Cloud Virtual Machine

Getting Started

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Contents

Getting Started
Quickly Configuring Linux CVM Instance

Last updated: 2023-09-25 15:03:54

> **Note**
> We recommend that you use Lighthouse to start your experience with CVM. For more information, see Quickly Configuring a Lighthouse Linux Instance. Lighthouse is designed for cloud developers and cloud computing beginners. To learn about the differences between a CVM and Lighthouse instance, see Comparison with CVM.

This document describes how to create a Linux CVM instance from scratch in the simplest way, and helps you purchase and configure your first monthly subsribed Linux CVM instance.
For more information about building a Windows Linux CVM instance, see Quickly Configuring Windows CVM Instance.

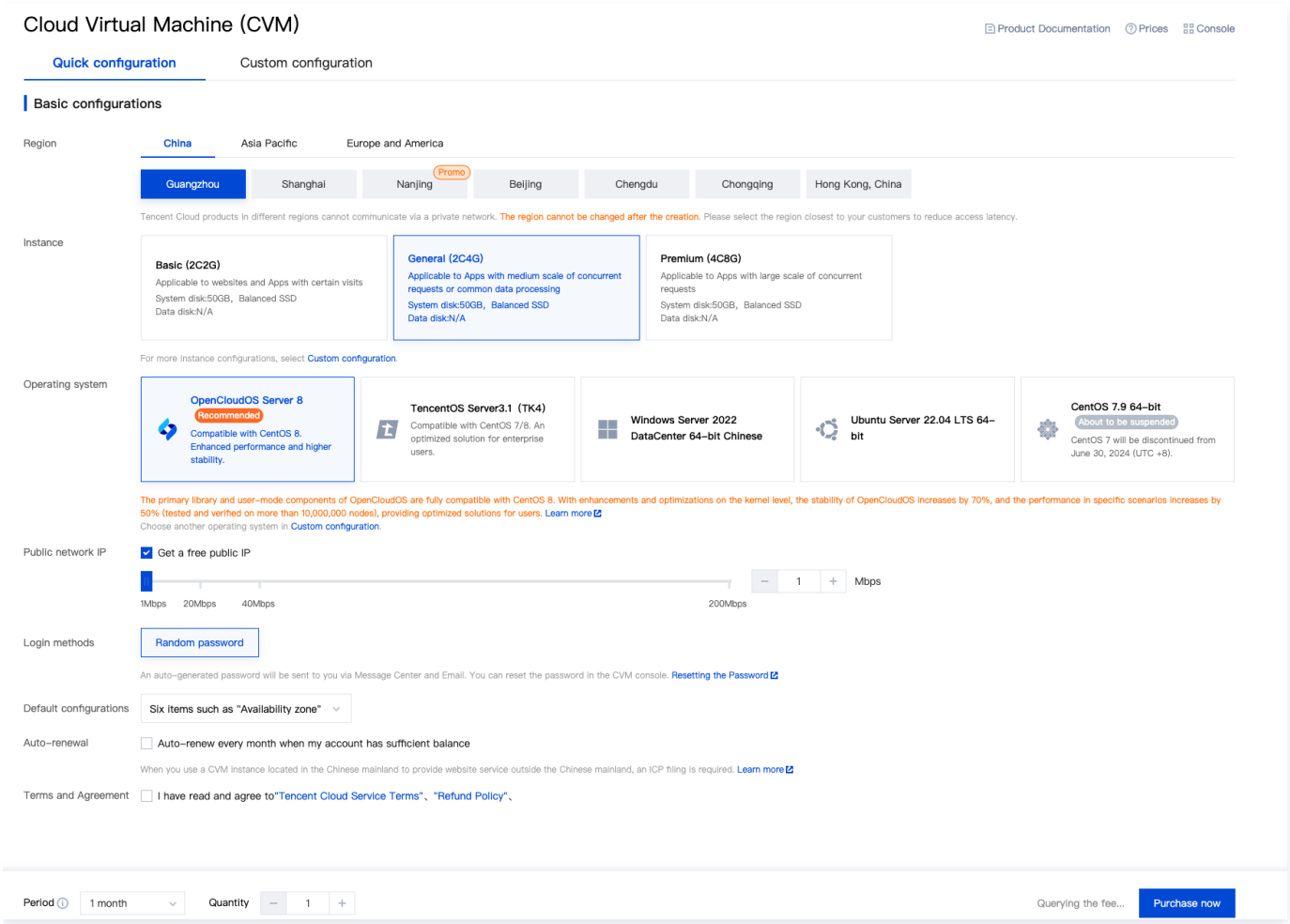
Step 1. Register a Tencent Cloud account

If you already have a Tencent Cloud account, ignore this step.

Click here to

Step 2. Purchase a Linux CVM instance

Click here to



The configuration is as described below:

Configuration items	Note
Region	Select the closest region. For example, if you are located in **Shenzhen**, select **Guangzhou** for the region.
Instance	Select the CVM model configuration as needed, which is **General (2-core, 4 GB)** here for example.
Operating system	Select the CVM operating system as needed, which is **CentOS 8.2 64-bit** here for example.
Public network IP	After this configuration item is selected, a public IP will be assigned to your instance. The default public network bandwidth is **1 Mbps**, which can be adjusted as needed.
Login methods	After creating a CVM instance, you can obtain the random password in the Message Center.
Default configurations	Six default configuration items can be expanded, such as AZ and security group.
Auto-renewal	After this option is selected, if your account balance is sufficient, the CVM instance will be automatically renewed by month upon expiration.
Terms and Agreement	Read and indicate your consent to the relevant agreements.
Period	Select the purchase period, which is **1 month** by default.
Quantity	Select the quantity, which is **1** by default.

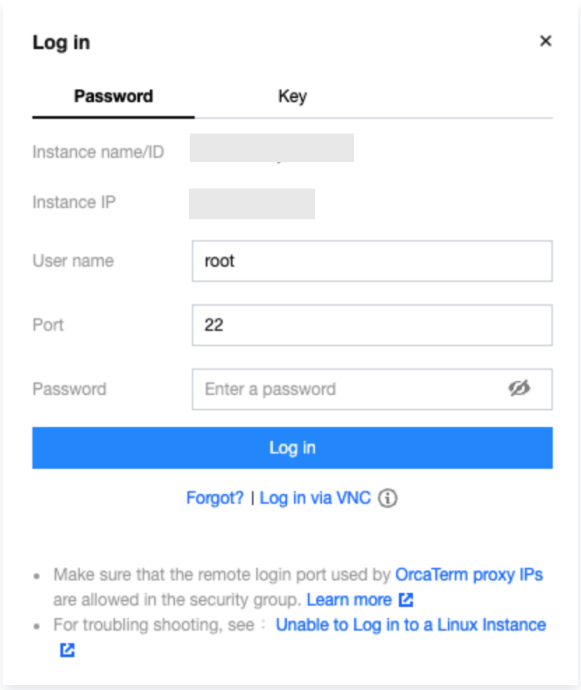
Click **Purchase now** and complete the payment to finish purchasing the CVM instance.
The CVM instance can be used as a personal virtual machine or as a server for your website. Next, you can log in to the purchased instance.

