



Bare-metal-server

Product Documentation





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Product Introduction

Product Overview

Product Overview

Last Updated At: 2025-08-04 16:17:36

CCB Cloud Bare Metal Server (BMS) is a cloud-based physical server that can seamlessly integrate with existing cloud computing, networking, and other services. It meets the ultimate requirements for computing performance and provides stable and high-performance physical computing resources. It can be used with cloud products like Cloud Virtual Machine (CVM) and Virtual Private Cloud (VPC), integrating the stability of traditional hosting with the high elasticity of cloud resources. BMS are positioned to accommodate special usage scenarios such as non-standard server compatibility. CCB Cloud BMS are currently provided on-demand. Please contact CCB Cloud customer service or technical managers to communicate and submit your usage requirements for BMS.



Basic Concepts

Last Updated At: 2025-08-11 16:20:13

Before using BMS, you should familiarize yourself with the following concepts:

Term	Description
Bare Metal Server (BMS)	A cloud-based bare metal server
BMS instance	Physical computing resources based on BMS
BMS flavor	A combination of CPU, memory, storage, and network configurations of a BMS instance
Virtual Private Cloud (VPC)	A customized virtual network space that is logically isolated from other resources
BMS subnet	A network space specifically designed to host BMS instances
Login Method	Supports logging into BMS instances via SSH protocol using username and password credentials.
Internal IP Address	An IP address inaccessible via the Internet, serving as the implementation form of CCB Cloud's internal network services.
Region and Availability Zone	These terms describe the physical locations of CCB Cloud data centers. Bare metal servers can be deployed in specific regions and availability zones. A region refers to an independent geographical area, each containing multiple isolated data centers known as availability zones.
CCB Cloud Console	A web-based user interface for creating and managing bare metal servers.



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Before using BMS, you should familiarize yourself with the following concepts:



Product Type Classification

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Bare Metal product types are categorized into Standard and Custom. Standard Bare Metal refers to models that have undergone cloud-based installation software for device type, operating system, and RAID configuration adaptation. When creating a Standard instance, online installation is performed, with delivery time ranging from approximately 30 minutes to 1 hour. Custom Bare Metal, on the other hand, allows users to specify physical server models or operating system types beyond the Standard configurations. This requires prior coordination with Bare Metal technical managers for adaptation evaluation and pre-installation. During Custom instance creation, users don't need to reconfigure OS or RAID settings, resulting in a significantly faster delivery time of around 5 minutes.

机型	类型	CPU	内存	硬盘	RAID
☐ GPU服务器	自定义机型	6132*2	256G	SSD-600G*4	支持
☐ R4800G2	标准机型	E5-2680v4*2	256G	SAS-900G*2	支持
☐ CG1-10G	标准机型	6148*2	256GB	SSD-480G*6	支持



Hardware Configuration and Operating System

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Currently, the physical equipment models available in different availability zones may vary. For more detailed model information, please contact CCB Cloud customer service or technical managers for further consultation.



Strengths

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Compared to self-built data centers, using Bare Metal Servers enables faster deployment of cloud computing environments, with CCB Cloud providing comprehensive capabilities including VPC, NAT gateway, dedicated line interconnection, operation and maintenance support, basic monitoring, and security protection capabilities. BMS deliver enhanced computing capabilities without performance loss, featuring physical machine-level security isolation that fully fulfills enterprise requirements for data security and regulatory compliance in terms of safety and reliability. BMS has the following strengths compared to managed self-built IDCs:

Comparison Item	BMS	Managed Self-Built IDC
Elasticity	·Users can flexibly select predefined physical server configurations including CPU, memory, hard drives, etc. ·Support for CFS, COS, and mounting elastic network interfaces. Users can configure disks on-demand, providing flexible scaling capabilities.	·Poor elasticity and flexibility ·Users need to stock up for temporary expansion needs and bear performance surplus and depreciation during off-peak hours.
Ease of use	·Simple operations and flexible Ops.Users can disable, enable, restart, or reinstall a server online in the console	·Server operations require assistance from IDC on-site engineers, which is troublesome and time-consuming.
Comprehensiveness	·It is integrated with various types of CCB Cloud services. ·It provides VPC, NAT Gateway, DC and other CCB Cloud services.CCB Cloud IDCs in different regions are interconnected over the private network of the high-speed IDC internet.	·The costs of self-built IDCs are high.Private network interconnection requires costly leased lines. You need to set up load balancers and NAT gateways on your own.



