

# **Tencent Cloud Lighthouse**

## **Product Introduction**

### **Product Documentation**



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# Product Introduction

## Overview

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### What is Tencent Cloud Lighthouse?

Tencent Cloud Lighthouse (Lighthouse) is a new-gen cloud server service for small- and medium-sized enterprises (SMEs) and developers. It features out-of-the-box service for cloud-based lightweight business scenarios, such as websites, mini games, ecommerce, cloud storage, image hosting, and various development, testing as well as learning environments. It is easier to use than traditional cloud server services and integrates common basic cloud services into bundles with different data transfer quota. Such bundles contain popular open-source software programs, enabling you to build applications swiftly and enjoy the best way to get started with Tencent Cloud.

### Why Tencent Cloud Lighthouse?

Tencent Cloud Lighthouse features the following advantages:

- **One-Click App Deployment:** A rich set of out-of-the-box app images and preconfigured software stacks for websites, blogs, and other application systems allow you to deploy apps in seconds.
- **Easy to Use:** One-stop integration of basic cloud services, including computing, storage, and network, makes creating and managing cloud servers and applications simple and intuitive.
- **Cost Effective Bundles:** Bundles for computing, storage, and network resources make your deployments highly cost-effective.
- **Stable, reliable, and secure.**

To learn more about Tencent Cloud Lighthouse, see [Strengths](#) and [Use Cases](#).

### Differences from CVM

For more information on the differences between Lighthouse and CVM, see [Comparison with CVM](#).

### Instances

A Lighthouse instance is a virtual computing resource in the cloud, containing the most basic components such as CPU, OS, network, and disk. Lighthouse instances are generally suitable for lightweight application scenarios with a moderate number of access requests, including small websites, web applications, blogs, forums, and cloud-based development, testing, and learning environments. For more information on how to select an instance specification, see [Lighthouse Bundles](#).

For scenarios like high-concurrency websites, video encoding/decoding, large-scale games, and complex distributed cluster applications, it's recommended to use CVM. CVM provides rich instance models, such as Memory Optimized, High I/O, Big Data, Bare Metal, and GPU/FPGA Heterogeneous Computing. For more information, see [CVM Instance Types](#).

## Image

An image is a preconfigured template used for the launch and running of Lighthouse instances. It contains the preinstalled operating system and software applications. Simply put, you can consider an image as an "installation disk" for Lighthouse instance. You can use an image to create one or multiple instances.

Lighthouse provides five types of images:

- Application image
- System image
- Docker image
- Custom Image
- Shared image

- **Description**

An application image provides everything you need to launch a Lighthouse instance, including the OS (CentOS and Windows Server), applications (such as LAMP, WordPress, ASP.NET, and Node.js), their runtime environments, and relevant initialization configuration files.

- **Use cases**

It is suitable for quick out-of-the-box application deployment. After a Lighthouse instance is created from an application image, the application system can be initialized automatically, and you can build the application in just a few steps of simple configuration, with no need to perform operations such as manually installing applications and uploading software packages.

- **Available images**

- WordPress
- WooCommerce
- SRS audio/video server
- Interactive live streaming room service
- Typecho

- Cloudfire
- Matomo
- LAMP
- Node.js
- Theia IDE
- Docker CE
- K3s
- ASP.NET

For more information on the images, please go to the [Lighthouse purchase page](#).

#### Note

You can use an image to build personal websites, forums, or other platforms as instructed in [Best Practice](#).

## Network

The network of Lighthouse is based on Tencent Cloud VPC, which is stable and secure.

#### Note

For more information about the networking of Lighthouse instances, [Region and Network Connectivity](#).

Show All

### Public IP

展开&收起

An independent public IP is assigned to each created Lighthouse instance, and a dedicated public network bandwidth value is configured by default for access over the internet. You cannot add more public IPs or change the public IP.

### Public network bandwidth

展开&收起

It is the upper limit of the public network outbound bandwidth for a Lighthouse instance outside the Chinese mainland.

