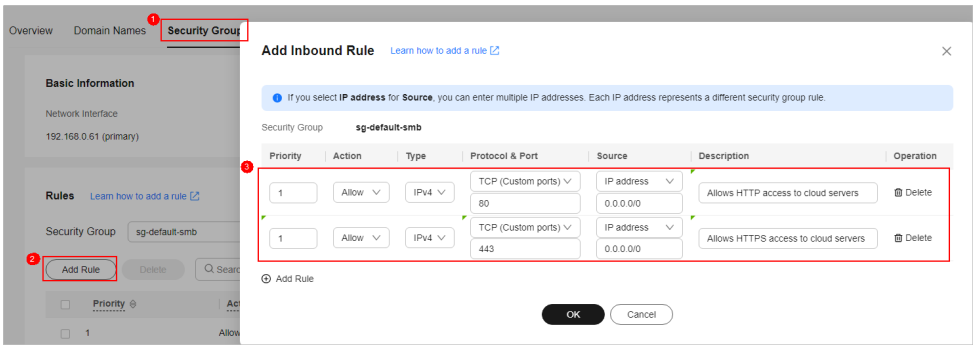


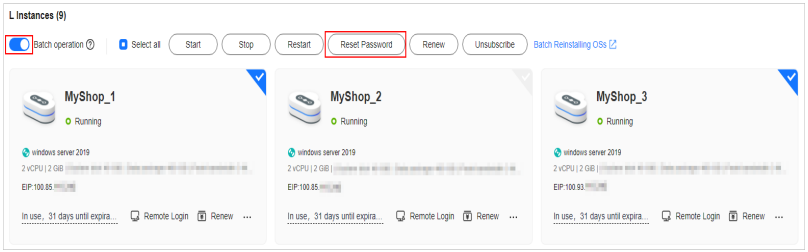
Table 3-2 Security group rules

Priority	Action	Type	Protocol & Port	Source	Description
1	Allow	IPv4	TCP: 80	0.0.0.0/0	Allows HTTP traffic to FlexusL instances.
1	Allow	IPv4	TCP: 443	0.0.0.0/0	Allows HTTPS traffic to FlexusL instances.

Step 3: Log In to a FlexusL Instance Server

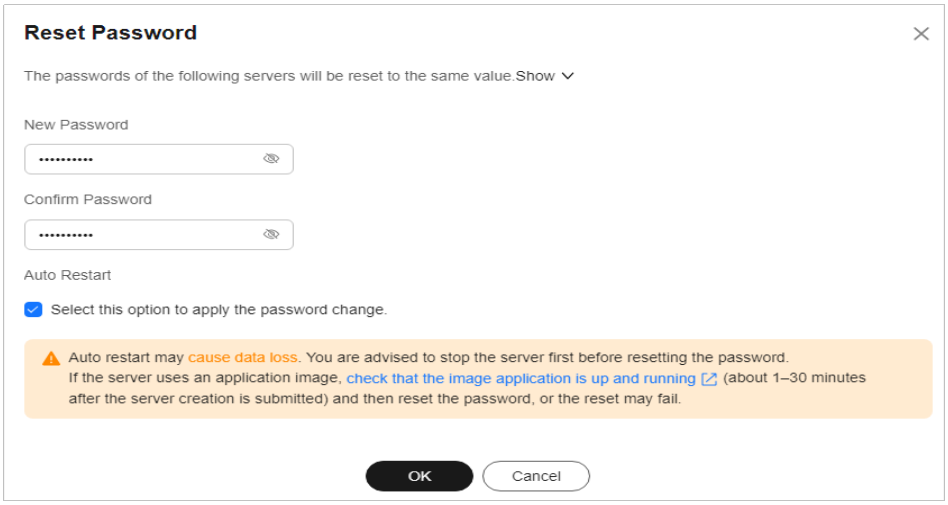
For Windows FlexusL instances, the administrator username is **Administrator** and there is no default password. Set a password before logging in to the server.

1. Enable **Batch operation**, select **Select all**, and click **Reset Password**.



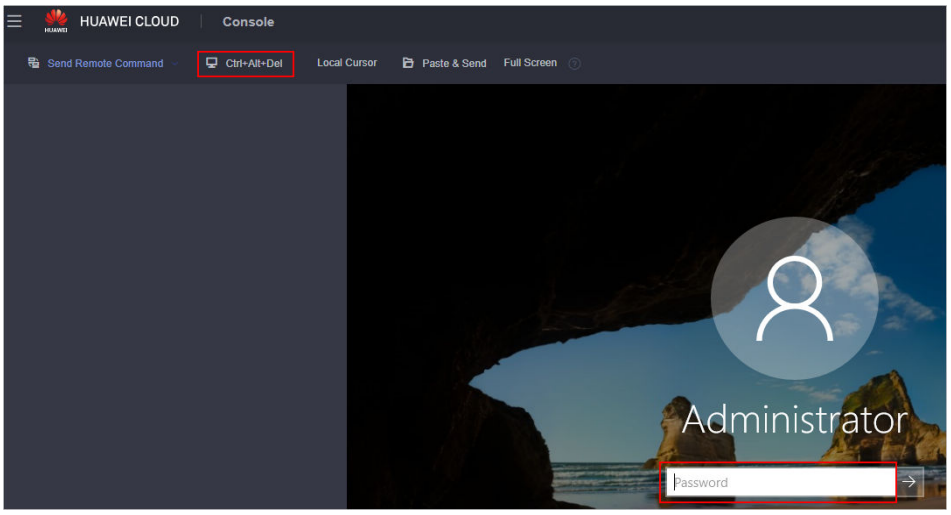
2. Set a new password for the FlexusL instance servers and click **OK**.

   If you reset the password for running servers, the password change is applied only after the next restart. Select **Auto Restart**. After the password is reset, the server status becomes **Restarting**. Wait until the status changes to **Running** and go to the next step.



3. In the resource card, click **Remote Login** to remotely log in to the cloud server using VNC.
4. Click **Ctrl+Alt+Del** in the upper left corner to unlock the desktop.

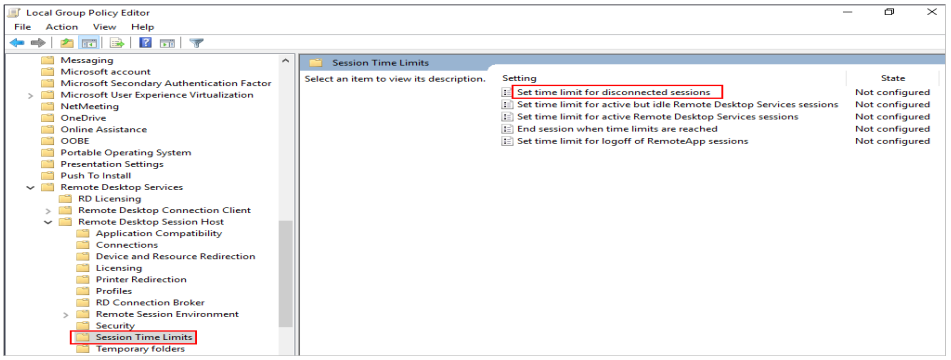
   Follow the instructions to enter the password set in step **2** and press **Enter**.



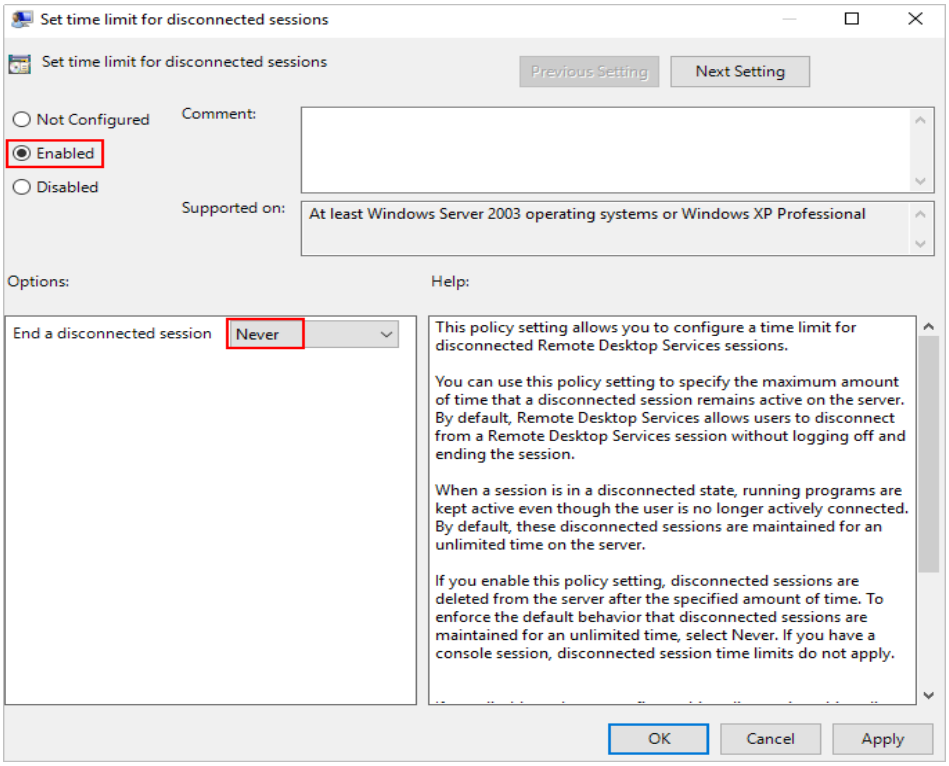
Step 4: Remove the Session Time Limit

A session is a sequence of uninterrupted requests and responses between a user and a server. Session timeout occurs when a user does not perform any action within a specified period and the session of the user is terminated. Once the session times out, you need to log in to the FlexusL instance server again. This section describes how to remove the session time limit.

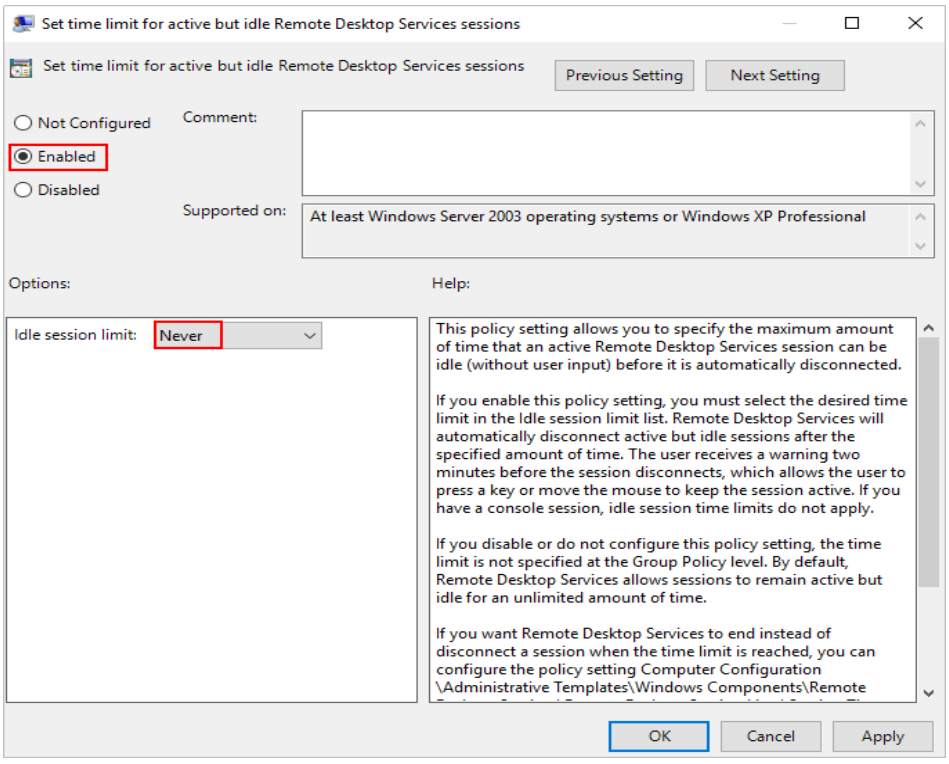
1. In the search box at the lower left corner of the page, search for **RUN**.
2. Enter **gpedit.msc** in the **RUN** dialog box and click **OK**.
3. In the **Local Group Policy Editor** window, choose **Computer Configuration > Administrative Templates > Windows Components > Remote Desktop Services > Remote Desktop Session Host > Session Time Limits**, and double-click **Set time limit for disconnected sessions** in the right pane.



4. In the displayed dialog box, select **Enabled** and set **End a disconnected session** to **Never**. Click **OK**.



5. In the **Local Group Policy Editor** window, double-click **Set time limit for active but idle Remote Desktop Services sessions** in the right pane.
6. In the displayed dialog box, select **Enabled** and set **Idle session limit** to **Never**. Click **OK**.



Step 5: Open Stores

Now you have obtained a Windows Server FlexusL instance with a fixed EIP bound. You can create accounts, and open and manage stores on e-commerce websites.

When running e-commerce stores, you may need to upload your local files to cloud servers. For details, see **How Do I Upload Files to My ECS** (The method also applies to uploading files to FlexusL instances).

4 Building a WordPress Website

4.1 Overview

Applicable Scenario

WordPress is an enterprise-level open-source content management system. It is usually used for enterprise website setup, cross-border e-commerce, and personal blog building. The WordPress application image uses Ubuntu 22.04 and is deployed using Docker. The Nginx, MySQL, phpMyAdmin, and Docker have been preconfigured in the image. You can use this application image to quickly set up a website.

Resource Planning and Costs

This practice uses the following resource planning as an example. You can adjust it as required.

Resource	Configuration	Description
Cloud server	• vCPUs: 2 • Memory: 2 GiB	Select appropriate instance specifications based on your service requirements.
Image	WordPress	Select the WordPress application image.
Security group	Inbound rule: • Protocol: TCP • Port: 9001,3306 • Source IP: 0.0.0.0/0	• 9001: Allows external access to the application management page. • 3306: Allows access to MySQL databases.

Resource	Configuration	Description
Domain name	wpwebsite.com	• If the website is only used for personal development or testing, there is no need to add a domain name. • If the website is open to the public, add and resolve a domain name for the cloud server.

Process

Step	Procedure	Description
1	**Purchasing and Configuring a FlexusL Instance**	Purchase and configure a FlexusL instance, including configuring a security group and adding and resolving a domain name.
2	**Initializing WordPress**	Log in to the dashboard, set the username and password, and install WordPress. The image application dashboard needs to be initialized only when you log in for the first time.
3	**Setting up WordPress**	On the dashboard, perform the following operations: • Set themes • Install plugins • Configure SMTP • Configure a domain name • Reset a password

4.2 Purchasing and Configuring a FlexusL Instance

This section describes how to purchase and configure a FlexusL instance, including purchasing a cloud server, setting the server login password, logging in to the server, configuring a security group, and adding and resolving a domain name.

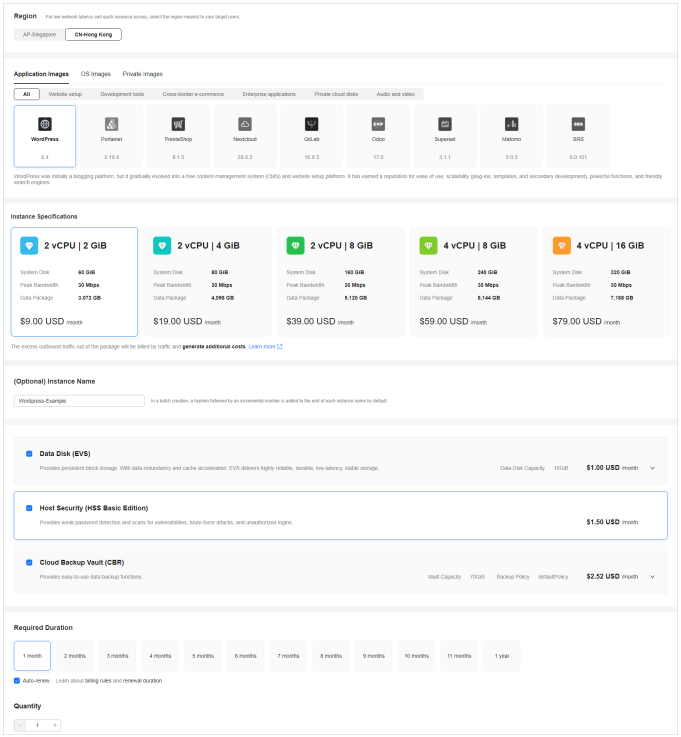
Process

Procedure	Description
Step 1: Purchase a FlexusL Instance	Purchase a FlexusL instance and select the WordPress application image.
Step 2: Configure a Security Group	Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.

Procedure	Description
(Optional) Step 3: Add and Resolve a Domain Name	Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.
(Optional) Step 4: Apply for and Install an SSL Certificate for Your Instance	Install an SSL certificate if you need to enable HTTPS on your server.

Step 1: Purchase a FlexusL Instance

1. Log in to the FlexusL console.
2. Click **Buy FlexusL**.
3. Specify required parameters for the FlexusL instance.



Parameter	Example	Description
Region	CN-Hong Kong	For low network latency and quick resource access, select the region nearest to your target users. After a FlexusL instance is created, the region cannot be changed. Exercise caution when selecting a region.

Parameter	Example	Description
Application Images	WordPress	Select the WordPress application image.
Instance Specifications	2 vCPUs | 2 GiB memory and 60 GiB system disk	Select instance specifications as needed.
Instance Name	Wordpress-Example	Customize an instance name that is easy to identify, for example, Wordpress-Example.
(Optional) Associated Services	• Data disk: 10 GiB • Host security • Cloud backup vault: 70 GiB	You can bundle any of the services to your FlexusL instances as needed: EVS, HSS (basic edition), and CBR and set specifications as needed.
Required Duration	1 month	The minimum duration of a purchase is one month and the maximum duration is three years. Auto-renew is enabled by default, which means the purchased FlexusL instances will be automatically renewed before they expire. If you do not enable auto-renew during the purchase process, you can still enable it later after the instances are created. Monthly subscription allows you to renew the subscription for one month every time. The number of renewal times is not limited. For more information about auto-renewal rules, see **Auto-Renewal Rules**.
Quantity	1	Set the number of FlexusL instances to be purchased.

4. Click **Buy Now**.

   On the displayed page, confirm the order details, read and select the agreement, and click **Submit**.

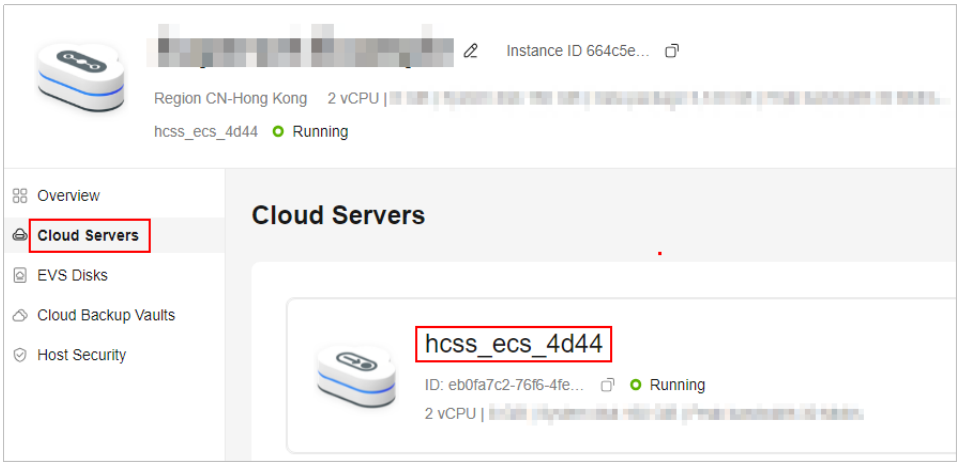
5. Select a payment method and complete the payment.

6. Go back to the FlexusL console and view the purchased FlexusL instance.

Step 2: Configure a Security Group

Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.

1. Log in to the **console** and click a resource card to go to the instance details page.
2. In the navigation pane on the left, choose **Cloud Servers** and then click the server name.



3. On the **Security Groups** tab, click **Add Rule**. In the displayed dialog box, add rules displayed in the following figure and click **OK**.

   The following figure only displays common rules. You can add more rules as needed.

Table 4-1 Security group rules

Priority	Action	Type	Protocol & Port	Source	Description
100	Allow	IPv4	TCP: 3306	0.0.0.0/0	Allows access to MySQL databases
100	Allow	IPv4	TCP: 80	0.0.0.0/0	Allows access to the HECS L instance via HTTP
100	Allow	IPv4	TCP: 443	0.0.0.0/0	Allows access to the HECS L instance via HTTPS
100	Allow	IPv4	TCP: 9001	0.0.0.0/0	Allows external access to the application management page

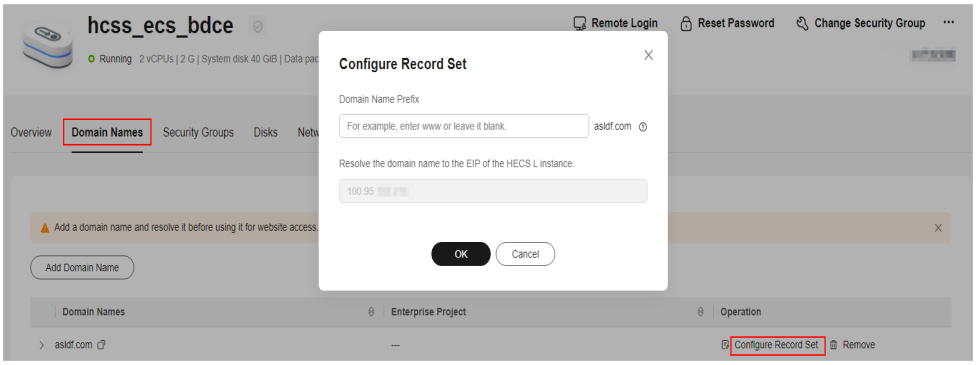
(Optional) Step 3: Add and Resolve a Domain Name

Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

1. In the navigation pane on the left, choose **Cloud Servers**. Locate the server and click its name.
2. On the **Server Details** page, click the **Domain Names** tab and click **Add Domain Name**.

Parameter	Setting
Domain Name	Enter a domain name that will be added for the instance, for example, wpwebsite.com. **NOTE** A domain name that is not registered can be added. After the domain name is added, it must be registered and licensed. To ensure that a domain name can be used normally, register the domain name and complete ICP licensing before adding the domain name.
Enterprise Project	Select an enterprise project from the drop-down list. Enterprise projects are associated with public zones. You can manage public zones by enterprise project. **NOTE** This parameter is displayed only when your account is an enterprise account.

3. Click **OK**.
4. In the row containing the **wpwebsite.com** domain name, click **Configure Record Set**.



Parameter	Setting
Domain Name Prefix	If you enter a prefix, a subdomain is used for website access. Either the domain name or its subdomains can be resolved to the EIP of the instance. Suppose the domain name is wpwebsite.com. • If the domain name prefix is left empty, wpwebsite.com is resolved to the EIP. • If the domain name prefix is www, the subdomain www.wpwebsite.com is mapped to the EIP.
EIP	The EIP bound to the instance is displayed here automatically.

5. On the **Domain Names** tab, view the domain name resolution details.
6. Apply for ICP licensing for the domain name.

   To successfully access the server using a domain name, you must file the domain name. Domain name filing in the Huawei Cloud ICP license center is free of charge. For details, see **ICP Filing Process**.

(Optional) Step 4: Apply for and Install an SSL Certificate for Your Instance

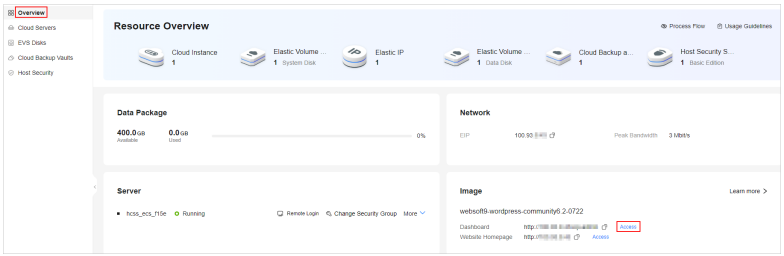
Install an SSL certificate if you need to enable HTTPS on your server. For details, see **About SCM and SSL Certificate Usage**.

4.3 Initializing WordPress

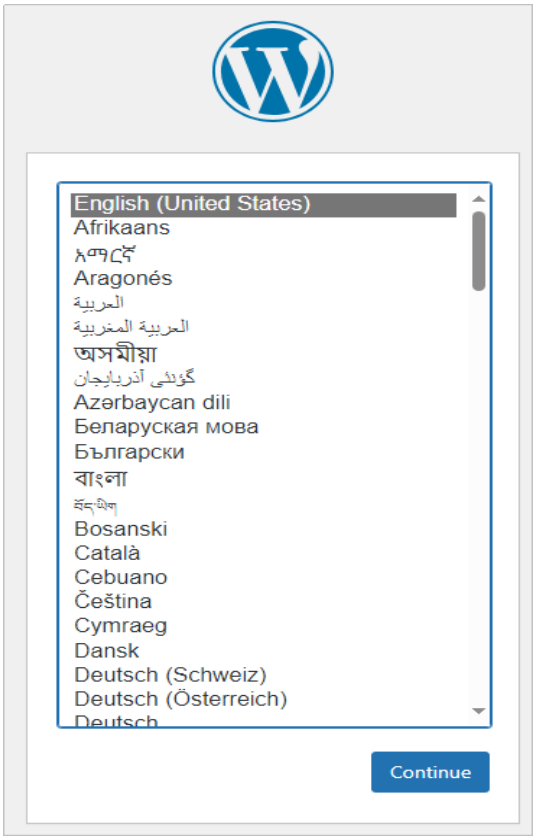
The image application dashboard needs to be initialized only when you log in for the first time.

1. On the **Overview** page, click **Access** in the **Dashboard** field in the **Image** area.

   After WordPress is initialized, click **Access** in the **Website Homepage** field.

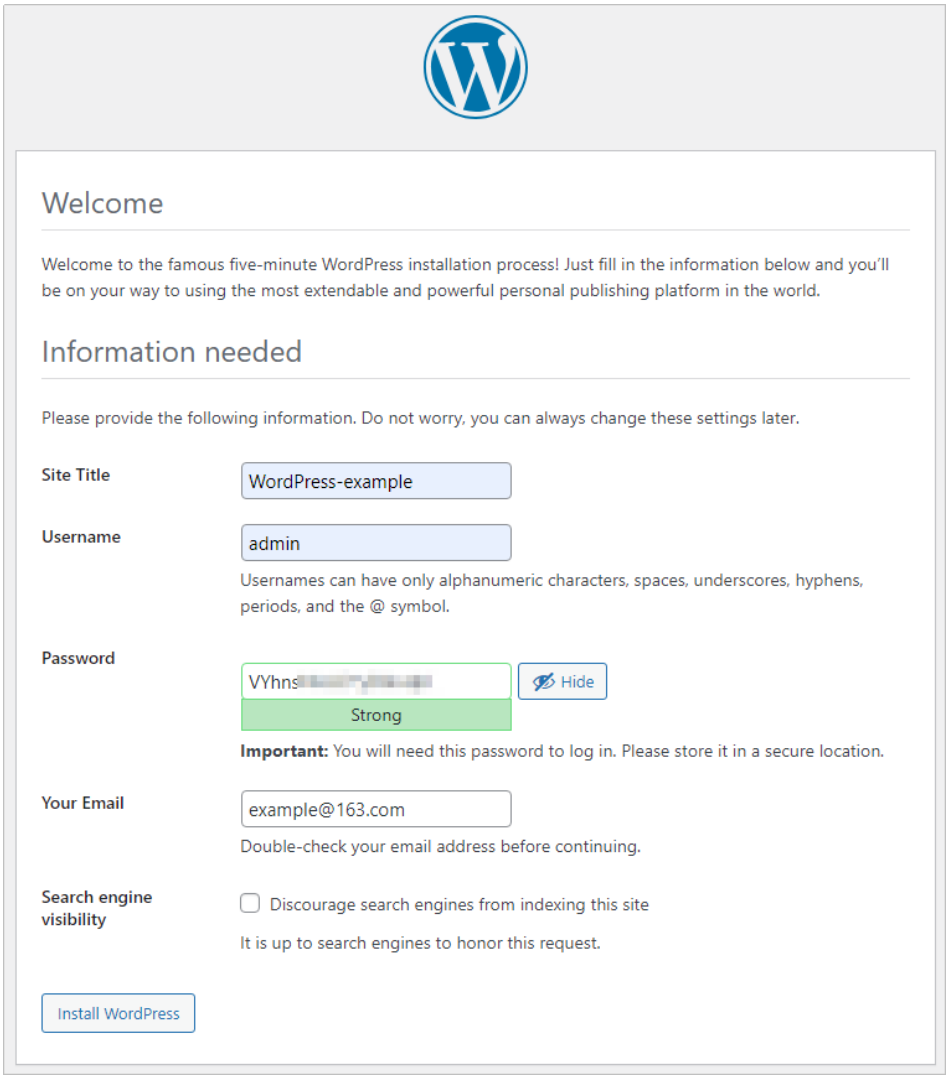


2. Select the WordPress language and continue.

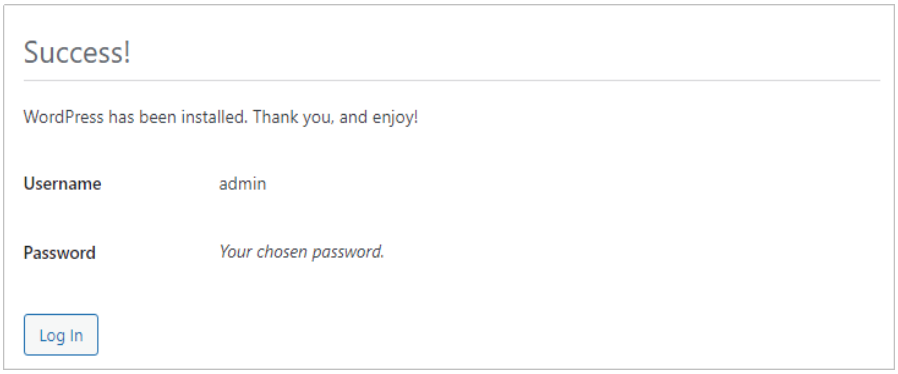


3. Set the website title, WordPress administrator username, password, and email, and click **Install WordPress**.

   Keep your website administrator username, password, and email secure. If you forgot the password, you can use this email to reset the password.



4. Enter the administrator username and password and click **Log In**.



Then, you have obtained a WordPress hosting server. You can set up a website or follow the instructions provided in **Setting up WordPress** to set up WordPress.

4.4 Setting up WordPress

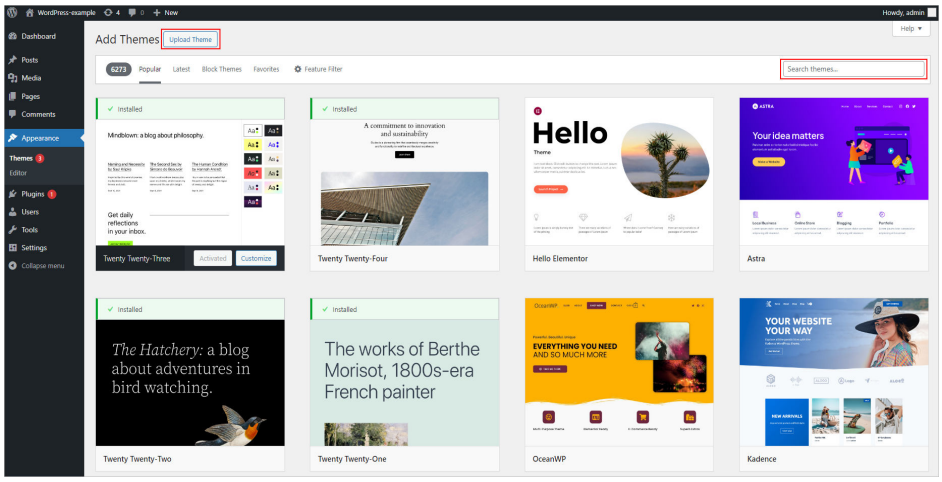
Managing Appearance

WordPress provides a wide range of themes. You can select an appropriate one for your WordPress website. You can change the WordPress theme of your website without changing the website content and structure.

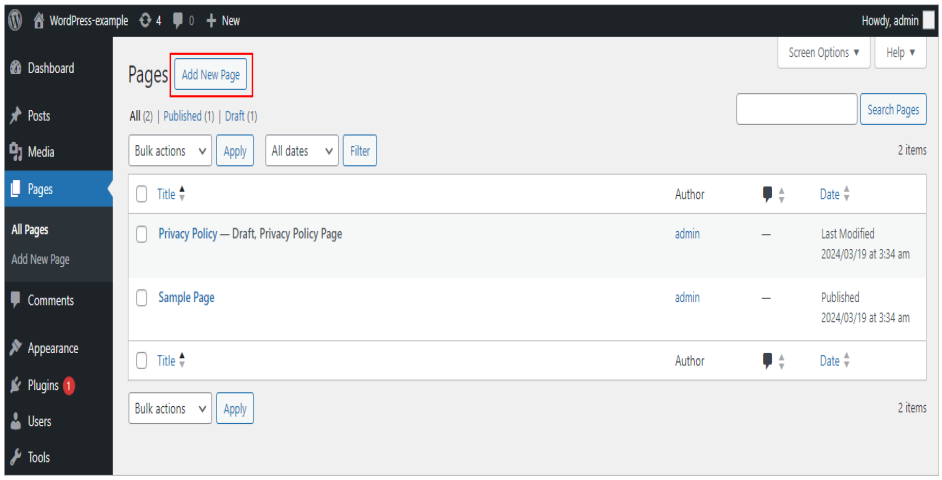
1. Choose **Appearance** > **Themes** on the WordPress dashboard.