Step 3. Log in to the CVM instance

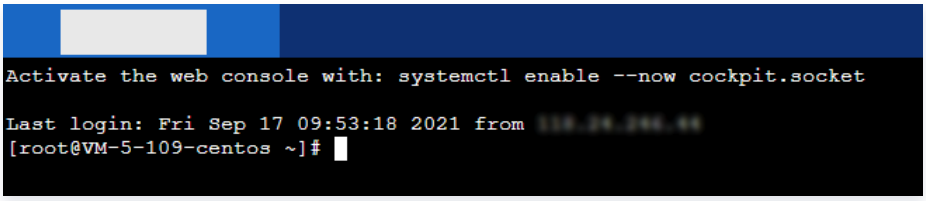
> **Note**
> After you purchase a quickly configured CVM instance, the system will automatically generate a login password and send it to your Message Center. This password is the credential for logging in to the CVM instance.
>
> Retrieve the initial password

1. Log in to the CVM console, find the purchased CVM instance, and click **Log In** on the right.

2. In the **Log in** window, enter the username and password of the CVM instance and click **Log in**, as shown below:



3. After successful login, the UI is as shown below:



See Also : Using the CVM Instance

After you log in to the CVM instance, you can perform the operations as needed, such as:

- Upload your local files to the cloud server
- Setting up a website on a CVM instance

For more information, see the related documentation.

What if a problem occurs when I use TCR?

Submit a ticket or refer to related documentation to troubleshoot.
See below for the common problems and solutions:

- I forgot my CVM login password.
  See Resetting Instance Password.
- What should I do if the login failed? How to locate an issue?
  See Unable to Log into a Linux Instance.

Quickly Configuring Windows CVM Instance

Last updated: 2023-09-25 15:04:29

> **Note**
> If you are new to cloud servers, we recommend starting with Tencent Cloud Lighthouse as an entry-level approach. For more information, see Quickly Configuring Lighthouse Windows Instances. Lighthouse is specifically designed for cloud developers and beginners in cloud computing. To understand the differences between cloud servers and Lighthouse, visit Comparing CVM with Lighthouse.

This article primarily focuses on how to set up a Windows cloud server from scratch in the simplest way possible. Follow the steps in this document to purchase and configure your first pay-as-you-go Windows cloud server. If you are interested in learning how to set up a Linux cloud server, refer to Quickly Configuring Linux Cloud Servers.

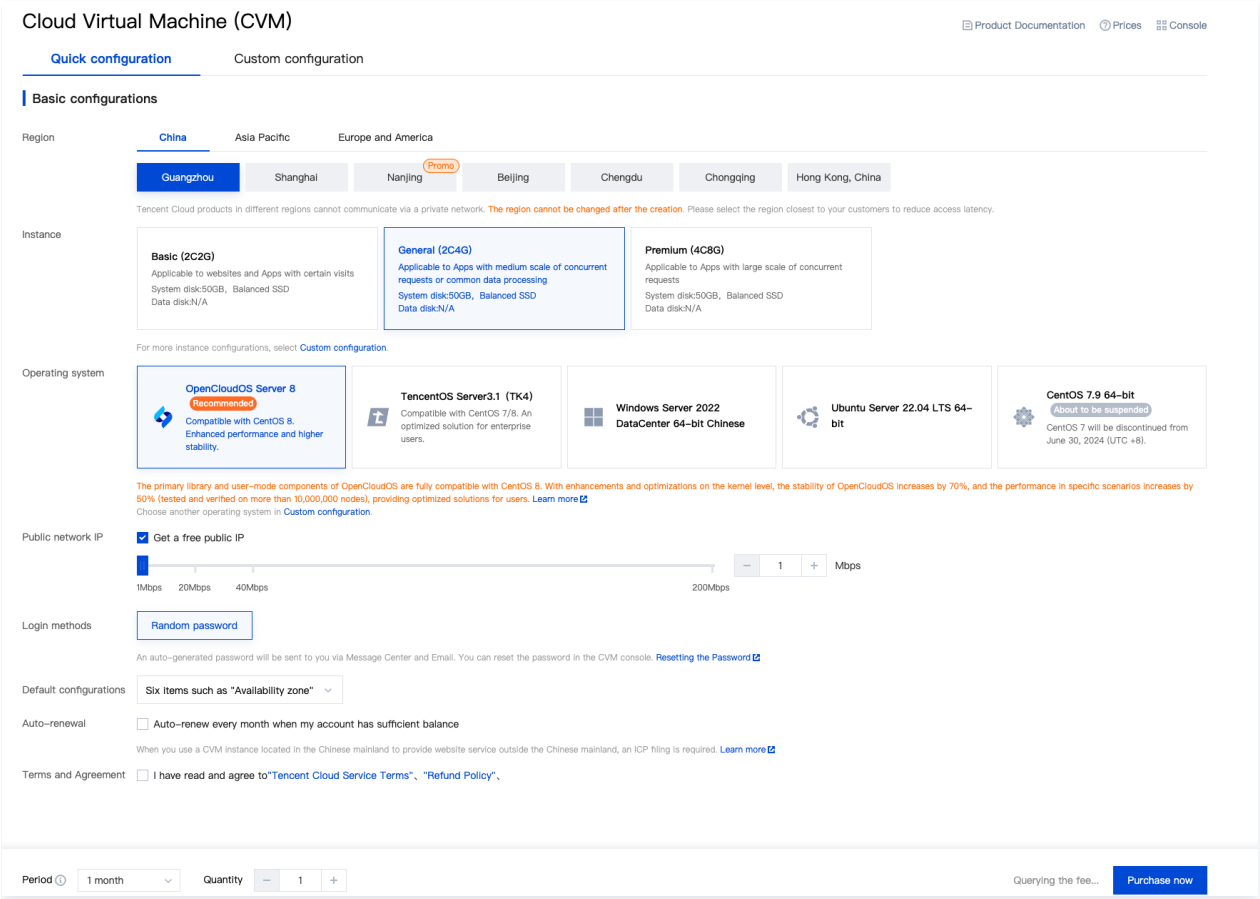
Step 1. Register a Tencent Cloud account

If you already have a Tencent Cloud account, ignore this step.