Comparison Item	BMS	Managed Self-Built IDC
Security	·All-round and professional protection.·The VPC allows users to decide the IP range, whether to open a server, and whether to make an instance private. This ensures the private ownership and security of your nodes. It provides basic server and security protection measures such as traffic scrubbing, WAF, and login security. These services form a solid line of defense for business.	It is prone to hacker attacks and requires additional security protection services.
Ops	·24/7 Ops service. ·To quickly recover from hardware failures, faulty components will be replaced through warranty services after obtaining user consent .Out-of-warranty equipment will also be systematically replaced according to scheduled plans.With a professional operations and maintenance (O&M) engineer team, hardware, network, and related technical failures can be resolved with enhanced expertise.	·Fault issues must be resolved by contacting the manufacturer directly.Out-of-warranty devices require self-maintenance or reinitiation of the procurement process.



Application Scenarios

Last Updated At: 2025-08-04 15:56:45

Compared to self-built data centers, using Bare Metal Servers (BMS) enables faster setup of computing environments. CCB Cloud provides capabilities such as data center private networks, NAT gateways, dedicated line interconnection, O&M support, basic monitoring, and security protection. By simply selecting server configurations and quantities, deployment and delivery time can be reduced to approximately half an hour. For performance-sensitive services, BMS is also recommended as it delivers the computational power of physical machines without performance overhead. Scenarios requiring high server performance, stability, and real-time capabilities are ideal for standard Bare Metal Servers.

For intensive, high-speed parallel computing and floating-point computing scenarios, GPU servers are recommended. GPU servers provide fast, stable, and elastic physical computing services based on GPUs, primarily applied in deep learning training/inference, graphics/image processing, and scientific computing. By leveraging their powerful capability to process massive datasets rapidly, GPU servers effectively alleviate computational pressure and enhance business efficiency and competitiveness.

For big data computing scenarios, high-capacity storage servers are suitable. These servers can establish a unified big data and computing platform to collect, store, analyze, search, and mine massive data, uncovering intrinsic value. They are applicable to historical data statistics, interactive queries, precision marketing, fraud detection, and social network analysis.



Region and zone

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Regions and Availability Zones (AZs) describe the geographical locations of CCB Cloud data centers. Bare Metal Servers can be deployed in specific regions and AZs. Region refers to an independent geographical area. Each region contains multiple isolated data centers called Availability Zones. Availability Zones (AZs) are physically isolated facilities within the same region, featuring independent power supplies, cooling systems, and network infrastructure. Different AZs in the same region are interconnected via low-latency private networks. When deploying services, it is recommended to distribute workloads across multiple AZs to avoid service unavailability caused by single points of failure.



Deployment Guide

Getting Started

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This document uses a bare metal server as an example to help users learn how to create and use BMS instances.



Deployment Process

Deployment Process

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Follow these steps to create and use a Bare Metal Server:



Step 1: Create a Bare Metal Server

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Access the Creation Page Navigate to the BMS creation page by clicking 【New】 in the upper left corner of the BMS instance list. Select Region and Availability Zone (AZ) Choose the region and AZ based on business requirements.BMS resource types vary across regions. Once selected, BMS instances cannot be migrated. Plan resource distribution carefully. Available regions/AZs are subject to CCB Cloud’s actual offerings. Recommendation: Select the data center closest to end-users to minimize access latency and improve performance. Configure Server Specifications Select a BMS model that meets business needs.Example interface for Beijing Zone 1:

