Bare Metal Server

Getting Started

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Purchasing and Logging In to a Linux BMS (New)

Scenario

Bare Metal Server (BMS) combines the scalability of Elastic Cloud Server (ECS) with the high performance of physical servers. It provides dedicated servers on the cloud. You only need to specify a flavor, an image, and network settings, and a BMS will be provisioned to you within 30 minutes.

This section describes how to quickly purchase and use a BMS.

- Quantity: 1
- Billing: yearly/monthly (pay-per-use is not available for BMS)
- Flavor: physical.s4.xlarge
- OS: Linux
- Login mode: password

Preparations

Sign up with Huawei Cloud and complete real-name authentication.
 Before purchasing a BMS, sign up for a HUAWEI ID and enable Huawei

Cloud services and complete real-name authentication first.

If you already have enabled Huawei Cloud services and completed real-name authentication, skip this step.

2. Make sure you have a valid payment method configured.

If you have a top-up account, you can **top up your account**.

3. Plan network resources, such as VPCs and subnets.

When you are purchasing a BMS, the system creates a default VPC (vpc-default) and subnet (subnet-default).

If you do not want to use the default VPC and subnet, you can create a VPC and subnet in the region where your BMS will be created. For details, see VPC and Subnet Planning.

4. Create a security group and add rules.

When you start to purchase a BMS, the system automatically creates a security group. The default security group allows all outgoing data packets

and denies all incoming data packets. This can ensure security of basic BMS communications.

If the default security group cannot meet your service requirements, you can modify its rules as needed. For details, see **Adding a Security Group Rule**.

Purchasing a BMS

The following is an example for your reference. For more details, see **Creating a Common BMS**.

- 1. Log in to the management console and go to **Buy BMS**.
- 2. Configure basic settings.

Figure 1-1 Basic settings

< Buy BMS					
Configure Basic Settings	a 2 Configure Network 3 Configure	Advanced Settings 4 Co	nfirm		
Region	CN-Hong Kong Sin different regions cannot communicate with each other over a	nintranet. For low network latency and quic	k resource access, select the nearest region		
AZ	AZ3 AZ7	AZ2 AZ1	0		
Flavor	Flavor name	CPU 🖯	Memory 🖯	Local Disk	Extended Configuration
	physical d2.large	24 cores Intel Xeon Gold 5118 V5 (2*12Cor	192 GIB DDR4	2*600G SAS System Disk RAID 1+ 12*10T SATA	2 × 2*10GE
	o physical s4.2xiarge	28 cores Intel Xeon Gold 5120 V5(2*14cor	384 GIB DDR4	NA	2×2*10GE
	by physical s4.3xiarge	44 cores Intel Xeon Gold 6161 V5(2*22Cor	384 GIB DDR4	NA	2×2*10GE
	physical s4.starge	28 cores Intel Xeon Gold 5120 V5(2*14Cor	192 GIB DDR4	NA	2 × 2*10GE
	Current specifications physical.s4.xlarge 28 cores 192 GIB This flavor provides a 100E dual-port NIC for connecting to the VPC c This flavor supports boot from EVS disks, and provides EVS disk HA a	nd 2°10GE extension NICs for high-speed nd quick service restoration. Learn more a	interconnections between BMSs. You can co bout advanced features.	nfigure VLANs on the extension NICs as needed. Learn how to configure user-defined VLANs	
Image	Public Image Private image Shared image				
	CentOS CentOS CentOS 7.9 x86 64bit sdi2 fit Compatible drivers ensure that the server can run normally and an OS	r BareMetal With Unlagent. V	be incompatible, so you are advised not to o	hange or upgrade the drivers or kernels.	
System Disk	If you select a Linux image, change the disk identifier in the fstab field High I/O - 150 + GiB I	UUID after the BMS is created. Otherwise DPS limit: 3,000, IOPS burst limit: 5,000 (, the BMS OS or service will be unavailable	due to a failure to find the disk UUID after the BMS is restarted.	
	Add Data Disk. You can attach 9 more disks.				

Table 1-1 Basic settings

Parame ter	Example Value	Description
Region	CN-Hong Kong	For lower network latency and faster resource access, select the region nearest to your target users. After a BMS is purchased, the region cannot be changed. For details, see Region and AZ .
AZ	AZ1	An AZ is a physical location that uses an independent power supply and network. AZs in the same region can communicate with each other over an intranet. The AZ of a purchased BMS cannot be changed.