Click here to

Step 2. Purchase a Windows CVM instance

Click here to



The configuration is as described below:

Configuration	Note

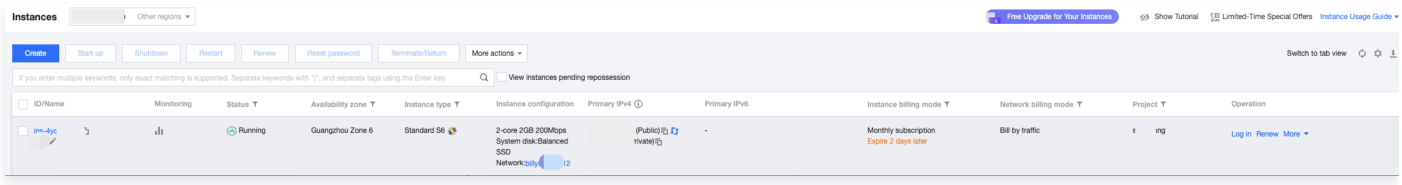
items	
Region	Select the closest region. For example, if you are located in **Shenzhen**, select **Guangzhou** for the region.
Instance	Select the CVM model configuration as needed, which is **General (2-core, 4GB)** here for example.
Operating system	Select the desired cloud server operating system. In this case, we choose **Windows Server 2012 R2 DataCenter 64-bit Chinese version**.
Public network IP	After this configuration item is selected, a public IP will be assigned to your instance. The default public network bandwidth is **1 Mbps**, which can be adjusted as needed.
Login methods	After creating a CVM instance, you can obtain the random password in the Message Center.
Default configurations	Six default configuration items can be expanded, such as AZ and security group.
Auto-renewal	After this option is selected, if your account balance is sufficient, the CVM instance will be automatically renewed by month upon expiration.
Terms and agreement	Read and indicate your consent to the relevant agreements.
Period	Select the purchase period, which is **1 month** by default.
Quantity	Select the quantity, which is **1** by default.

Click **Purchase Now** and complete the payment to finish purchasing the CVM instance.
The CVM instance can be used as a personal virtual machine or as a server for your website. Next, you can log in to the purchased instance.

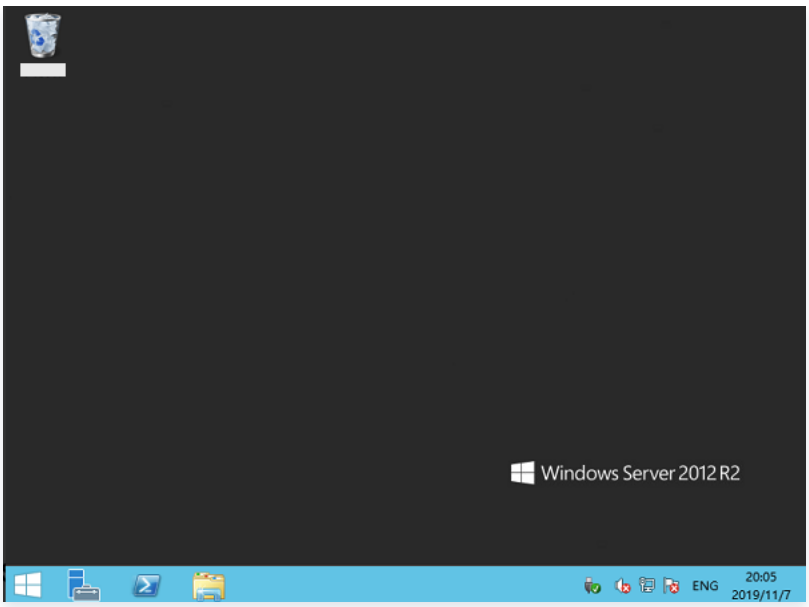
Step 3. Log in to the CVM instance

> **Note**
> After you purchase a quickly configured CVM instance, the system will automatically generate a login password and send it to your Message Center. This password is the credential for logging in to the CVM instance.
>
> Retrieve the initial password

1. Log in to the Cloud Server Console, locate the cloud server you just purchased in the instance list, and click **Login** in the right-side action bar.



2. Refer to Logging in to Windows Instances Using Standard Method (Recommended) to log in to the cloud server. After a successful login, the Windows cloud server interface will open, as shown in the following image:



See Also : Using the CVM Instance

After you log in to the CVM instance, you can perform the operations as needed, such as:

- Upload your local files to the cloud server
- Setting up a website on a cloud server

For more information, see the related documentation.

What if a problem occurs when I use TCR?

Submit a ticket or refer to related documentation to troubleshoot.
See below for the common problems and solutions:

- I forgot my CVM login password.
  See Resetting Instance Password.
- Unable to log in? How to troubleshoot the issue?
  Refer to Windows Instance Login Failures.

Custom
Choosing a Billing Mode

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Tencent Cloud's Cloud Virtual Machine (CVM) instances offer the following billing methods:

- **Monthly Subscription**: A prepaid billing method for CVM instances, where you pay upfront for one or more months, or even years. This payment method is suitable for scenarios where resource demands can be estimated in advance. Compared to pay-as-you-go, the prices are more affordable.
- **Pay-as-you-go**: A flexible billing method for CVM instances, allowing you to create and terminate instances as needed, and pay based on actual usage. Billing is accurate to the second, with no upfront payment required, and settlements occur every hour on the hour. This payment method is suitable for scenarios with sudden fluctuations in resource demand, such as flash sales. The unit price is higher than the monthly subscription billing method.
- **Spot Instance**: A new way to use and pay for CVM instances. Similar to the pay-as-you-go method, you pay for spot instances in postpaid mode by the second, every hour. The price of spot instances fluctuates according to the market demand. You can receive a sizable discount for them when the demand is low (usually 10% to 20%). However, spot instances might be repossessed automatically by the system as the demand becomes high.

Monthly subscription, pay-as-you-go, and spot instances each cater to different user requirements in various scenarios. For more information, please refer to Billing Modes.

Choosing Instance

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Tencent Cloud provides the following recommendations for selecting an instance type for diverse customer use cases:

Scenario	Recommended Instance Type	Note
Personal website	**Standard** Instance	Suitable for general workloads, such as medium and small Web applications and databases.
Enterprise website/E-commerce/App	**Standard** Instance	Suitable for general workloads, such as medium and small Web applications and databases.
Relational database / Distributed cache	**Memory-optimized** instance	Applicable to scenarios that require extensive memory operations, searches, and calculations.
NoSQL Database	**High I/O** instances	Suitable for I/O-intensive applications with high requirements for disk read/write and latency, such as cloud-based MongoDB and clustered databases.
High performance computing	• **Compute-optimized** instance • **Compute Network Enhanced** Instance	Applicable to scenarios requiring high computational resource consumption, such as large-scale online games, high-performance engineering and scientific applications, and video encoding/decoding.
High-performance online games	• **Compute-optimized** instance • **Compute Network Enhanced** Instance	Applicable to scenarios requiring high computational resource consumption, such as large-scale online games, high-performance engineering and scientific applications, and video encoding/decoding.
Mobile and Web Games	• **Compute-optimized** instance • **Compute Network Enhanced** Instance	Applicable to scenarios requiring high computational resource consumption, such as large-scale online games, high-performance engineering and scientific applications, and video encoding/decoding.
Live stream publishing	• **Standard Network Enhanced** Instance • **Compute Network Enhanced** Instance	Equipped with a 25G network card, the network performance is 2.5 times higher compared to ordinary 10G data centers; offering greater bandwidth and lower latency.