   You can use the default and active themes, or add new themes.

   - Select a theme from the theme collection provided by WordPress.
   - Click **Add New** and upload third-party themes.



2. After installing a theme, click **Activate**.
3. Choose **Page** > **Add New** and use the fusion builder provided by the theme to flexibly set up a web page.

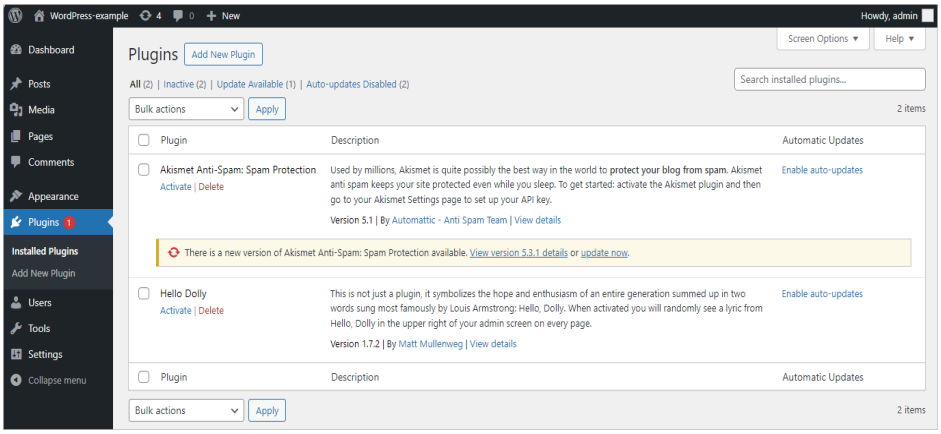


Managing Plugins

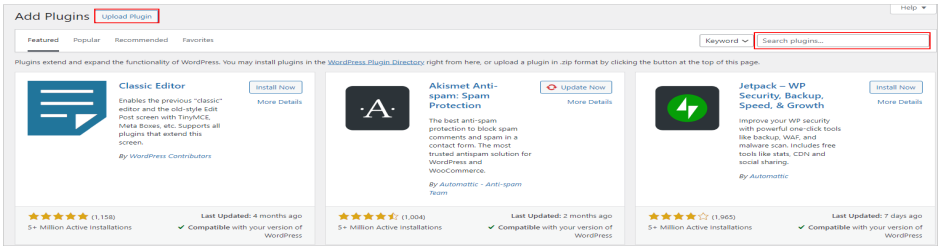
WordPress provides many plugins that add more capabilities, choices, and options to your WordPress website.

- Choose **Plugins** > **Installed Plugins**.

  You can view all the plugins that have been installed and their details, such as the developer and functions.



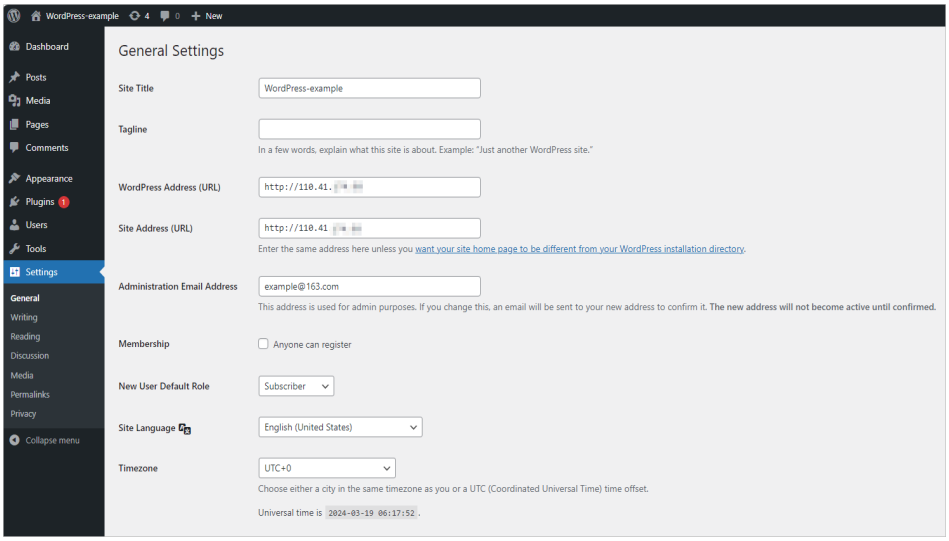
- Choose **Plugins** > **Add New** and add plugins.
  - In the upper right corner, select a filter and search for plugins from the WordPress plugin library.
  - Click **Upload Plugin** and select a third-party plugin for installation.



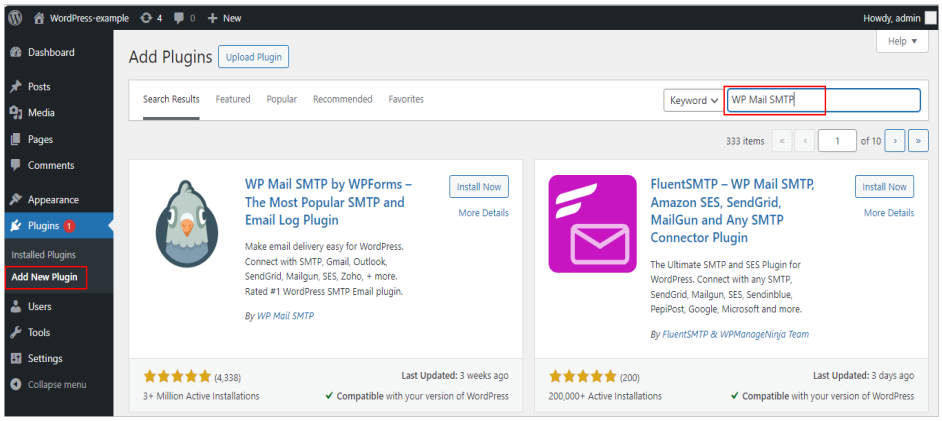
Configuring SMTP

The following uses the 163 email as an example to show how to use the WP Mail SMTP plugin to configure SMTP.

1. Choose **Settings** > **General** and set the administration email address.



2. Install the WP Mail SMTP plugin.
   a. On the WordPress dashboard, choose **Plugins** > **Add New**.
   b. Search for the keyword **WP Mail SMTP**. In the displayed result, click **Install Now**. After the installation is complete, click **Activate**.



3. Go back to the dashboard, configure SMTP, and click **Save Settings**.

   The following uses the 163 mailbox as an example to show how to configure a mailbox. If you use another mailbox, specify corresponding parameters.

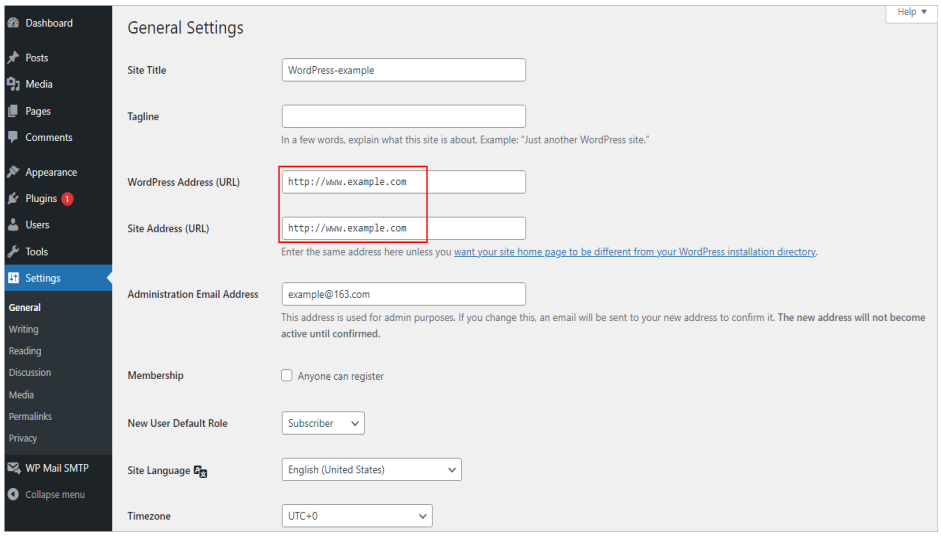
Parameter	Description
From Email	The email address that emails are sent from, which is the email address that you specify during WordPress installation by default. In this example, the value is *example@163.com*. You can change the value as needed. **NOTE** SMTP must be configured for the email address.
From Name	The name that emails are sent from, which can be your website name. The default value is the website title that you specify during WordPress installation. In this example, the value is *WordPress-example*. You can change the value as needed.
Mailer	Select **Other SMTP**.
SMTP Host	SMTP host IP address. Enter *smtp.163.com* in this example.
Encryption	Select **SSL**.
SMTP Port	Enter *465* in this example.
Auto TLS	Enable this function.
Authentication	Enable this function.
SMTP Username	Keep it the same as the **From Email** parameter value: *example@163.com*.

Parameter	Description
SMTP Password	Enter the authorization code obtained when configuring SMTP for the email *example@163.com*. This is not the password of the email *example@163.com*.

Configuring a WordPress Domain Name

If you add a domain name to a cloud server, or remove a domain name from a cloud server and then add a new one to it, you need to configure the domain name in WordPress so that the new domain name can be used to access the WordPress website.

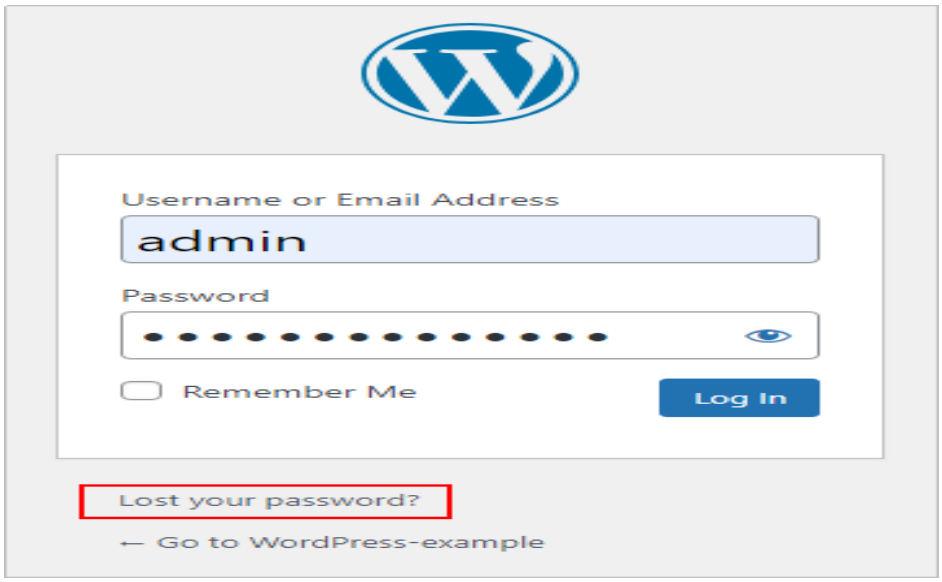
On the WordPress dashboard, choose **Settings** > **General**, set **WordPress Address (URL)** and **Site Address (URL)** to the new domain name, and click **Save Changes**.



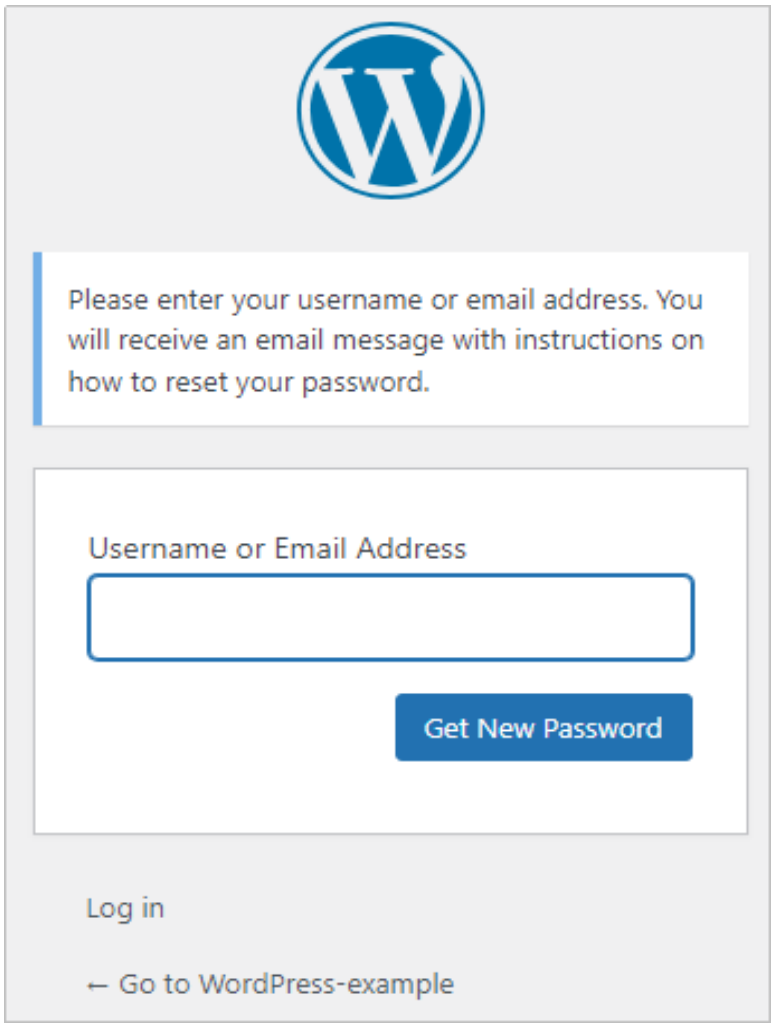
Resetting a Password

If you forgot the WordPress administrator password, you can reset the password via email (SMTP must have been configured for WordPress).

- Resetting a password via email
  a. On the WordPress login page, click **Lost your password**.



b. Enter the username or email address and click **Get New Password**. Then a new password will be sent to your email.



c. On the dashboard, choose **Users** > **Profile**. In the **Account Management** area on the displayed page, set a new password and click **Update Profile**.

5 Managing Servers Using the BT Panel

5.1 Overview

Applicable Scenario

The BT panel is a visualized server management software that supports more than 100 server management functions, such as one-click LAMP, LNMP, monitoring, website, FTP, database, and Java. The BT panel application image uses Ubuntu 22.04 and provides a web client for you to manage servers, such as website or file management, graphical monitoring, and task planning. You can use this application image to manage servers on the BT panel.

Resource Planning and Costs

Resource	Configuration	Description
Cloud server	• vCPUs: 2 • Memory: 2 GiB	A BT panel application image requires at least 2 vCPUs and 2 GiB memory. Select appropriate instance specifications accordingly.
Image	BT panel	Select the BT panel application image.
Security group	Inbound rule: • Protocol/ Application: TCP • Port: 80,443,8888,9090,3306 • Source: 0.0.0.0/0	• 80: Allows HTTP traffic to FlexusL instances. • 443: Allows HTTPS traffic to FlexusL instances. • 8888: Allows access to the BT panel. • 3306: Allows access to MySQL databases • 9090: Allows access to the phpMyAdmin database management tool

Resource	Configuration	Description
Domain name	wpwebsite.com	• If the website is only used for personal development or testing, there is no need to add a domain name. • If the website is open to the public, add and resolve a domain name for the cloud server.

Process

Step	Procedure	Description
1	**Purchasing and Configuring a FlexusL Instance**	Purchase and configure a FlexusL instance.
2	**Initializing the BT Panel**	Log in to the BT dashboard and install the basic software bundle.
3	**Deploying the BT Panel**	On the dashboard, perform the following operations: • Manage software • Manage files • Manage logs • Manage databases

5.2 Purchasing and Configuring a FlexusL Instance

This section describes how to purchase and configure a FlexusL instance, including purchasing a cloud server, setting the server login password, and configuring a security group.

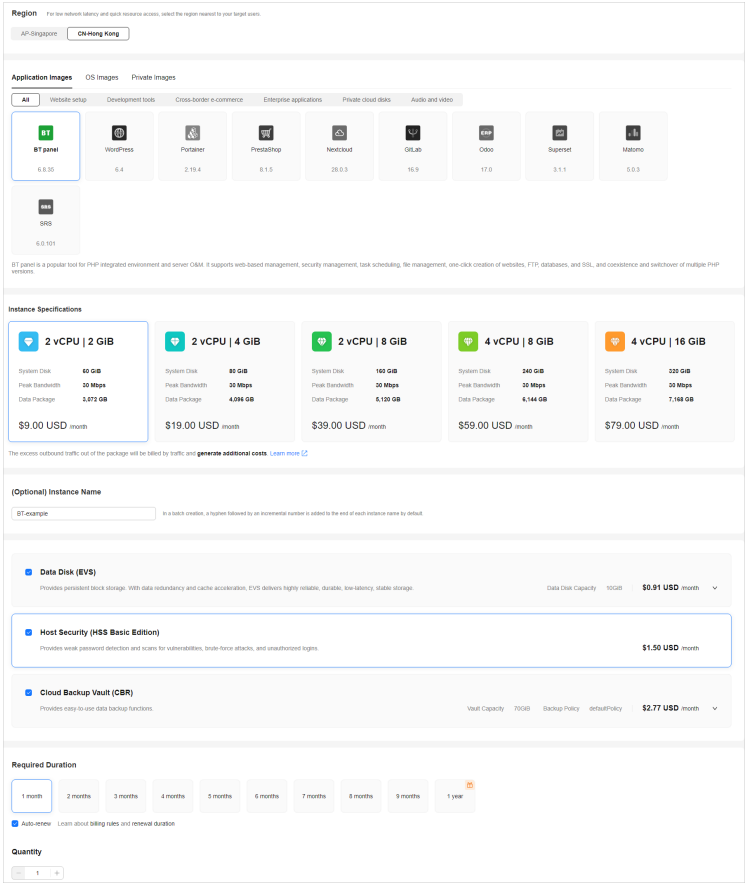
Process

Procedure	Description
Step 1: Purchase a FlexusL Instance	Purchase a FlexusL instance and select the BT panel application image.
Step 2: Configure a Security Group	Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.

Procedure	Description
(Optional) Step 3: Add and Resolve a Domain Name	Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

Step 1: Purchase a FlexusL Instance

1. Log in to the FlexusL console.
2. Click **Buy FlexusL**.
3. Specify required parameters for the FlexusL instance.



Parameter	Example	Description
Region	CN-Hong Kong	For low network latency and quick resource access, select the region nearest to your target users. After a FlexusL instance is created, the region cannot be changed. Exercise caution when selecting a region.

Parameter	Example	Description
Application Images	BT panel	Select the BT panel application image.
Instance Specifications	2 vCPUs | 2 GiB memory and 60 GiB system disk	Select instance specifications as needed.
Instance Name	**BT-example**	Customize an instance name that is easy to identify, for example, BT-example.
(Optional) Associated Services	• Data disk: 10 GiB • Host security • Cloud backup vault: 70 GiB	You can bundle any of the services to your FlexusL instances as needed: EVS, HSS (basic edition), and CBR and set specifications as needed.
Required Duration	1 month	The minimum duration of a purchase is one month and the maximum duration is three years. Auto-renew is enabled by default, which means the purchased FlexusL instances will be automatically renewed before they expire. If you do not enable auto-renew during the purchase process, you can still enable it later after the instances are created. Monthly subscription allows you to renew the subscription for one month every time. The number of renewal times is not limited. For more information about auto-renewal rules, see **Auto-Renewal Rules**.
Quantity	1	Set the number of FlexusL instances to be purchased.

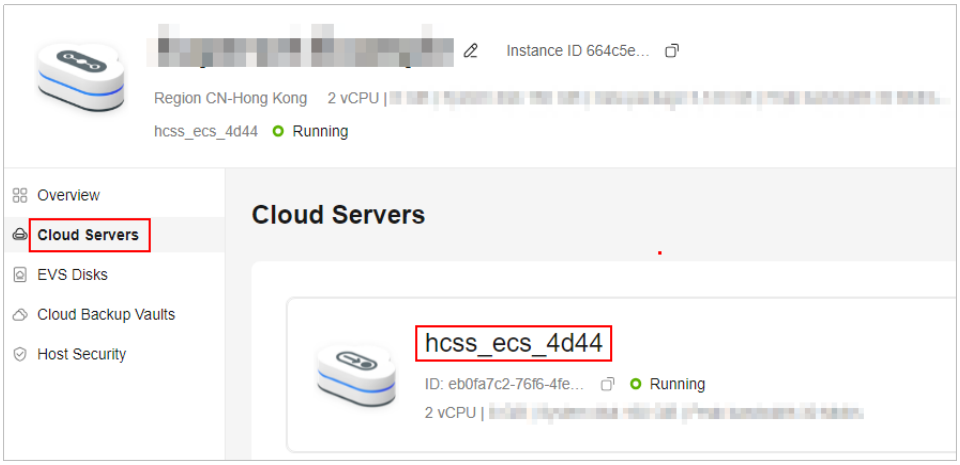
4. Click **Buy Now**.

   On the displayed page, confirm the order details, read and select the agreement, and click **Submit**.

5. Select a payment method and complete the payment.
6. Go back to the FlexusL console and view the purchased FlexusL instance.

Step 2: Configure a Security Group

1. Log in to the **console** and click a resource card to go to the instance details page.
2. In the navigation pane on the left, choose **Cloud Servers** and then click the server name.



3. On the **Security Groups** tab, click **Add Rule**. In the displayed dialog box, add rules displayed in the following figure and click **OK**.

   The following figure only displays common rules. You can add more rules as needed.

Table 5-1 Security group rules

Priority	Action	Type	Protocol & Port	Source	Description
100	Allow	IPv4	TCP: 3306	0.0.0.0/0	Allows access to MySQL databases
100	Allow	IPv4	TCP: 9090	0.0.0.0/0	Allows access to the phpMyAdmin database management tool

Priority	Action	Type	Protocol & Port	Source	Description
100	Allow	IPv4	TCP: 8888	0.0.0.0/0	Allows access to the BT panel dashboard.
100	Allow	IPv4	TCP: 443	0.0.0.0/0	Allows HTTPS traffic to FlexusL instances.
100	Allow	IPv4	TCP: 80	0.0.0.0/0	Allows HTTP traffic to FlexusL instances.

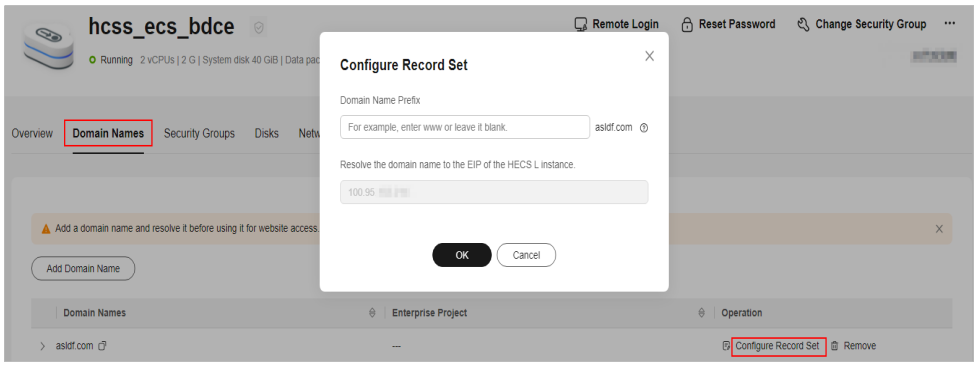
(Optional) Step 3: Add and Resolve a Domain Name

Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

1. In the navigation pane on the left, choose **Cloud Servers**. Locate the server and click its name.
2. On the **Server Details** page, click the **Domain Names** tab and click **Add Domain Name**.

Parameter	Setting
Domain Name	Enter a domain name that will be added for the instance, for example, wpwebsite.com. **NOTE** A domain name that is not registered can be added. After the domain name is added, it must be registered and licensed. To ensure that a domain name can be used normally, register the domain name and complete ICP licensing before adding the domain name.
Enterprise Project	Select an enterprise project from the drop-down list. Enterprise projects are associated with public zones. You can manage public zones by enterprise project. **NOTE** This parameter is displayed only when your account is an enterprise account.

3. Click **OK**.
4. In the row containing the **wpwebsite.com** domain name, click **Configure Record Set**.



Parameter	Setting
Domain Name Prefix	If you enter a prefix, a subdomain is used for website access. Either the domain name or its subdomains can be resolved to the EIP of the instance. Suppose the domain name is wpwebsite.com. • If the domain name prefix is left empty, wpwebsite.com is resolved to the EIP. • If the domain name prefix is www, the subdomain www.wpwebsite.com is mapped to the EIP.
EIP	The EIP bound to the instance is displayed here automatically.

5. On the **Domain Names** tab, view the domain name resolution details.
6. Apply for ICP licensing for the domain name.

   To successfully access the server using a domain name, you must file the domain name. Domain name filing in the Huawei Cloud ICP license center is free of charge. For details, see **ICP Filing Process**.

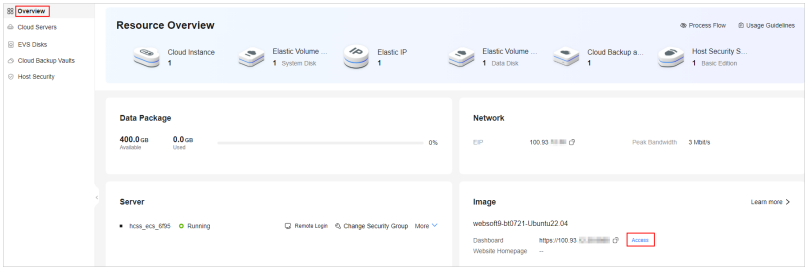
5.3 Initializing the BT Panel

The image application dashboard needs to be initialized only when you log in for the first time.

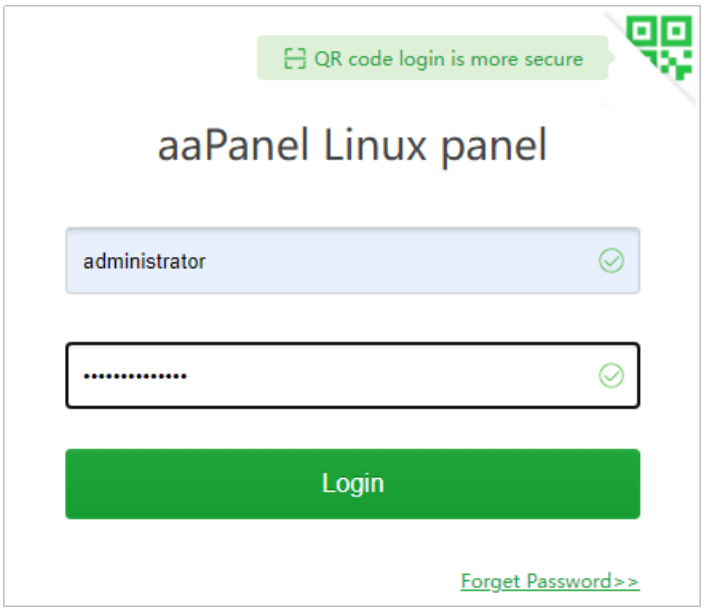
1. Obtain the administrator username and password for logging in to the BT panel.

   Log in to the server and run **sudo cat /credentials/password.txt** to obtain the username and password for logging in to the BT panel. The administrator username is **administrator**.

2. On the **Overview** page, click **Access** in the **Dashboard** field in the **Image** area.



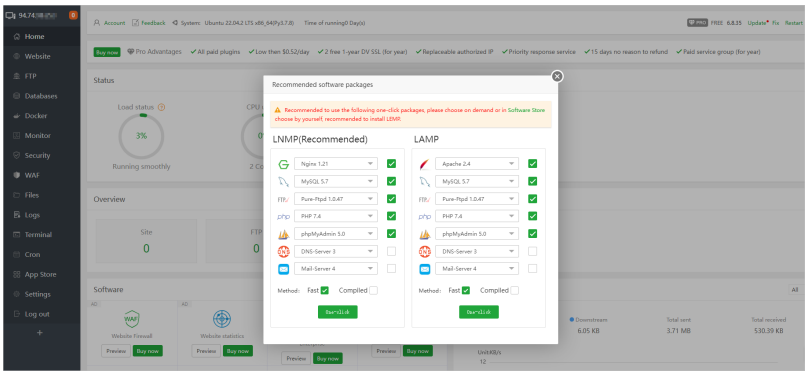
3. Enter the obtained username and password and click **Login**.



4. Install the basic software bundle.

   Select LNMP (recommended) or LAMP and click **One-click** to install them.

   You can also select other software from **App Store** and install them.



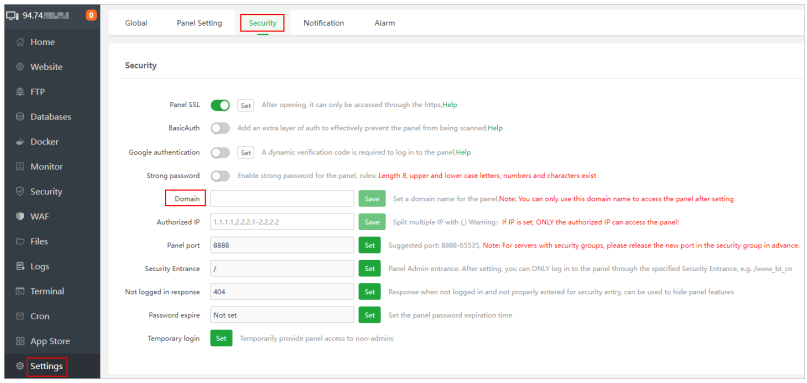
Then, you have obtained a BT panel hosting server. You can use the BT panel or follow the instructions provided in **Deploying the BT Panel** to manage software, files, logs, and databases.

5.4 Deploying the BT Panel

Specifying a Domain Name

If you want to use a domain name to access the BT panel, configure one for the BT panel first. Once a domain name is specified, you can only use it to access the BT panel.

If your FlexusL instance does not need a domain name, skip this part.

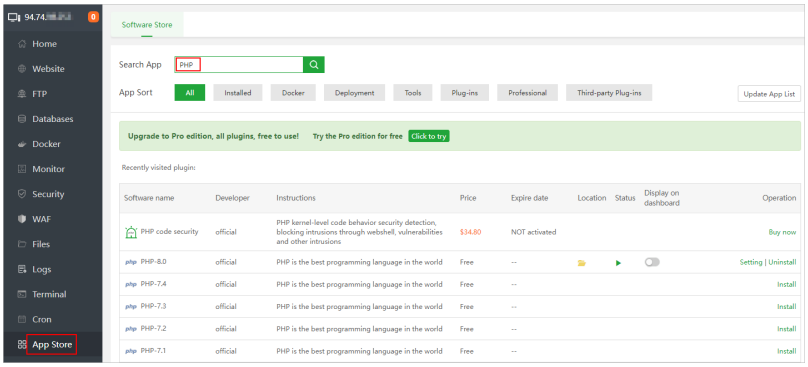


Managing Software

In the software store, you can install, uninstall, and manage software.

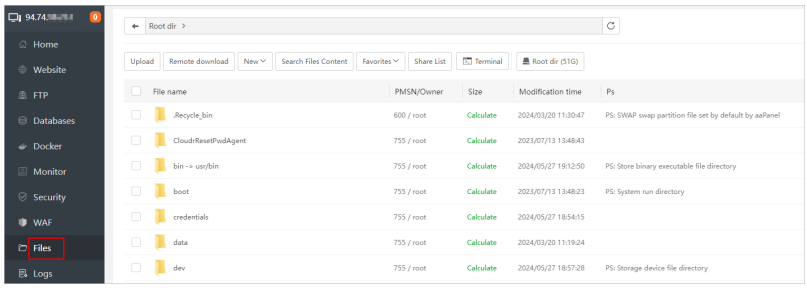
You can search for the software by name or category. A PHP extension plugin is required to enhance PHP language functions. The following shows how to install a PHP extension:

1. Choose **App Store** in the left navigation pane and search for PHP.
2. Select the PHP version, click **Install** or **Buy now** in the **Operation** column of the target software and complete the installation.