Parame ter	Example Value	Description
Flavor	physical.s4.xlarge	Select a flavor based on service requirements. For more information, see Instance Family .
Image	CentOS 7.9 64bit	The example is a free public Linux image provided by Huawei Cloud.
Disk	General Purpose SSD, 150 GiB	A BMS comes with a system disk when you buy it, and the system disk is automatically initialized. You can manually add data disks. For details, see EVS Disk .

3. Configure the network.

Figure 1-2 Network parameters

Configure Basic Setting	is 2 Configure Network	3 Configure Adva	nced Settings — 4	Confirm				
Network	spc-default-steric V12.188.8.0.16)							
Extension NIC	Add NIC You can add 1 more NICs.							
High-Speed NIC	Add High-Speed NIC You can add 0 more Add You can add 0 more	e NICs. 🔾 Create High-Spe	eed Network ③					
Security Group								
	Security Group Name	Priority	Action	Protocol & Port (2)	Туре	Source ③	Description	
		1	Allow	TCP: 3389	IPv4	0.0.0/0	Permit default Windows remote desktop port.	
	default	1	Allow	TCP: 22	IPv4	0.0.0.0/0	Permit default Linux SSH port.	
		100	Allow	All	IPv4	default	-	
EIP	Use existing Not required If you specify an EIP, you can apply for only o 189.1.236.118 (test123) Current EIP Specifications: Dynamic RGP	View EIPs ③ ne BMS at a time.	Sv. Bandwidth					

Table 1-2 Network parameters

Parame ter	Example Value	Description
Networ k	vpc-default-smb	Use the default VPC and subnet. For details, see VPC and Subnet Planning .
Security Group	default	Use the default security group. For more information, see Adding a Security Group Rule .

Parame ter	Example Value	Description
EIP	Use existing	Select an EIP from the drop-down list. If there is no EIP available in the drop-down list, click View EIPs to go to the EIP console. Click Buy EIP and configure parameters by referring to Assigning an EIP . For more information, see EIP .

4. Configure advanced settings.

Figure 1-3 Advanced settings

BMS Name	bms-b50f			
	If you buy more than one BMS a	at a time, the system automa	atically adds a suffix to the name of each BMS, for example, bms-0001, bms-0002	
Login Mode	Key pair	Password		
Username	root			
Password	•••••	۵		
Confirm Password		0		
Enterprise Project	-Select-	v	Q Create Enterprise Project ③	
Advanced Options	Do not configure	Configure now		

Table 1-3 Advanced settings

Parame ter	Example Value	Description
BMS Name	bms-9493	Specify a BMS name.
Login Mode	Password	Set a strong password for login.

Parame ter	Example Value	Description
Enterpri se Project	default	This parameter is available only when you use an enterprise account to purchase a BMS.
		You can manage cloud resources by project.

5. Configure the quantity.

Figure 1-4 Parameter settings

Required Duration	1	2	3	4	5	6	7	8	9 months	1 year 🛍
Auto-renew Billing rules and Renewal duration										
Quantity	- 1 + You cannot buy BMSs in batches if an elastic IP address or a static NIC IP address is specified.									

Table 1-4 Parameters

Parame ter	Example Value	Description
Require d Duratio n	1	The duration ranges from one month to one year.
Quantit y	1	If you selected Use existing for EIP , you can create only one BMS at a time.

6. Read and select the agreement, and click **Submit**.

Logging In to a BMS

If you are using a Windows PC locally, you can log in to a Linux BMS using PuTTY. For more login methods, see **Logging In to a Linux BMS**.

NOTE

You can download PuTTY from https://www.chiark.greenend.org.uk/~sgtatham/putty/ latest.html.

- 1. Run PuTTY.
- 2. In the navigation pane on the left, choose **Session**. Enter the EIP of the BMS in the text box under **Host Name (or IP address)**. Select **SSH** for **Connection type**.
- 3. In the navigation pane, choose **Windows** > **Translation**. Select **UTF-8** from the **Received data assumed to be in which character set:** drop-down list.

- 4. Click **Open**.
- 5. Enter username **root** and the password you set to log in to the BMS.

2 Deploying an Application on a BMS

This section describes how to deploy an application on a BMS.

Install and Start Nginx

1. Run the **yum install nginx** command to install Nginx and enter **y** as prompted.

If the information shown in the following figure is displayed, Nginx is installed successfully.