#### Note

- It is called "Bandwidth" in [Lighthouse Bundles](#).
- For information on inbound/outbound bandwidth cap, see [Bandwidth Cap Description](#).
- During peak periods, due to cross-border network congestion, the actual public network bandwidth connected from the Chinese mainland may not reach the "Bandwidth" indicated in the Lighthouse bundles.

## Private IP

展开&收起

- Each Lighthouse instance is assigned with one private IP for communication with other Lighthouse instances.
- Under the same account, Lighthouse instances are grouped by the region and deployed on different VPCs.
- Private network bandwidth is the bandwidth of a shared network, and there is no guarantee for its continuous stability.
- Network isolation between Lighthouse instances can be implemented by a firewall.

## Data transfer

展开&收起

Data transfer of a Lighthouse instance is included in the bundle. The quota of data transfer refers to the monthly upper limit on the public network outbound traffic. When the quota is used up, the excessive part is billed on the pay-as-you-go basis. For more information, see [Billing Overview](#).

# Storage

Cloud Block Storage (CBS) is a cost-effective and customizable block storage device service, featuring high availability and reliability. It provides efficient and reliable storage device for Lighthouse instances. CBS provides long-term storage at the data block level. It is typically used as the primary storage device for data that requires frequent and fine-grained updates (such as file system and database). CBS uses a three-copy distributed mechanism to back up your data on different physical machines to avoid data loss caused by a single point of failure.

See below for the lifecycles of system disks and data disks.

Show All

## System disk

展开&收起

- The lifecycle of a system disk follows the lifecycle of the bound Lighthouse instance. It is purchased with the Lighthouse, and cannot be attached or detached.

- All system disks included in Lighthouse bundles are SSDs, which are based on full NVMe SSD storage media and use a three-copy distributed storage mechanism. It features low-latency and high-throughput I/O capabilities with a high random IOPS and 99.9999999% data security.

## Data disk

展开&收起

- The lifecycle of a data disk is independent of a Lighthouse instance. You can purchase data disks independently and then manually attach them to or detach them from any Lighthouse instance in the same availability zone. You can attach multiple data disks to one Lighthouse instance.
- The Lighthouse data disk supports **Premium cloud disks** and **SSD cloud disks**. See [Cloud Disk Types] (<https://www.tencentcloud.com/document/product/362/31636>).

## Secure service

Anti-DDoS Basic and [Cloud Workload Protection Platform \(CWPP\) Basic](#) are activated by default for Lighthouse instances.

### Note

- Anti-DDoS: To check the DDoS protection status, go to the [Anti-DDoS Basic](#) console, and select **Lighthouse** at the top.
- CWPP Basic: To check the details, go to the CWPP console, open the [Server List](#) page, and select **Lighthouse**.

## Relevant Tencent Cloud Services

- If you want to create a website and release information on the internet, you need to register a domain name.
- Bind the domain name and resolve it for accessing your website directly with the domain name.
- [SSL Certificates Service](#): Install a Secure Sockets Layer (SSL) certificate to provide security features for your website such as HTTPS, identity verification, and encrypted data transfer.
- [Cloud Monitor](#): Monitor performance of the Lighthouse instance, and [creating alarm policies](#) to receive notifications when exceptions happen by email, SMS, or phone call.



# Product Comparison

## Comparison with CVM

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Compared with [CVM](#), Lighthouse is easier to use and more suitable for SMEs, developers, cloud computing beginners, and students, as it simplifies CVM's advanced concepts and features. It offers high-bandwidth data transfer plans and integrates basic cloud services into cost-effective bundles. Such bundles contain popular open-source software programs perfect for lightweight use cases with low to medium load and moderate access requests, such as small and mid-sized websites, web applications, blogs, forums, mini games, ecommerce, cloud storage, and image hosting, as well as development, testing, and learning environments in the cloud.

Note

- When creating a Lighthouse instance, you cannot specify the CPU model of the underlying physical server; instead, Tencent Cloud will randomly assign a physical CPU model that meets the selected bundle specification.
- At the same specification level, Lighthouse has a CPU and memory performance comparable with that of [CVM](#).