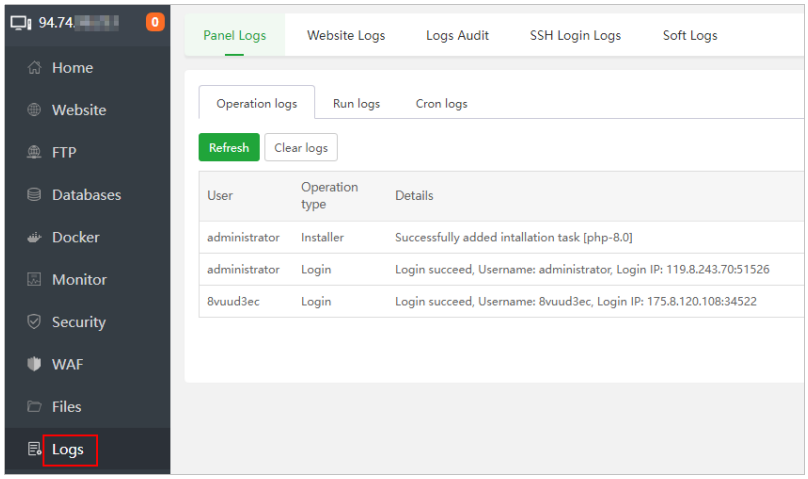
Managing Files

In the **Files** menu, you can perform a range of operations on files, including copying, pasting, cutting, deleting, renaming, compressing, refreshing, or creating a file, and creating a directory for a file.



Managing Logs

In the **Logs** menu, logs are classified by log type. You can click the tabs to view different types of logs and clear logs.



6 Analyzing Website Data Using the Matomo Application Image

6.1 Overview

Applicable Scenario

Matomo is a powerful open-source network analysis platform that has full data ownership and ensures that the business complies with General Data Protection Regulation (GDPR) and California Consumer Privacy Act (CCPA). The Matomo application image uses Ubuntu 22.04 and is deployed using Docker. The Nginx, MySQL, phpMyAdmin, and Docker have been preconfigured in the image. You can use this application image to analyze website data with Matomo.

Resource Planning and Costs

Resource	Configuration	Description
Cloud server	• vCPUs: 2 • Memory: 2 GiB	Select appropriate instance specifications based on your service requirements.
Image	Matomo	Select the Matomo application image.
Security group	Inbound rule: • Protocol/ Application: TCP • Port: 9001 • Source IP: 0.0.0.0/0	9001: Allows external access to the application management page.

Resource	Configuration	Description
Domain name	wpwebsite.com	• If the website is only used for personal development or testing, there is no need to add a domain name. • If the website is open to the public, add and resolve a domain name for the cloud server.

Process

Step	Procedure	Description
1	**Purchasing and Configuring a FlexusL Instance**	Purchase and configure a FlexusL instance.
2	**Initializing Matomo**	Install and initialize Matomo.
3	**Using Matomo to Monitor Websites**	Add tracking code to the websites you want to monitor.

6.2 Purchasing and Configuring a FlexusL Instance

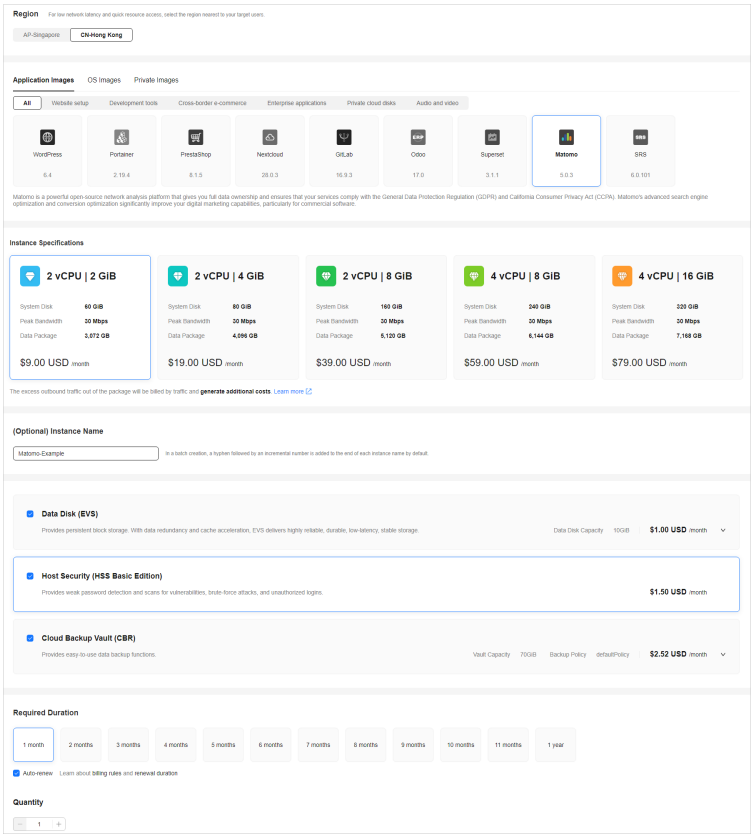
This section describes how to purchase and configure a FlexusL instance, including purchasing a cloud server, setting the server login password, logging in to the server, configuring a security group, and adding and resolving a domain name.

Process

Procedure	Description
Step 1: Purchase a FlexusL Instance	Purchase a FlexusL instance and select the Matomo application image.
Step 2: Configure a Security Group	Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.
(Optional) Step 3: Add and Resolve a Domain Name	Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

Step 1: Purchase a FlexusL Instance

1. Log in to the FlexusL console.
2. Click **Buy FlexusL**.
3. Specify required parameters for the FlexusL instance.



Parameter	Example	Description
Region	CN-Hong Kong	For low network latency and quick resource access, select the region nearest to your target users. After a FlexusL instance is created, the region cannot be changed. Exercise caution when selecting a region.
Application Images	Matomo	Select the Matomo application image.
Instance Specifications	2 vCPUs | 2 GiB memory and 60 GiB system disk	Select instance specifications as needed.

Parameter	Example	Description
(Optional) Instance Name	Matomo-Example	Customize an instance name that is easy to identify, for example, Matomo-Example.
(Optional) Associated Services	• Data disk: 10 GiB • Host security • Cloud backup vault: 70 GiB	You can bundle any of the services to your FlexusL instances as needed: EVS, HSS (basic edition), and CBR and set specifications as needed.
Required Duration	1 month	The minimum duration of a purchase is one month and the maximum duration is three years. Auto-renew is enabled by default, which means the purchased FlexusL instances will be automatically renewed before they expire. If you do not enable auto-renew during the purchase process, you can still enable it later after the instances are created. Monthly subscription allows you to renew the subscription for one month every time. The number of renewal times is not limited. For more information about auto-renewal rules, see **Auto-Renewal Rules**.
Quantity	1	Set the number of FlexusL instances to be purchased.

4. Click **Buy Now**.

   On the displayed page, confirm the order details, read and select the agreement, and click **Submit**.

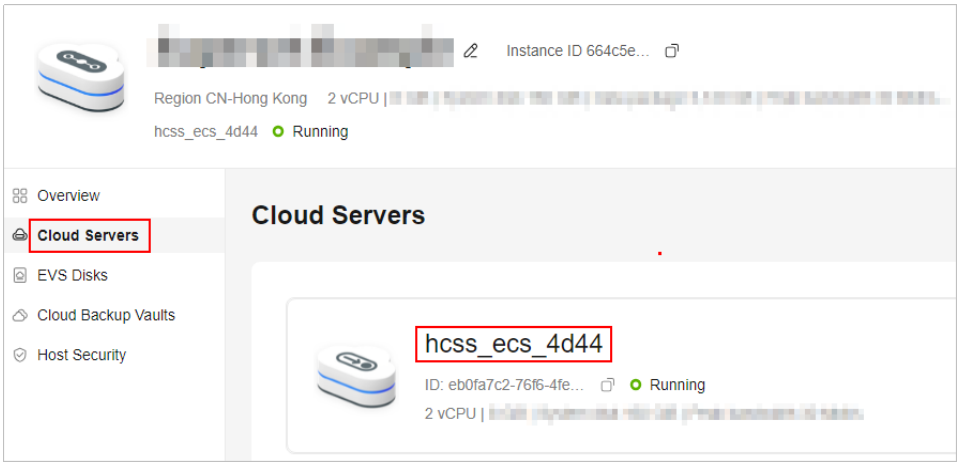
5. Select a payment method and complete the payment.
6. Go back to the FlexusL console and view the purchased FlexusL instance.

Step 2: Configure a Security Group

Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.

1. Log in to the **console** and click a resource card to go to the instance details page.

2. In the navigation pane on the left, choose **Cloud Servers** and then click the server name.



3. On the **Security Groups** tab, click **Add Rule**. In the displayed dialog box, add rules displayed in the following figure and click **OK**.

   The following figure only displays common rules. You can add more rules as needed.

Table 6-1 Security group rules

Priority	Action	Type	Protocol & Port	Source	Description
100	Allow	IPv4	TCP: 9001	0.0.0.0/0	Allows external access to the application management page.

(Optional) Step 3: Add and Resolve a Domain Name

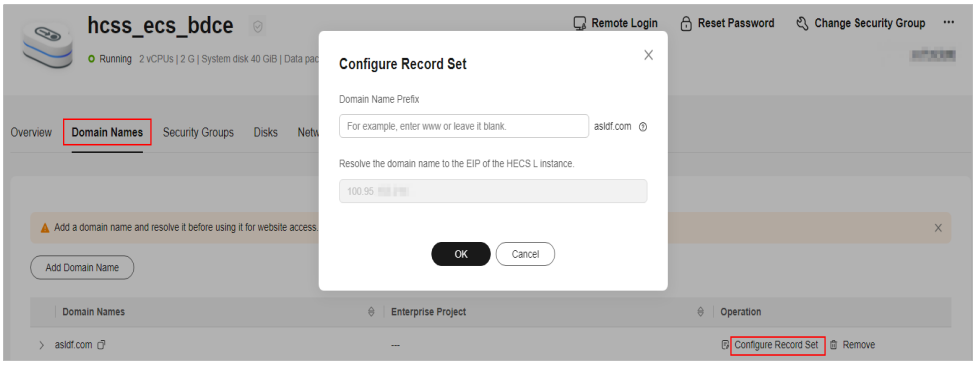
Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

1. In the navigation pane on the left, choose **Cloud Servers**. Locate the server and click its name.
2. On the **Server Details** page, click the **Domain Names** tab and click **Add Domain Name**.

Parameter	Setting
Domain Name	Enter a domain name that will be added for the instance, for example, wpwebsite.com. **NOTE** A domain name that is not registered can be added. After the domain name is added, it must be registered and licensed. To ensure that a domain name can be used normally, register the domain name and complete ICP licensing before adding the domain name.

Parameter	Setting
Enterprise Project	Select an enterprise project from the drop-down list. Enterprise projects are associated with public zones. You can manage public zones by enterprise project. **NOTE** This parameter is displayed only when your account is an enterprise account.

3. Click **OK**.
4. In the row containing the **wpwebsite.com** domain name, click **Configure Record Set**.



Parameter	Setting
Domain Name Prefix	If you enter a prefix, a subdomain is used for website access. Either the domain name or its subdomains can be resolved to the EIP of the instance. Suppose the domain name is wpwebsite.com. • If the domain name prefix is left empty, wpwebsite.com is resolved to the EIP. • If the domain name prefix is www, the subdomain www.wpwebsite.com is mapped to the EIP.
EIP	The EIP bound to the instance is displayed here automatically.

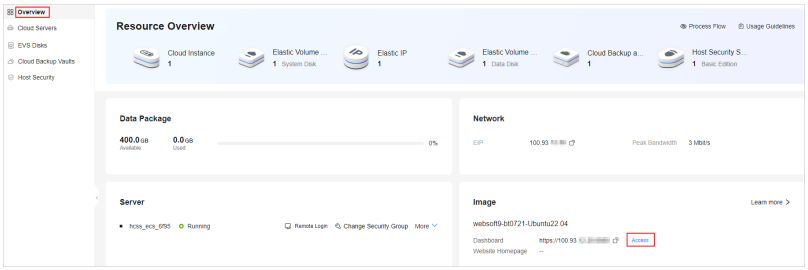
5. On the **Domain Names** tab, view the domain name resolution details.
6. Apply for ICP licensing for the domain name.

   To successfully access the server using a domain name, you must file the domain name. Domain name filing in the Huawei Cloud ICP license center is free of charge. For details, see **ICP Filing Process**.

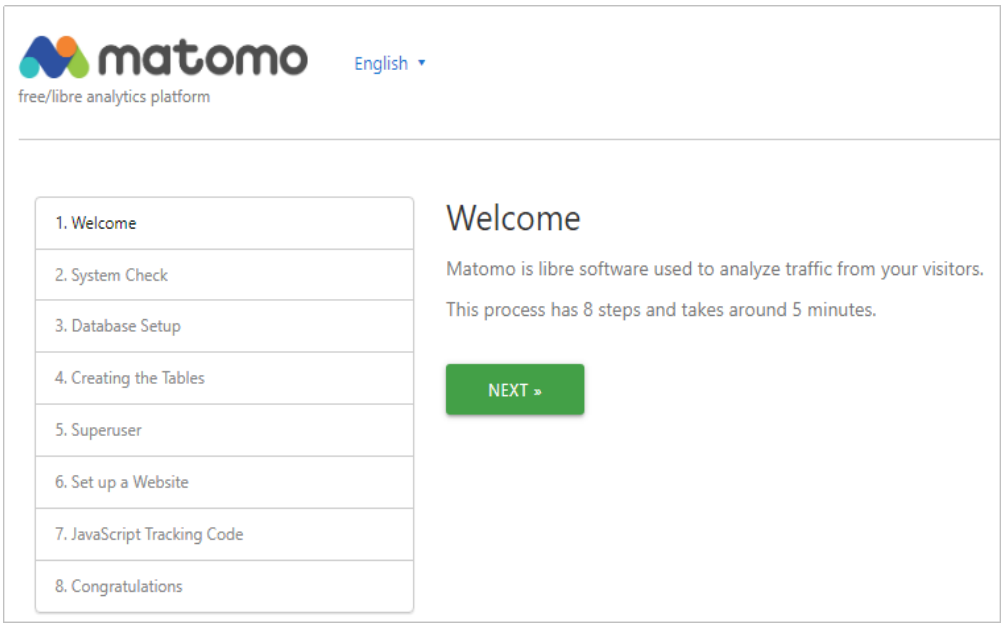
6.3 Initializing Matomo

The image application dashboard needs to be initialized only when you log in for the first time.

1. On the **Overview** page, click **Access** in the **Dashboard** field in the **Image** area.



2. Click **NEXT**.



3. Wait until Matomo completes the system check and click **NEXT**.

   Matomo automatically checks whether the server meets the requirements for installing Matomo and displays the check result for each item.

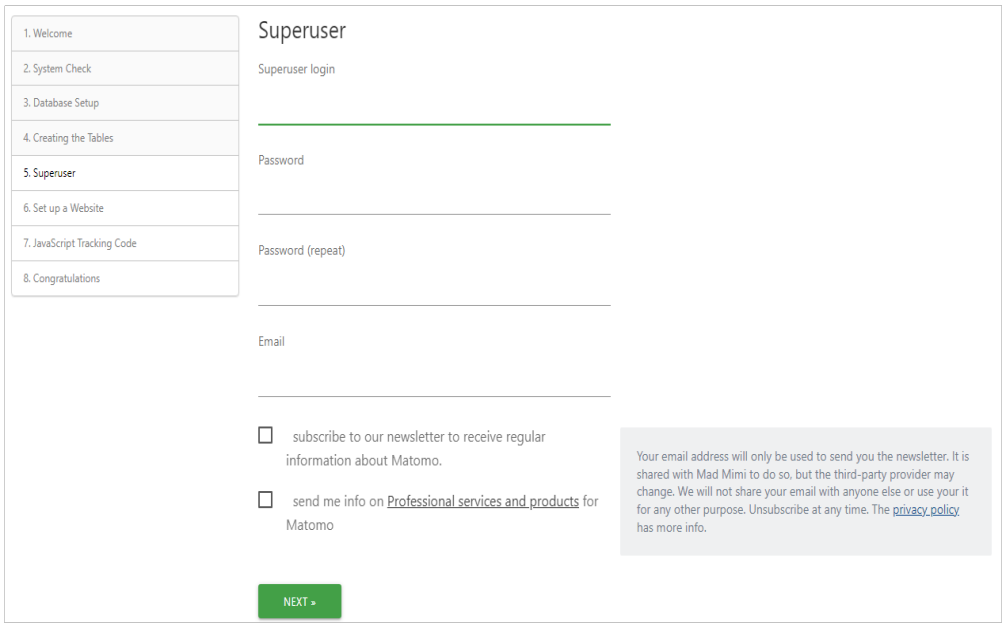
4. Set up the MySQL database and click **NEXT**.

   The MySQL database and a default database account have been preset in Matomo. The information about the default database account is automatically obtained. Retain the default settings and click **NEXT**.

5. After Matomo automatically creates data tables, click **NEXT**.

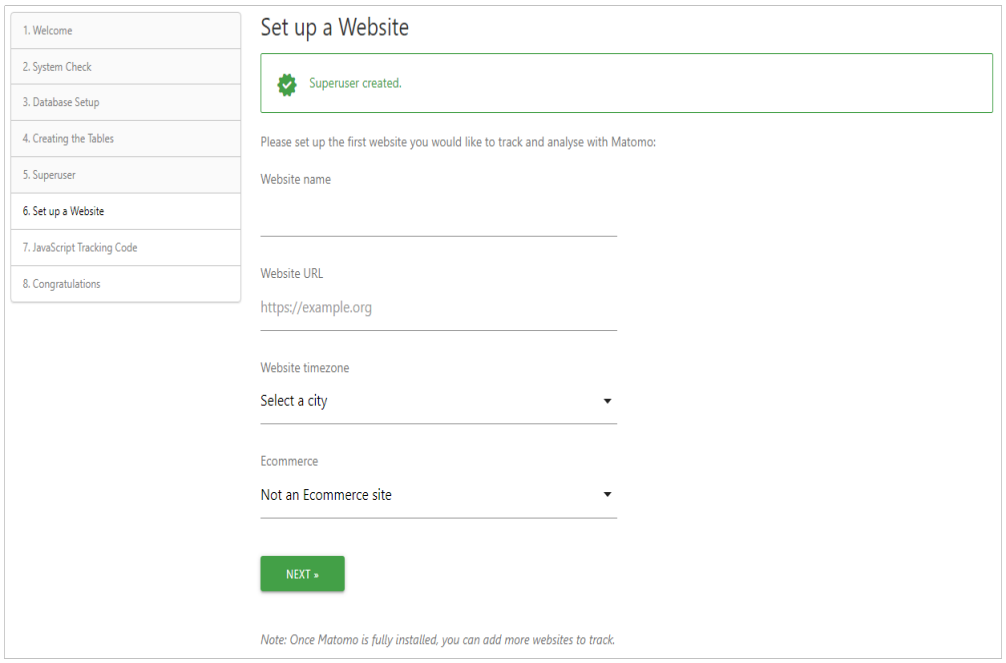
6. On the **Super User** page, set the username, password, and email address of the Matomo administrator, and click **NEXT**.

   The super user is the user that you created when you installed Matomo. Each Matomo has only one super user who has the highest permissions. Keep the username and password of the super user secure.



7. On the **Set up a Website** page, add the name and URL of the first website you want to track and analyze with Matomo and click **NEXT**.

   You can add more websites to track later.



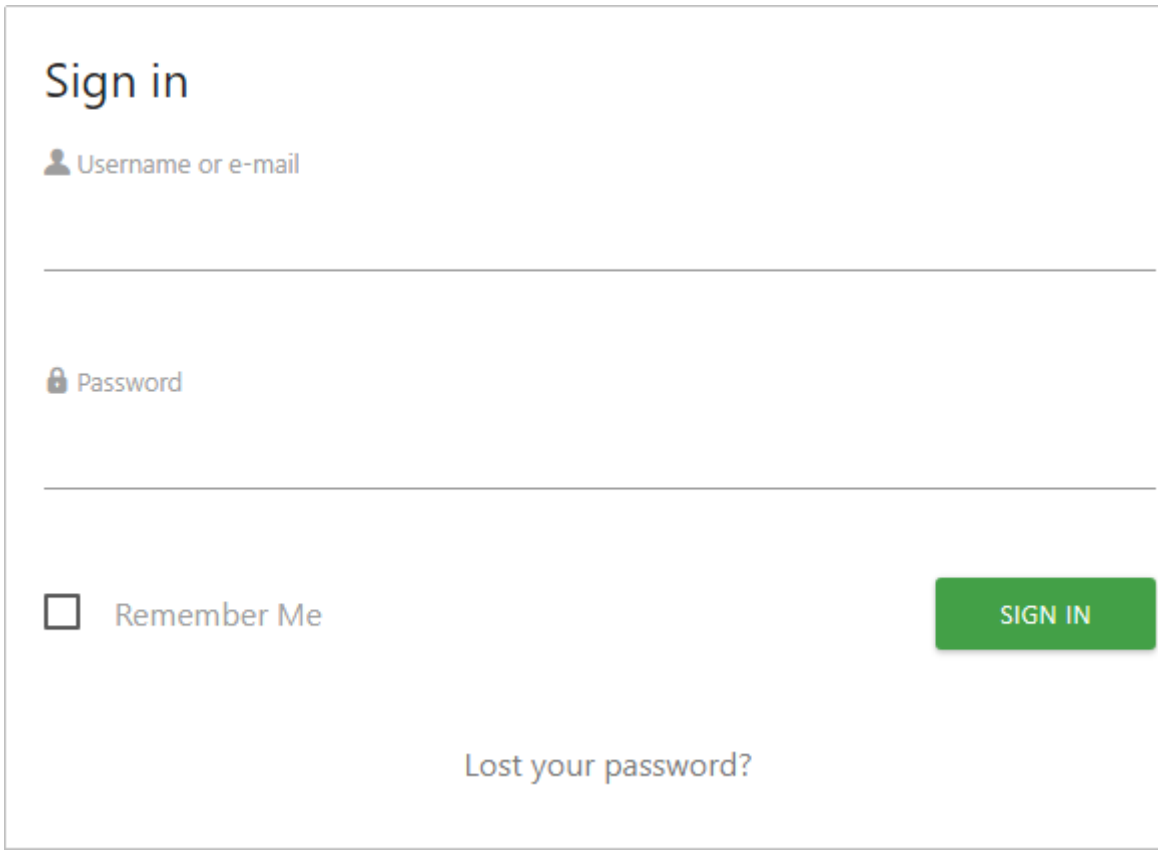
8. Learn about the JavaScript tracking code and click **NEXT**.

   To track your web traffic with Matomo, you need to make sure that some extra code is added to each of your webpages. Matomo automatically generates a JavaScript tracking code. Make sure that this code is on every page that you want Matomo to analyze.

   After the installation is complete, you can generate customized tracking code in the **Tracking Code** admin section.

9. After the initialization configurations are complete, click **Continue to Matomo**.

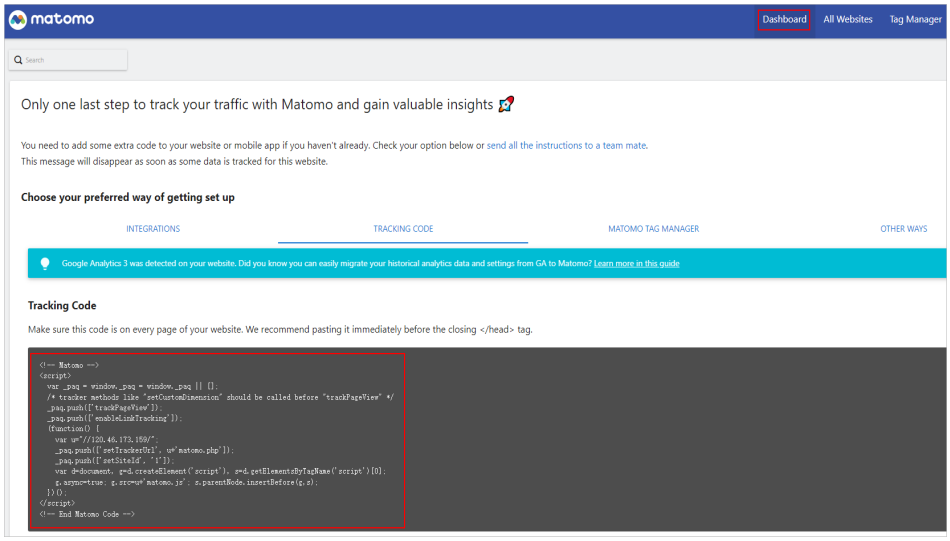
10. Enter the username and password of the super user and click **SIGN IN**.



Then, you have obtained a Matomo hosting server. You can start using Matomo or follow the instructions provided in **Using Matomo to Monitor Websites** to monitor websites.

6.4 Using Matomo to Monitor Websites

1. On the dashboard, click the **TRACKING CODE** tab and copy the tracking code in the **Tracking Code** area.



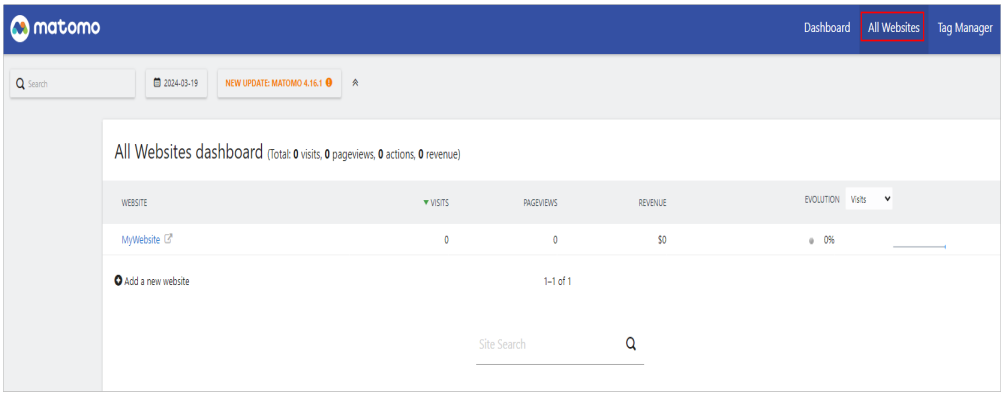
2. Copy the tracking code to each page of the website you want to monitor.

   Matomo can collect real-time analysis data of the website with the tracking code.

   NOTE

   For details about how to install the Matomo tracking code, see **official documentation**.

3. Select **All Websites** to view the access to the monitored websites.



7 Visualizing Docker Management Using Portainer

7.1 Overview

Applicable Scenario

Portainer is a graphical tool for Docker management. It 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, container console operations, centralized management and operations of Swarm clusters and services, and user login management and control. The Portainer application image uses Ubuntu 22.04 and is deployed using Docker. The Docker and Portainer have been preconfigured in the image. You can use this application image to visualize Docker management.

Resource Planning and Costs

Resource	Configuration	Description
Cloud server	• vCPUs: 2 • Memory: 4 GiB	Select appropriate instance specifications based on your service requirements.
Image	Portainer	Select the Portainer application image.
Security group	Inbound rule: • Protocol/ Application: TCP • Port: 9001,3306 • Source IP: 0.0.0.0/0	• 9001: Allows external access to the application management page. • 3306: Allows access to MySQL databases

Resource	Configuration	Description
Domain name	wpwebsite.com	• If the website is only used for personal development or testing, there is no need to add a domain name. • If the website is open to the public, add and resolve a domain name for the cloud server.

Process

Step	Procedure	Description
1	**Purchasing and Configuring a FlexusL Instance**	Purchase and configure a FlexusL instance.
2	**Initializing Portainer**	Log in to the dashboard and install and initialize Portainer.
3	**Using Portainer to Deploy a MySQL Container**	Use Portainer to visualize Docker management (using MySQL container as an example)

7.2 Purchasing and Configuring a FlexusL Instance

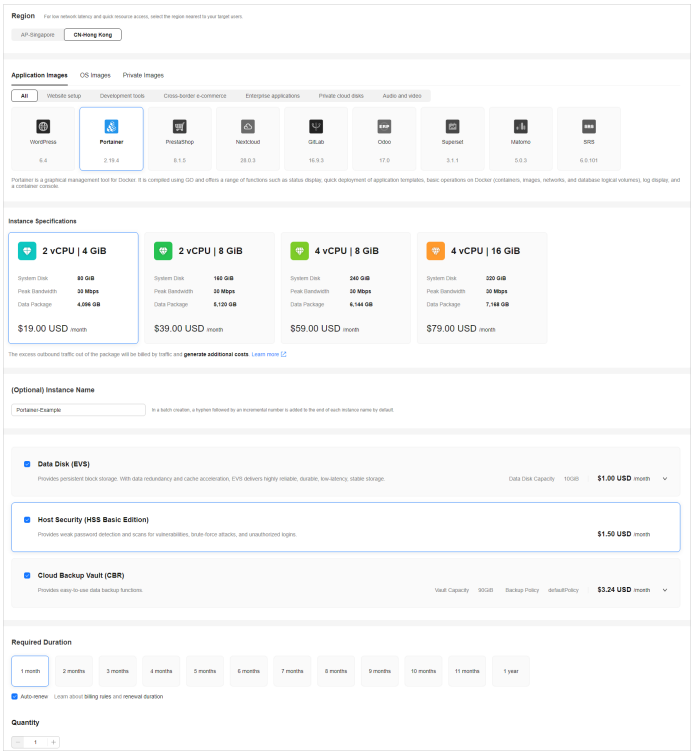
This section describes how to purchase and configure a FlexusL instance, including purchasing a cloud server, setting the server login password, logging in to the server, configuring a security group, and adding and resolving a domain name.

Process

Procedure	Description
Step 1: Purchase a FlexusL Instance	Purchase a FlexusL instance and select the Portainer application image.
Step 2: Configure a Security Group	Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.
(Optional) Step 3: Add and Resolve a Domain Name	Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

Step 1: Purchase a FlexusL Instance

1. Log in to the FlexusL console.
2. Click **Buy FlexusL**.
3. Specify required parameters for the FlexusL instance.



Parameter	Example	Description
Region	CN-Hong Kong	For low network latency and quick resource access, select the region nearest to your target users. After a FlexusL instance is created, the region cannot be changed. Exercise caution when selecting a region.
Application Images	Portainer	Select the Portainer application image.
Instance Specifications	2 vCPUs | 4 GiB memory and 80 GiB system disk	Select instance specifications as needed.
Instance Name	Portainer-Example	Customize an instance name that is easy to identify, for example, Portainer-Example.

Parameter	Example	Description
(Optional) Associated Services	• Data disk: 10 GiB • Host security • Cloud backup vault: 90 GiB	You can bundle any of the services to your FlexusL instances as needed: EVS, HSS (basic edition), and CBR and set specifications as needed.
Required Duration	1 month	The minimum duration of a purchase is one month and the maximum duration is three years. Auto-renew is enabled by default, which means the purchased FlexusL instances will be automatically renewed before they expire. If you do not enable auto-renew during the purchase process, you can still enable it later after the instances are created. Monthly subscription allows you to renew the subscription for one month every time. The number of renewal times is not limited. For more information about auto-renewal rules, see **Auto-Renewal Rules**.
Quantity	1	Set the number of FlexusL instances to be purchased.

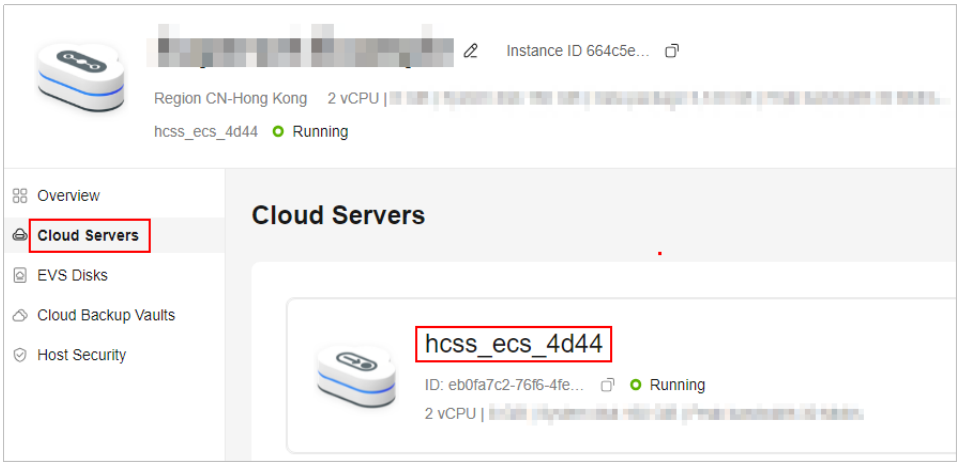
4. Click **Buy Now**.

   On the displayed page, confirm the order details, read and select the agreement, and click **Submit**.
5. Select a payment method and complete the payment.
6. Go back to the FlexusL console and view the purchased FlexusL instance.

Step 2: Configure a Security Group

Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.

1. Log in to the **console** and click a resource card to go to the instance details page.
2. In the navigation pane on the left, choose **Cloud Servers** and then click the server name.



3. On the **Security Groups** tab, click **Add Rule**. In the displayed dialog box, add rules displayed in the following figure and click **OK**.

   The following figure only displays common rules. You can add more rules as needed.

Table 7-1 Security group rules

Priority	Action	Type	Protocol & Port	Source	Description
100	Allow	IPv4	TCP: 3306	0.0.0.0/0	Allows access to MySQL databases.
100	Allow	IPv4	TCP: 9001	0.0.0.0/0	Allows external access to the application management page.