Installed:	
nginx.x86_64 1:1.12.2-3.el7	
Dependency Installed:	
dejavu-fonts-common.noarch 0:2.33-6.e17	dejavu-sans-fonts.noarch 0:2.33-6.e17
fontconfig.x86_64 0:2.13.0-4.3.e17	fontpackages-filesystem.noarch 0:1.44-8.el7
gd.x86_64_0:2.0.35-26.e17	gperftools-libs.x86_64 0:2.6.1-1.el7
libX11.x86_64 0:1.6.5-2.el7	libX11-common.noarch 0:1.6.5-2.el7
libXau.x86_64 0:1.0.8-2.1.el7	libXpm.x86_64 0:3.5.12-1.el7
libjpeg-turbo.x86_64 0:1.2.90-6.e17	libxcb.x86_64 0:1.13-1.el7
libxslt.x86_64 0:1.1.28-5.el7	nginx-all-modules.noarch 1:1.12.2-3.el7
nginx-filesystem.noarch 1:1.12.2-3.el7	nginx-mod-http-geoip.x86_64 1:1.12.2-3.e17
nginx-mod-http-image-filter.x86_64 1:1.12.2-3.el7	nginx-mod-http-perl.x86_64 1:1.12.2-3.el7
nginx-mod-http-xslt-filter.x86_64 1:1.12.2-3.el7	nginx-mod-mail.x86_64 1:1.12.2-3.el7
nginx-mod-stream.x86_64_1:1.12.2-3.e17	
Complete!	

Huawei Cloud provides free yum repositories, and the NTP and DNS services.

2. Enter systemctl start nginx.service to start Nginx.

NOTE

This command applies to CentOS 7.4 64-bit, which is used as an example.

3. Enter wget http://127.0.0.1 to test Nginx.

Iroot@bms- "1# wget http://127.8.8.1 2819-87-04 11:06:32 http://127.8.8.1/ Connecting to 127.8.0.1:80 connected. HTTP request sent, awaiting response 200 OK Length: 3700 (3.6K) [text/html] Saving to: 'index.html'		
100×[===================================	K∕s	in Øs
2019-07-04 11:06:32 (532 MB/s) - 'index.html' saved [3700/3700]		

Access the Default Web Page

Open a browser and enter http://*BMS EIP* in the address box. If the Nginx welcome page is displayed, Nginx is installed successfully.

3 Purchasing and Logging In to a Linux BMS (Old)

3.1 Quick Start

This section uses a web application server as an example to describe how you can create and use BMSs. This helps you choose an appropriate BMS, log in to it, and deploy Nginx on it.

NOTE

This section is applicable only to the management console. If you use APIs, see **API Reference**.

The following figure shows how to use BMSs.



Figure 3-1 Process of using BMSs

3.2 Making Preparations

Before using the BMS service, you need to:

- Signing Up with Huawei Cloud
- Top Up an Account
- Create an IAM User
- (Optional) Create a Key Pair

Signing Up with Huawei Cloud

If you already have a Huawei Cloud account, skip this section. If you do not have an account, perform the following steps to create one:

Visit https://www.huaweicloud.com/intl/en-us/ and click Sign Up.

On the displayed page, sign up for an account.

After you have successfully signed up, the system automatically redirects you to your personal information page.

Top Up an Account

Ensure that your account has sufficient balance.

- For details about the BMS price, see **Product Pricing Details**.
- To top up an account, see **Topping Up an Account**.

Create an IAM User

If you want to allow multiple users to manage your resources without sharing your password or private key, you can create users using IAM and grant permissions to the users. These users can use specified login links and their own accounts to access the public cloud and help you efficiently manage resources. You can also set account security policies to ensure the security of these accounts and reduce enterprise information security risks.

If you have signed up with the public cloud platform, you can create an IAM user on the IAM console. For example, to create a BMS administrator, perform the following steps:

- 1. Enter your username and password to log in to the management console.
- 2. In the upper right corner of the page, click the username and select **Identity and Access Management**.
- 3. In the navigation pane, choose **Users**. In the right pane, click **Create User**.
- 4. Enter user information on the **Create User** page.
 - Username: Enter a username, for example, bms_administrator.
 - **Email Address**: Email address bound to the IAM user. This parameter is mandatory if the access type is specified as **Set by user**.
 - (Optional) Mobile Number: Mobile number bound to the IAM user.

- (Optional) Description: Enter description of the user, for example, BMS administrator.
- 5. Select Management console access for Access Type and Set now for Password. Enter a password, and click Next.

Figure 3-2 Selecting the access/credential type

* Access Type	Programmatic access Allows access to Huawei Cloud services only by using development tools, such as APIs, CLI, and SDKs, and requires an access key or password.
	Management console access Allows access to Huawei Cloud services only by using the management console and requires a password.
Credential Type	Access key You can download the access key after you create the user.
	Password
	 Set now Enter a password. Require password reset at first login Automatically generated A password will be automatically generated. You can download the password file and provide it to the user. Set by user A one-time login URL will be emailed to the user. The user can then click on the link to set a password.
	Give your account a security boost.
★ Login Protection	Enable (Recommended) Disable

NOTE

A BMS administrator can log in to the management console and manage users. It is good practice to select **Set now** for **Password** when you create a BMS administrator for yourself. If you create a BMS administrator for another user, select **Set by user** for **Password** so that the user can set their own password.