裸金属服务器

裸金属服务器

< 返回

新建服务器

1 地域和操作系统

2 存储和网络

3 确认信息

地域和机型

地域

北京

可用区

自用北京一区公共

自用北京二区公共

机型

机型	类型	CPU	内存	硬盘	RAID
CG1-10G-自用-(2RAID1 4RAID10)	自定义机型	[6148*2]40	16GB*16	[SSD]480G*6	支持



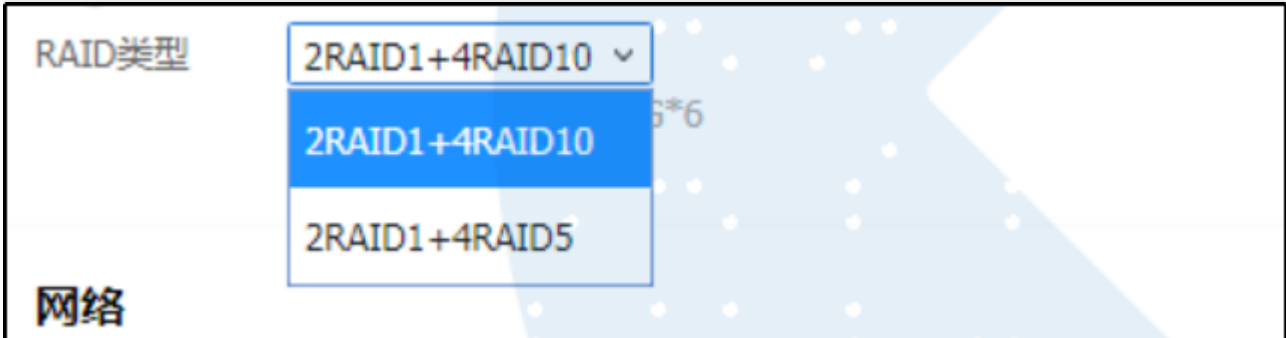
Step 2: Select Server Configuration

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This section explains how to configure a server, which includes choosing an operating system, setting up RAID modes, and adding internet access capabilities.

Selecting Operating System After selecting the desired BMS model, choose the server configuration, including the operating system and RAID setup. **Choose an Operating System:** Select an appropriate operating system based on your business needs. Currently, bare metal servers offer support for designated Linux distributions depending on the model. Once you’ve chosen your server configuration, follow the prompts to select the operating system and its version. Virtualization technology used in cloud servers shields compatibility issues with hardware, so when installing an operating system on a cloud server, hardware compatibility does not need to be considered. However, since bare metal servers provide raw physical machines, the operating systems offered on the page must be certified by the server manufacturer and tested by CCB Cloud to ensure they function properly in the data center environment. It is advisable to consult with CCB Cloud customer service or technical managers beforehand regarding operating system requirements.

Configuring RAID Modes After selecting the operating system, click [Next] to choose the RAID mode best suited for your business scenario. On the page, you’ll see that this server supports various RAID modes. For more RAID options, please contact CCB Cloud customer service or technical managers for details. Different servers, due to limitations imposed by RAID controllers and hard drive counts, may not all support the same range of RAID modes. For a more detailed explanation of RAID-related features, refer to the chapter on Setting RAID Modes.





Step 4: Deployment of Application Scenarios

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The applications running on the BMS bare metal servers provided by CCB Cloud are installed and deployed by the user. We recommend designing applications with loose coupling to both the system and hardware environment, making it easier to handle changes in hardware models and operating system versions when replacing aging hardware.



Step 3: Logging Into the Server

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Retrieve the IP Address of the Bare Metal Server On the control panel for BMS bare metal servers, locate the relevant server. Remote Login You can remotely log into the bare metal server through a CVM located in the same VPC as the BMS. The default port for standard bare metal servers is 36000: `ssh -p36000 root@IP` Enter the initial password for the root user to complete the login procedure.



