

# **BM Cloud Physical Machine**

## **Product Introduction**

### **Product Documentation**



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# Contents

## Product Introduction

Overview

Strengths

Use Cases

# Product Introduction

## Overview

Last updated : 2023-05-19 12:00:43

### CBM overview

Cloud Bare Metal (CBM) is a bare metal cloud service combining the elasticity of virtual machines and the performance of physical machines. It can be seamlessly integrated with all Tencent Cloud products such as networks, storage, and databases to sustain dedicated, high-performance, and isolated physical machine clusters in the cloud.

CBM's CPU and memory can be directly accessed by your business applications without incurring virtualization costs. With CBM, you only need to add or remove physical machines based on business characteristics and can get physical machines within just minutes. CBM frees you from troublesome capacity management and Ops, so that you can focus more on business innovation.

### Concepts

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

Concept	Description
<b>Instance</b>	A public cloud computing resource containing basic computing components such as CPU, memory, operating system, network, and disk.
<b>Instance specification</b>	Different CPU, memory, storage, and network configurations coming with different Tencent Cloud servers.
<b>Image</b>	CBM is fully compatible with the CVM image system and provides preconfigured Windows and Linux images.
<b>Local disk</b>	A device on the physical machine that can be used for persistent storage by an instance.
<b>Cloud disk</b>	A distributed and persistent block storage device provided by Tencent Cloud that can serve as the system disk or an expandable data disk of an instance.
<b>VPC</b>	A logically isolated virtual network space in Tencent Cloud.
<b>IP</b>	Tencent Cloud provides <b>private</b> and <b>public</b> IPs. Simply put, a private IP provides a LAN service for access between CBM instances, while a public IP is used for you to access an internet service on a CBM instance.

<b>EIP</b>	Static public network IP addresses designed especially for dynamic networks to meet the demands for fast troubleshooting.
<b>Security group</b>	A virtual firewall that can check the status and filter data packets. As an important means for network security isolation, it can be used to set network access controls for one or more CBM instances.
<b>Login method</b>	<a href="#">Login password</a> or the more secure <a href="#">SSH key pair</a> .
<b>Region and AZ</b>	The startup location of instances and other resources. CBM instances in the same VPC are interconnected over the private network, which means they can communicate through private IPs, even if they are in different AZs of the same region.
<b>Tencent Cloud console</b>	Web-based UIs.

## Usage

Tencent Cloud allows you to configure and manage CBM instances in the following ways:

- **Console:** You can configure and manage CBM instances on the web UIs of CVM.
- **API:** Tencent Cloud provides APIs for configuring and managing CBM instances. For more information, see [API Category](#).
- **SDK:** You can use the SDK or TCCLI to call APIs.

### Note

If you have never used CBM, you can try it out as instructed in [Getting Started](#).

## Billing overview

For CBM billing details, see [Billing Overview](#).

# Strengths

Last updated : 2023-01-03 15:25:22

CBM is more efficient than self-built IDCs in setting up a dedicated cloud cluster. It comes with Tencent Cloud's public cloud cross-region IDC private network interconnection, VPC, CLB, NAT Gateway, Ops, monitoring, and security protection capabilities. CBM boasts strong computing capabilities without performance loss and security isolation of physical machines, perfectly meeting your requirements for enterprise data security, regulatory business security, and reliability.

CBM has the following strengths compared to managed self-built IDCs:

Comparison Item	CBM	Managed Self-Built IDC
Elasticity	<p>Elastic scalability and agile deployment.</p> <ul style="list-style-type: none"> <li>Based on the proprietary elastic bare metal architecture, CBM supports physical machine instance creation in minutes and out-of-the-box and quick deployment.</li> <li>Cloud disks and ENIs can be mounted to the new-gen models, and disks can be configured to allow for flexible capacity expansion.</li> <li>Thanks to the Tencent Cloud resource pool, you can quickly purchase dozens of physical machines to expand your cluster during peak hours.</li> </ul>	<p>Poor elasticity and flexibility.</p> <ul style="list-style-type: none"> <li>Configuration upgrade may disqualify you from the vendor's maintenance service.</li> <li>You need to stock up for temporary expansion needs and bear performance surplus and depreciation during off-peak hours.</li> </ul>
Ease of use	<p>Simple operations and flexible Ops.</p> <ul style="list-style-type: none"> <li>You can disable, enable, restart, or reinstall a server online in the console or through TencentCloud API. You can also view the server status out of the band through the VNC feature.</li> <li>It is compatible with public cloud image systems and provides various images for flexible deployment.</li> </ul>	<p>Server operations require assistance from IDC on-site engineers, which is troublesome and time-consuming.</p>
Comprehensiveness	<p>It is integrated with various types of Tencent Cloud services.</p> <ul style="list-style-type: none"> <li>Tencent Cloud IDCs in different regions are interconnected over the private network of the high-speed IDC internet.</li> <li>It provides VPC, CLB, NAT Gateway, and other Tencent Cloud services.</li> </ul>	<p>The costs of self-built IDCs are high.</p> <ul style="list-style-type: none"> <li>Private network interconnection requires costly leased lines.</li> <li>You need to set up load balancers and NAT gateways on your own.</li> </ul>