Finance	**Dedicated Host Standard** Instance	Compared to the general standard type, dedicated physical servers offer resource isolation, security, and control. Users can define their own CVM specifications, ensuring compliance with stringent regulatory requirements in the financial industry.
Scientific computing	**GPU Compute** Instance	Applicable to deep learning, scientific computing such as computational fluid dynamics, computational finance, genomics research, environmental analysis, high-performance computing (HPC), and other server-side GPU computing workloads.
Machine learning	**GPU Compute** Instance	Applicable to deep learning, scientific computing such as computational fluid dynamics, computational finance, genomics research, environmental analysis, high-performance computing (HPC), and other server-side GPU computing workloads.
to rendering	**GPU Rendering** Instance	Suitable for non-linear editing, video encoding and decoding, graphics acceleration visualization, and 3D design in GPU rendering scenarios.
Hadoop/Spark/ Elastic Search	**Big Data** instance	Suitable for Hadoop (HDFS/MapReduce/Spark/Hive, etc.) distributed computing, large-scale parallel processing (MPP) data warehousing, B8 log or data processing applications, and more.

For more application scenarios, see Instance Specifications.

Choosing Disk

Last updated: 2023-09-07 16:41:50

When configuring an instance, you can choose either a local disk or a cloud disk as your system disk or data disk. Before selecting a storage medium, please understand the differences in features and applicable scenarios between local disks and cloud disks.

Note

- Depending on the instance specifications you choose, the available system disk and data disk types displayed on the purchase page may vary. For example, SSD local disks are only available for users who select high IO instance types.
- You cannot upgrade the hardware (CPU, memory, or storage) of a CVM instance with local disks. You can only upgrade its bandwidth.
- The media type of system disks cannot be changed after purchase.

The following table lists the different strengths and use cases of different storage media such as the SATA HDD local disk, the NVME SSD disk, Premium Cloud Storage, and SSD.

Storage Medium	Advantages	Scenarios
NVMe SSD local disks (supported only by high IO instance types such as IT3 and IT5)	Low latency: provides microsecond-level access latency.	**Used as Temporary Read Cache**: NVMe SSD local disks have excellent random read performance (4KB/8KB/16KB random reads), making them suitable for read-only replicas of relational databases such as MySQL and Oracle. Due to the higher cost of memory compared to solid-state drives, NVMe SSD local disks can also be used as secondary caches for cache-based services such as Redis and Memcache. **Note:** NVMe SSD local disks have a single point of failure risk. It is recommended to implement data redundancy at the application layer to ensure data availability. For critical business operations, it is advised to use SSD cloud disks.
SATA HDD local disks (supported only by big data instance types such as D2)	• Affordable, suitable for cold data backup and archiving purposes. • High Throughput: Offers the throughput capability of local mechanical hard drives.	It is suitable for **scenarios that involve the sequential reading and writing of large files**, such as EMR and big data processing.
Premium Cloud Disk	It is the most cost-effective option that is suitable for 90% of I/O scenarios.	It is suitable for **small and medium databases, web servers**, and other scenarios, and provides consistent and stable I/O performance. Satisfy I/O requirements for core business testing and developing joint testing environments.
SSD cloud disk	High performance and data reliability: Utilizes the industry's best NVMe solid-state storage as the disk medium. It is suitable for	Applicable to the following scenarios: • **Mid and large-sized databases**: Support relational database applications with tables containing millions of rows, such as MySQL, Oracle, and SQL Server. • **Core Business Systems**: I/O-intensive applications and other core business systems with high requirements for data reliability.

	I/O-intensive businesses and provides long-term stable, ultra-high single-disk performance.	• **Big Data Analysis:** Offers distributed processing capabilities for data at TB and PB levels, suitable for data analysis, mining, business intelligence, and other fields.

- For more information about the types and use cases of cloud disks, see Cloud Disk Types.
- Refer to Cloud Disk Pricing Overview for information on cloud disk pricing.

Network Planning

Last updated: 2023-09-07 16:42:11

Tencent Cloud Virtual Private Cloud (VPC) is a user-defined and logically isolated network space on Tencent Cloud, in which users can customize IP ranges, IP addresses and routing policies. We recommend you use VPC.
To help you use Tencent Cloud VPC, we provides the following suggestions on network planning:

Determining the number of VPCs

- Existing features:
  - VPC is region-specific. By default, cloud services in different regions cannot communicate with each other over the private network. To enable cross-region communication, you can establish a Peering Connection.
  - By default, private networks within different VPCs in the same region cannot communicate with each other. To enable cross-VPC communication, you can establish a Peering Connection.
  - By default, different availability zones in the same VPC are interconnected with each other over the private network.
- Suggestions:
  - If you need to deploy businesses in multiple regions, multiple VPCs are required. You can build a VPC in the region closest to your customers to reduce access latency and improve access speed.
  - If you have deployed multiple businesses in the current region and want to achieve network isolation among them, you can build a VPC for each of your businesses in the current region.
  - If you have no requirement for multi-region deployment and network isolation among businesses, you can use only one VPC.

Determining subnet division

- Existing features:
  - Subnets are IP address blocks within a VPC, and all cloud resources in a VPC must be deployed in subnets.
  - In the same VPC, subnet IP ranges must not overlap.
  - Initial private IP addresses are automatically assigned by Tencent Cloud within the VPC CIDR block. Tencent Cloud VPC supports CIDR blocks in any of the three major private IP ranges, with mask lengths ranging from 16 to 28. The specific value is determined by the instance's VPC. For more information, please refer to Network Planning.
    - **10.0**.0.0-**10.255**.255.255
    - **172.16**.0.0-**172.31**.255.255
    - **192.168**.0.0-**192.168**.255.255
  - After a VPC has been created, the IP range cannot be modified.
- Suggestions:
  - If only VPC subnet division is required, and communication between VPC and classic network/IDC is not involved, you can choose one of the above IP ranges to create a new subnet.
  - If communication with the classic network is required, please establish a network with the 10.[0-47].0.0/16 range and its subsets as needed.
  - When setting up a VPN, the local IP range (VPC range) and the remote IP range (your IDC range) cannot overlap. Therefore, make sure to avoid the remote IP range when creating a new subnet.
  - When dividing IP ranges, consider the IP capacity of the range, i.e., the number of available IP addresses.
  - We recommend dividing subnets within the same VPC based on business modules, such as Subnet A for the Web layer, Subnet B for the logic layer, and Subnet C for the DB layer. This facilitates access control and filtering in conjunction with Network ACLs.