(Optional) Step 3: Add and Resolve a Domain Name

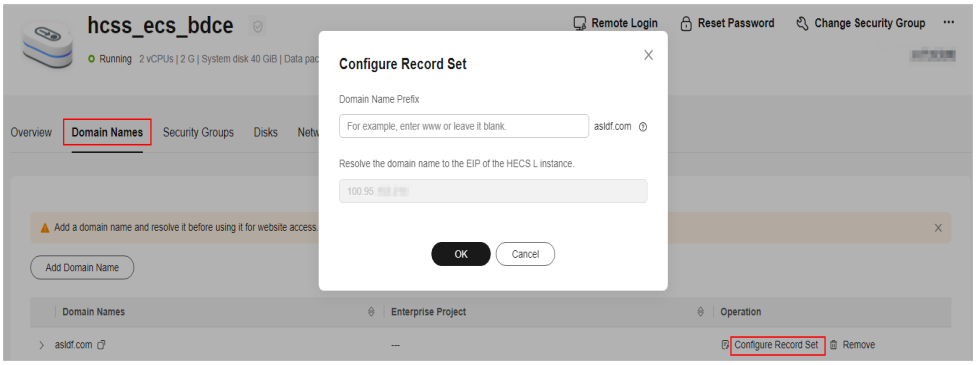
Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

1. In the navigation pane on the left, choose **Cloud Servers**. Locate the server and click its name.
2. On the **Server Details** page, click the **Domain Names** tab and click **Add Domain Name**.

Parameter	Setting
Domain Name	Enter a domain name that will be added for the instance, for example, wpwebsite.com. **NOTE** A domain name that is not registered can be added. After the domain name is added, it must be registered and licensed. To ensure that a domain name can be used normally, register the domain name and complete ICP licensing before adding the domain name.

Parameter	Setting
Enterprise Project	Select an enterprise project from the drop-down list. Enterprise projects are associated with public zones. You can manage public zones by enterprise project. **NOTE** This parameter is displayed only when your account is an enterprise account.

3. Click **OK**.
4. In the row containing the **wpwebsite.com** domain name, click **Configure Record Set**.



Parameter	Setting
Domain Name Prefix	If you enter a prefix, a subdomain is used for website access. Either the domain name or its subdomains can be resolved to the EIP of the instance. Suppose the domain name is wpwebsite.com. • If the domain name prefix is left empty, wpwebsite.com is resolved to the EIP. • If the domain name prefix is www, the subdomain www.wpwebsite.com is mapped to the EIP.
EIP	The EIP bound to the instance is displayed here automatically.

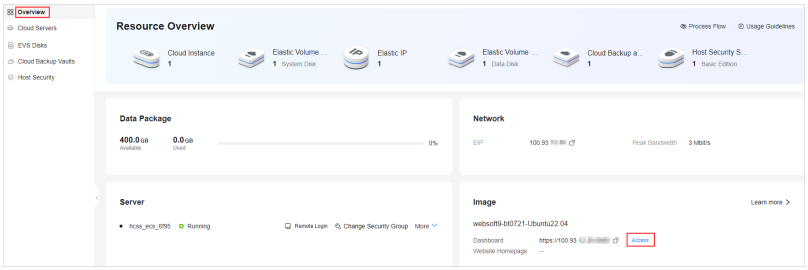
5. On the **Domain Names** tab, view the domain name resolution details.
6. Apply for ICP licensing for the domain name.

   To successfully access the server using a domain name, you must file the domain name. Domain name filing in the Huawei Cloud ICP license center is free of charge. For details, see **ICP Filing Process**.

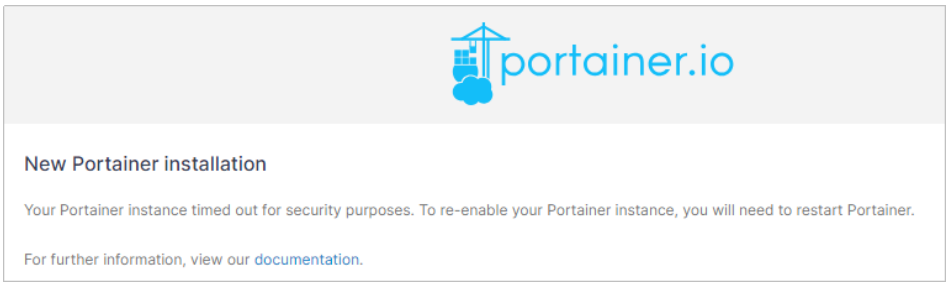
7.3 Initializing Portainer

The image application dashboard needs to be initialized only when you log in for the first time.

1. On the **Overview** page, click **Access** in the **Dashboard** field in the **Image** area.



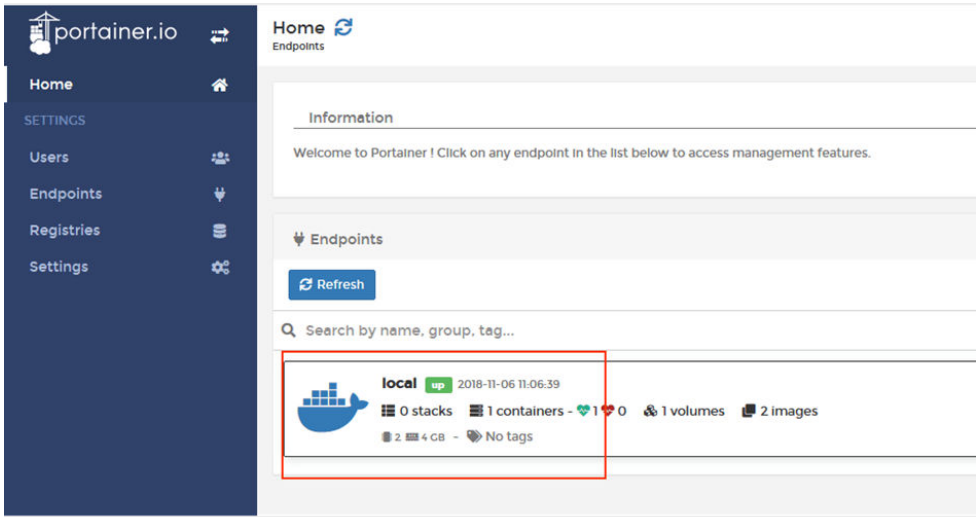
Portainer initialization has a certain validity period. If no users are created within the validity period, the following message is displayed. In this case, **log in to the server** and run **sudo docker restart portainer** to restart Portainer, and then create a user as soon as possible.



2. Set the username and password of the Portainer administrator and click **Create user**.

   If you have backup data for Portainer, click **Restore Portainer from backup** and upload the backup data to quickly set up the Portainer environment.

3. Choose **Home** and click **local** to use Portainer for Docker visual management.



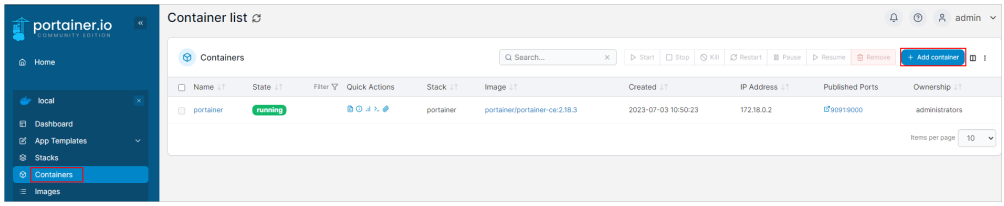
Then, you have obtained a Portainer hosting server. You can start using Portainer or follow the instructions provided in **Using Portainer to Deploy a MySQL Container** to create and connect to a MySQL container.

7.4 Using Portainer to Deploy a MySQL Container

This section uses the MySQL container as an example to describe how to use Portainer to visualize Docker management.

Creating a MySQL Container

1. Choose **Containers** in the left navigation pane and click **Add container**.



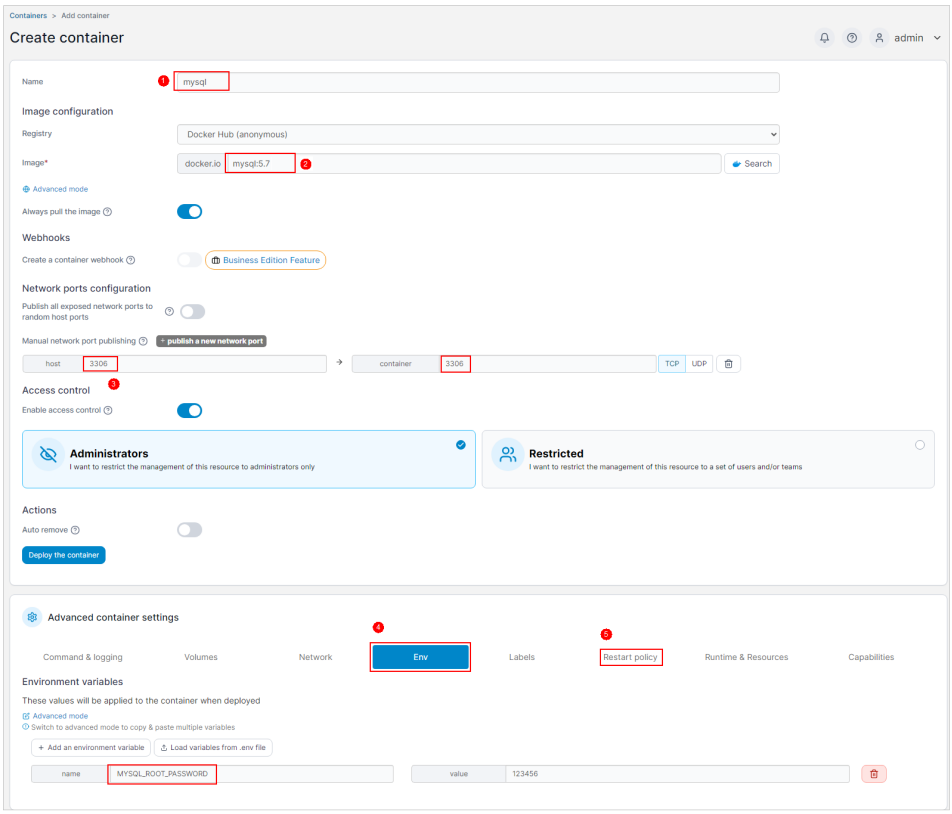
2. Specify MySQL container parameters.
   - ① **Name**: user-defined container name.
   - ② **Image**: container image name. For example, if you set this parameter to **mysql:5.7**, the system automatically pulls the MySQL5.7 container image from Docker Hub.
   - ③ Click **publish a new network port** and add port 3306 to ensure that the MySQL database can be accessed.
   - ④ **Env**: environment variables.
     - **MYSQL_ROOT_PASSWORD**: password of the root user of the database. This parameter is mandatory. It is used for logging in to the MySQL container. Keep the password secure.

       NOTE

       Ensure that the **MYSQL_ROOT_PASSWORD** parameter name is correctly entered, or the database cannot be connected.

- **MYSQL_DATABASE**: name (such as *wordpress*) of the database which is automatically created in the **value** row after the MySQL container is created. This parameter is optional.

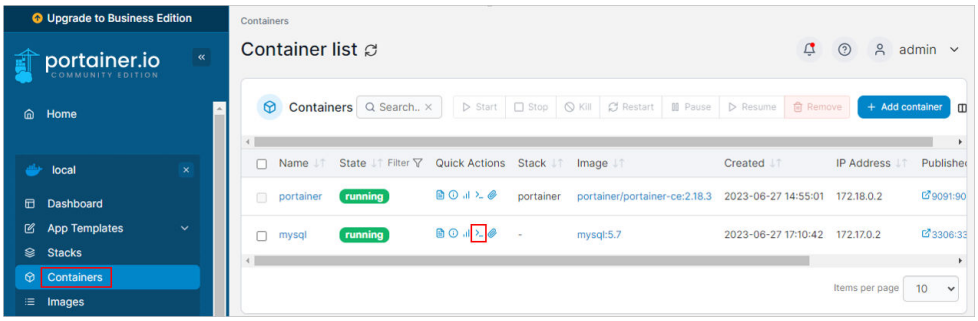
– ⑤ **Restart policy**: You are advised to select **Always** so that the container is always automatically restarted when it is stopped.



3. Click **Deploy the container** to create a MySQL container.

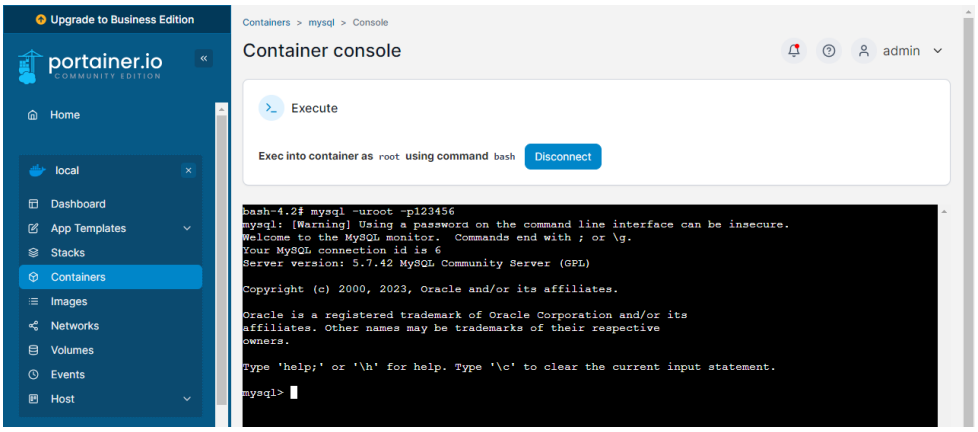
Connecting to the MySQL Container

1. Return to the container list and click >_ in the MySQL container row.



2. On the displayed page, click **Connect** to connect to the container.
3. Run the following command to log in to the MySQL database:

   mysql -uroot –p123456, in which **123456** is the value of **MYSQL_ROOT_PASSWORD**.



8 Using GitLab to Manage Teams and Projects

8.1 Overview

Applicable Scenario

GitLab is a DevOps platform that provides a complete solution for software development and operations, aiming to help teams collaborate on project development. On GitLab, you can protect your applications, and manage, plan, create, validate, package, release, configure, and monitor project source code. The GitLab image uses Ubuntu 22.04 and is deployed using Docker. The Nginx and Docker have been preconfigured in the image. This section describes how to use GitLab to manage teams and projects.

Resource Planning and Costs

The following resource planning is only for your reference. You can adjust it as required.

Resource	Configuration	Description
Cloud server	vCPUs: 2 Memory: 8 GiB	Select appropriate instance specifications based on your service requirements.
Image	GitLab	Select the GitLab application image.
Security group	Inbound rule: • Protocol/ Application: TCP • Port: 9001,9000 • Source: 0.0.0.0/0	• 9001: Allows external access to the application management page. • 9000: Allows external access to the dashboard of the application preinstalled in the image.

Resource	Configuration	Description
Domain name	wpwebsite.com	• If the website is only used for personal development or testing, there is no need to add a domain name. • If the website is open to the public, add and resolve a domain name for the cloud server.

Process

Step	Procedure	Description
1	**Purchasing and Configuring a FlexusL Instance**	Purchase and configure a FlexusL instance.
2	**Initializing GitLab**	Log in to GitLab and select the desired language for the Admin Area.
3	**Using GitLab**	Create a project, add project members, and integrate codes.

8.2 Purchasing and Configuring a FlexusL Instance

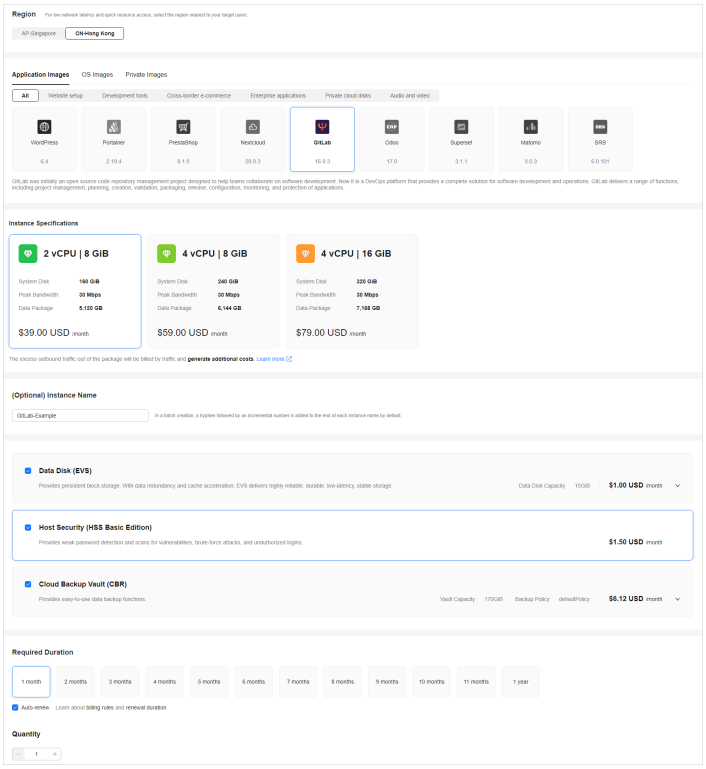
This section describes how to purchase and configure a FlexusL instance, including purchasing a cloud server, setting the server login password, logging in to the server, configuring a security group, and adding and resolving a domain name.

Procedure

Procedure	Description
Step 1: Purchase a FlexusL Instance	Purchase a FlexusL instance and select the GitLab application image.
Step 2: Configure a Security Group	Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.
(Optional) Step 3: Add and Resolve a Domain Name	Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

Step 1: Purchase a FlexusL Instance

1. Log in to the FlexusL console.
2. Click **Buy FlexusL**.
3. Specify required parameters for the FlexusL instance.



Parameter	Example	Description
Region	CN-Hong Kong	For low network latency and quick resource access, select the region nearest to your target users. After a FlexusL instance is created, the region cannot be changed. Exercise caution when selecting a region.
Application Images	GitLab	Select the GitLab application image.
Instance Specifications	2 vCPUs | 8 GiB memory	Select instance specifications as needed.
Instance Name	GitLab-Example	Customize an instance name that is easy to identify, for example, GitLab-Example.

Parameter	Example	Description
(Optional) Associated Services	• Data disk: 10 GiB • Host security • Cloud backup vault: 170 GiB	You can bundle any of the services to your FlexusL instances as needed: EVS, HSS (basic edition), and CBR and set specifications as needed.
Required Duration	1 month	The minimum duration of a purchase is one month and the maximum duration is three years. Auto-renew is enabled by default, which means the purchased FlexusL instances will be automatically renewed before they expire. If you do not enable auto-renew during the purchase process, you can still enable it later after the instances are created. Monthly subscription allows you to renew the subscription for one month every time. The number of renewal times is not limited. For more information about auto-renewal rules, see **Auto-Renewal Rules**.
Quantity	1	Set the number of FlexusL instances to be purchased.

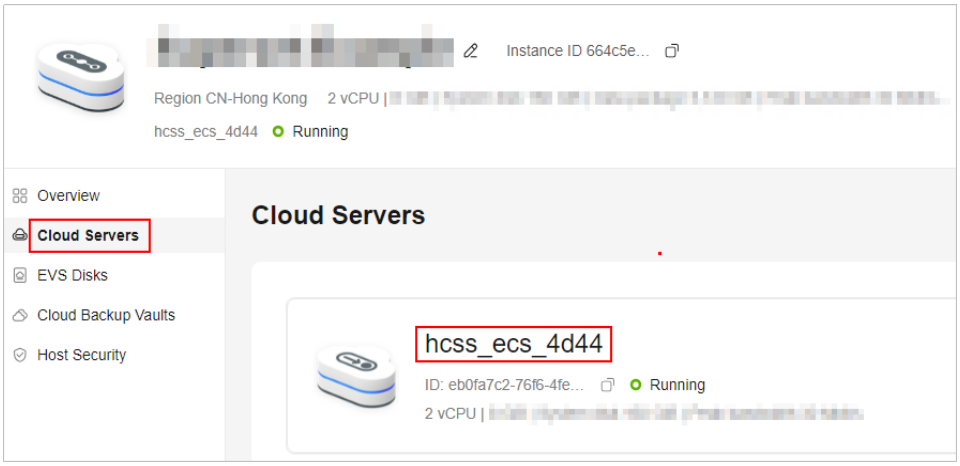
4. Click **Buy Now**.

   On the displayed page, confirm the order details, read and select the agreement, and click **Submit**.
5. Select a payment method and complete the payment.
6. Go back to the FlexusL console and view the purchased FlexusL instance.

Step 2: Configure a Security Group

Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.

1. Log in to the **console** and click a resource card to go to the instance details page.
2. In the navigation pane on the left, choose **Cloud Servers** and then click the server name.



3. On the **Security Groups** tab, click **Add Rule**. In the displayed dialog box, add rules displayed in the following figure and click **OK**.

   The following figure only displays common rules. You can add more rules as needed.

Table 8-1 Security group rules

Priority	Action	Type	Protocol & Port	Source	Description
100	Allow	IPv4	TCP: 9001	0.0.0.0/0	Allows external access to the application management page.
100	Allow	IPv4	TCP: 9000	0.0.0.0/0	Allows external access to the application O&M dashboard.

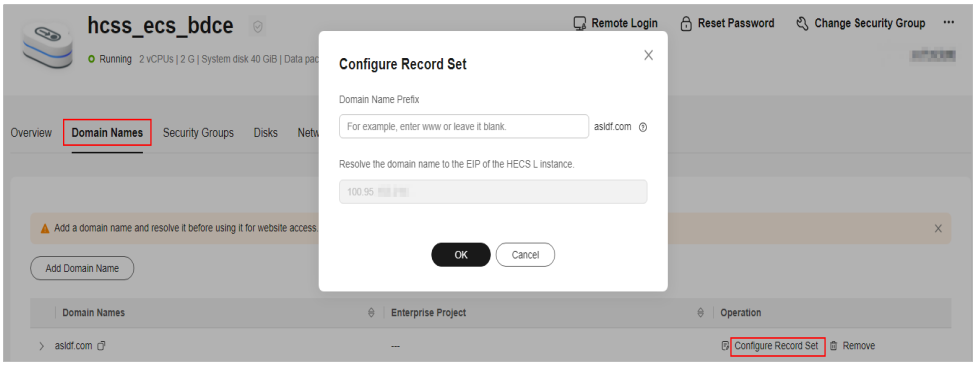
(Optional) Step 3: Add and Resolve a Domain Name

Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

1. In the navigation pane on the left, choose **Cloud Servers**. Locate the server and click its name.
2. On the **Server Details** page, click the **Domain Names** tab and click **Add Domain Name**.

Parameter	Setting
Domain Name	Enter a domain name that will be added for the instance, for example, wpwebsite.com. **NOTE** A domain name that is not registered can be added. After the domain name is added, it must be registered and licensed. To ensure that a domain name can be used normally, register the domain name and complete ICP licensing before adding the domain name.
Enterprise Project	Select an enterprise project from the drop-down list. Enterprise projects are associated with public zones. You can manage public zones by enterprise project. **NOTE** This parameter is displayed only when your account is an enterprise account.

3. Click **OK**.
4. In the row containing the **wpwebsite.com** domain name, click **Configure Record Set**.



Parameter	Setting
Domain Name Prefix	If you enter a prefix, a subdomain is used for website access. Either the domain name or its subdomains can be resolved to the EIP of the instance. Suppose the domain name is wpwebsite.com. • If the domain name prefix is left empty, wpwebsite.com is resolved to the EIP. • If the domain name prefix is www, the subdomain www.wpwebsite.com is mapped to the EIP.
EIP	The EIP bound to the instance is displayed here automatically.

5. On the **Domain Names** tab, view the domain name resolution details.
6. Apply for ICP licensing for the domain name.

To successfully access the server using a domain name, you must file the domain name. Domain name filing in the Huawei Cloud ICP license center is free of charge. For details, see **ICP Filing Process**.

8.3 Initializing GitLab

The image application dashboard needs to be initialized only when you log in for the first time.

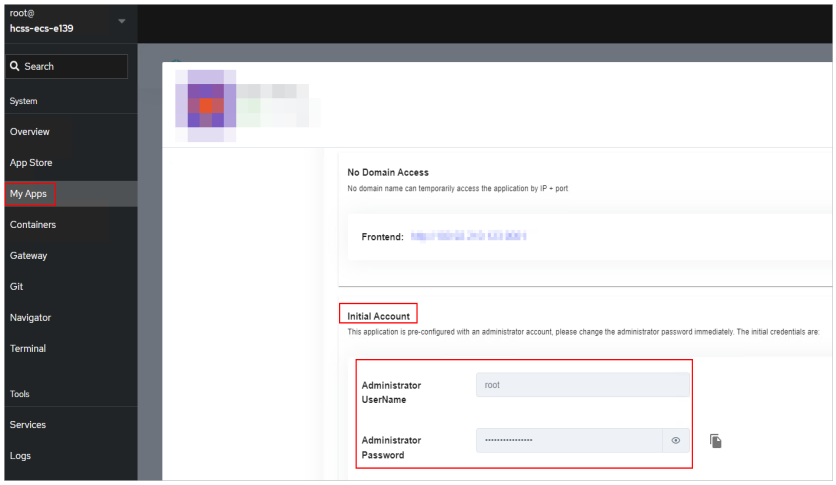
1. Obtain the administrator username and password for logging in to GitLab.

   a. In the address bar of a local browser, enter **http://*EIP*:9000** to log in to the application O&M dashboard.

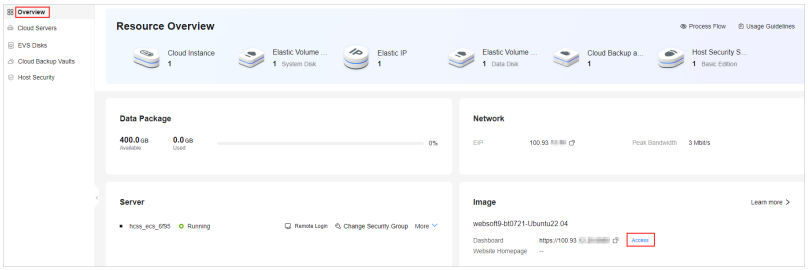
      The username and password for logging in to the dashboard are the **root** user and password of the FlexusL instance. A FlexusL instance does not have an initial password. **Reset the password** and use it to log in to the dashboard.

   b. Choose **My Apps** and click the App icon.

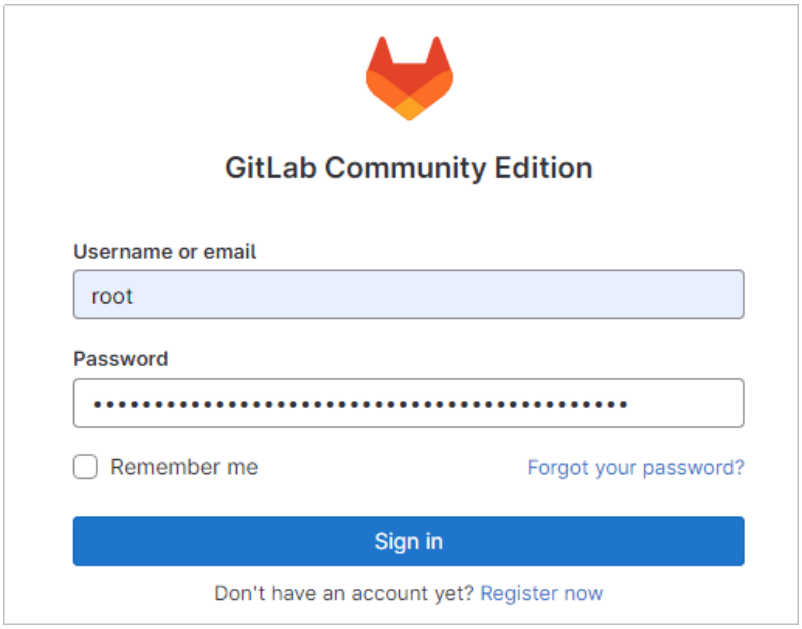
   c. Choose **Access** and click **Initial Account** to view the username and password of the administrator.



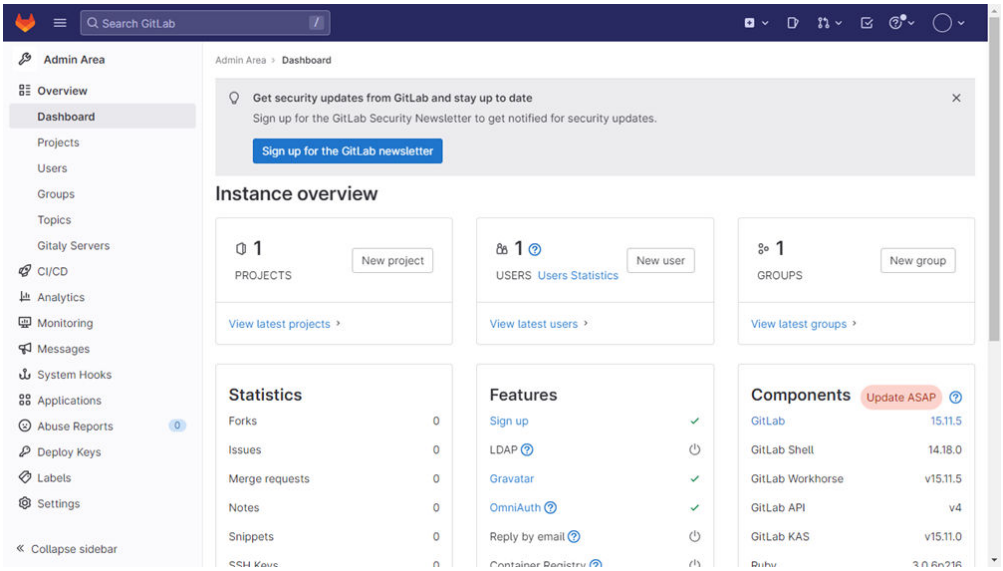
2. On the **Overview** page, click **Access** in the **Dashboard** field in the **Image** area.



3. Enter the username and password obtained in step 1.



4. Click **Sign in** to access the GitLab Admin Area.



After initializing GitLab, you will have a server that uses the GitLab application image. You can start using GitLab or follow the steps in **Using GitLab** to create a project, add project members, and integrate codes.

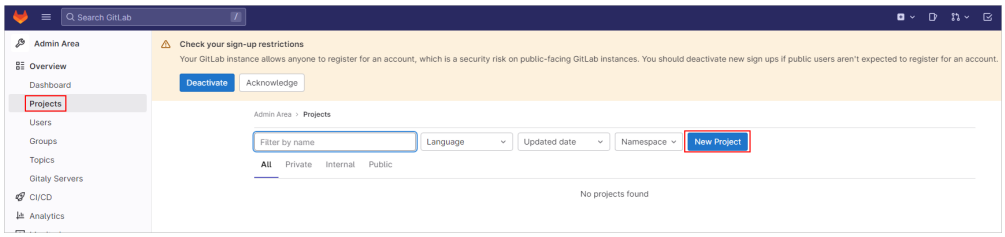
8.4 Using GitLab

This section describes how to use GitLab to create a project, add project members, and integrate codes.

Creating a Project

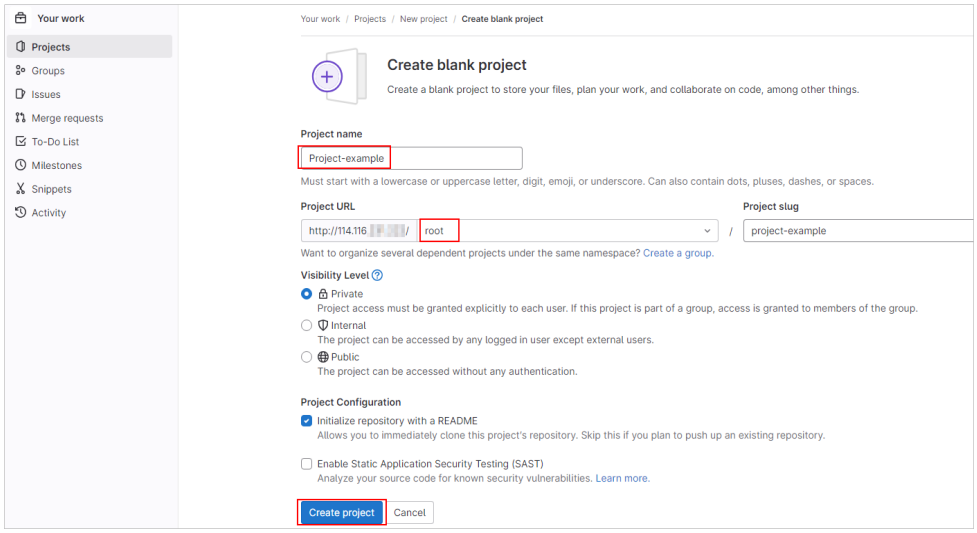
This example demonstrates that how an administrator creates a project, initializes the project, adds a development branch dev, and hides the master branch main from developers.

1. Click in the upper left corner and choose **admin** to access the management center.
2. Choose **Projects** and click **New project**.