Operation Guide

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Setting RAID Modes RAID, which stands for Redundant Array of Independent Disks, is also known as an independent disk array. Its fundamental concept involves combining multiple hard drives into a single array to achieve enhanced data integration, fault tolerance, and higher throughput or capacity compared to individual hard drives. In summary, the goal of RAID is to improve read and write performance as well as fault tolerance.

When creating or reinstalling bare metal servers, you are allowed to set RAID modes. Generally, the process involves: Assembling a server equipped with a RAID controller card. If the server lacks a RAID card, RAID modes cannot be set; however, servers with RAID cards can be configured in HBA mode, which is equivalent to NO-RAID. Selecting the Suitable RAID Mode According to Your Business Scenario Commonly used RAID modes include RAID0, RAID1, RAID5, and RAID10. For more detailed information, please contact CCB Cloud customer service or technical managers for further consultation.



Setting RAID Modes

Last Updated At: 2025-08-04 16:17:27

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Reinstalling and Choosing RAID Mode

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When reinstalling, you still have the option to select a RAID mode. Please note that rebuilding the RAID will reformat the disks. Make sure to back up your data in advance.



BMS Subnet

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Within a VPC, there are two types of subnets: BMS subnets and regular subnets. Among these, BMS subnets are specifically designed to host the virtual network space for bare metal servers. Under the same private network VPC, BMS subnets and regular subnets are interconnected at the network layer by default. There's no need to configure routes separately to enable connectivity between CVM cloud servers and BMS bare metal servers within the same VPC.



User Guidance

Instance Lifecycle

Last Updated At: 2025-08-04 16:27:12

The lifecycle of a CCB Cloud bare metal server (BMS instance) encompasses all states experienced from creation to release, including operations such as creation, startup, shutdown, reboot, and reinstall.



Deployment

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Different regions and availability zones offer distinct types of bare metal resources. Once a region and availability zone are chosen, the bare metal server cannot be relocated. Tenants must plan resource allocation before deploying resources. Prior to utilization, precise positioning requirements should be determined, including options for co-cabinet, cross-cabinet, and cross-TOR placement methods. At present, bare metal servers lack high availability, necessitating downtime for repairs in case of certain hardware malfunctions. When employing bare metal servers, tenants should design high availability at the application level. It is recommended that each deployment unit comprises at least two bare metal instances. Moreover, the bare metal product manager will assist in planning and designing positioning strategies. Hardware models, operating systems, and RAID configurations must align with officially available combinations.



Security and Networking

Last Updated At: 2025-08-04 16:27:12

Before utilizing bare metal products, it is mandatory to establish an independent BMS-type subnet beforehand, followed by subscription procedures for bare metal servers. Products do not support ACLs (Access Control Lists) or security groups. Tenants need to implement their own security access control policies, such as using iptables for network isolation. Scenarios involving communication between bare metal servers, CVMs (Cloud Virtual Machines), and other cloud products depend on cloud gateway products. When there are substantial changes in bandwidth usage concerning bare metal products, tenants should consult with product managers beforehand. Considering high availability, bare metal servers should not be bound as backend services for load balancers.



Storage

Last Updated At: 2025-08-04 16:27:28

Bare metal servers employ local disks. It is highly recommended to install operating systems or software exclusively on local disks, refraining from storing computational data on them. Support for CFS (Cloud File System) and COS (Cloud Object Storage) is available, whereas CBS (Cloud Block Storage) and SAN (Storage Area Network) are not supported (refer to the respective introductions for CFS and COS for specific capabilities). You can apply for CFS and COS storage to accommodate computational data. Local disks cannot undergo fault migration, hence the NORAIID approach is not suggested.



Backup and Recovery

Last Updated At: 2025-08-04 16:36:29

It is wise to leverage CFS or COS for backing up critical business data. When returning BMS standard models, data disk information will be erased, necessitating preemptive backup actions. Upon returning custom BMS models, tenants themselves must delete sensitive data since data disk information remains intact.