Determining routing policies

- Existing features:
  - A route table consists of a series of routing policies that are used to control the traffic direction of subnets within the VPC.
  - Each subnet must and can only be associated with one route table.
  - Each route table can be associated to multiple subnets.
  - When a VPC is created, the system automatically generates a default route table, which indicates that VPCs are interconnected with each other via the private network.
- Suggestions:
  - If you do not need to control the traffic direction of subnets, and VPCs are interconnected with each other via the private network by default, you can directly use the default route table with no need to configure a custom routing policy.
  - If you need to apply special control over the traffic flow of a subnet, please refer to the official documentation on Route Tables for detailed instructions.

For more information about VPC, please refer to Virtual Private Cloud.

Configuring Security Group

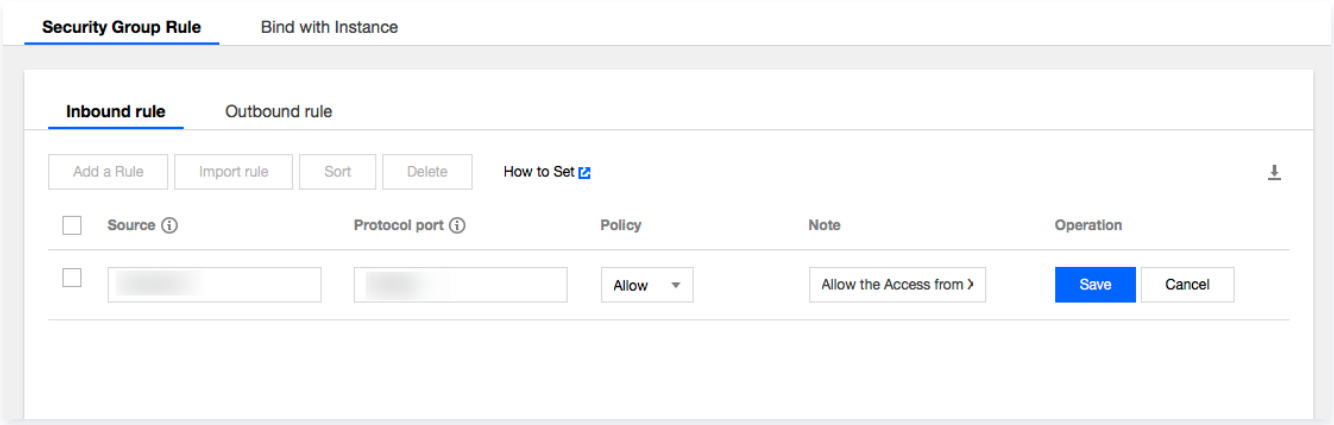
Last updated: 2023-09-25 15:54:47

This guide demonstrates how to configure a security group for the first time using Tencent Cloud's provided security group rules when customizing an instance. For more security group-related operations, visit the **Security Groups** page in the cloud server console. For more information, see Security Group Overview.

Configuring a security group

1. When configuring a security group, select **Create New Security Group** according to your actual needs, as shown in the following image:

> **Note**
> If you have available security groups, you can select **Existing Security Groups**.



2. Select IP addresses or ports to be opened based on your actual requirements.

   Rules for a new security group are as follows:
   - ICMP: opens to the ICMP protocol and allows the pinging of the server over the public network.
   - TCP:80: opens port 80 and allows access to Web services over HTTP.
   - TCP:22: opens port 22 and allows a remote connection to Linux CVMs over SSH.
   - TCP:443: opens port 443 and allows access to Web services over HTTPS.
   - TCP:3389: opens port 3389 and allows a remote connection to Windows CVMs over RDP.
   - Open the private network: opens to the private network and allows private network access among different cloud resources (IPv4).

   > **Note:**
   > - After selecting the required IP addresses and ports, the detailed inbound and outbound security group rules will be displayed in the security group rules section.
   > - If your business requires opening additional ports, you can refer to Security Group Use Cases for Creating a Security Group. For security reasons, Tencent Cloud recommends opening only the ports necessary for your business to avoid unnecessary security risks.

3. Configure the other information as prompted by the page.

Security Group Rules

Inbound Rules: These rules represent the inbound traffic allowed to reach the cloud server associated with the security group.

Outbound Rules: These rules represent the outbound traffic leaving the cloud server.

- Priority of rules within a security group: **The higher the position, the higher the priority**.
- When a CVM is bound to a security group without rules, all inbound and outbound traffic is rejected by default. If a rule is available, the rule prevails.
- When a cloud server is bound to multiple security groups, the security group priority is determined by the **smaller the number, the higher the priority**.
- When a CVM is bound to multiple security groups, the reject rule takes effect for the security group with the lowest priority by default.

Security Group Limits

For limitations, see Security Group–related Restrictions.

Estimating Costs

Last updated: 2023-09-07 16:42:50

Other than your CVM model and VPC configuration, these factors also influence how much your service costs:

- Billing method
- Resource used
- Purchase quantity
- Usage

Billing method

- **Monthly Subscription**: A prepaid billing method for CVM instances, where you pay upfront for one or more months, or even years. This payment method is suitable for scenarios where resource demands can be estimated in advance. Compared to pay-as-you-go, the prices are more affordable.
- **Pay-as-you-go**: A flexible billing method for CVM instances, allowing you to create and terminate instances as needed, and pay based on actual usage. Billing is accurate to the second, with no upfront payment required, and settlements occur every hour on the hour. This payment method is suitable for scenarios with sudden fluctuations in resource demand, such as flash sales. The unit price is higher than the monthly subscription billing method.
- **Spot Instance**: A new way to use and pay for CVM instances. Similar to the pay-as-you-go method, you pay for spot instances in postpaid mode by the second, every hour. The price of spot instances fluctuates according to the market demand. You can receive a sizable discount for them when the demand is low (usually 10% to 20%). However, spot instances might be repossessed automatically by the system as the demand becomes high.

Resource used

- **Region**:
  - The price is the same for the same instance model in different regions in Mainland China.
  - The price might be the same for the same instance model in different regions outside Mainland China.
- **Image**:
  - Public images: Include open-source and commercial images. Open-source images are provided for free. Commercial images may incur license fees. For more information, see Billing Overview.
  - Marketplace images: Pricing is determined by the image provider, with both free and paid images available. When launching an instance with a paid image, the cost includes both the instance fee and the image fee.
  - Custom image: creating custom images, importing custom images, and copying custom images across regions are free of charge.
  - Shared images: shared images from other Tencent Cloud users are free of charge.
- **Network**:
  - VPC, Subnet, Route Table, Network ACL, Security Group, Direct Connect Gateway, VPN Tunnel, and Customer Gateway are free of charge.
  - Bandwidth costs are not applicable to inter-instance communication within different subnets. Intra-region peering connections are free as well.
  - Public network communication fees apply. Click to view Public Network Billing.
  - NAT gateway, VPN gateway, and cross-region peering connection fees apply. Click related product billing for more information.
- **Storage**:
  Pricing for local disks and cloud disks. Click to view Cloud Disk Pricing Overview.

Purchase quantity

The number of CVMs you purchase also affect the price you pay. More CVMs means a higher price.