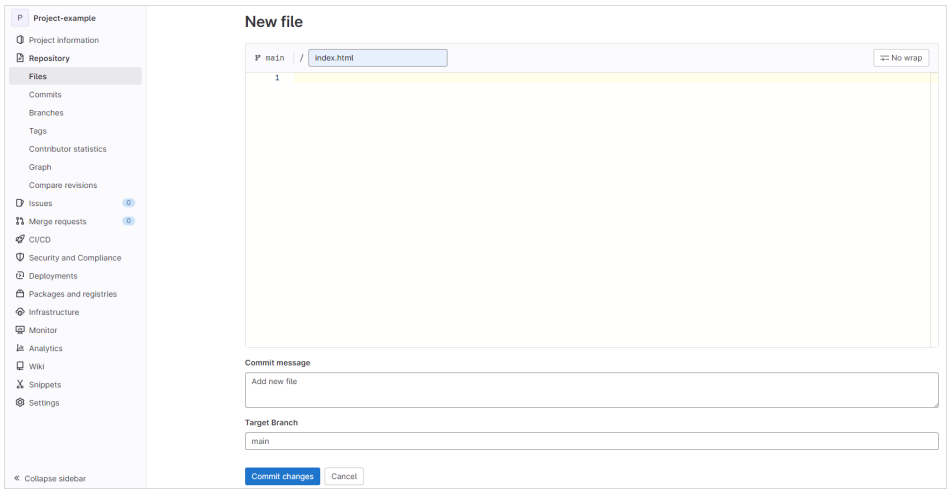


3. Click **Create blank project**.
4. Configure parameters for the project and click **Create project**.
   - **Project name**: Enter a project name that is easy to identify, for example, **Project-example**.
   - **Project URL**: It consists of the public IP address of the cloud service and the administrator account. Select **root**.

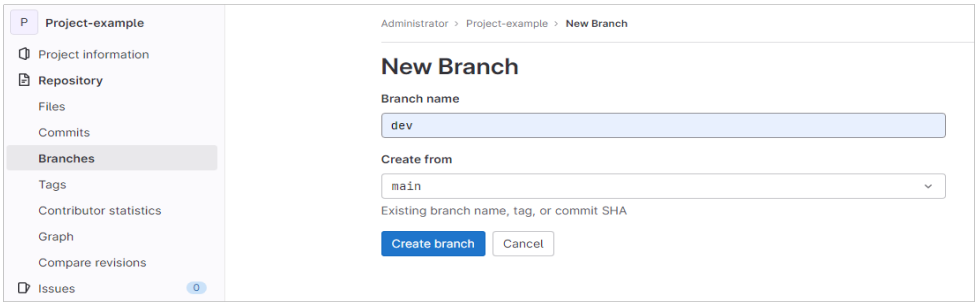
   Retain the default values for other parameters.



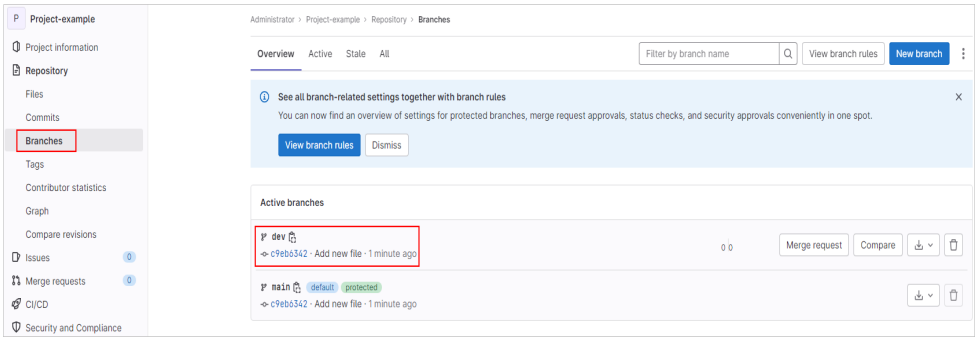
5. Choose **Repository > Files**, click > **New file**, add the **index.html** file to **main**, and click **Commit changes**.



6. Choose **Repository > Branches**, click **New branch**, and configure the development branch dev.
   - **Branch name**: dev
   - **Create from**: main



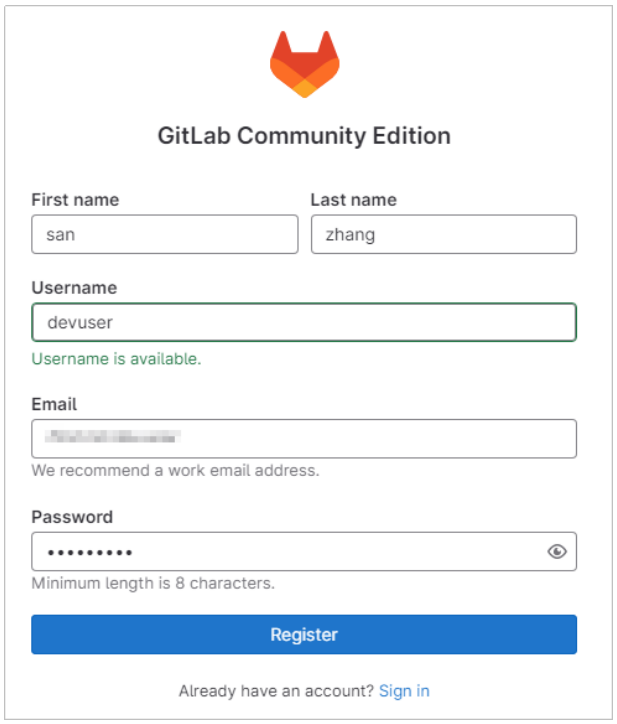
7. Click **Create branch**. Then you can view the created development branch dev.



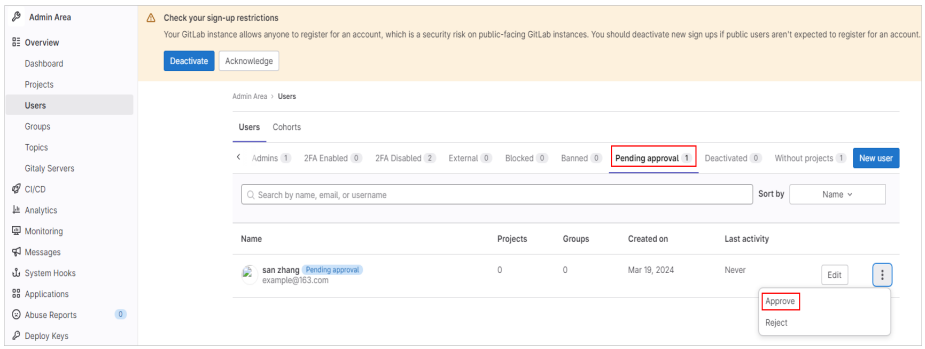
Adding Project Members

After registering an account, users cannot directly log in to GitLab. To let them log in, the administrator needs to approve their registration, invite them to be members of the project, and assign permissions to them.

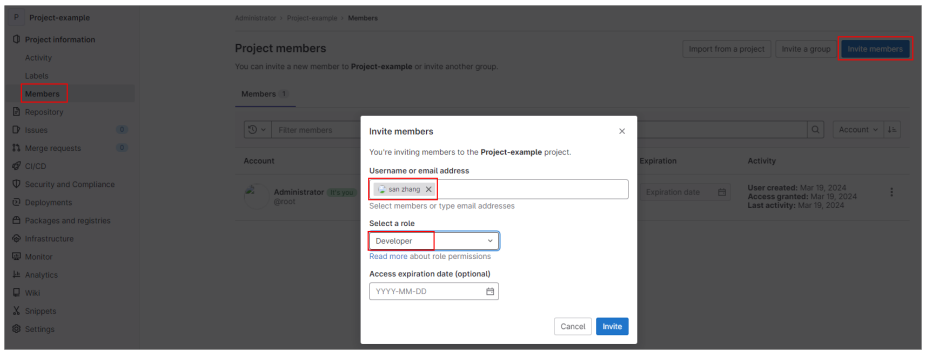
1. Register an account.
   a. Visit http://*public IP address of the server* or http://*domain name*.
   b. Click **Register now**, enter registration information, and click **Register**.



2. The administrator approves the registration.
   a. Click in the upper left corner and select **admin**.
   b. On the **Users** page, select **Pending approval**, and click **Approve**.



3. The administrator invites users to join the project team and assigns permissions to them.
   a. Click in the upper left corner, choose **Projects > View all projects**, and click **Administrator/Project-example**.
   b. Choose **Project information** > **Members** and click **Invite members**.
   c. Enter the username or email address, assign **Developer** permission to users, and click **Invite**.

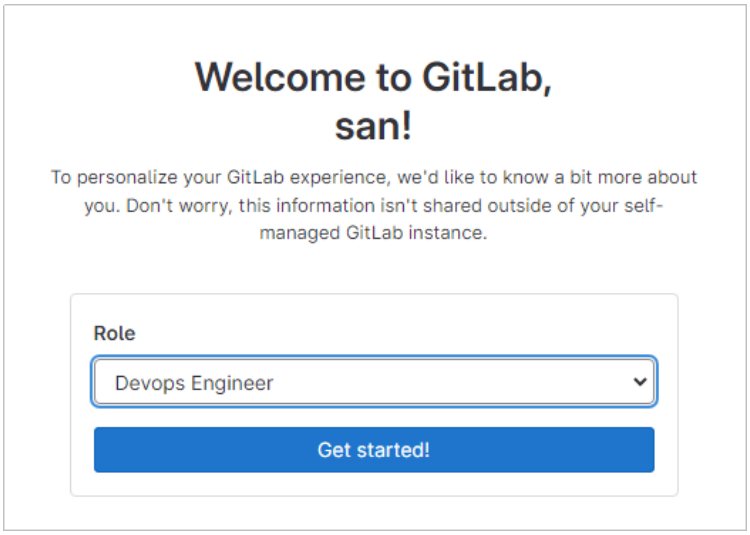


You can assign users the following five roles: **Guest**, **Reporter**, **Developer**, **Maintainer**, or **Owner**.

- **Guest**: allows users to create issues and post comments, and denies them to read or write the repository.
- **Reporter**: allows users to clone codes, and denies them to submit code.
- **Developer**: allows users to clone, develop, submit, and push code.
- **Master**: allows users to create projects, add tags, protect branches, add new members to the project, and edit projects.
- **Owner**: allows users to assign permissions to access projects, delete or migrate projects, and manage project team members.

4. Visit http://*Public IP address of the server* or http://*Domain name*. Enter the username and password to log in to GitLab.

   When members log in to GitLab for the first time, select a role for better experience.

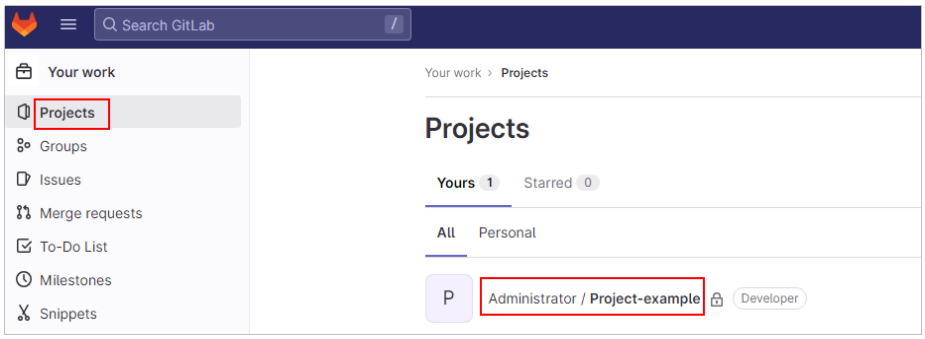


Integrating Codes

1. The developers edit and submit code.

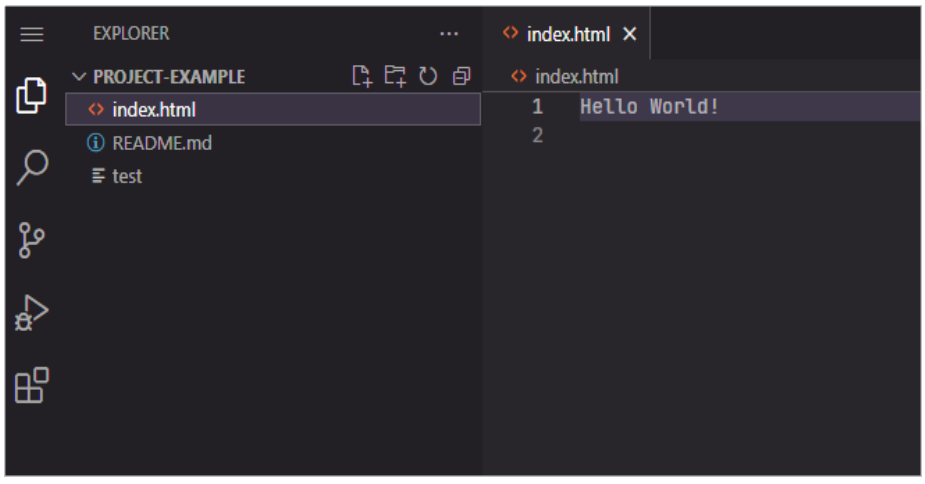
   a. Visit http://*Public IP address of the server* or http://*Domain name* to log in to GitLab.

b. Choose **Projects** and click the target project name.



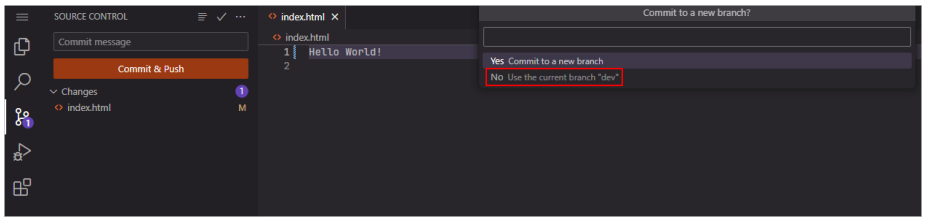
c. Choose **Repository** > **Branch** and click **dev**.

d. Click **Web IED**, select a file to edit. For example, edit the index.html file.

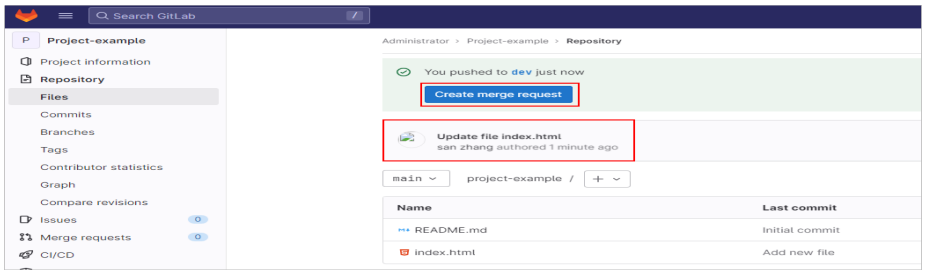


e. Choose  on the left navigation pane to go to the **SOURCE CONTROL**, and click **Commit & Push**.

Click **No** when **Commit to a new branch?** is displayed.

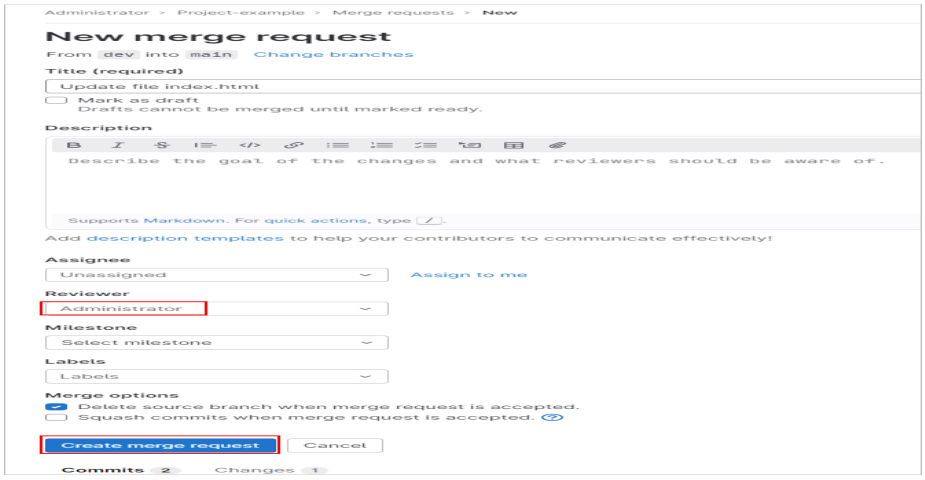


f. Choose **Repository** > **Files** on the project menu bar. You can view **Update file index.html**. Click **Create merge request**



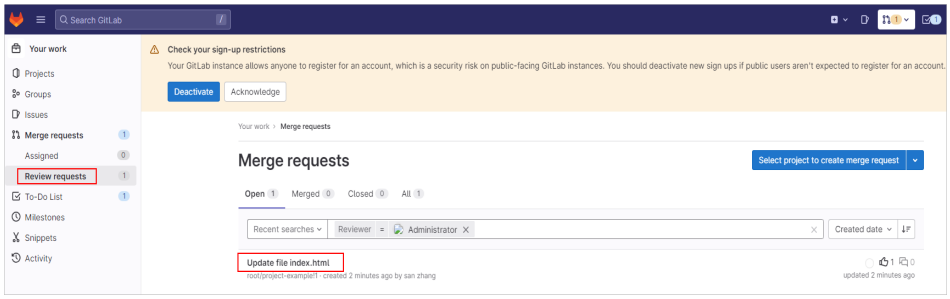
g. Set request information and click **Create merge request**.

Specify the **Reviewer** to **Administrator** and retain the default values for other parameters.



2. The administrator reviews the merge request.

a. Click  in the upper right corner, choose **Merge requests > New merge request**, and click the specific request title.



b. Click **Merge** to merge the index.html file from **dev** into **main**.

9 Using PrestaShop to Build an E-Commerce Website

9.1 Overview

Applicable Scenario

PrestaShop is a full-featured, cross-platform, and open source e-commerce platform written in the PHP programming language with support for the MySQL database management system. PrestaShop supports transactions using different currencies and almost all payment methods, such as Paypal. It is a good choice for you to build foreign trade websites. The PrestaShop application image uses Ubuntu 22.04 and is deployed using Docker. The Nginx, MySQL, phpMyAdmin, and Docker have been preconfigured in the image. This section describes how to use PrestaShop to build an e-commerce website.

Resource Planning and Costs

This practice uses the following resource planning as an example. You can adjust it as required.

Resource	Configuration	Description
Cloud server	• vCPUs: 2 • Memory: 2 GiB	Select appropriate instance specifications based on your service requirements.
Image	PrestaShop	Select the PrestaShop application image.

Resource	Configuration	Description
Security group	Inbound rule: • Protocol/ Application: TCP • Port: 9001,9000,3306 • Source: 0.0.0.0/0	• 9001: Allows external access to the application management page. • 9000: Allows external access to the dashboard of the application preinstalled in the image. • 3306: Allows access to MySQL databases.
Domain name	wpwebsite.com	• If the website is only used for personal development or testing, there is no need to add a domain name. • If the website is open to the public, add and resolve a domain name for the cloud server.

Process

Step	Procedure	Description
1	Purchasing and Configuring a FlexusL Instance	Purchase and configure a FlexusL instance.
2	Initializing PrestaShop	Log in to PrestaShop and select the desired language for the management page.
3	Deploying PrestaShop	On the dashboard, perform the following operations: • Manage language packages and set languages. • Manage modules • Back up databases. • Configure domain names.

9.2 Purchasing and Configuring a FlexusL Instance

This section describes how to purchase and configure a FlexusL instance, including purchasing a cloud server, setting the server login password, logging in to the server, configuring a security group, and adding and resolving a domain name.

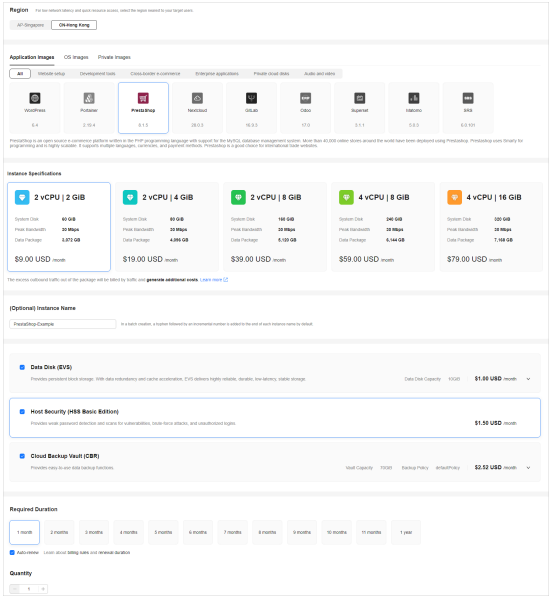
Procedure

Procedure	Description
Step 1: Purchase a FlexusL Instance	Purchase a FlexusL instance and select the PrestaShop application image.

Procedure	Description
Step 2: Configure a Security Group	Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.
(Optional) Step 3: Add and Resolve a Domain Name	Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

Step 1: Purchase a FlexusL Instance

1. Log in to the FlexusL console.
2. Click **Buy FlexusL**.
3. Specify required parameters for the FlexusL instance.



Parameter	Example	Description
Region	CN-Hong Kong	For low network latency and quick resource access, select the region nearest to your target users. After a FlexusL instance is created, the region cannot be changed. Exercise caution when selecting a region.
Application Images	PrestaShop	Select the PrestaShop application image.

Parameter	Example	Description
Instance Specifications	2 vCPUs | 2 GiB memory and 60 GiB system disk	Select instance specifications as needed.
Instance Name	PrestaShop-Example	Customize an instance name that is easy to identify, for example, PrestaShop-Example.
(Optional) Associated Services	• Data disk: 10 GiB • Host security • Cloud backup vault: 70 GiB	You can bundle any of the services to your FlexusL instances as needed: EVS, HSS (basic edition), and CBR and set specifications as needed.
Required Duration	1 month	The minimum duration of a purchase is one month and the maximum duration is three years. Auto-renew is enabled by default, which means the purchased FlexusL instances will be automatically renewed before they expire. If you do not enable auto-renew during the purchase process, you can still enable it later after the instances are created. Monthly subscription allows you to renew the subscription for one month every time. The number of renewal times is not limited. For more information about auto-renewal rules, see **Auto-Renewal Rules**.
Quantity	1	Set the number of FlexusL instances to be purchased.

4. Click **Buy Now**.

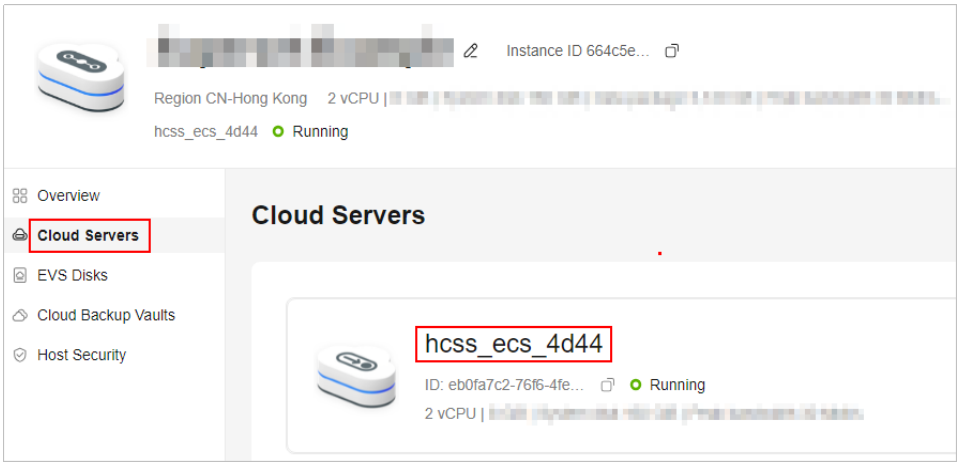
   On the displayed page, confirm the order details, read and select the agreement, and click **Submit**.
5. Select a payment method and complete the payment.
6. Go back to the FlexusL console and view the purchased FlexusL instance.

Step 2: Configure a Security Group

Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.

1. Log in to the **console** and click a resource card to go to the instance details page.

2. In the navigation pane on the left, choose **Cloud Servers** and then click the server name.



3. On the **Security Groups** tab, click **Add Rule**. In the displayed dialog box, add rules displayed in the following figure and click **OK**.

   The following figure only displays common rules. You can add more rules as needed.

Table 9-1 Security group rules

Priority	Action	Type	Protocol & Port	Source	Description
100	Allow	IPv4	TCP: 3306	0.0.0.0/0	Allows access to MySQL databases.
100	Allow	IPv4	TCP: 9001	0.0.0.0/0	Allows external access to the application management page.
100	Allow	IPv4	TCP: 9000	0.0.0.0/0	Allows external access to the application O&M dashboard.

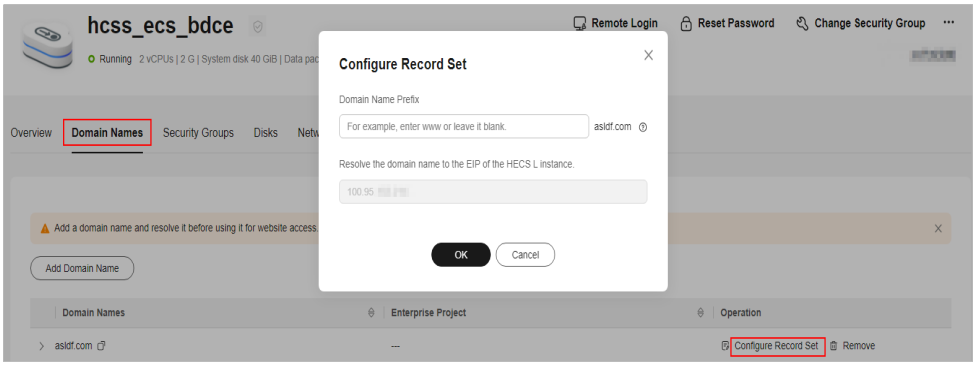
(Optional) Step 3: Add and Resolve a Domain Name

Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

1. In the navigation pane on the left, choose **Cloud Servers**. Locate the server and click its name.
2. On the **Server Details** page, click the **Domain Names** tab and click **Add Domain Name**.

Parameter	Setting
Domain Name	Enter a domain name that will be added for the instance, for example, wpwebsite.com. **NOTE** A domain name that is not registered can be added. After the domain name is added, it must be registered and licensed. To ensure that a domain name can be used normally, register the domain name and complete ICP licensing before adding the domain name.
Enterprise Project	Select an enterprise project from the drop-down list. Enterprise projects are associated with public zones. You can manage public zones by enterprise project. **NOTE** This parameter is displayed only when your account is an enterprise account.

3. Click **OK**.
4. In the row containing the **wpwebsite.com** domain name, click **Configure Record Set**.



Parameter	Setting
Domain Name Prefix	If you enter a prefix, a subdomain is used for website access. Either the domain name or its subdomains can be resolved to the EIP of the instance. Suppose the domain name is wpwebsite.com. • If the domain name prefix is left empty, wpwebsite.com is resolved to the EIP. • If the domain name prefix is www, the subdomain www.wpwebsite.com is mapped to the EIP.
EIP	The EIP bound to the instance is displayed here automatically.

5. On the **Domain Names** tab, view the domain name resolution details.
6. Apply for ICP licensing for the domain name.

To successfully access the server using a domain name, you must file the domain name. Domain name filing in the Huawei Cloud ICP license center is free of charge. For details, see **ICP Filing Process**.

9.3 Initializing PrestaShop

The image application dashboard needs to be initialized only when you log in for the first time.

NOTICE

When you visit **http://***Public IP address*:**9001/admin** to access the management console for the first time, PrestaShop generates a random character string following *admin* for encryption. Keep the encrypted address in mind because you can only use it to access the management console. For example, when you visit **http://1.1.1.1:9001/admin** to access the management console for the first time, the address automatically changes to **http://1.1.1.1:9001/admin923reep1k**.

You can also reset the address for accessing the management console, but this will lead to data loss. Please keep the encrypted address safe.

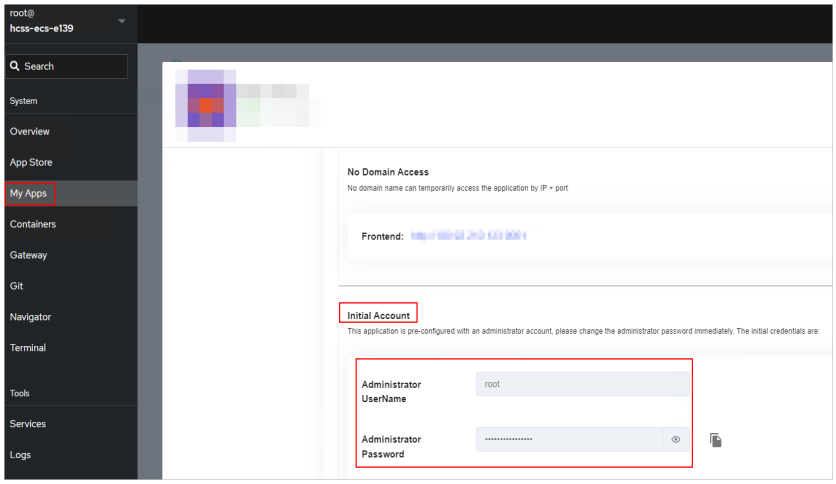
1. Obtain the administrator username and password for logging in to PrestaShop.

   a. In the address bar of a local browser, enter **http://***EIP*:**9000** to log in to the application O&M dashboard.

      The username and password for logging in to the dashboard are the **root** user and password of the FlexusL instance. A FlexusL instance does not have an initial password. **Reset the password** and use it to log in to the dashboard.

   b. Choose **My Apps** and click the App icon.

   c. Choose **Access** and click **Initial Account** to view the username and password of the administrator.



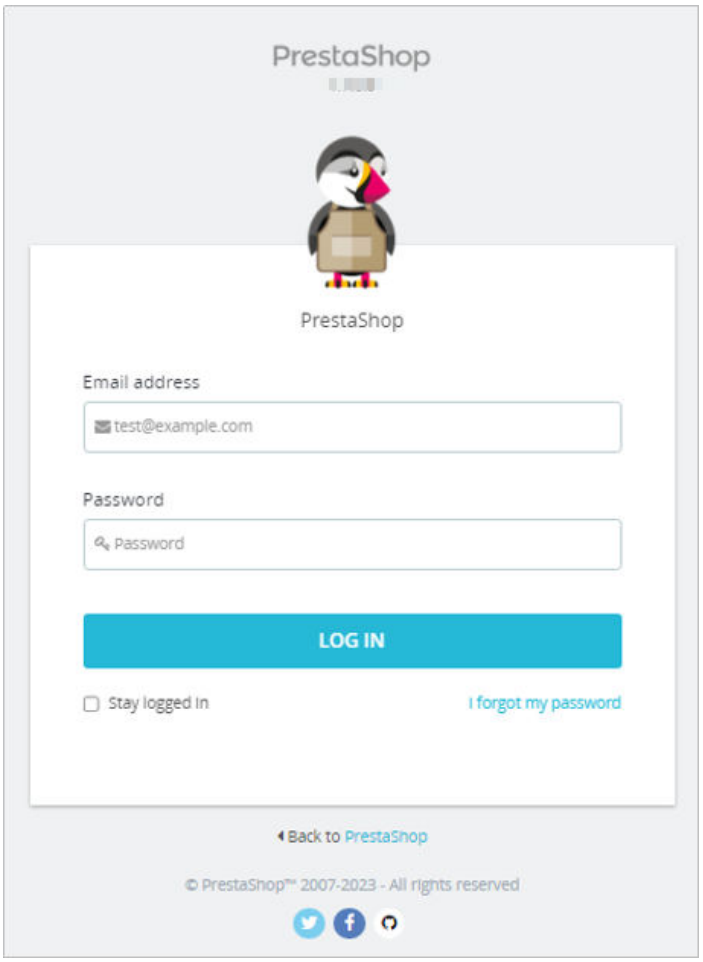
2. Visit **http://***Public IP address*:**9001/admin** in the address bar of a local browser to access the management console.