Quotas

Last Updated At: 2025-08-04 16:36:29

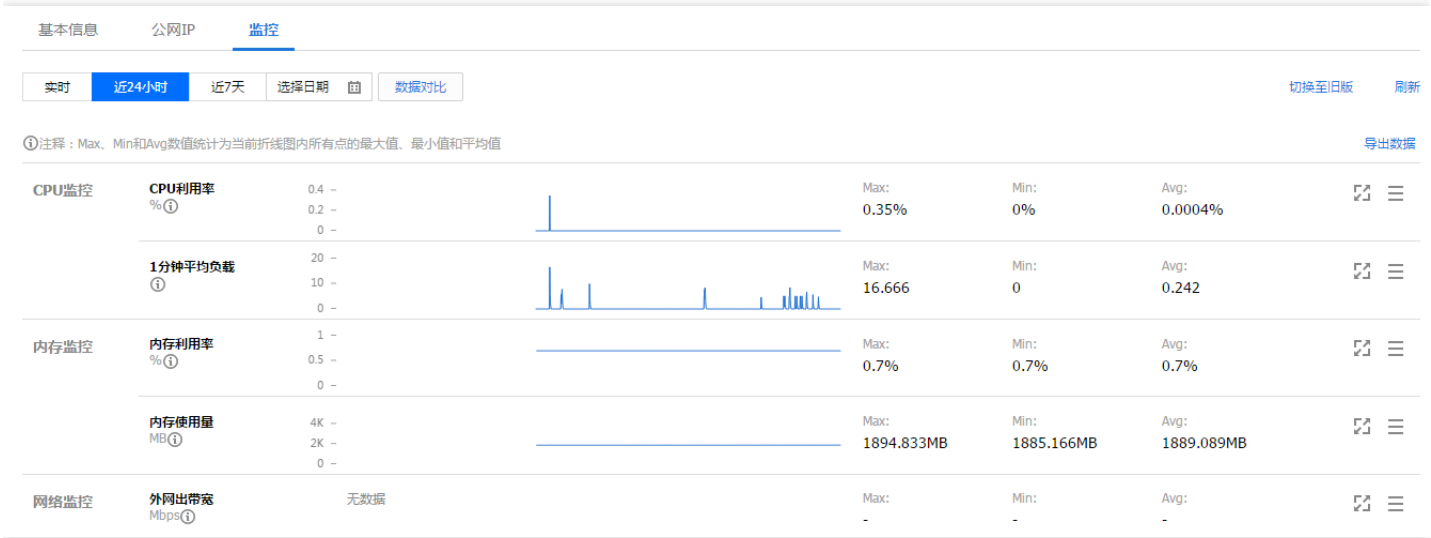
At present, CCB Cloud’s bare metal servers operate on-demand. Please contact CCB Cloud customer service or technical managers for discussions regarding deployment needs for bare metal servers.



Monitoring Services

Last Updated At: 2025-08-11 18:39:54

Upon successful deployment of standard bare metal servers, monitoring services for CPU usage, memory, and internet traffic are pre-installed by default. These can be accessed through the detailed information section of the server.



Customized bare metal servers currently do not automatically install monitoring services. Should there be a requirement, advanced communication with the technical manager responsible for the product is necessary.



Others

Last Updated At: 2025-08-04 16:36:29

The BIOS mode is set to Uefi, and automatic partition configuration is currently unsupported. Management of other background tasks through iLO or out-of-band management interfaces is also unsupported. Password retrieval is unavailable; therefore, it is crucial to keep your password secure.



Common Issues

How to Terminate BMS After Use?

Last Updated At: 2025-08-04 16:36:20

Click the [Return] button in the console. This will permanently remove the physical server resource from the console list. All data will be irrecoverable after this operation. Ensure data backup before deletion.



How to Configure a Private Network VPC for BMS?