Usage

If you choose the Monthly Subscription payment mode, the longer the purchase duration, the higher the cost. However, different durations come with corresponding discounts. Click to view the Cloud Server Pricing Overview.

Customizing Linux CVM Configurations

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Compared to the quick configuration, custom configuration offers a wider range of image platforms, as well as advanced settings for storage, bandwidth, and security groups. You can choose the appropriate configuration based on your needs. This document provides an example of custom configuration.
If you prefer to create a CVM using the quick configuration, refer to the Quick Configuration for Linux CVM document.

Registration and Verification

Before using a CVM instance, you need to perform the following operations:

1. Sign up for a Tencent Cloud account and complete identity verification.
   New users need to register on the Tencent Cloud official website. For detailed instructions, refer to Sign Up for a Tencent Cloud Account.
2. Visit the Tencent Cloud CVM Introduction page and click **Buy Now**.

Select a basic configuration

> **Note**
> For first-time buyers, the default page is **Quick Configuration**. For users who have previously purchased CVM instances, the default page is **Custom Configuration**. If you have not purchased a CVM instance before, please select **Custom Configuration** to proceed with custom configuration.

1. Configure the following information as prompted by the page:

Category	Required/Optional	Configuration Notes
Billing Mode	Required	Select one as needed: • **Monthly Subscription**: A prepaid billing mode for CVM instances, suitable for scenarios where resource demands can be estimated in advance. The pricing is more cost-effective compared to the pay-as-you-go billing mode. • **Pay-as-you-go**: A flexible billing mode for CVM instances, suitable for scenarios with sudden spikes in demand, such as flash sales. The unit price is higher than that of the monthly subscription billing mode. • **Spot Instance**: A new instance operation mode suitable for big data processing, load-balanced online services, and website services, with prices generally ranging from 10% to 20% of the pay-as-you-go rate.
Regions	Required	We recommend you select the region closest to your users to minimize the access latency and improve the access speed.
Availability Zones	Required	Select one as needed. If you need to purchase multiple CVM instances, it is recommended to choose different availability zones for disaster recovery purposes. For more information, see Regions and Availability Zones.
Instance	Required	Tencent Cloud currently offers a variety of instance types based on different underlying hardware. For optimal performance, it is recommended to use the latest generation of instance types. For more information about instance types, see Instance Specifications.
Video flipping	Required	Tencent Cloud offers public images, custom images, shared images, and image marketplace. You can refer to Image Types for selection.

		We recommend new Tencent Cloud users select a public image.
System disk	Required	It is used for OS installation and defaults to 50 GB. Available cloud disk types vary by region. Select one as instructed on the page. For more information about cloud disks, please refer to Cloud Disk Types.
Data disk	Optional	Used to expand the storage capacity of CVM instances, providing efficient and reliable storage devices. By default, no cloud disk data disks are added. For more information about cloud disks, please refer to Cloud Disk Types.
Period	Required	Applicable only to monthly/yearly subscribed cloud servers. Indicates the duration of cloud server usage.
Amount	Required	It indicates the quantity of CVM instances to be purchased.

2. Click **Next: Configure Network and Host** to enter the host configuration page.

Setting the network and CVM

1. Configure the following information as prompted by the page:

Category	Required/Optional	Configuration Notes
Networking	Required	A logically isolated network space built on Tencent Cloud, a VPC consists of at least one subnet. The system provides a default VPC and subnet for you in each region. If the existing VPC or subnet does not meet your requirements, you can create a VPC or subnet in the VPC console. **Note:** • By default, resources in the same VPC are interconnected over the private network. • When purchasing a CVM instance, make sure that the CVM instance and its subnet are in the same AZ.
Public IP	Optional	If your CVM instance requires public network access, you need to allocate a public IP address. You can choose to allocate a public IP address when creating the CVM instance or configure an Elastic Public IP after the instance is created.
Bill-by-bandwidth mode	Optional	Tencent Cloud provides two network billing modes. You can select one as needed. • **Bandwidth-based billing**: Choose a fixed bandwidth, and packets will be dropped when exceeding this bandwidth. Suitable for scenarios with minimal network fluctuations. • **Pay-as-you-go by traffic**: Charges are based on actual traffic usage. You can limit the peak bandwidth to avoid unexpected traffic costs, and packets will be dropped when the instantaneous bandwidth exceeds this value. Suitable for scenarios with significant network fluctuations. For more information, see Public Network Billing Modes.
Bandwidth value	Optional	You can set the public network bandwidth cap for the CVM instance as needed. For more information, see Public Network Bandwidth Cap.
IPv6 address	Optional	Enable IPv6 address for your CVM instance. For more information, please refer to Elastic Public IPv6.
Security Group	Required	Used to configure the network access policies for one or more CVM instances.

		Please ensure that port 22 is open for login. For more information, refer to Security Group.
Tag	Optional	You can add tags to your CVM instances as needed for categorizing, searching, and aggregating cloud resources. For more information, please refer to Tags.
Instance Name	Optional	The name of the CVM to be created. User-defined, recommended as **CVM-01**.
Login Options	Required	Configure the method to log in to the CVM as needed. • **Set Password**: Customize the password for logging in to the instance. • **Associate SSH Key**: Link an SSH key for a more secure login to your CVM instance. If you don't have a key or the existing key is not suitable, you can click Create Now to create one. For more information on SSH keys, please refer to SSH Keys. • **Auto-generated Password**: The generated password will be sent via Message Center.
Instance Termination Protection	Optional	By default, this feature is disabled. You can enable instance termination protection based on your needs, which prevents the instance from being terminated through the console or API. For more information about instance termination protection, please refer to Enable Instance Termination Protection.
Security Enhancement	Optional	By default, security service is enabled for free to help you build a CVM security system to prevent data leakage.
Tencent Cloud Observability Platform (TCOP)	Optional	By default, the service is activated for free, offering comprehensive CVM data monitoring, intelligent data analysis, real-time fault alarms, and customizable data report configurations, enabling users to accurately manage the health of their businesses and CVM instances.
Automation Assistant	Optional	By default, it is available for free as a native CVM deployment tool. Without the need for remote connection to instances, it can automatically execute Shell commands in batches, accomplishing tasks such as running automated operation scripts, polling processes, installing/uninstalling software, updating applications, and installing patches.
Advanced settings	Optional	Configure additional settings for the instance as needed. • **Host Name**: Users can customize the computer name within the CVM operating system. After the CVM is successfully created, the host name can be viewed by logging into the instance. • **Project**: By default, the Default Project is selected. You can choose an existing project based on your needs for managing different CVM instances. • **CAM Role**: After setting a role, you can grant access permissions to Tencent Cloud services, operations, and resources for the CVM instance. For more information, refer to Managing Instance Roles. • **Placement Group**: You can add instances to a placement group as needed to improve the availability of your services. For more information, refer to Placement Groups for configuration. • **Custom Data**: Specify custom data to configure the instance, which runs the configured script when the instance is launched. If multiple CVMs are purchased at once, the custom data will be executed on all of them. Linux operating systems support Shell format, with a maximum of 16KB raw data. For more information, refer to Custom Data.