NOTICE

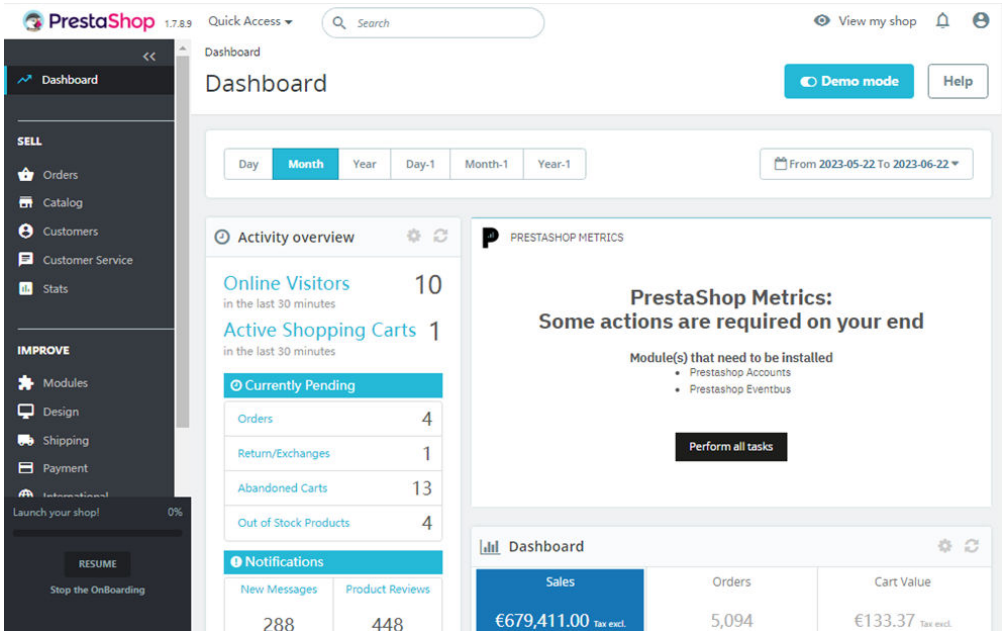
When you visit **http://***Public IP address***:9001/admin** to access the management console for the first time, PrestaShop generates a random character string following *admin* for encryption. Keep the encrypted address in mind because you can only use it to access the management console. For example, when you visit **http://1.1.1.1:9001/admin** to access the management console for the first time, the address automatically changes to **http://1.1.1.1:9001/admin923reep1k**.

You can also reset the address for accessing the management console, but this will lead to data loss. Please keep the encrypted address safe.

3. Enter the password obtained in step 1.



4. Click **LOG IN** to log in to PrestaShop.



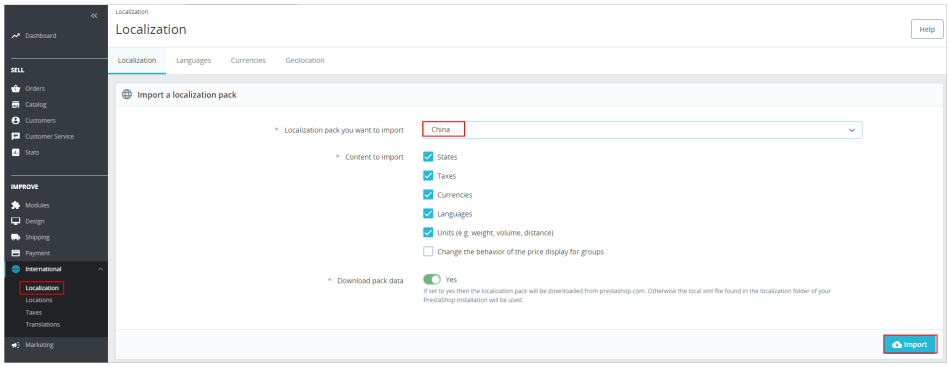
Then, you have obtained a PrestaShop hosting server. You can start operating the website or follow the steps in **Deploying PrestaShop** to manage language packages and set languages, install modules, back up databases, and configure domain names.

9.4 Deploying PrestaShop

Managing Language Packages and Setting Languages

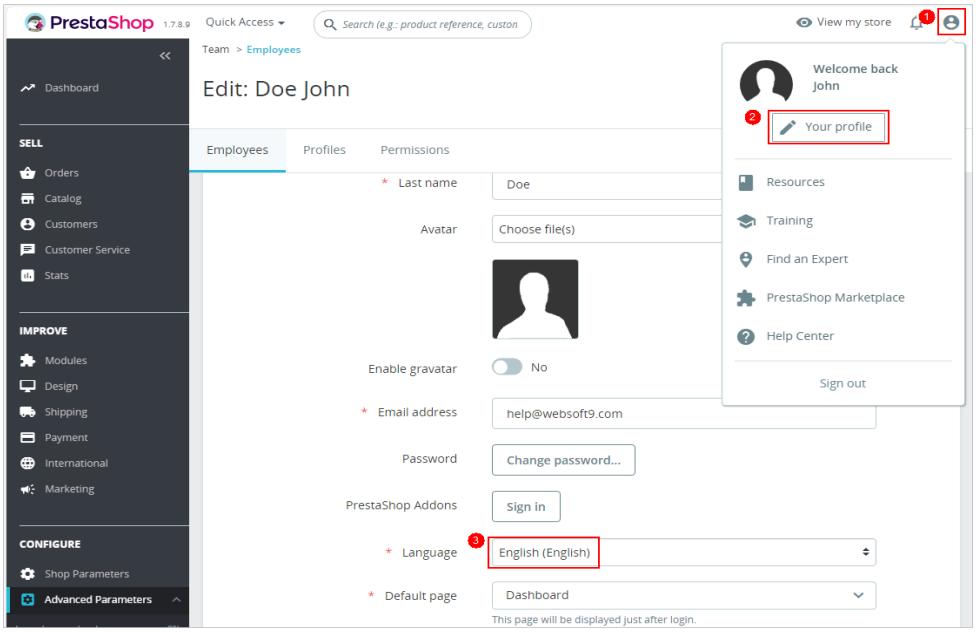
PrestaShop has a built-in multi-language system. You only need to select the corresponding language and import it to your PrestaShop system online.

- Import a language package.
  a. Choose **IMPROVE** > **International** > **Localization**, select the language package you want to import, and click **Import**.



  b. Click the **Languages** tab to view the language packages that have been imported.
- Set the language of the dashboard.

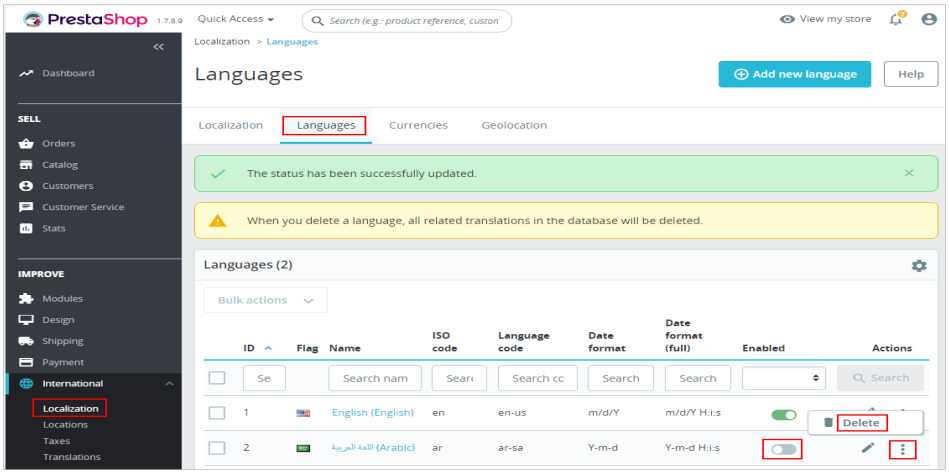
  Click the avatar on the right corner, select **Your profile** and set the language. Click **Save**.



- Delete a language package.

  You can delete unnecessary language packages.

  a. Choose **International** > **Localization** > **Languages** and disable the language package you want to delete.



  b. In the **Actions** list, click **Delete** to delete the language that is disabled.

Managing Modules

PrestaShop has a rich module library, which greatly expands the functions of PrestaShop.

- Choose **Modules > Marketplace**, find the required plug-in, and click **Buy Now** or **Install** to purchase and install the module.

  You can also click **Upload a module** to install other modules.

- Choose **Modules** > **Module Manager**.
  - On the **Modules** tab page, you can disable, configure, uninstall, and restore the modules.

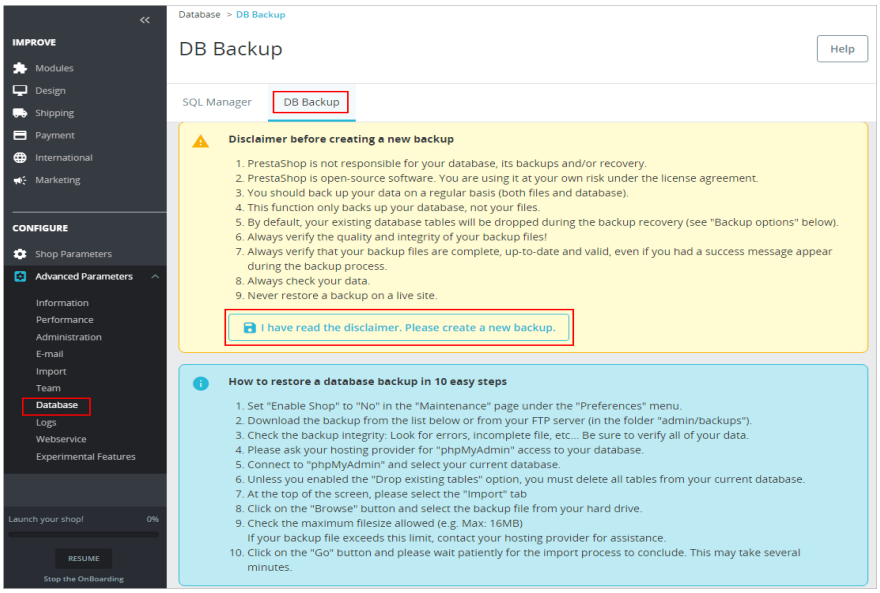
- On the **Alerts** tab page, you can view the notifications of modules.
- On the **Updates** tab page, you can view modules that can be updated.

Backing Up Databases

PrestaShop allows you to back up databases.

1. In the navigation pane on the left, choose **Advanced Parameters** > **Database** > **DB Backup**, read the disclaimer, and click **I have read the disclaimer. Please create a new backup.**

   You can follow the instructions on the following page to restore a database.

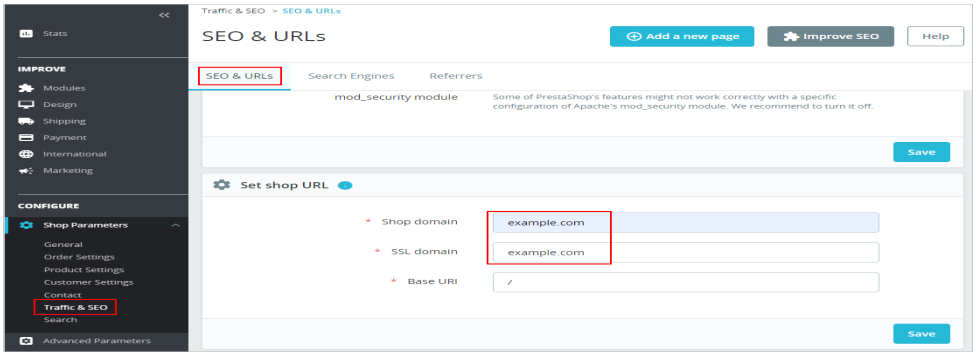


2. Click **Download the backup file** to download the backup file to your local PC.

Configuring Domain Names

After a domain name is **added and resolved**, you need to configure the domain name on PrestaShop so that your users can use the domain name to access PrestaShop.

1. Choose **Shop Parameters** > **General** > **Maintenance** and set **Enable Shop** to **Yes**.
2. Choose **Shop Parameters** > **Traffic & SEO**. On the **Set shop URL** area of **SEO & URLs** page, set the **Shop domain** and **SSL domain**. The values must be the same as those of the server domain name.



3. Click **Save**.

10 Using Odoo to Build an ERP System

10.1 Overview

Applicable Scenario

Odoo is an open-source ERP/CRM software that integrates a comprehensive suite of applications for managing all aspects of your business, including procurement, inventory, finance and accounting, marketing, manufacturing, human resources management, service support, e-commerce, and website building, achieving fully automated service processes. The Odoo application image uses Ubuntu 22.04 and is deployed using Docker. The Nginx, pgAdmin, and Docker have been preconfigured in the image. This section describes how to use Odoo to build an ERP system.

Resource Planning and Costs

This practice uses the following resource planning as an example. You can adjust it as required.

Resource	Configuration	Description
Cloud server	• vCPUs: 2 • Memory: 2 GiB	Select appropriate instance specifications based on your service requirements.
Image	Odoo	Select the Odoo application image.
Security group	Inbound rule: • Protocol/ Application: TCP • Port: 9001 • Source: 0.0.0.0/0	9001: Allows external access to the application management page.

Resource	Configuration	Description
Domain name	wpwebsite.com	• If the website is only used for personal development or testing, there is no need to add a domain name. • If the website is open to the public, add and resolve a domain name for the cloud server.

Process

Step	Procedure	Description
1	**Purchasing and Configuring a FlexusL Instance**	Purchase and deploy a FlexusL instance, configure security groups, and configure domain names.
2	**Initializing Odoo**	Log in to Odoo and create databases.
3	**Deploying Odoo**	On the dashboard, perform the following operations: • Configure general settings. • Obtain administrator information and technical support. • Manage databases.

10.2 Purchasing and Configuring a FlexusL Instance

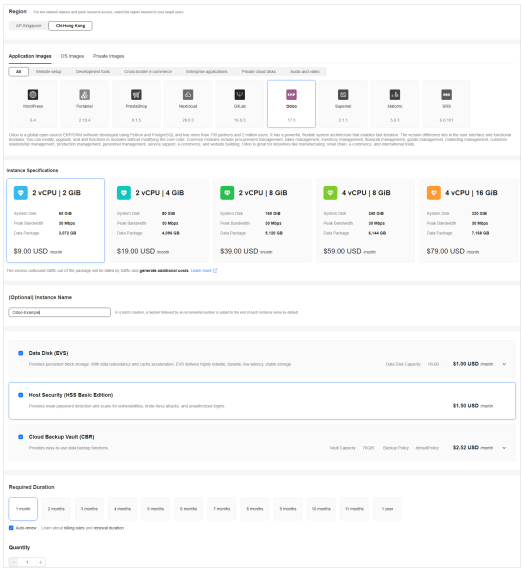
This section describes how to purchase and configure a FlexusL instance, including purchasing a cloud server, setting the server login password, logging in to the server, configuring a security group, and adding and resolving a domain name.

Procedure

Procedure	Description
Step 1: Purchase a FlexusL Instance	Purchase a FlexusL instance and select the Odoo application image.
Step 2: Configure a Security Group	Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.
(Optional) Step 3: Add and Resolve a Domain Name	Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

Step 1: Purchase a FlexusL Instance

1. Log in to the FlexusL console.
2. Click **Buy FlexusL**.
3. Specify required parameters for the FlexusL instance.



Parameter	Example	Description
Region	CN-Hong Kong	For low network latency and quick resource access, select the region nearest to your target users. After a FlexusL instance is created, the region cannot be changed. Exercise caution when selecting a region.
Application Images	Odoo	Select the Odoo application image.
Instance Specifications	2 vCPUs | 2 GiB memory and 60 GiB system disk	Select instance specifications as needed.
(Optional) Instance Name	Odoo-Example	Customize an instance name that is easy to identify, for example, Odoo-Example.

Parameter	Example	Description
(Optional) Associated Services	• Data disk: 10 GiB • Host security • Cloud backup vault: 70 GiB	You can bundle any of the services to your FlexusL instances as needed: EVS, HSS (basic edition), and CBR and set specifications as needed.
Required Duration	1 month	The minimum duration of a purchase is one month and the maximum duration is three years. Auto-renew is enabled by default, which means the purchased FlexusL instances will be automatically renewed before they expire. If you do not enable auto-renew during the purchase process, you can still enable it later after the instances are created. Monthly subscription allows you to renew the subscription for one month every time. The number of renewal times is not limited. For more information about auto-renewal rules, see **Auto-Renewal Rules**.
Quantity	1	Set the number of FlexusL instances to be purchased.

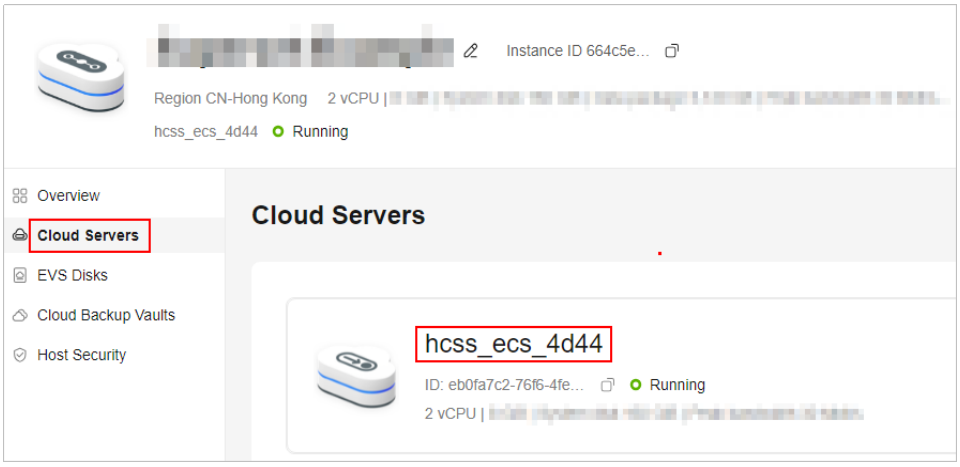
4. Click **Buy Now**.

   On the displayed page, confirm the order details, read and select the agreement, and click **Submit**.
5. Select a payment method and complete the payment.
6. Go back to the FlexusL console and view the purchased FlexusL instance.

Step 2: Configure a Security Group

Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.

1. Log in to the **console** and click a resource card to go to the instance details page.
2. In the navigation pane on the left, choose **Cloud Servers** and then click the server name.



3. On the **Security Groups** tab, click **Add Rule**. In the displayed dialog box, add rules displayed in the following figure and click **OK**.

   The following figure only displays common rules. You can add more rules as needed.

Table 10-1 Security group rules

Priority	Action	Type	Protocol & Port	Source	Description
100	Allow	IPv4	TCP: 9001	0.0.0.0/0	Allows external access to the application management page.

(Optional) Step 3: Add and Resolve a Domain Name

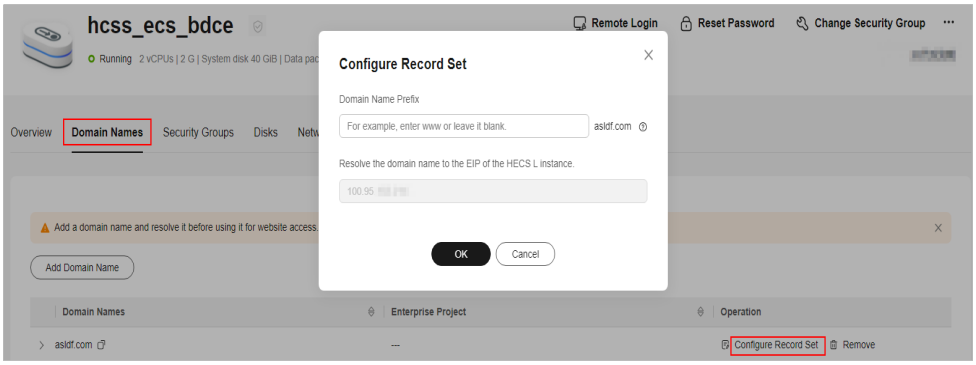
Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

1. In the navigation pane on the left, choose **Cloud Servers**. Locate the server and click its name.
2. On the **Server Details** page, click the **Domain Names** tab and click **Add Domain Name**.

Parameter	Setting
Domain Name	Enter a domain name that will be added for the instance, for example, wpwebsite.com. **NOTE** A domain name that is not registered can be added. After the domain name is added, it must be registered and licensed. To ensure that a domain name can be used normally, register the domain name and complete ICP licensing before adding the domain name.

Parameter	Setting
Enterprise Project	Select an enterprise project from the drop-down list. Enterprise projects are associated with public zones. You can manage public zones by enterprise project. **NOTE** This parameter is displayed only when your account is an enterprise account.

3. Click **OK**.
4. In the row containing the **wpwebsite.com** domain name, click **Configure Record Set**.



Parameter	Setting
Domain Name Prefix	If you enter a prefix, a subdomain is used for website access. Either the domain name or its subdomains can be resolved to the EIP of the instance. Suppose the domain name is wpwebsite.com. • If the domain name prefix is left empty, wpwebsite.com is resolved to the EIP. • If the domain name prefix is www, the subdomain www.wpwebsite.com is mapped to the EIP.
EIP	The EIP bound to the instance is displayed here automatically.

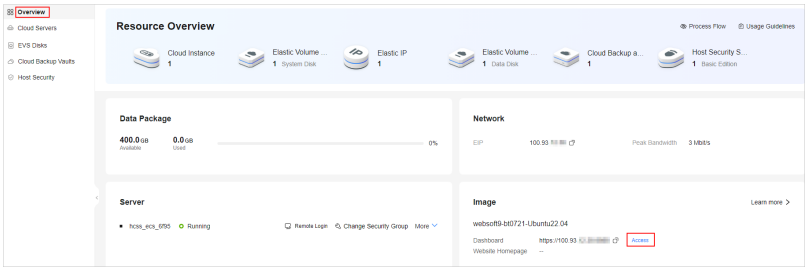
5. On the **Domain Names** tab, view the domain name resolution details.
6. Apply for ICP licensing for the domain name.

   To successfully access the server using a domain name, you must file the domain name. Domain name filing in the Huawei Cloud ICP license center is free of charge. For details, see **ICP Filing Process**.

10.3 Initializing Odoo

The image application dashboard needs to be initialized only when you log in for the first time.

1. On the **Overview** page, click **Access** in the **Dashboard** field in the **Image** area.



2. Configure the parameters and click **Create database**.

   If you have had a **backup** database on your local device, click **or restore a database**.

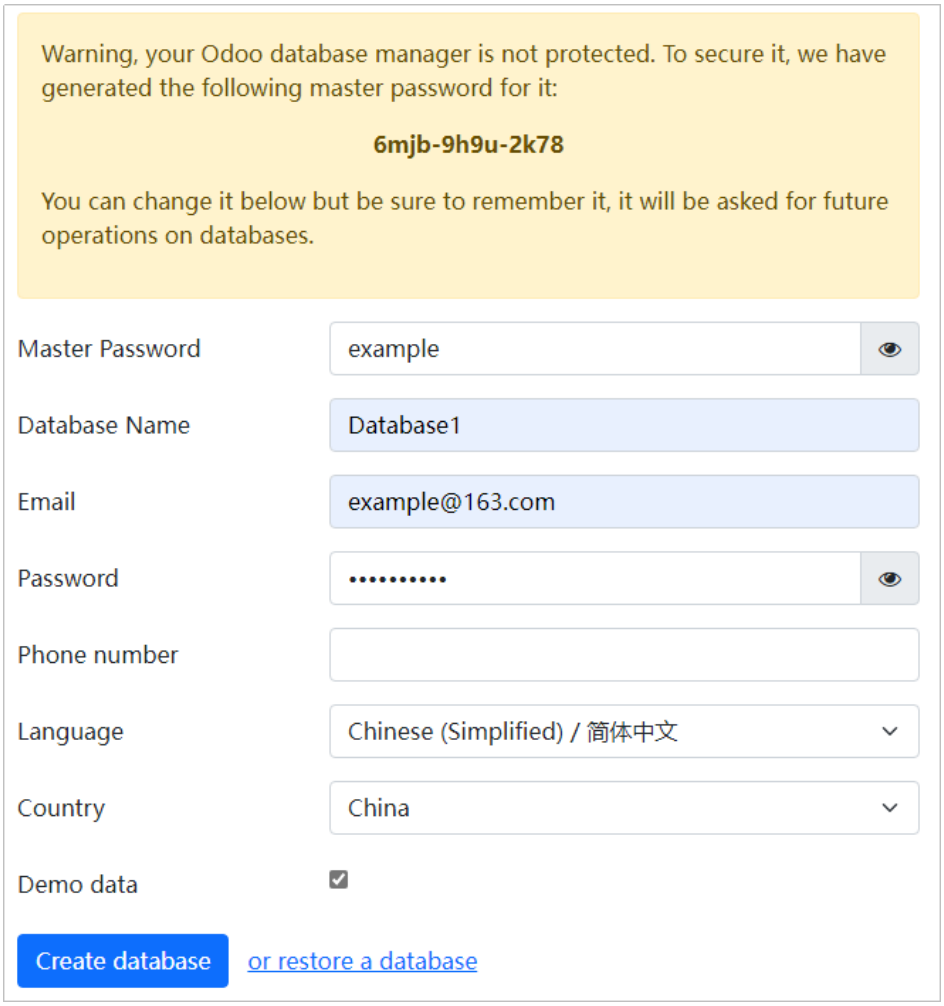
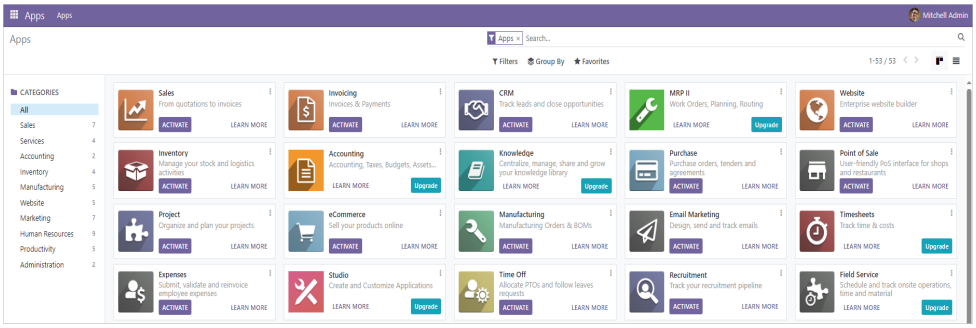


Table 10-2 Parameter descriptions

Parameter	Description
Master Password	The system automatically generates a database master password. You can change it but be sure to remember it. **NOTE** The database master password will be asked for future operations on databases, so please keep it safe.
Database Name	Specifies a database name.
Email/ Password	Specifies the email address and password for the administrator to log in to Odoo. Please keep it safe.
Phone number	Specifies the telephone number of the administrator.
Language	Specifies the language you want to use on the management console.
Country	Specifies the country or region where you are located.
Demo data	After this option is selected, data samples are automatically generated for the created database.

3. Enter the email address and password, and click **Log in**.

   The management console is displayed.



Then, you have obtained an Odoo hosting server. You can start using Odoo or follow the steps in **Deploying Odoo** to configure general settings, obtain administrator information and technical support, and manage databases.

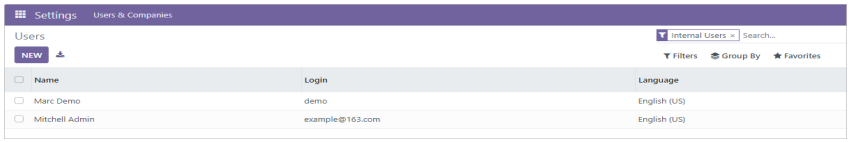
10.4 Deploying Odoo

General Settings

1. Click in the upper left corner and choose **Settings**.
2. Add a user.
   a. Click **New** in the upper left corner.

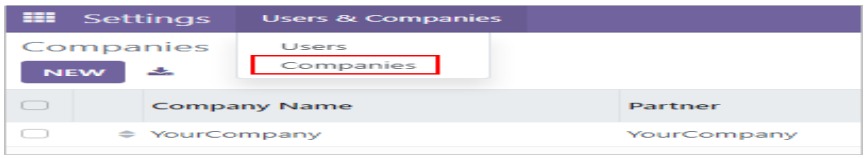
b. After the user is added, click the username to view or modify the username, email address, access permissions, and preferences.

The email address must be unique. If you enter a name that already exists, the message indicating the operation cannot be completed because you cannot have two users with the same login will be displayed.



3. Add a company.

a. Choose **User & Companies** > **Companies**, click **New**, and enter the company name and general information.



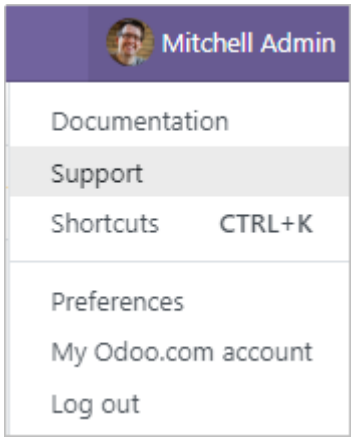
b. Click **New** in the upper right corner.

After the company is added, you can click the company name to view or modify the basic information about the company.

Obtaining Administrator Information and Technical Support

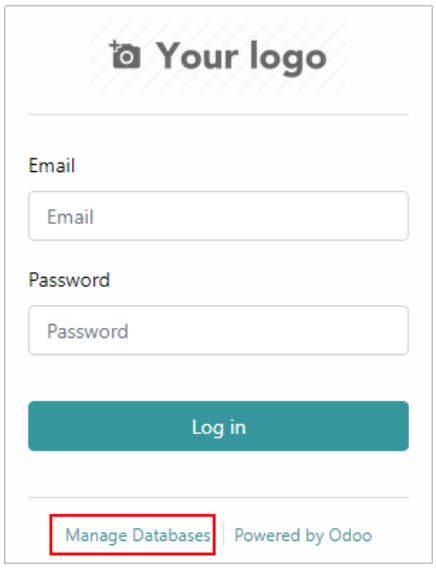
Click the administrator avatar in the upper right corner.

- Click **Documentation** to obtain the official Odoo guide.
- Click **Support** to go to the Odoo official website and learn more about Odoo products.
- Press **Shortcuts CTRL+K** to set the shortcut key.
- Click **Preferences** and set administrator preferences and account security information.
- Click **My Odoo.com account** to go to the Odoo login page.



Managing Databases

On the Odoo login page, click **Manage Databases** to access the Odoo database manager.



NOTE

You can access the Odoo login page:

- From the FlexusL management console. For details, see 1.
- By selecting the administrator avatar in the upper right corner and clicking **Log out**, if you have logged in to Odoo.

- (Optional) Set Master Password

  If you did not change the database master password when initialing Odoo in 2, you can reset a master password that is easy to remember. The master password is required when you create, delete, dump, or restore databases. Please keep it safe.

  a. Click **Set Master Password** to set a new master password.

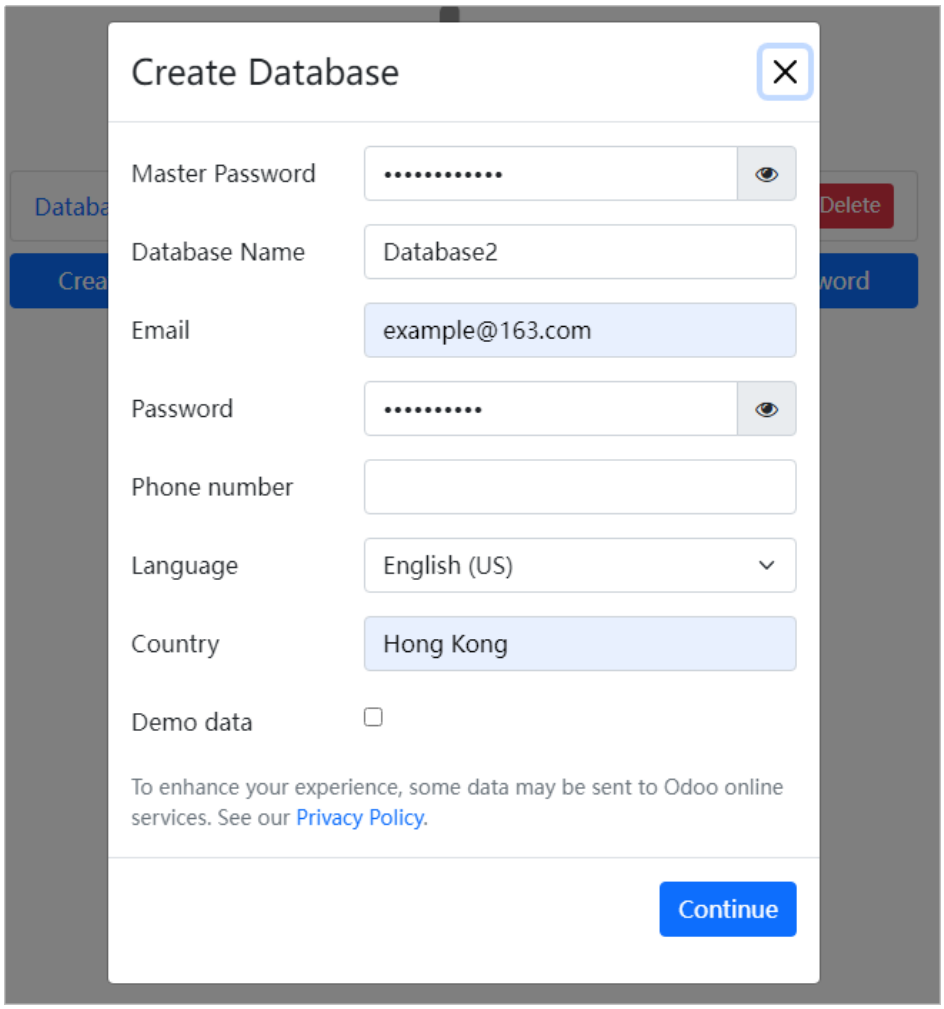
  

  b. Click **Continue** to save the new master password.