The table below lists Lighthouse's strengths and main differences from CVM:

Strength		Product Lighthouse	CVM
Target user		SMEs and individual developers	Large ent
Lightweight scenario-oriented		Lightweight use cases: <ul style="list-style-type: none"> <li>• Enterprise websites, blogs, forums, news, and product display</li> <li>• General web applications</li> <li>• WeChat mini programs and mini games</li> <li>• Mobile apps, H5 apps, and WeChat Official Account</li> <li>• E-commerce shops, individual websites</li> <li>• Cloud storage and image hosting services</li> <li>• Cloud-based development, testing, and learning environments</li> </ul>	Use case: <ul style="list-style-type: none"> <li>• High-c</li> <li>• Large q</li> <li>• Compl</li> <li>• applica</li> <li>• Video €</li> <li>• Big dat</li> <li>• Machir</li> </ul>
Favorable pricing	Selling method	Cost-effective bundles (combinations of computing/network/storage resources)	Flexible s computing that are b

	<b>Network billing</b>	High-bandwidth data transfer plan	Fixed ban
<b>Simpler use</b>	<b>Console operation</b>	Integrated, independent, and simplified console	For all ser CVM, VPC involved
	<b>Application creation</b>	<ul style="list-style-type: none"> <li>Out-of-the-box and premium official application images, preset with the optimal combination of software stacks required by the application system</li> <li>Application creation in one minute as well as automatic installation of application software and runtime environment and initialization configuration</li> </ul>	Applicatio
	<b>Networking</b>	Automatic network resource creation without manual management needed	Network c managem

#### Note

- Compared with CVM, the main limits of Lighthouse at the functional level include the following:  
An instance supports the overall upgrade of the configuration (computing, storage, and network) on a bundle basis but not bundle downgrade. For more information, see [Upgrading Instance Bundle](#).  
For the specific use limits of Lighthouse, see [Use Limits](#).
- There are certain limits on private network connectivity for Lighthouse. For more information, see [Region and Network Connectivity](#).
- Lighthouse [cloud disks](#) are independent of CVM [cloud disks](#), which means Lighthouse cloud disks can only be attached to Lighthouse instances but not CVM instances.

For scenarios like high-concurrency websites, video encoding/decoding, large-scale games, and complex distributed cluster applications, it's recommended to use CVM. CVM provides rich instance models, such as Memory Optimized, High I/O, Big Data, Bare Metal, and GPU/FPGA Heterogeneous Computing. For more information, see [CVM Instance Types](#).

# Comparison with Other Products

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Lighthouse is a new-gen cloud server service developed for lightweight use cases and has many advantages over traditional virtual private server (VPS) and virtual hosting services.

Note :

- **VPS:** it uses server virtualization technologies to divide a single physical server into multiple virtual servers, each of which can have an independent IP address. You have complete admin permissions for your VPS servers and can configure them and install software programs on them as needed.
- **Virtual Hosting:** aka shared web hosting, it allows multiple websites to share the same physical server (or cloud server service, i.e., virtual cloud hosting) at the underlying layer and uses a web server (such as Apache) to sustain these websites. The server has the runtime environments and databases used for website build preinstalled and hosts the database, network bandwidth, and storage resources shared by these websites. You have your own FTP permissions to upload webpage files to your own directory space. You have no permission to log in to the server's backend operating system; instead, you can only use virtual hosting to build websites.

The table below shows the feature comparison:

Feature	Lighthouse	VPS	Virtual Hosting
Server lifecycle management	✓	✓	×
Server power state management	✓	✓	×
System image	✓	✓	×
Application image	✓	×	×
Quick application deployment (such as corporate website, blog, and forum)	✓	×	✓
Application management	✓	×	×
Independent IP	✓	✓	×
Firewall	✓	✓	×

Feature	Lighthouse	VPS	Virtual Hosting
Server monitoring	✓	✓	×
Remote server login	✓	✓	×
Integration with other Tencent Cloud services	✓	×	×

# Strengths

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## Ease of Use

Lighthouse simplifies the complexity of cloud service operation, use, and management and implements the automatic configuration of infrastructure resources such as computing, network, and storage, which help you get started quickly and focus more on business and application innovation.