		Note: Custom data configuration is only supported for some public images with Cloudinit service. For more information, see Cloud-Init.

2. Click **Next: Confirm Configuration Info** to proceed to the confirmation page.

Confirming the Configuration Information

1. Check the configuration items and billing details of the CVM instance to be purchased.
2. If you have purchased a monthly or yearly subscription CVM, you can configure the following settings:

Option	Note
Unify Expiry Date	Unified expiry date allows users to synchronize the expiration time of prepaid devices to the same date each month, making it convenient for users to manage and renew their cloud servers uniformly. • If you have never used the Unified Expiration Date feature, the purchase page will not display the checkbox for it. To set up this feature, please refer to the Unified Expiration Date operation guide. • If you have used the Unified Expiration Date feature before, the purchase page will display a checkbox for it. When purchasing a CVM with this option selected, the duration must be longer than one month. For any partial month, the system will calculate the fees based on the monthly price converted to daily rates. For example, if you purchase a CVM on November 12th with a unified expiry date and a monthly price of 60 RMB/month, and the unified expiry date is the 20th of each month, the CVM will expire on December 20th. The amount you need to pay is 76 RMB (60 + 60 ÷ 30 × 8).
Auto-Renewal	For Monthly Subscription CVM instances only. Select **Auto-renew the device monthly upon expiration if your account has sufficient balance** to avoid manual renewal when the device expires.

3. Read and select **I agree to the Tencent Cloud Terms of Service, Refund Rules, and Tencent Cloud Prohibition of Virtual Currency-related Activities Statement or I agree to the Tencent Cloud Terms of Service and Tencent Cloud Prohibition of Virtual Currency-related Activities Statement**.
4. You can perform the following operations as needed:
   - Choose **Save as Launch Template**: Save the instance configuration as a launch template, which can be used to quickly create instances. For more information, refer to Managing Instance Launch Templates.
   - Select **Generate API Explorer Best Practice Script**: Generate the OpenAPI best practice script code for the selected configuration, which you can save for purchasing cloud servers with the same configuration. For more information, see Generating Instance Creation API Explorer Best Practice Script.
5. Click **Buy Now** or **Activate** and complete the payment. After the payment is completed, you can access the CVM console to view your CVM instance.

   The instance name, public IP address, private IP address, username, initial login password, and other information will be sent to your account via in-app messages. Use this information to log in and manage your instance, and change your CVM login password as soon as possible to ensure the security of your server.

Logging in to and Connecting the Instance

After completing CVM operations, you can log in to your CVM on the Tencent Cloud console and perform operations such as building a site as needed.
Select a method for logging in to the CVM on the Tencent Cloud console as needed:

- Logging in to Linux Instance Using Standard Login Method (Recommended)
- Logging in to a Linux Instance Using Remote Login Software

- Log in to the Linux Instance Using SSH

Partitioning and formatting the data disk

If you added a data disk during the Instance Type Selection, you need to format and partition the data disk after logging into the instance. **If you did not add a data disk, you can skip this step.**
Select the appropriate operations guide according to the disk capacity and the CVM operating system:

- When the disk capacity is less than 2 TB:
  Initialize Cloud Disks (Linux)
- When the disk capacity is 2 TB or more:
  Initializing Cloud Disks (Linux)

For more guidance, see Introduction to Initialization Scenarios.

Customizing Windows CVM Configurations

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Compared to the quick configuration of CVM instances, custom configuration offers a wider range of image platforms, as well as advanced settings for storage, bandwidth, and security groups. You can choose the appropriate configuration based on your needs. This document provides an example of custom configuration.
If you prefer to create a CVM instance using the quick configuration method, refer to the Customizing Windows CVM Configurations document.

Registration and Verification

Before using a CVM instance, you need to perform the following operations:

1. Sign up for a Tencent Cloud account and complete identity verification.
   New users need to register on the Tencent Cloud official website. For detailed instructions, refer to Signing Up for Tencent Cloud.
2. Visit the Tencent Cloud CVM Introduction page and click **Buy Now**.

Select a basic configuration

> **Note**
> For first-time buyers, the default page is **Quick Configuration**. For users who have previously purchased CVM instances, the default page is **Custom Configuration**. If you have not purchased a CVM instance before, please select **Custom Configuration** to proceed with custom configuration.

1. Configure the following information as prompted by the page:

Category	Required/Optional	Configuration Notes
Billing Mode	Required	Select one as needed: • **Monthly Subscription**: A prepaid billing mode for CVM instances, suitable for scenarios where resource demands can be estimated in advance. The pricing is more cost-effective compared to the pay-as-you-go billing mode. • **Pay-as-you-go**: A flexible billing mode for CVM instances, suitable for scenarios with sudden spikes in demand, such as flash sales. The unit price is higher than that of the monthly subscription billing mode. • **Spot Instance**: A new instance operation mode suitable for big data processing, load-balanced online services, and website services, with prices generally ranging from 10% to 20% of the pay-as-you-go rate.
Regions	Required	We recommend you select the region closest to your users to minimize the access latency and improve the access speed.
Availability Zones	Required	Select one as needed. If you need to purchase multiple CVM instances, it is recommended to choose different availability zones for disaster recovery purposes. For more information, see Regions and Availability Zones.
Instance	Required	Tencent Cloud currently offers a variety of instance types based on different underlying hardware. For optimal performance, it is recommended to use the latest generation of instance types. For more information about instance types, see Instance Specifications.
Video flipping	Required	Tencent Cloud offers public images, custom images, shared images, and image marketplace. You can refer to Image Types for selection.

		We recommend new Tencent Cloud users select a public image.
System disk	Required	It is used for OS installation and defaults to 50 GB. Available cloud disk types vary by region. Select one as instructed on the page. For more information about cloud disks, please refer to Cloud Disk Types.
Data disk	Optional	Used to expand the storage capacity of CVM instances, providing efficient and reliable storage devices. By default, no cloud disk data disks are added. For more information about cloud disks, please refer to Cloud Disk Types.
Period	Required	Applicable only to monthly-subscribed cloud servers. Indicates the usage duration of the CVM instance.
Amount	Required	It indicates the quantity of CVM instances to be purchased.