	<ul style="list-style-type: none"> <li>• It provides network resources, TencentCloud API, and virtualization.</li> </ul>	
<p>Security</p>	<p>All-round and professional protection.</p> <ul style="list-style-type: none"> <li>• The VPC allows you 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.</li> <li>• It provides basic server and security protection measures such as trojan detection, brute force protection, vulnerability scan, WAF, and login security. These free services form a solid line of defense for your business.</li> <li>• It provides up to 10 Gbps DDoS protection free of charge, monitors network traffic in real time, cleanses attack traffic as soon as it is identified, and enables protection within seconds for public IPs in Tencent Cloud.</li> </ul>	<p>It is prone to hacker attacks and requires additional security protection services.</p>
<p>Ops</p>	<p>24/7 Ops service.</p> <ul style="list-style-type: none"> <li>• To quickly recover from hardware failures, Tencent Cloud offers a dedicated hardware pool in the IDC. Failed components will be replaced after the diagnosis by on-site professional engineers.</li> <li>• Tencent Cloud has a team of expert network engineers who can handle network failures due to ENI or switch issues.</li> </ul>	<p>No expert-level maintenance is available, and network issues need to be addressed by yourself after the maintenance expires.</p>
<p>Cost effectiveness</p>	<p>On-demand purchase and pay-as-you-go billing.</p> <ul style="list-style-type: none"> <li>• CBM supports second-level pay-as-you-go billing and on-demand purchase, reducing costs by eliminating one-time investments.</li> <li>• It provides different configurations, such as Standard, High I/O, Big Data, and heterogeneous GPU instances, which can be purchased as needed to reduce resource waste.</li> </ul>	<p>High rental and Ops costs.</p> <ul style="list-style-type: none"> <li>• You need to prepare a large number of components or purchase the maintenance or on-site services of the vendor or IDC to quickly handle hardware failures.</li> <li>• You need to purchase many servers at a time, which are costly and tend to depreciate.</li> </ul>

# Use Cases

Last updated : 2023-01-03 15:25:22

CBM is a public cloud physical machine leasing service that is pay-as-you-go and can be purchased on demand. It is widely applicable to scenarios requiring high performance, strong isolation, and self-built virtualization. The following are common use cases.

## Game applications

Massively multiplayer online role-playing games (MMORPGs) are very attractive because of their colorful images, grand scenes, multiple modes, and large-scale cross-server events. Players in the same region can see each other, and all their operations need to be broadcast in the view. When the number of players is large, high requirements are created for the load, stability, and network of the accessed server. You can deploy the combat logic and other modules of your game in CBM instances to accommodate high I/O and PPS based on the characteristics of the physical machine. You can also reshape your cost structure by leveraging the elasticity of CBM instances to lower the TCO.

## Government and enterprise applications

Government and enterprise applications are highly sensitive to data security and require dedicated, high-performance, and easily scalable services in OLTP and big data processing scenarios, which translate into resource exclusivity, network isolation, and high performance on physical machines. These business requirements can be met by CBM instances with its dedicated and high-performance public cloud physical machine clusters.

## Big data scenarios

In the internet big data business, typically big data storage and analysis, CBM instances can offer high cost-effectiveness with their local NVMe high-speed storage and COS's storage-computing separation deployment solution.

## Cloud-native bare metal container deployment

As elastic internet businesses are going cloud-native containerized, CBM instances based on the new-gen bare metal architecture leverage ENIs, CBS, TKE's VPC-CNI mode, and public CLB to gain the performance of physical machines and the native network and storage capabilities in the cloud, so as to reduce the performance loss caused by kube-proxy component forwarding. Over 400 ENIs or cloud disks can be mounted to an instance to implement high-density container management. Compared to virtual machines, bare metal containers feature a higher deployment density, lower resource costs, and more agile deployment, helping you reduce cloud-based costs with cloud native technologies.

## Cloud virtualization software support



CBM instances are highly compatible, scalable, and accessible in virtualization business scenarios. You can seamlessly connect to CBM through third-party virtualization software such as Xen and KVM in your self-built IDC or through virtualization scheduling platforms such as OpenStack. This can reduce your business transformation and cloud management costs.

### **High-performance computing/AI application deployment**

Supercomputing, gene sequencing, AI, and other high-performance computing scenarios are computing-intensive with a large volume of processed data. CBM leverages high-speed and low-latency RDMA network interconnection and the latest CPU architecture and heterogeneous GPU components to calculate the computing-intensive load, supporting servers in pursuit of high computing performance, stability, and real-timeness.