6. (Optional) Add the user to the **admin** user group and click **Create**.

After the user is created, you can use the IAM user login link displayed above the user list and the created user's login credentials to log in to the console.

(Optional) Create a Key Pair

The cloud platform uses public key cryptography to protect the login information of your BMS. You need to specify the key pair name and provide the private key when logging in to the BMS using SSH if you choose the key pair login mode. If you choose the password login mode, skip this section.

If you do not have a key pair, create one on the management console.

NOTE

If you want to create BMSs in multiple regions, you need to create a key pair in each region. For more information about regions, see **Region and AZ**.

- 1. Log in to the management console.
- 2. Under **Computing**, click **Bare Metal Server**. The BMS console is displayed.
- 3. In the navigation tree, choose **Key Pair**.
- 4. On the right side of the page, click **Create Key Pair**.
- 5. Enter the key name and click **OK**.

An automatically populated key name consists of **KeyPair-** and a 4-digit random number. Change it to an easy-to-remember one, for example, **KeyPair-***xxxx***_bms**.

6. Download the private key file. The file name is the specified key pair name with a suffix of .pem. Store the private key file securely. In the displayed dialog box, click **OK**.

You can save the private key file only once. When you create a BMS, provide the key pair name. Each time you log in to the BMS using SSH, you need to provide the private key.

3.3 Step 1: Create a BMS

Scenarios

This section helps you quickly create a BMS that will be used as a web server. For details about all the parameters used for creating a BMS, see **Creating a BMS**. To create a BMS by calling an API, see **Creating a BMS**.

Procedure

- 1. Log in to the Cloud Server Console https://consoleintl.huaweicloud.com/ecm/?locale=en-us.
- 2. In the navigation pane, choose **Bare Metal Server**.
- 3. In the upper right corner, click **Buy BMS**.
- 4. Configure parameters.
 - Specify **Region** and **AZ**. For example, select **CN-Hong Kong** for **Region** and retain the default value of AZ.
 - **NOTE**

After the BMS is created, you cannot change its region or AZ.

- Set Flavor.

Available **flavors** vary depending on the region and AZ you select. Web servers are mainly used for web page access and do not require strong computing capabilities. In addition, only a small amount of storage is required for recording logs. Therefore, select **physical.d1.large**.

– Set Image.

Select **Public image** and then **CentOS 7.4 64bit for BareMetal**.

NOTE

After the BMS is created, you cannot change its OS.

- Specify **Disk**.

An EVS disk can be attached to a BMS. However, whether an EVS disk can be attached is determined by the flavor and image you select. In this exercise, EVS disks cannot be attached to the BMS.

Set VPC and NIC.

Retain the default values. When you use cloud services for the first time, the system automatically creates a VPC **default-vpc** and a subnet **default-subnet** for you. You can also create VPCs and subnets.

NOTE

The system creates a security group for you by default. The default security group rule allows all outgoing data packets and blocks incoming data packets. In this way, the default security group rule ensures the security of basic BMS communications.

- Set **EIP**.

BMSs without an EIP cannot be connected to the Internet and are only used for deploying services in a private network or used in a cluster. Select **Automatically assign** and set **Bandwidth**.

- Set Login Mode.

Select **Password** and set a password for user **root**.

Configure Advanced Settings.

Select **Do not configure**.

Set BMS Name.

The BMS name is in the format **bms**-*four random digits*. To easily identify it, you can add the function to its name, for example, **bms**-**7676-nginx**.

- Set **Required Duration**.

The value ranges from 1 month to 1 year. Set the value to **1 month**.

Set Quantity.

Set the value to 1.

- 5. Click **Buy Now**. Confirm the specifications, read **Image Disclaimer**, select **I** have read and agree to the Image Disclaimer, and click **Pay Now**.
- 6. Select a payment method and click **Pay**.

Result

The BMS creation process requires about 5 to 30 minutes to complete. Refresh the BMS list. After the BMS status changes from **Creating** to **Running**, the BMS is created successfully.

Follow-up Operations

A BMS that functions as a web server must allow ICMP traffic on ports 80 and 443. These rules are not configured for the default security group. You need to add the rules after you create the BMS. For details, see **Adding Security Group Rules**.