## Quick Application Build

Lighthouse offers a variety of preconfigured operating systems, development environments, and application stacks, such as Linux and Windows operating systems as well as ASP.NET, LAMP, and WordPress applications, enabling you to quickly deploy, start, and initialize applications.

## Cost Efficiency

You can choose different packages according to the purchase duration (monthly, quarterly, or annual) and enjoy different discounts.

## Stability and Reliability

Lighthouse provides stable network bandwidth, latency, and download/upload speed and guarantees stable cloud server I/O performance with high service availability and data reliability. It provides higher reliability than traditional virtual private server (VPS) services.

## Premium Images

Lighthouse provides a wide variety of dedicated high-quality application images and operating system images as well as a rich-featured image ecosystem, helping you easily and efficiently configure and manage various applications.

## Security Protection

Anti-DDoS Basic and [CWPP Basic](#) are activated by default to help you build a server security protection system. The resources of different users are fully isolated to ensure the security of your resources in the cloud, and firewall services are provided to implement network security protection and guarantee the secure and stable operations of your business.

# Use Cases

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## Website Build

With the premium images of Lighthouse such as WordPress and Discuz! Q, you can build websites meeting your business requirements, such as corporate websites, personal profile websites, blogs, forums, ecommerce websites, and international trade websites. Tencent Cloud will continuously provide more types of application images to help you build various types of websites with speed and ease.



Select the WordPress application image to create an instance



Start the Lighthouse instance



Install a WordPress theme and edit the website content

## Web Application

By using images with built-in common web development platforms, such as LAMP stack and Node.js, you can deploy web applications promptly and release different business applications easily and efficiently.



Select the LAMP application image to create an instance



View the application details



Upload the code



Access and debug the application

## Quick Setup of Development and Test Environments

Lighthouse assists you in building development and test environments outside the production environment anywhere, anytime by offering multiple application images with built-in common development environments, such as LAMP, Node.js, and ASP.NET.



Select an application image with a preset development/testing environment to create an instance



View the application details and log in to the instance



Start development, deployment, and debugging

## Cloud-Based Learning Environment

Lighthouse provides out-of-the-box cloud-based learning environments, including common Linux distributions such as Ubuntu and CentOS, as well as Windows Server, which can be created and terminated at any time.



Select the Ubuntu image to create an instance



Install VNC Server



Install the GNOME desktop environment



Use the local VNC Viewer to remotely log in to the Ubuntu graphical desktop environment



# Instance Package

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When you create a Lighthouse instance, the instance package you specify determines its server hardware configuration. The computing, memory, and storage features vary by instance package. You can select an appropriate instance package based on the scale of your application to be deployed. These instance packages consist of different combinations of CPU, memory, SSD cloud disk, and network traffic package, so you can flexibly select appropriate resources for your applications.

## Instance Limits

- The total number of instances that can be started in a region is limited. For more information, please see [Use Limits](#).
- The purchasable instance packages may vary by region, and some packages may be sold out. The information displayed on the actual purchase page shall prevail.
- Please pay attention to the corresponding network traffic package capacity (i.e., upper limit) of each instance package. After the network traffic of a Lighthouse instance exceeds the limit, it will be billed by the general network bandwidth traffic. For more information, please see [Billing Overview](#).

Note :

- When creating a Lighthouse instance, you cannot specify the CPU model of the underlying physical server; instead, Tencent Cloud will randomly assign a physical CPU model that meets the selected package specification.
- At the same specification level, Lighthouse has a CPU and memory performance comparable with that of [CVM](#).

## Instance Package

For more information on the supported Lighthouse instance packages and their pricing, please see [Basic Package Pricing](#).