- Create Database

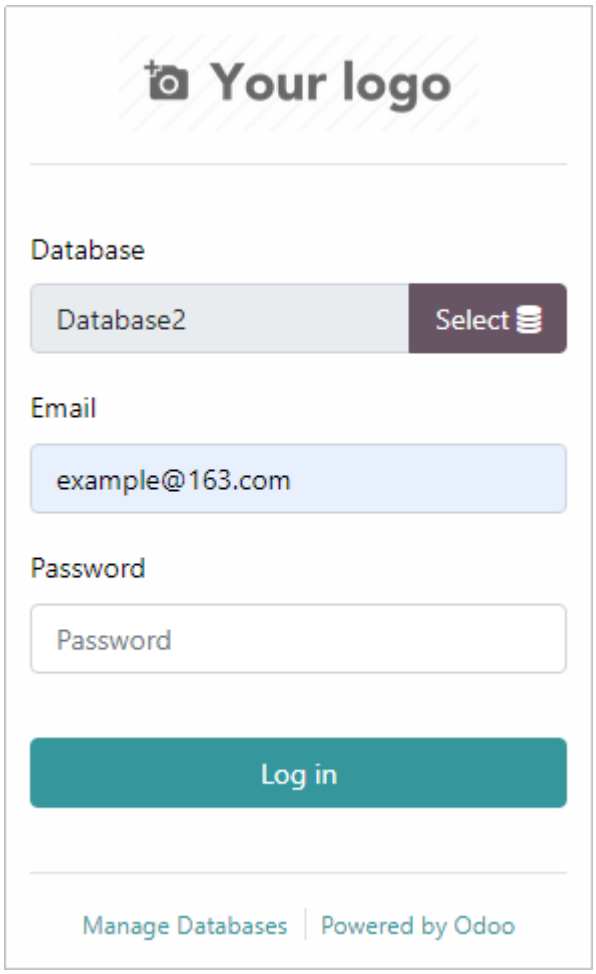
  You can add multiple companies on Odoo. Each database means a company. Multiple companies can use Odoo with different accounts and do not interfere with each other.

  a. Click **Create Database** and set basic information.



b. Click **Continue**.

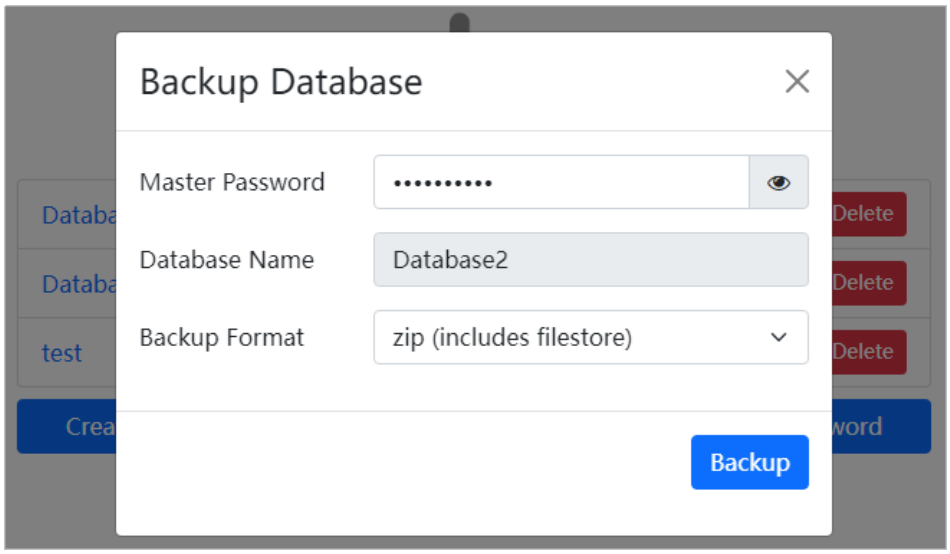
c. Click **Select**, select **Database2**, and enter the email and password.



d. Click **Log in** to log in to the management page of Database2.

- Backup Database
  a. On the database management page, click **Backup**.
  b. On the **Backup Database** page, enter the master password, select a backup format, and click **Backup**.

     After the backup is completed, the system will automatically download the database backup file.



- Duplicate Database

  The data of a company can be duplicated and used as the data of a new enterprise.

  a. On the database management page, click **Duplicate**.
  b. Enter the master password, set a new database name, and click **Continue**.

     After the duplication is successful, the duplicated database will be displayed in the database management column.

- Restore Database

  After a database is deleted, it can be restored using backup data.

  a. Click **Restore Database**.
  b. Enter the master password, select the backup file, set the database name, and click **Continue**.

     After the restoration is successful, the restored database will be displayed in the database management column.

11 Using Superset to Obtain Data from MySQL Databases for Analysis

11.1 Overview

Applicable Scenario

Superset is an open-source data exploration and visualization platform. This tool provides a quick way to intuitively visualize datasets by allowing you to create and share interactive dashboards. The Superset application image uses Ubuntu 22.04 and is deployed using Docker. The Nginx, Redis, pgAdmin, and Docker have been preconfigured in the image. This section describes how to use Superset to obtain data from MySQL databases for analysis.

Resource Planning and Costs

This practice uses the following resource planning as an example. You can adjust it as required.

Resource	Configuration	Description
Cloud server	vCPUs: 2 Memory: 8 GiB	A Superset application image requires at least 2 vCPUs and 8 GiB memory. Select appropriate instance specifications accordingly.
Image	Superset	Select the Superset application image.
Security group	Inbound rule: • Protocol/ Application: TCP • Port: 9001,9000,3306 • Source: 0.0.0.0/0	• 9001: Allows external access to the application management page. • 9000: Allows external access to the dashboard of the application preinstalled in the image. • 3306: Allows access to MySQL databases.

Resource	Configuration	Description
Domain name	wpwebsite.com	• If the website is only used for personal development or testing, there is no need to add a domain name. • If the website is open to the public, add and resolve a domain name for the cloud server.

Process

Step	Procedure	Description
1	**Purchasing and Configuring a FlexusL Instance**	Purchase and configure a FlexusL instance.
2	**Initializing Superset**	Set the language, log in to Superset, and reset the password.
3	**Obtaining Data from MySQL Databases for Analysis**	To use Superset to obtain data from MySQL databases for analysis, you need to connect to a database, add datasets, and create charts.

11.2 Purchasing and Configuring a FlexusL Instance

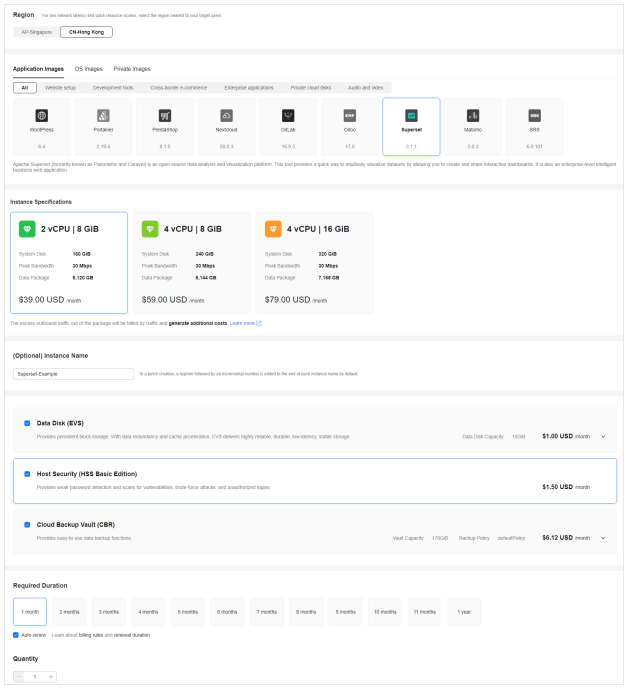
This section describes how to purchase and configure a FlexusL instance, including purchasing a cloud server, setting the server login password, logging in to the server, configuring a security group, and adding and resolving a domain name.

Procedure

Procedure	Description
Step 1: Purchase a FlexusL Instance	Purchase a FlexusL instance and select the Superset application image.
Step 2: Configure a Security Group	Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.
(Optional) Step 3: Add and Resolve a Domain Name	Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

Step 1: Purchase a FlexusL Instance

1. Log in to the FlexusL console.
2. Click **Buy FlexusL**.
3. Specify required parameters for the FlexusL instance.



Parameter	Example	Description
Region	CN-Hong Kong	For low network latency and quick resource access, select the region nearest to your target users. After a FlexusL instance is created, the region cannot be changed. Exercise caution when selecting a region.
Application Images	Superset	Select the Superset application image.
Instance Specifications	2 vCPUs | 8 GiB memory	Select instance specifications as needed.
(Optional) Instance Name	Superset-Example	Customize an instance name that is easy to identify, for example, Superset-Example.

Parameter	Example	Description
(Optional) Associated Services	• Data disk: 10 GiB • Host security • Cloud backup vault: 170 GiB	You can bundle any of the services to your FlexusL instances as needed: EVS, HSS (basic edition), and CBR and set specifications as needed.
Required Duration	1 month	The minimum duration of a purchase is one month and the maximum duration is three years. Auto-renew is enabled by default, which means the purchased FlexusL instances will be automatically renewed before they expire. If you do not enable auto-renew during the purchase process, you can still enable it later after the instances are created. Monthly subscription allows you to renew the subscription for one month every time. The number of renewal times is not limited. For more information about auto-renewal rules, see **Auto-Renewal Rules**.
Quantity	1	Set the number of FlexusL instances to be purchased.

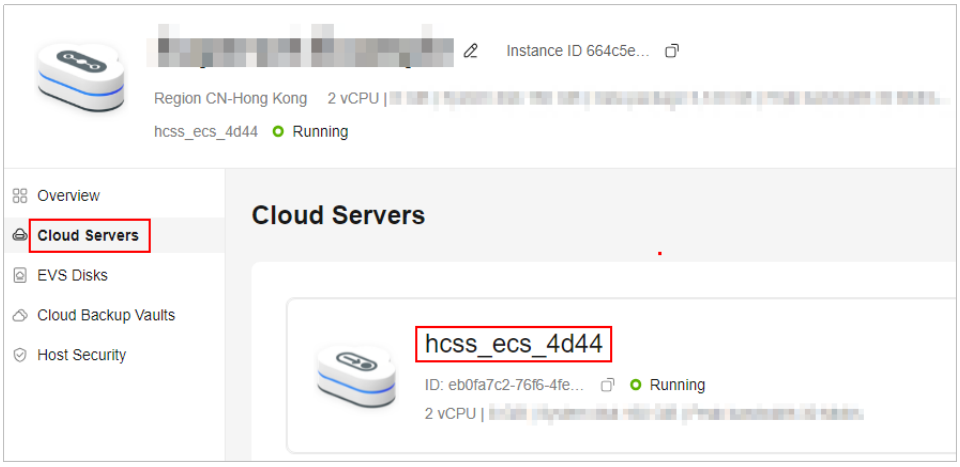
4. Click **Buy Now**.

   On the displayed page, confirm the order details, read and select the agreement, and click **Submit**.
5. Select a payment method and complete the payment.
6. Go back to the FlexusL console and view the purchased FlexusL instance.

Step 2: Configure a Security Group

Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.

1. Log in to the **console** and click a resource card to go to the instance details page.
2. In the navigation pane on the left, choose **Cloud Servers** and then click the server name.



3. On the **Security Groups** tab, click **Add Rule**. In the displayed dialog box, add rules displayed in the following figure and click **OK**.

   The following figure only displays common rules. You can add more rules as needed.

Table 11-1 Security group rules

Priority	Action	Type	Protocol & Port	Source	Description
100	Allow	IPv4	TCP: 3306	0.0.0.0/0	Allows access to MySQL databases.
100	Allow	IPv4	TCP: 9001	0.0.0.0/0	Allows external access to the application management page.
100	Allow	IPv4	TCP: 9000	0.0.0.0/0	Allows external access to the application O&M dashboard.

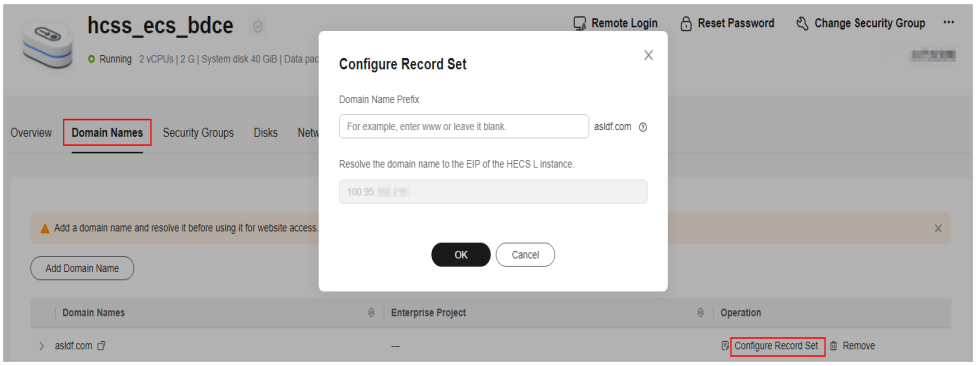
(Optional) Step 3: Add and Resolve a Domain Name

Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

1. In the navigation pane on the left, choose **Cloud Servers**. Locate the server and click its name.
2. On the **Server Details** page, click the **Domain Names** tab and click **Add Domain Name**.

Parameter	Setting
Domain Name	Enter a domain name that will be added for the instance, for example, wpwebsite.com. **NOTE** A domain name that is not registered can be added. After the domain name is added, it must be registered and licensed. To ensure that a domain name can be used normally, register the domain name and complete ICP licensing before adding the domain name.
Enterprise Project	Select an enterprise project from the drop-down list. Enterprise projects are associated with public zones. You can manage public zones by enterprise project. **NOTE** This parameter is displayed only when your account is an enterprise account.

3. Click **OK**.
4. In the row containing the **wpwebsite.com** domain name, click **Configure Record Set**.



Parameter	Setting
Domain Name Prefix	If you enter a prefix, a subdomain is used for website access. Either the domain name or its subdomains can be resolved to the EIP of the instance. Suppose the domain name is wpwebsite.com. • If the domain name prefix is left empty, wpwebsite.com is resolved to the EIP. • If the domain name prefix is www, the subdomain www.wpwebsite.com is mapped to the EIP.
EIP	The EIP bound to the instance is displayed here automatically.

5. On the **Domain Names** tab, view the domain name resolution details.
6. Apply for ICP licensing for the domain name.

To successfully access the server using a domain name, you must file the domain name. Domain name filing in the Huawei Cloud ICP license center is free of charge. For details, see **ICP Filing Process**.

11.3 Initializing Superset

The image application dashboard needs to be initialized only when you log in for the first time.

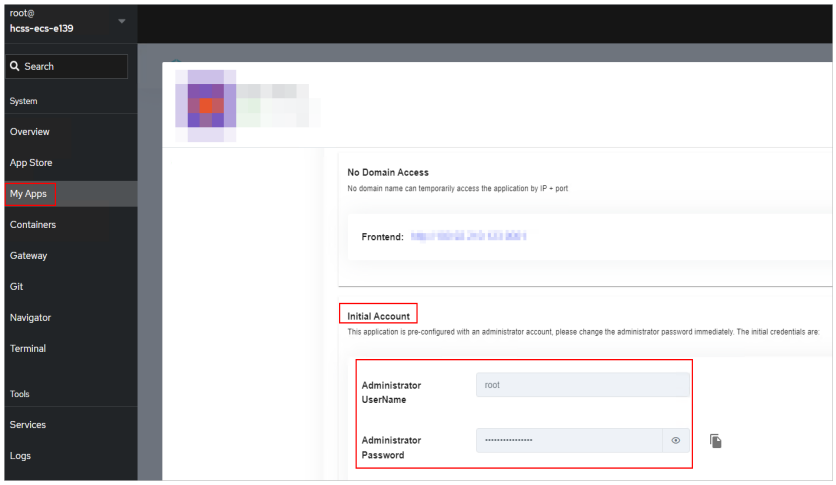
1. Obtain the administrator username and password for logging in to Superset.

   a. In the address bar of a local browser, enter **http://*EIP*:9000** to log in to the application O&M dashboard.

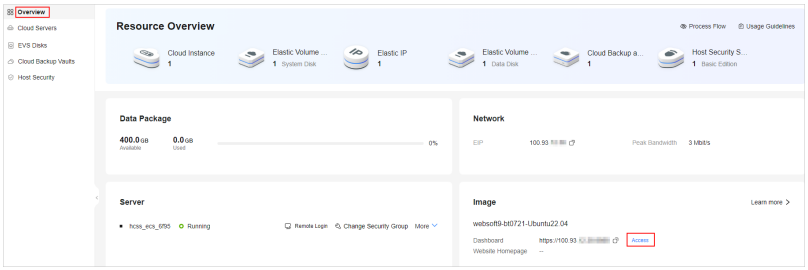
      The username and password for logging in to the dashboard are the **root** user and password of the FlexusL instance. A FlexusL instance does not have an initial password. **Reset the password** and use it to log in to the dashboard.

   b. Choose **My Apps** and click the App icon.

   c. Choose **Access** and click **Initial Account** to view the username and password of the administrator.

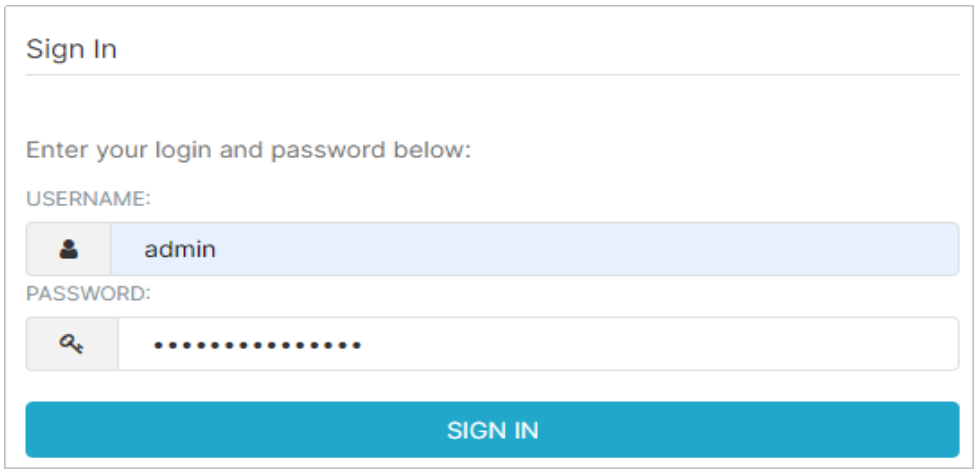


2. On the **Overview** page, click **Access** in the **Dashboard** field in the **Image** area.



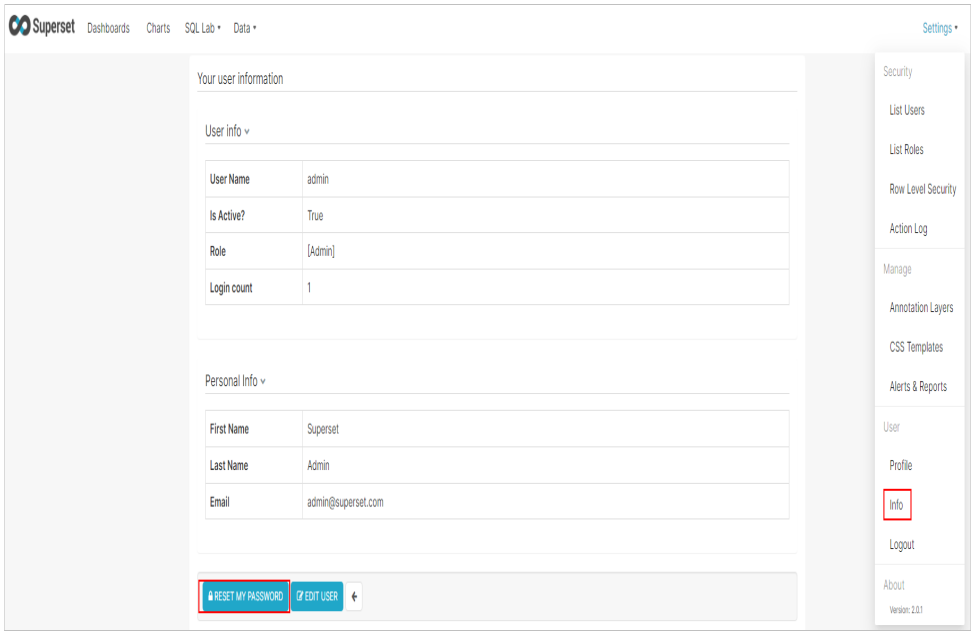
3. Enter the username and password obtained in step 1 to access the management page.

   You can set the language on the login page or on the management page.



4. In the upper right corner of the page, choose **Settings** > **User** > **Info** and click **RESET MY PASSWORD**.

   Preset passwords are usually difficult to remember, so you are advised to set a password that is easy to remember, and please keep it safe.



Then, you have obtained a Superset hosting server. You can start using Superset or follow the steps in **Obtaining Data from MySQL Databases for Analysis** to connect to a database, add datasets, and create charts.

11.4 Obtaining Data from MySQL Databases for Analysis

Connecting to Database

You can only analyze data after connecting to a database first.

1. On the management page, choose **Data** > **Databases** and click **+DATABASE**.

2. Select the database to be connected, for example, the MySQL database.
3. Enter the information about the database to be connected.

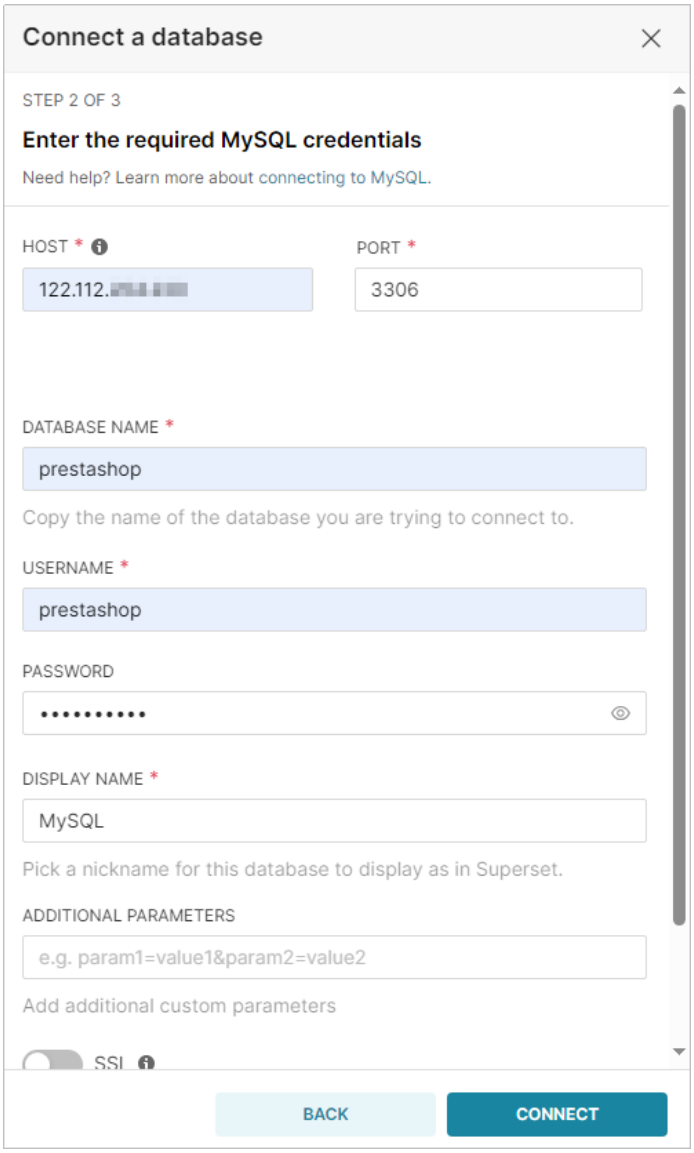
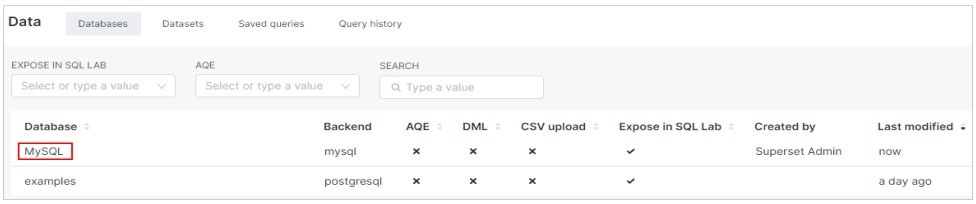


Table 11-2 Parameter descriptions

Parameter	Description
HOST/PORT	Specifies the public IP address and port number of the database. The default MySQL port number is 3306.
DATABASE NAME	Specifies the name of the database to be connected.
USERNAME/ PASSWORD	Specifies the username and password of the database.
DISPLAY NAME	Specifies the name displayed on Superset after the database is connected.

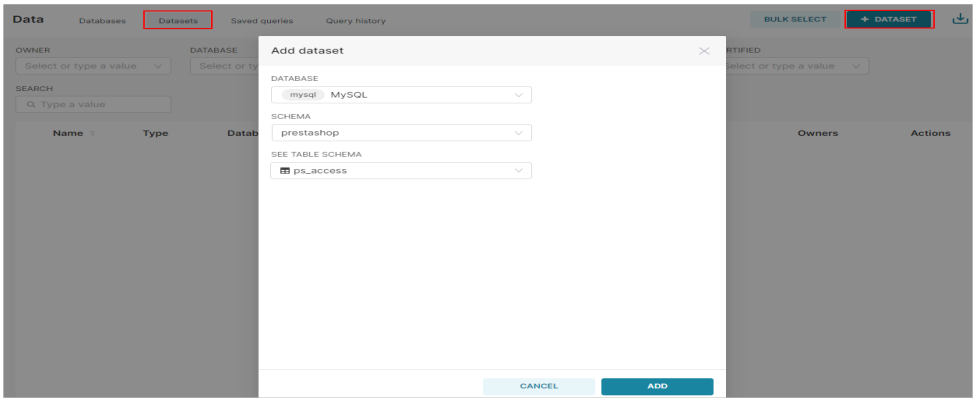
4. Click **CONNECT**.
5. Click **FINISH** and you can view the connected database in the list.



Adding Datasets

Now that you have configured a data source, you need to register tables (called **Datasets** in Superset) for subsequent chart creation.

1. Choose **Data** > **Datasets** and click **+DATASET**.

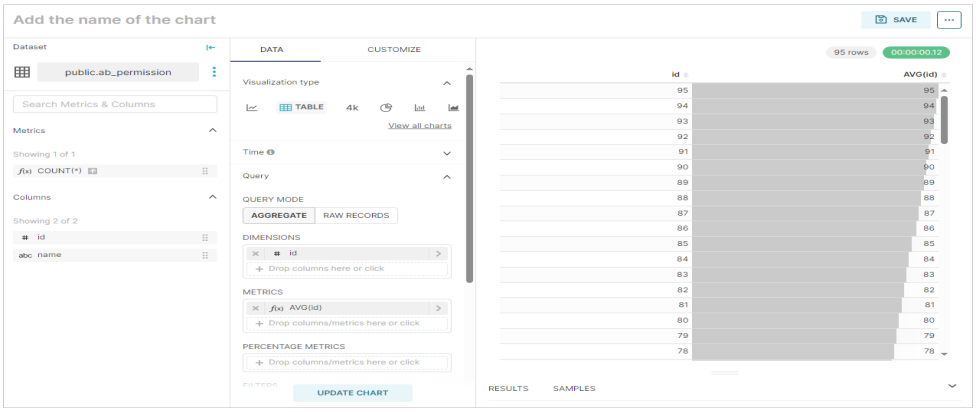


2. Click **ADD**, and you can view your dataset in the list of datasets.

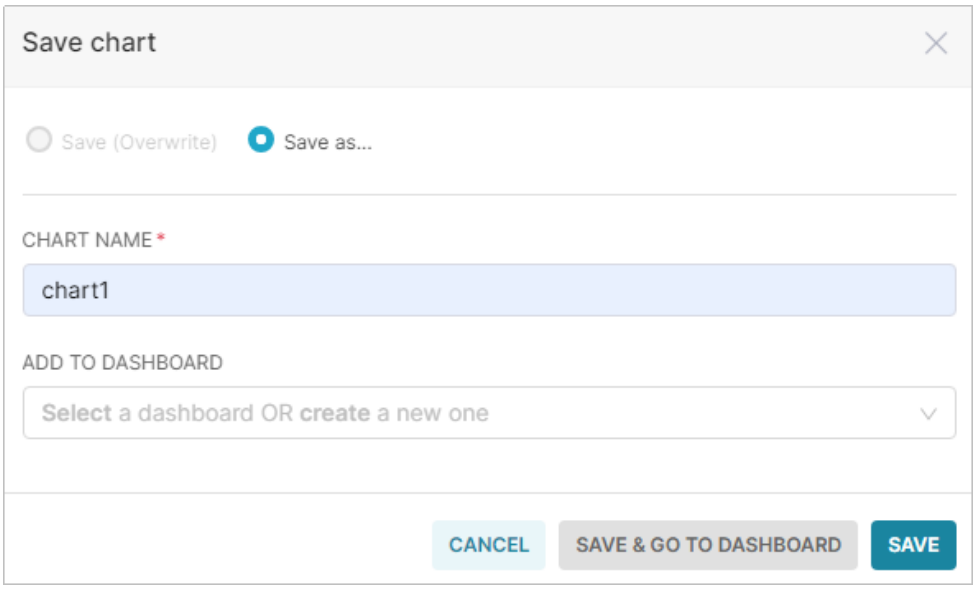
Creating Charts

Superset is a powerful visualization builder that allows you to create charts and dashboards. This section is for demonstration only. You can create exquisite charts and dashboards by referring to the **official guide**.

1. Click the database name to visualize the chart.



2. Click **SAVE** to add the chart to the dashboard.



3. Click **SAVE & GO TO DASHBOARD**. The visualized chart is displayed on the dashboard.

12 Using Nextcloud to Build an Enterprise Web Disk System

12.1 Overview

Applicable Scenario

Nextcloud is a suite of open-source cloud based storage software for self-built private cloud disks for enterprises. Nextcloud supports PC, Android, and iOS, and you can easily synchronize with vital data stored on servers, including files, schedules, contacts, and bookmarks. The Nextcloud image uses Ubuntu 22.04 and is deployed using Docker. The Nginx, MySQL, phpMyAdmin, and Docker have been preconfigured in the image. This section describes how to use Nextcloud to build an enterprise web disk system.

Resource Planning and Costs

This practice uses the following resource planning as an example. You can adjust it as required.

Resource	Configuration	Description
Cloud server	• vCPUs: 2 • Memory: 4 GiB	Select appropriate instance specifications based on your service requirements.
Image	Nextcloud	Select the Nextcloud application image.

Resource	Configuration	Description
Security group	Inbound rule: • Protocol & Port TCP: 9001,9000 Source: 0.0.0.0/0 • Protocol & Port ICMP: all Source: 0.0.0.0/0	• 9001: Allows external access to the application management page. • 9000: Allows external access to the dashboard of the application preinstalled in the image.
Domain name	wpwebsite.com	• If the website is only used for personal development or testing, there is no need to add a domain name. • If the website is open to the public, add and resolve a domain name for the cloud server.

Process

Step	Procedure	Description
1	**Purchasing and Configuring a FlexusL Instance**	Purchase a FlexusL instance, configure security groups, and configure domain names.
3	**Initializing Nextcloud**	Log in to the frontend page and install Nextcloud.
4	**Deploying Nextcloud**	On the dashboard, perform the following operations: • Install applications. • Configure SMTP. • Configure domain names.

12.2 Purchasing and Configuring a FlexusL Instance

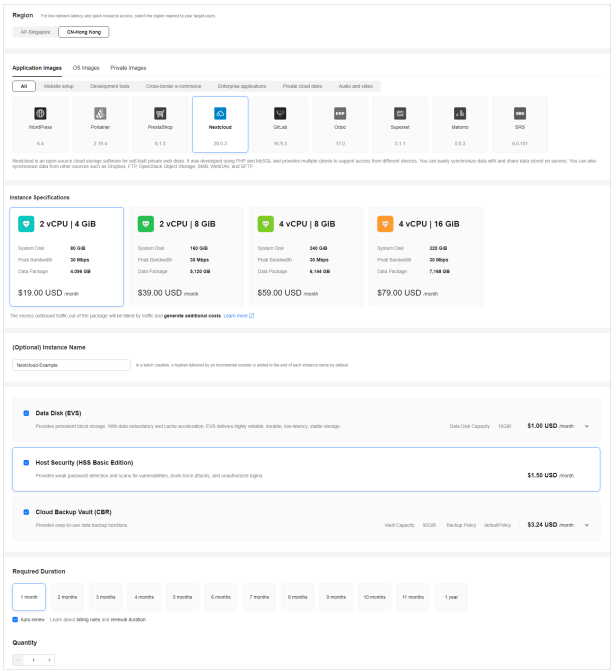
This section describes how to purchase and configure a FlexusL instance, including purchasing a cloud server, setting the server login password, logging in to the server, configuring a security group, and adding and resolving a domain name.