Protocol	Direction	Port Range	Source
ТСР	Inbound	80	0.0.0/0
ТСР	Inbound	443	0.0.0/0
ICMP	Inbound	All	0.0.0/0

3.4 Step 2: Log In to the BMS

Scenarios

After you create a BMS, you can log in to it using multiple methods. This section describes the procedure to log in to a BMS from the management console. For more login modes, see LinuxLinux BMS Login Methods.

Procedure

- Log in to the Cloud Server Console https://consoleintl.huaweicloud.com/ecm/?locale=en-us.
- 2. In the navigation pane, choose **Bare Metal Server**.
- 3. In the upper left corner, click 🕺 and select a region. Select **CN-Hong Kong**.
- 4. In the BMS list, locate the instance **bms-7676-nginx** and click **Remote Login** in the **Operation** column.
- 5. Wait for about one minute till the login page is displayed. Press **Enter** and enter username **root** and the password set in **Step 1: Create a BMS**. Press **Enter**.

The login is successful if the following information is displayed: [root@bms-7676-nginx ~]#

NOTE

If you have forgotten the login password, you can reset the password.

3.5 Step 3: Deploy an Application

This section describes how to deploy an application on a BMS.

Install and Start Nginx

1. Run the **yum install nginx** command to install Nginx and enter **y** as prompted.

If the information shown in the following figure is displayed, Nginx is installed successfully.

Installed:	
nginx.x86_64 1:1.12.2-3.el7	
Dependency Installed:	
dejavu-fonts-common.noarch 0:2.33-6.e17	dejavu-sans-fonts.noarch 0:2.33-6.e17
fontconfig.x86_64 0:2.13.0-4.3.el7	fontpackages-filesystem.noarch 0:1.44-8.el7
gd.x86_64 0:2.0.35-26.e17	gperftools-libs.x86_64 0:2.6.1-1.el7
libX11.x86_64 0:1.6.5-2.el7	libX11-common.noarch 0:1.6.5-2.el7
libXau.x86_64 0:1.0.8-2.1.el7	libXpm.x86_64 0:3.5.12-1.el7
lib.jpeg-turbo.x86_64 0:1.2.90-6.el7	libxcb.x86_64 0:1.13-1.el7
libxslt.x86_64 0:1.1.28-5.el7	nginx-all-modules.noarch 1:1.12.2-3.el7
nginx-filesystem.noarch 1:1.12.2-3.el7	nginx-mod-http-geoip.x86_64 1:1.12.2-3.e17
nginx-mod-http-image-filter.x86_64 1:1.12.2-3.el7	nginx-mod-http-perl.x86_64 1:1.12.2-3.el7
nginx-mod-http-xslt-filter.x86_64 1:1.12.2-3.el7	nginx-mod-mail.x86_64_1:1.12.2-3.el7
nginx-mod-stream.x86_64 1:1.12.2-3.e17	
Complete!	

Huawei Cloud provides free yum repositories, and the NTP and DNS services.

2. Enter systemctl start nginx.service to start Nginx.

NOTE

This command applies to CentOS 7.4 64-bit, which is used as an example.

3. Enter wget http://127.0.0.1 to test Nginx.

[root09ms]# wget http://127.0.0.1 2019-07-04 11:06:32http://127.0.0.1/ Connecting to 127.0.8.1:38, connected. HTTP request sent, awaiting response 200 OK Length: 3708 (3.6K) [text/html] Saving to: * index.html/	
100×[===================================	700K∕s in Øs
2019-07-04 11:06:32 (532 MB/s) - 'index.html' saved [3700/3700]	

Access the Default Web Page

Open a browser and enter http://*BMS EIP* in the address box. If the Nginx welcome page is displayed, Nginx is installed successfully.

3.6 Step 4: Release the BMS

Scenarios

If you no longer require the BMS, you can release it to avoid being billed for it.

NOTE

You can release a yearly/monthly BMS only by unsubscribing it. For details about unsubscription rules, see **What Is the Impact on Billing if I Unsubscribe from a BMS?**

Procedure

- Log in to the Cloud Server Console https://consoleintl.huaweicloud.com/ecm/?locale=en-us.
- 2. In the navigation pane, choose **Bare Metal Server**.
- 3. In the upper left corner, click 🕺 and select a region. Select **CN-Hong Kong**.
- 4. In the BMS list, locate **bms-7676-nginx**. Click **More** in the **Operation** column and select **Unsubscribe** from the drop-down list.
- 5. On the Unsubscribe page, select a reason and click Confirm.

6. In the displayed dialog box, click **Yes**.

Result

The unsubscribed BMS will no longer be displayed in the BMS list.