## Storage Performance Description

The instance system disks of all Lighthouse packages are [Tencent Cloud SSD cloud disks](#), which are based on full NVMe SSD storage media and use a three-copy distributed storage mechanism to provide low-latency and high-throughput I/O capabilities with a high random IOPS and 99.9999999% data security. Their performance metrics are as follows:

IOPS per Disk	Random IOPS Calculation Formula	Maximum Throughput per Disk (MB/s)	Throughput Calculation Formula	One-Way Random Read/Write Latency
26,000	Random IOPS = $\min\{1800 + \text{storage capacity (GB)} * 30, 26000\}$	260 MB/s	Throughput = $\min\{120 + \text{storage capacity (GB)} * 0.2, 260\}$	0.5–3 ms

## Bandwidth Cap Description

- Outbound
- Inbound

The cap of the package bandwidth used by a Lighthouse instance is the outbound bandwidth cap by default, i.e., the bandwidth that comes out of the Lighthouse instance.

# Use Limits

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## Note

For more information on the differences between Lighthouse and CVM, see [Comparison with CVM](#).

## General Restrictions

An instance supports the overall upgrade of the configuration (computing, storage, and network) on a bundle basis but not bundle downgrade. For more information, see [Upgrading Instance Bundle](#).

## Quota Limits

- Different Lighthouse instance bundles have different quotas of purchasable instances.

## Note

The instance quota refers to the maximum number of instances (including those to be repossessed) of a bundle type in a region under an account.

For example:

- In Singapore region, the quota of General bundles is **20 per account**. Assume that you **2 General instances** in this region, your remaining quota of General instances in this region will be **18**.
- In Silicon Valley region, the Enterprise instance bundle has a default quota of **50 instances**. If you already have **10 Enterprise instances** in this region, your remaining quota of Enterprise instances in this region will be **40**.

The quota of instances that can be created under each account is as shown below:

Region	Instance Package Type	Quota (Instances/Region)
Hong Kong/Macao/Taiwan (China) and other countries/regions	General	20
	Enterprise	50

#### Note

- Lighthouse instances divide into **General** and **Enterprise** bundles that come with different configurations. For more information on instance bundles, see [Basic Bundle Overview](#).
- The General bundle can be upgraded to the Enterprise bundle. The upgraded instances will take up the quota of the target package.

- Up to **100** firewall rules can be created for each Lighthouse instance.
- Up to **10** SSH key pairs can be created in each region under one account.
- Up to **20** custom images can be created in each region.
- Snapshot quota limits:
- The maximum number of free snapshots in each region is the number of created instances multiplied by 2 and cannot exceed 10.

## Private Network Connectivity Limits

There are certain limits on private network connectivity between Lighthouse and other Tencent Cloud services. For more information, see [Region and Network Connectivity](#).

# Region and Network Connectivity

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## Regions

- **Overview**

Tencent Cloud IDCs are distributed across different regions worldwide. To minimize access delay and improve download speed, we recommend you select the region closest to your end users.

- **Considerations**

- Each region includes multiple availability zones.
- By default, Lighthouse instances in different regions are not interconnected over the private network.

### How to Select a Region

When creating a Lighthouse instance, you can select a region based on the following considerations. **Note that the region cannot be changed after the instance is created successfully.**

- **Business requirements:** To guarantee the quality of public network access and reduce the packet loss and delay, we recommend you select the region closest to your end users.
- **Instance package:** Available instance packages vary by region. You can select one based on the CPU, memory, system disk, public network bandwidth, and monthly traffic usage of the instance as required by your application. For more information, see [Price Overview](#).
- **Cost budget:**
  - Instance packages in and outside the Chinese mainland differ in configuration and price.
  - Instance packages for Linux and Windows outside the Chinese mainland differ in price.You can select a package based on your budget and requirements. For billing details, see [Price Overview](#).
- **Cross-border network quality:** For Lighthouse instances outside the Chinese mainland, as access from the Chinese mainland may experience a significant delay and packet loss due to the ISP network lines (non-cross-border access typically suffers no impact), Tencent Cloud only guarantees that the public network bandwidth provided in instance packages is the "peak bandwidth".