Procedure

Procedure	Description
Step 1: Purchase a FlexusL Instance	Purchase a FlexusL instance and select the Nextcloud application image.
Step 2: Configure a Security Group	Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.
(Optional) Step 3: Add and Resolve a Domain Name	Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

Step 1: Purchase a FlexusL Instance

1. Log in to the FlexusL console.
2. Click **Buy FlexusL**.
3. Specify required parameters for the FlexusL instance.



Parameter	Example	Description
Region	CN-Hong Kong	For low network latency and quick resource access, select the region nearest to your target users. After a FlexusL instance is created, the region cannot be changed. Exercise caution when selecting a region.

Parameter	Example	Description
Application Images	Nextcloud	Select the Nextcloud application image.
Instance Specifications	2 vCPUs | 4 GiB memory and 80 GiB system disk	Select instance specifications as needed.
Instance Name	Nextcloud-Example	Customize an instance name that is easy to identify, for example, Nextcloud-Example.
(Optional) Associated Services	• Data disk: 10 GiB • Host security • Cloud backup vault: 90 GiB	You can bundle any of the services to your FlexusL instances as needed: EVS, HSS (basic edition), and CBR and set specifications as needed.
Required Duration	1 month	The minimum duration of a purchase is one month and the maximum duration is three years. Auto-renew is enabled by default, which means the purchased FlexusL instances will be automatically renewed before they expire. If you do not enable auto-renew during the purchase process, you can still enable it later after the instances are created. Monthly subscription allows you to renew the subscription for one month every time. The number of renewal times is not limited. For more information about auto-renewal rules, see **Auto-Renewal Rules**.
Quantity	1	Set the number of FlexusL instances to be purchased.

4. Click **Buy Now**.

   On the displayed page, confirm the order details, read and select the agreement, and click **Submit**.

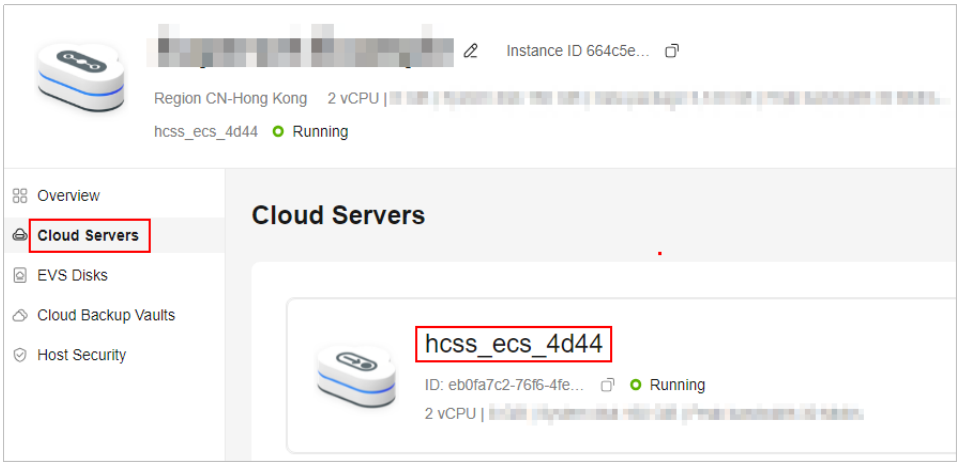
5. Select a payment method and complete the payment.

6. Go back to the FlexusL console and view the purchased FlexusL instance.

Step 2: Configure a Security Group

Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.

1. Log in to the **console** and click a resource card to go to the instance details page.
2. In the navigation pane on the left, choose **Cloud Servers** and then click the server name.



3. On the **Security Groups** tab, click **Add Rule**. In the displayed dialog box, add rules displayed in the following figure and click **OK**.

   The following figure only displays common rules. You can add more rules as needed.

Table 12-1 Security group rules

Priority	Action	Type	Protocol & Port	Source	Description
100	Allow	IPv4	TCP: 9001	0.0.0.0/0	Allows external access to the application management page.
100	Allow	IPv4	TCP: 9000	0.0.0.0/0	Allows external access to the application O&M dashboard.

(Optional) Step 3: Add and Resolve a Domain Name

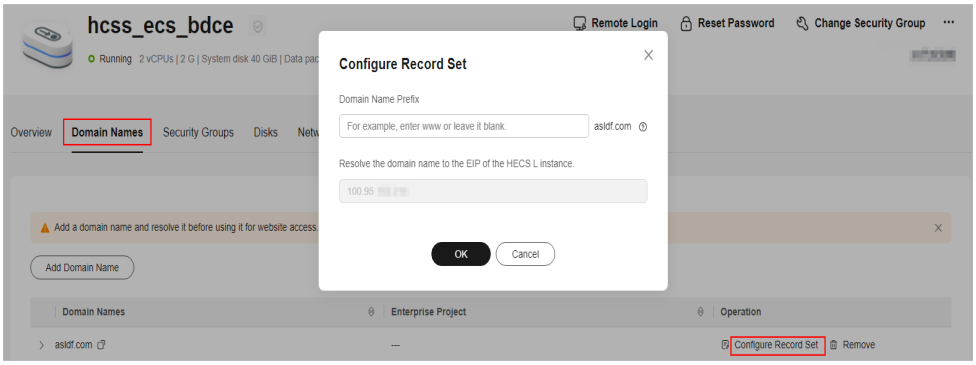
Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

1. In the navigation pane on the left, choose **Cloud Servers**. Locate the server and click its name.

2. On the **Server Details** page, click the **Domain Names** tab and click **Add Domain Name**.

Parameter	Setting
Domain Name	Enter a domain name that will be added for the instance, for example, wpwebsite.com. **NOTE** A domain name that is not registered can be added. After the domain name is added, it must be registered and licensed. To ensure that a domain name can be used normally, register the domain name and complete ICP licensing before adding the domain name.
Enterprise Project	Select an enterprise project from the drop-down list. Enterprise projects are associated with public zones. You can manage public zones by enterprise project. **NOTE** This parameter is displayed only when your account is an enterprise account.

3. Click **OK**.
4. In the row containing the **wpwebsite.com** domain name, click **Configure Record Set**.



Parameter	Setting
Domain Name Prefix	If you enter a prefix, a subdomain is used for website access. Either the domain name or its subdomains can be resolved to the EIP of the instance. Suppose the domain name is wpwebsite.com. • If the domain name prefix is left empty, wpwebsite.com is resolved to the EIP. • If the domain name prefix is www, the subdomain www.wpwebsite.com is mapped to the EIP.
EIP	The EIP bound to the instance is displayed here automatically.

5. On the **Domain Names** tab, view the domain name resolution details.

6. Apply for ICP licensing for the domain name.

   To successfully access the server using a domain name, you must file the domain name. Domain name filing in the Huawei Cloud ICP license center is free of charge. For details, see **ICP Filing Process**.

12.3 Initializing Nextcloud

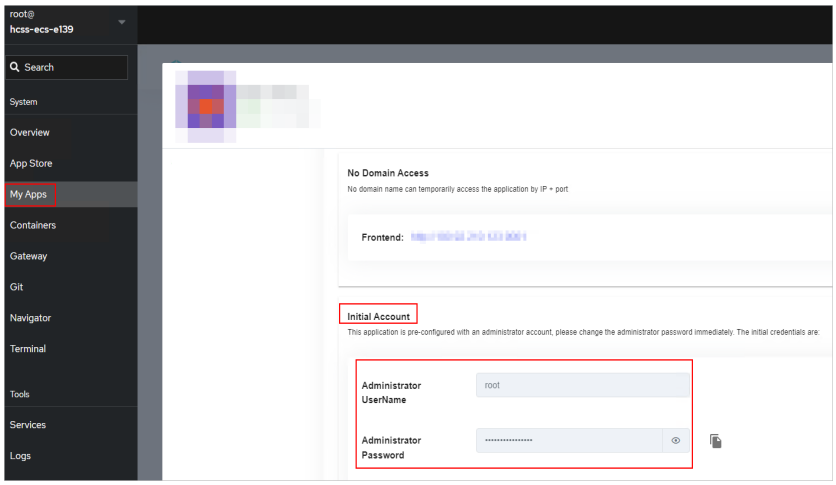
The image application dashboard needs to be initialized only when you log in for the first time.

1. Obtain the administrator username and password for logging in to Nextcloud.
   a. In the address bar of a local browser, enter **http://*EIP*:9000** to log in to the application O&M dashboard.

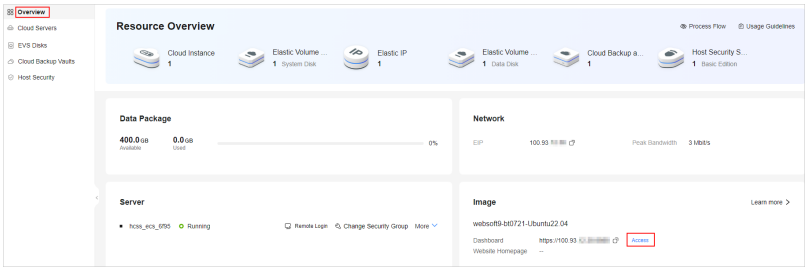
      The username and password for logging in to the dashboard are the **root** user and password of the FlexusL instance. A FlexusL instance does not have an initial password. **Reset the password** and use it to log in to the dashboard.

   b. Choose **My Apps** and click the App icon.

   c. Choose **Access** and click **Initial Account** to view the username and password of the administrator.



2. On the **Overview** page, click **Access** in the **Dashboard** field in the **Image** area.



3. Set the username and password of the Nextcloud administrator and click **Log in**.

4. After the installation is complete, you can continue to install recommended applications as prompted or click **Cancel**.

   You can still install these applications on the management page subsequently.

5. You can go through the pop-ups to learn about the Nextcloud functions, and then configure Nextcloud on the management page.

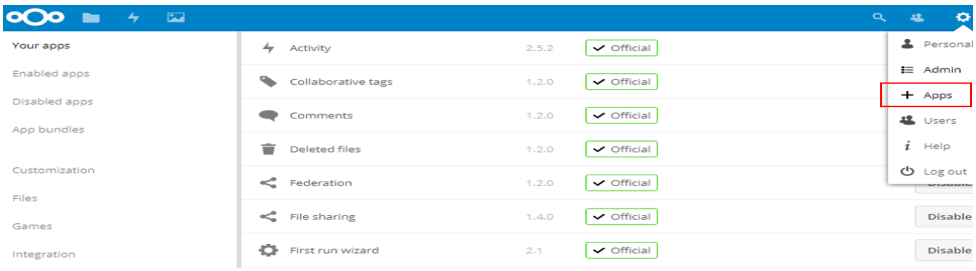
Then, you have obtained a Nextcloud hosting server. You can start using Nextcloud or follow the steps in **Deploying Nextcloud** to install applications, configure SMTP, and configure domain names.

12.4 Deploying Nextcloud

Installing Applications

Nextcloud integrates various applications, and you can add more functions to Nextcloud by installing these applications.

1. Click  in the upper right corner and choose **Apps** to view the applications integrated with Nextcloud.
2. Click **Enable**.



Configuring SMTP

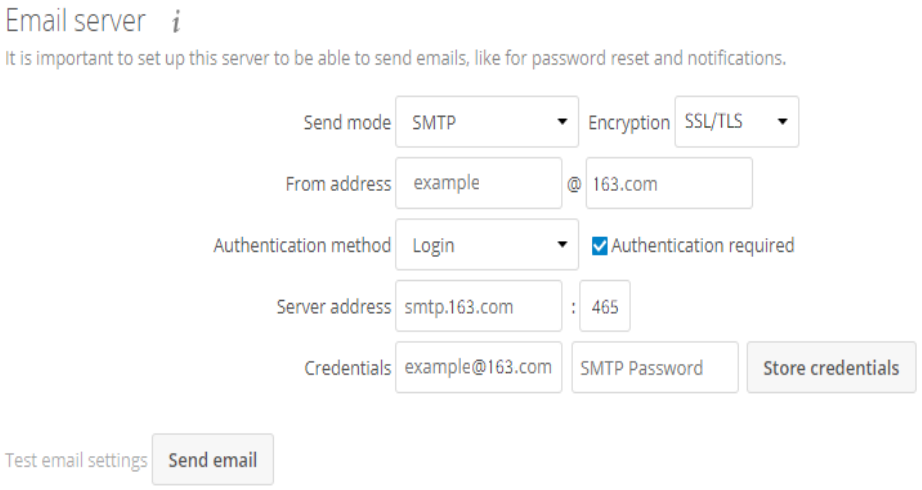
Configuring an SMTP mail server in an application is very important. It can be used to get back your passwords and receive important notifications. You are advised to configure the SMTP service to enable the email notification function.

1. Click  in the upper right corner and click **Personal**.
2. Enter the sender's email address, for example, example@163.

   The email address must be available, and the SMTP function must have been configured.

3. Choose **Administration** > **Basic Settings** > **Email Server**, and configure SMTP information.

   In this example, the 163 mailbox is only for reference. Please configure the corresponding parameters when other mailboxes are used.



Parameter	Description
Send mode	Select SMTP.
Encryption	Select SSL/TLS.
From address	Enter an email address, for example, example@163.com.
Server address	Enter smtp.163.com for the 163 email server.
Port number	Enter 465.
Authentication method	Select **Authentication required**.
Credentials	• **SMTP Username**: Set it to the email address. • **SMTP Password**: Set it to the authorization code obtained when configuring SMTP for example@163.com rather than the login password of example@163.com.

4. Click **Store credentials**.
5. Click **Send email** to test whether the SMTP has been successfully configured.

13 Pushing PC Desktop Streams to SRS Using OBS

13.1 Overview

Applicable Scenario

SRS is a simple and an efficient real-time video server that supports various real-time streaming media protocols, such as RTMP, WebRTC, HLS, HTTP-FLV, and SRT. The SRS image uses Ubuntu 22.04 and is deployed using Docker. The Nginx and Docker have been preconfigured in the image. This section describes how to push PC desktop streams to SRS using OBS.

Resource Planning and Costs

This practice uses the following resource planning as an example. You can adjust it as required.

Resource	Configuration	Description
Cloud server	• vCPUs: 2 • Memory: 4 GiB	Select appropriate instance specifications based on your service requirements.
Image	SRS	Select the SRS application image.

Resource	Configuration	Description
Security group	Inbound rule: • Protocol & Port TCP: 9001,1935,1985,8080,8000 Source: 0.0.0.0/0 • Protocol & Port ICMP: all Source: 0.0.0.0/0	• 9001: Allows external access to the application management page. • 1935: Allows access to the RTMP livestreaming server. • 1985: Allows access to the HTTP API server to deliver HTTP-API and WebRTC streams. • 8080: Allows access to the HTTP livestreaming server to deliver HTTP-FLV and HLS streams. • 8000: Allows access to the WebRTC media server.
Domain name	wpwebsite.com	• If the website is only used for personal development or testing, there is no need to add a domain name. • If the website is open to the public, add and resolve a domain name for the cloud server.

Process

Step	Procedure	Description
1	**Purchasing and Configuring a FlexusL Instance**	Purchase and configure a FlexusL instance.
2	**Learning About the SRS Working Interface**	Understand the SRS working interface.
3	**Pushing Local PC Desktop Streams to SRS Using OBS**	Learn how to push local PC desktop streams to SRS using OBS.

13.2 Purchasing and Configuring a FlexusL Instance

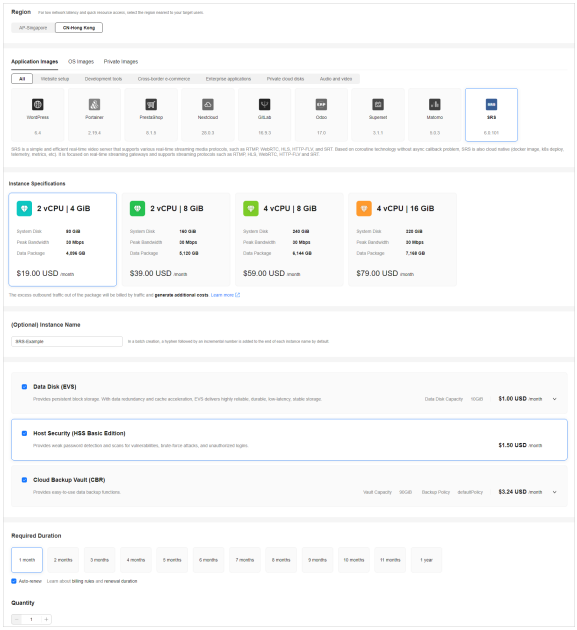
This section describes how to purchase and configure a FlexusL instance, including purchasing a cloud server, setting the server login password, logging in to the server, configuring a security group, and adding and resolving a domain name.

Procedure

Procedure	Description
Step 1: Purchase a FlexusL Instance	Purchase a FlexusL instance and select the SRS application image.
Step 2: Configure a Security Group	Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.
(Optional) Step 3: Add and Resolve a Domain Name	Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

Step 1: Purchase a FlexusL Instance

1. Log in to the FlexusL console.
2. Click **Buy FlexusL**.
3. Specify required parameters for the FlexusL instance.



Parameter	Example	Description
Region	CN-Hong Kong	For low network latency and quick resource access, select the region nearest to your target users. After a FlexusL instance is created, the region cannot be changed. Exercise caution when selecting a region.
Application Images	SRS	Select the SRS application image.

Parameter	Example	Description
Instance Specifications	2 vCPUs | 4 GiB memory and 80 GiB system disk	Select instance specifications as needed.
(Optional) Instance Name	SRS-Example	Customize an instance name that is easy to identify, for example, SRS-Example.
(Optional) Associated Services	• Data disk: 10 GiB • Host security • Cloud back up vault: 90 GiB	You can bundle any of the services to your FlexusL instances as needed: EVS, HSS (basic edition), and CBR and set specifications as needed.
Required Duration	1 month	The minimum duration of a purchase is one month and the maximum duration is three years. Auto-renew is enabled by default, which means the purchased FlexusL instances will be automatically renewed before they expire. If you do not enable auto-renew during the purchase process, you can still enable it later after the instances are created. Monthly subscription allows you to renew the subscription for one month every time. The number of renewal times is not limited. For more information about auto-renewal rules, see **Auto-Renewal Rules**.
Quantity	1	Set the number of FlexusL instances to be purchased.

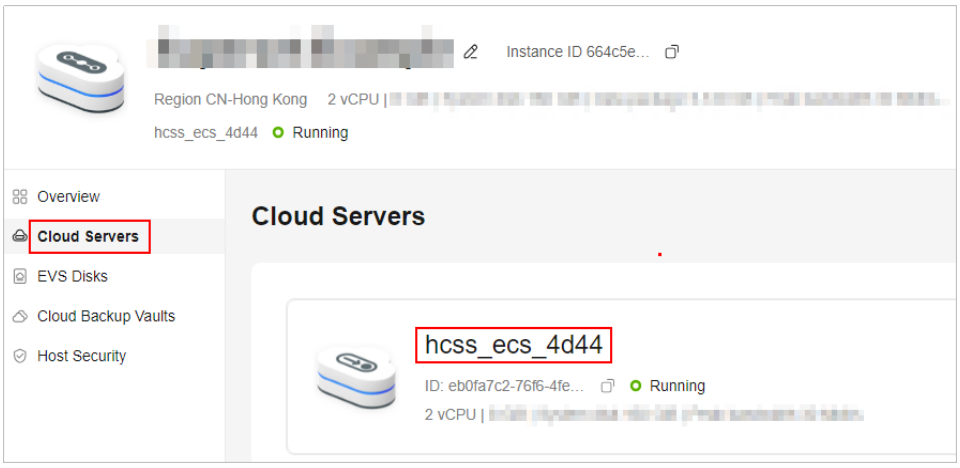
4. Click **Buy Now**.

   On the displayed page, confirm the order details, read and select the agreement, and click **Submit**.
5. Select a payment method and complete the payment.
6. Go back to the FlexusL console and view the purchased FlexusL instance.

Step 2: Configure a Security Group

Add inbound security group rules to ensure that the application preinstalled in the image can be accessed.

1. Log in to the **console** and click a resource card to go to the instance details page.
2. In the navigation pane on the left, choose **Cloud Servers** and then click the server name.



3. On the **Security Groups** tab, click **Add Rule**. In the displayed dialog box, add rules displayed in the following figure and click **OK**.

   The following figure only displays common rules. You can add more rules as needed.

Table 13-1 Security group rules

Priority	Action	Type	Protocol & Port	Source	Description
100	Allow	IPv4	TCP: 9001	0.0.0.0/0	Allows external access to the application management page.
100	Allow	IPv4	TCP: 1935	0.0.0.0/0	Allows access to the RTMP livestreaming server.
100	Allow	IPv4	TCP: 1985	0.0.0.0/0	Allows access to the HTTP API server to deliver HTTP-API and WebRTC streams.
100	Allow	IPv4	TCP: 8080	0.0.0.0/0	Allows access to the HTTP livestreaming server to deliver HTTP-FLV and HLS streams.
100	Allow	IPv4	TCP: 8000	0.0.0.0/0	Allows access to the WebRTC media server.

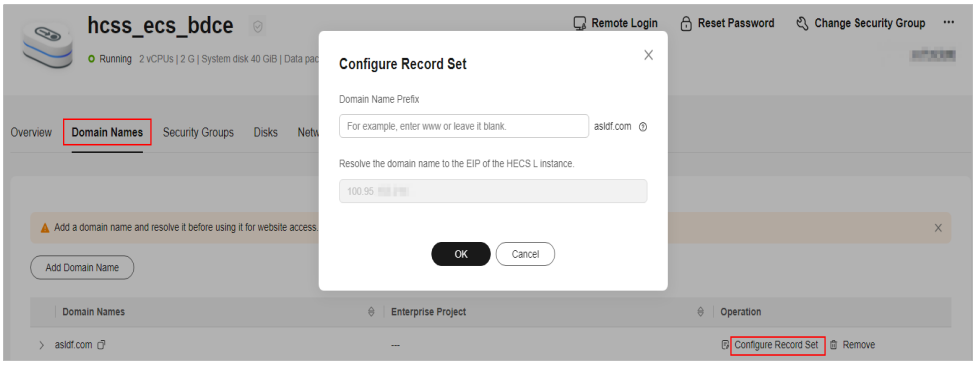
(Optional) Step 3: Add and Resolve a Domain Name

Add and resolve a domain name for the server so that users can use the domain name to access the website. If the website is only used for personal development or testing, there is no need to add a domain name.

1. In the navigation pane on the left, choose **Cloud Servers**. Locate the server and click its name.
2. On the **Server Details** page, click the **Domain Names** tab and click **Add Domain Name**.

Parameter	Setting
Domain Name	Enter a domain name that will be added for the instance, for example, wpwebsite.com. **NOTE** A domain name that is not registered can be added. After the domain name is added, it must be registered and licensed. To ensure that a domain name can be used normally, register the domain name and complete ICP licensing before adding the domain name.
Enterprise Project	Select an enterprise project from the drop-down list. Enterprise projects are associated with public zones. You can manage public zones by enterprise project. **NOTE** This parameter is displayed only when your account is an enterprise account.

3. Click **OK**.
4. In the row containing the **wpwebsite.com** domain name, click **Configure Record Set**.



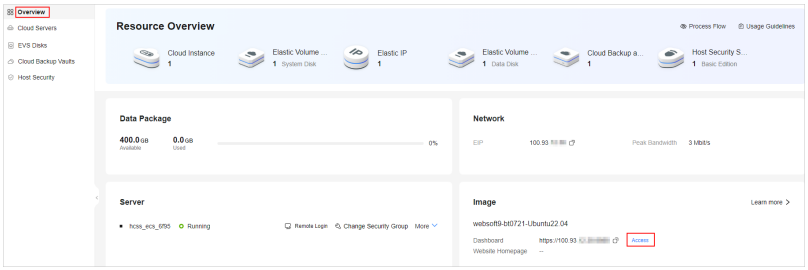
Parameter	Setting
Domain Name Prefix	If you enter a prefix, a subdomain is used for website access. Either the domain name or its subdomains can be resolved to the EIP of the instance. Suppose the domain name is wpwebsite.com. • If the domain name prefix is left empty, wpwebsite.com is resolved to the EIP. • If the domain name prefix is www, the subdomain www.wpwebsite.com is mapped to the EIP.
EIP	The EIP bound to the instance is displayed here automatically.

5. On the **Domain Names** tab, view the domain name resolution details.
6. Apply for ICP licensing for the domain name.

   To successfully access the server using a domain name, you must file the domain name. Domain name filing in the Huawei Cloud ICP license center is free of charge. For details, see **ICP Filing Process**.

13.3 Learning About the SRS Working Interface

1. On the **Overview** page, click **Access** in the **Dashboard** field in the **Image** area.



2. Understand the SRS working interface.

   You do not need to set the username and password for logging in to SRS. On the SRS working interface, you can:

   – Log in to the SRS console.
   – Obtain the ingest URL.
   – Start SRS player to watch the livestreaming content.

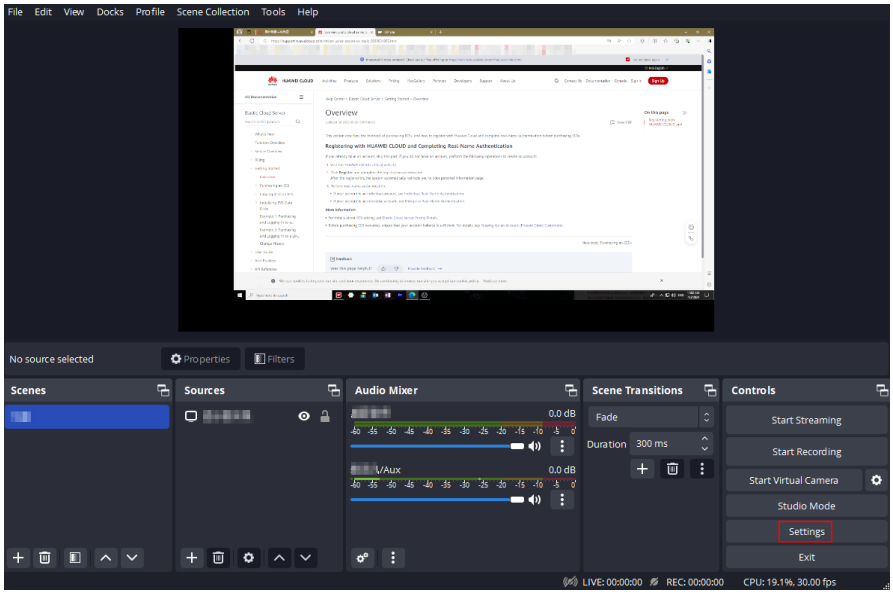
Then, you have obtained an SRS hosting server. You can start using SRS or follow the steps in **Pushing Local PC Desktop Streams to SRS Using OBS** to push and watch livestreams.

13.4 Pushing Local PC Desktop Streams to SRS Using OBS

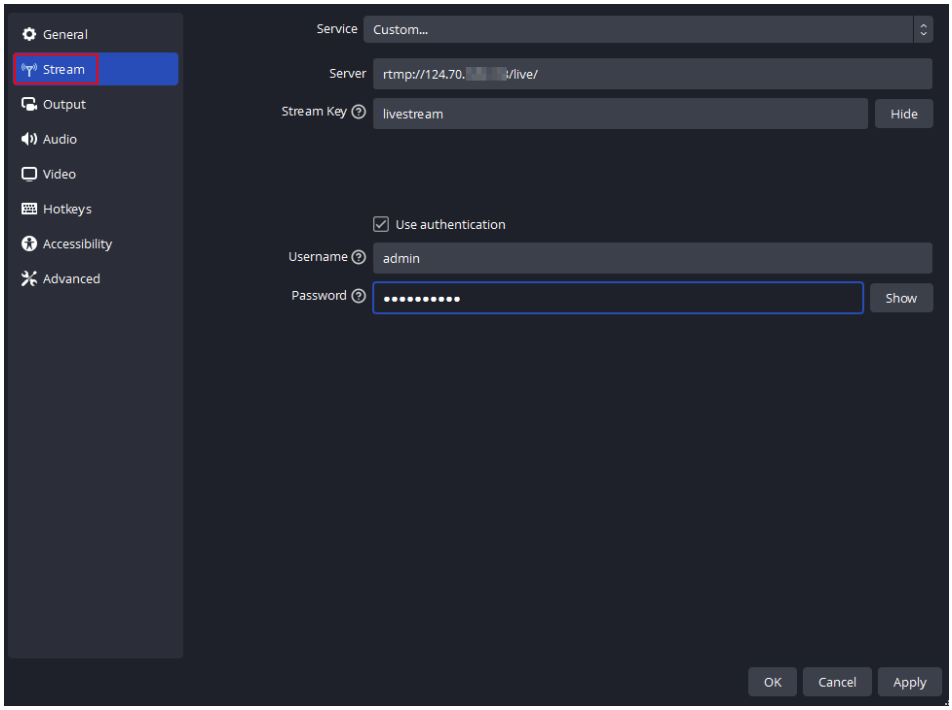
This section describes how to push local PC desktop streams to SRS using OBS.

Pushing Livestreams

1. **Download** and install OBS based on your operating system.
2. Open OBS tool and click **Settings** in the **Controls** area.



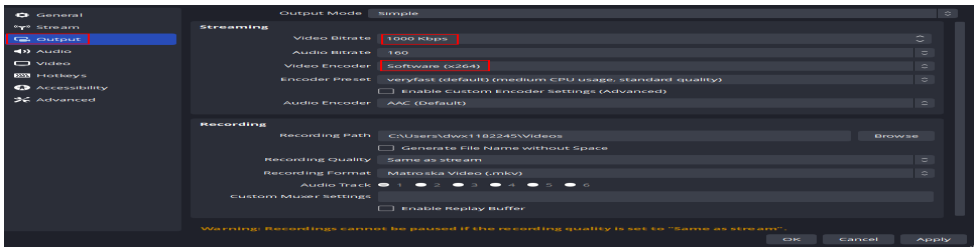
3. On the **Stream** page, configure parameters and click **Apply**.



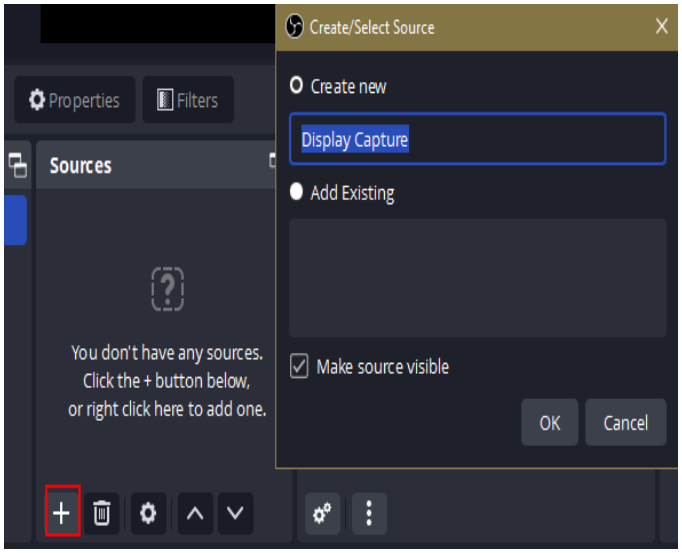
Parameter	Description
Service	Multiple platforms can push livestreams via OBS. For SRS, select **Custom**.
Server	Enter the stream pushing address specified by SRS, for example, **rtmp://124.70.x.x/live/**.
Stream key	Specify a character string following the specified stream pushing address, for example, the **livestream** following **live/** in **rtmp://124.70.x.x/live/**.
Use authentication	Select **Use authentication** and set the **Username** and **Password**.

4. In the **Output** page, configure parameters and click **Apply**.

   Set **Video Bitrate** to **1000 kbps**. Select **Software** for **Video Encoder** to avoid the need for high-end graphics cards and prevent potential streaming issues. Configure other parameters as needed.



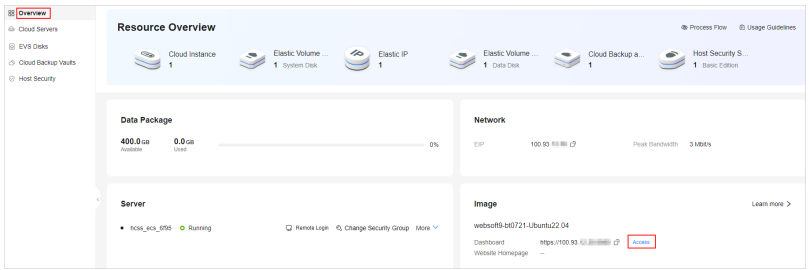
5. Click **OK**.
6. In the displayed **Sources** area, click **+**, select **Display Capture**, create a source, and click **OK**.



7. Perform any operation to change the desktop screen, and you can see that the screen starts to capture desktop content. Click **OK**.
8. Click **Start Streaming**. After the connection is successful, a green block is displayed in the lower right corner, indicating that the stream pushing is successful.

Watching Livestreams

1. Log in to the FlexusL console and click a resource card to go to the instance details page.
2. On the **Overview** page, in the **Image** area, click **Access** to access the image application dashboard.



3. Start SRS player.

4. Watch the desktop livestreams.

14 Change History

Released On	Description
2024-06-04	This issue is the second official release. Added the following: • **Managing Servers Using the BT Panel** • **Using Superset to Obtain Data from MySQL Databases for Analysis** • **Pushing PC Desktop Streams to SRS Using OBS**
2024-04-15	The issue is the first official release.