Last Updated At: 2025-08-04 16:36:20

During BMS creation, you must specify a preconfigured VPC network. Navigate to the VPC list page to create a new VPC network if needed.



How to Configure Subnets for BMS?

Last Updated At: 2025-08-11 18:39:54

When initiating a new BMS, designate the appropriate subnet information. Note that BMS networks cannot share subnets with CVMs and thus demand individual configuration. Access the private network subnet page, then click "Create." Select the desired VPC network and the BMS subnet type, and proceed to configure the subnet details to generate a new subnet.

子网 华中地区 (武汉) 全部私有网络

+新建 筛选

搜索子网的名称/ID

创建子网

所属网络 vpc-ng6ap1pi (bms_test_p... | 192.168.0.0/16) 已有3个子网

子网类型 ☐ 普通子网 ☒ BMS子网

子网名称	CIDR	可用区 ⓘ	关联路由表 ⓘ	操作
请输入子网名称	0/60 192.168. 0 .0 / 24	武汉一区	default	-

+ 新增一行

创建 取消



How to Configure Routing Tables for BMS

Last Updated At: 2025-08-04 16:36:20

When the routing table of the BMS subnet cannot meet networking requirements, you can reconfigure it by replacing the routing table. Note that this operation will cause communication interruption — proceed with caution.



Forgot BMS Login Password – How to Retrieve?

Last Updated At: 2025-08-04 16:36:29

Currently, BMS does not support password recovery functions. Password reset can only be performed by reinstalling the operating system. It is imperative to remember your login password.



How to Achieve Intranet Communication with CVM

Last Updated At: 2025-08-04 16:40:42

- When CVM and BMS reside in the same VPC, they communicate by default.
- For cross-VPC communication, establish a peering connection between VPCs and configure corresponding routing entries in both VPCs' routing tables. Refer to the 《Peering Connection Product Introduction Product Documentation》.



How to Configure NAT Gateway for BMS

Last Updated At: 2025-08-04 16:40:42

1. Create a NAT gateway in the BMS's VPC.
2. Configure routing rules for the NAT gateway to direct BMS subnet traffic to it.
3. Adjust NAT gateway configurations per business needs (see 《NAT Gateway Product Documentation》).



How to Configure Direct Connect Gateway for BMS

Last Updated At: 2025-08-04 16:40:42

1. Create a Direct Connect Gateway (DCGW) in the BMS's VPC.
2. Configure DCGW routing rules to direct BMS subnet traffic to the gateway.
3. Establish physical connections and dedicated channels for the DCGW.
4. Fine-tune configurations as needed (refer to 《Direct Connect Product Documentation》).



How to Configure Peering Connections for BMS

Last Updated At: 2025-08-04 16:40:42

1. Create a peering connection in the BMS's VPC.
2. Configure peering connection routing rules to direct BMS subnet traffic.
3. Adjust configurations per requirements (see 《Peering Connection Product Introduction Product Documentation》).



Troubleshooting

Last Updated At: 2025-08-04 16:40:42

BMS bare metal servers provide physical cloud resources. Users are responsible for OS/application maintenance after deployment. For non-software/hardware issues:

Critical Notes:

1. Hardware Failures: Immediately contact CCB Cloud Ops with BMS ID and IP details.
2. Intra-VPC Communication Issues:
 - BMS-to-BMS: Verify IP/subnet mask configurations
 - BMS-to-CVM: Check mutual accessibility, IP configurations, and security group/ACL settings
3. Cross-IDC Communication Failures:
 - Confirm basic VPC connectivity
 - Verify IDC access controls and ping connectivity
4. NAT Gateway Failures: Validate NAT gateway configurations when internal communication works but external access fails

If issues persist after these checks, contact CCB Cloud Ops with collected diagnostic information.

Configuration Constraints (From Knowledge Base):

- BMS subnets cannot simultaneously bind to both public CLB/NAT gateways
- NAT gateway routing should prioritize same-AZ configurations
- Always maintain backup strategies for critical configurations