## AZs

- **Overview**

An Availability Zone (AZ) refers to a physical location with independent power supply and network resources within a region.

AZs in the same region are interconnected through low-latency private network linkages, which allows Lighthouse instances in different AZs in the same region to communicate with each other through private networks. For applications with high disaster recovery requirements, deploy Lighthouse instances to different availability zones within the same region to ensure fault isolation. Note that it may cause a longer communication latency.

- **Considerations**

Lighthouse instances in different AZs in the same region under the same account are interconnected over the private network by default.

#### How to Select an AZ

We recommend you select an AZ that is "randomly assigned". You can also specify an AZ as needed. **Note that the AZ cannot be changed after the instance is created successfully.**

## Supported Regions and Availability Zones

#### Note

Lighthouse instances are available in the following availability zones.

### Hong Kong/Macao/Taiwan (China)

Hong Kong (China): Hong Kong Zone 1, Hong Kong Zone 2, Hong Kong Zone 3.

### Other countries and regions

- Singapore: Singapore Zone 1, Singapore Zone 2, Singapore Zone 3.
- Tokyo: Tokyo Zone 1, Tokyo Zone 2.
- Seoul: Seoul Zone 1, Seoul Zone 2.
- Silicon Valley: Silicon Valley Zone 1, Silicon Valley Zone 2.
- Frankfurt: Frankfurt Zone 1, Frankfurt Zone 2.
- Toronto: Toronto Zone 1.
- Mumbai: Mumbai Zone 1, Mumbai Zone 2.

## Connectivity

Both private and public IPs are assigned to Lighthouse instances for private and public network connectivity.

- **Private network connectivity:** Data transfer between Lighthouse instances in the same region is over the local area network (LAN), which is free of charge. See [Private network connectivity](#).
- **Public network connectivity:** Lighthouse instances are assigned with public IPs for internet access (both upstream and downstream). Note that you need to pay for the outbound traffic.

### Private network connectivity

- The table below describes the private network connectivity between Lighthouse instances:

Scenario		Supported by Default	Supported over CCN
In the same region Under the same account	Access between Lighthouse instances	<b>Yes</b>	-
	Connection between Lighthouse instances and LighthouseDB instances	<b>Yes</b>	-
Across regions Under the same account	Access between Lighthouse instances	No	-
	Connection between Lighthouse instances and LighthouseDB instances	No	-
Under different accounts	Access between Lighthouse instances	No	-

- The private network connectivity between Lighthouse instances and other Tencent Cloud services:

Scenario		Supported by Default	Supported over CCN
CVM		No	<b>Yes.</b> For more information, see <a href="#">Private Network Interconnection</a> .
COS (in the same region)		<b>Yes.</b> For more information, see <a href="#">COS Regions and Access Endpoints</a> . You can determine whether Lighthouse accesses COS over	-

	the private network by referring to <a href="#">FAQs</a> .	
COS (in different regions)	No	-
TencentDB	No	<b>Yes.</b> For more information, see <a href="#">Private Network Interconnection</a> .
CFS	No	<b>Yes.</b> For more information, see <a href="#">Private Network Interconnection</a> .
CLB	No	-

#### Note

For the above use cases where private network connectivity is not supported, you can connect the instances over the public network, and configure firewall policies to ensure the security. Note that you need to pay for the outbound traffic.

## Public network connectivity description

- **Regions in the Chinese mainland:** Stable BGP network access is provided to ensure that access to Lighthouse within the Chinese mainland is over a stable low-latency network.
- **Regions outside the Chinese mainland:** The public network bandwidth is mainly provided for users outside the Chinese mainland. Access from the Chinese mainland may experience a significant delay and packet loss due to the ISP network lines (non-cross-border access typically suffers no impact).

#### Note

We recommend you select the region closest to your end users to minimize the access delay and improve the network stability.