2. Click **Next: Configure Network and Host** to enter the host configuration page.

Setting the network and CVM

1. Configure the following information as prompted by the page:

Category	Required/Optional	Configuration Notes
Networking	Required	A VPC represents a logically isolated network space in Tencent Cloud, consisting of at least one subnet. The system provides a default VPC and subnet for you in each region. If the existing VPC or subnet does not meet your requirements, you can create a VPC or subnet in the VPC console. **Note:** • By default, resources in the same VPC are interconnected over the private network. • When purchasing a CVM instance, make sure that the CVM instance and its subnet are in the same AZ.
Public IP	Optional	If your CVM instance requires public network access, you need to allocate a public IP address. You can choose to allocate a public IP address when creating the CVM instance or configure an Elastic Public IP after the instance is created.
Bill-by-bandwidth mode	Optional	Tencent Cloud provides two network billing modes. You can select one as needed. • **Bandwidth-based billing:** Choose a fixed bandwidth, and packets will be dropped when exceeding this bandwidth. Suitable for scenarios with minimal network fluctuations. • **Pay-as-you-go by traffic:** Charges are based on actual traffic usage. You can limit the peak bandwidth to avoid unexpected traffic costs, and packets will be dropped when the instantaneous bandwidth exceeds this value. Suitable for scenarios with significant network fluctuations. For more information, see Public Network Billing.
Bandwidth value	Optional	You can set the public network bandwidth cap for your cloud server as needed. For more information, see Public Network Bandwidth Cap.
IPv6 address	Optional	Enable IPv6 addresses for your CVM instance. For more information, please see Elastic Public IPv6.
Security Group	Required	Used to configure the network access policies for one or more CVM instances. **Ensure that port 3389 is open for remote login.** For more information, please refer to Security Group.

Tag	Optional	You can add tags to your CVM instances as needed for categorizing, searching, and aggregating cloud resources. For more information, please refer to Tags.
Instance Name	Optional	Indicates the name of the CVM instance to be created. User-defined, recommended as **CVM-01**.
Login Options	Required	Configure the method to log in to the CVM as needed. • **Set Password**: Customize the password for logging in to the instance. • **Auto-generated Password**: The generated password will be sent via Message Center.
Instance Termination Protection	Optional	By default, this feature is disabled. You can enable instance termination protection based on your needs, which prevents the instance from being terminated through the console or API. For more information about instance termination protection, please refer to Enable Instance Termination Protection.
Security Enhancement	Optional	By default, security service is enabled for free to help you build a CVM security system to prevent data leakage.
Tencent Cloud Observability Platform (TCOP)	Optional	By default, the service is activated for free, offering comprehensive CVM data monitoring, intelligent data analysis, real-time fault alarms, and customizable data report configurations, enabling users to accurately manage the health of their businesses and CVM instances.
Automation Assistant	Optional	By default, it is available for free as a native CVM deployment tool. Without the need for remote connection to instances, it can automatically execute Shell commands in batches, accomplishing tasks such as running automated operation scripts, polling processes, installing/uninstalling software, updating applications, and installing patches.
Advanced settings	Optional	Configure additional settings for the instance as needed. • **Host Name**: Users can customize the computer name within the CVM operating system. After the CVM is successfully created, the host name can be viewed by logging into the instance. • **Project**: By default, the Default Project is selected. You can choose an existing project based on your needs for managing different CVM instances. • **CAM Role**: After setting a role, you can grant access permissions to Tencent Cloud services, operations, and resources for the CVM instance. For more information, refer to Managing Instance Roles. • **Placement Group**: You can add instances to a placement group as needed to improve the availability of your services. For more information, refer to Placement Groups for configuration. • **Custom Data**: Specify custom data to configure the instance, which runs the configured script when the instance is launched. If multiple CVM instances are purchased at once, the custom data will be executed on all instances. Windows operating system supports PowerShell format, with a maximum of 16KB raw data. For more information, refer to Setting Custom Data. **Note**: Custom data configuration is only supported for Windows public images. For more information, see Precautions.

2. Click **Next: Confirm Configuration Info** to proceed to the confirmation page.

Confirming the Configuration Information

1. Check the configuration items and billing details of the CVM instance to be purchased.
2. If you have purchased a monthly or yearly subscription CVM, you can configure the following settings:

Option	Note
Unify Expiry Date	Unified expiry date allows users to synchronize the expiration time of prepaid devices to the same date each month, making it convenient for users to manage and renew their cloud servers uniformly. • If you have never used the Unified Expiration Date feature, the purchase page will not display the checkbox for it. To set up this feature, please refer to the Unified Expiration Date operation guide. • If you have used the Unified Expiration Date feature before, the purchase page will display a checkbox for it. When purchasing a CVM with this option selected, the duration must be longer than one month. For any partial month, the system will calculate the fees based on the monthly price converted to daily rates. For example, if you purchase a CVM on November 12th with a unified expiry date and a monthly price of 60 RMB/month, and the unified expiry date is the 20th of each month, the CVM will expire on December 20th. The amount you need to pay is 76 RMB (60 + 60 ÷ 30 × 8).
Auto-Renewal	For Monthly Subscription CVM instances only. Select **Auto-renew the device monthly upon expiration if your account has sufficient balance** to avoid manual renewal when the device expires.

3. Read and select **I agree to the Tencent Cloud Terms of Service, Refund Rules, and Tencent Cloud Prohibition of Virtual Currency-related Activities Statement** or **I agree to the Tencent Cloud Terms of Service and Tencent Cloud Prohibition of Virtual Currency-related Activities Statement**.
4. You can perform the following operations as needed:
   - Choose **Save as Launch Template**: Save the instance configuration as a launch template, which can be used to quickly create instances. For more information, refer to Managing Instance Launch Templates.
   - Select **Generate API Explorer Best Practice Script**: Generate the OpenAPI best practice script code for the selected configuration, which you can save for purchasing cloud servers with the same configuration. For more information, see Generating Instance Creation API Explorer Best Practice Script.
5. Click **Buy Now** or **Activate** and complete the payment. After the payment is completed, you can access the CVM console to view your CVM instance.

   The instance name, public IP address, private IP address, username, initial login password, and other information will be sent to your account via in-app messages. Use this information to log in and manage your instance, and change your CVM login password as soon as possible to ensure the security of your server.

Logging in to and Connecting the Instance

After completing CVM operations, you can log in to your CVM on the Tencent Cloud console and perform operations such as building a site as needed.
Select a method for logging in to the CVM on the Tencent Cloud console as needed:

- Logging in to Windows Instance Using Standard Method (Recommended)
- Log in to the Windows Instance Using an RDP File
- Logging in to a Windows Instance Using Remote Desktop Connection

Formatting and Partitioning the Data Disk

If you added a data disk during the Instance Type Selection, you need to format and partition the data disk after logging into the instance. **If you did not add a data disk, you can skip this step.**
Select the appropriate operations guide according to the disk capacity and the CVM operating system:

- For a disk smaller than 2 TB:
  Initialize Cloud Disks (Windows)

- For a disk equal to or larger than 2 TB:
  Initializing Cloud Disks (Windows)

For more guidance, see Introduction to Initialization Scenarios.

Concepts

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Instance

An instance is a Cloud Virtual Machine (CVM), which is a virtual computing resource containing basic computing components such as CPU, memory, OS, network, and disks.
CVM instances provide secure, reliable, and elastic computing services in the cloud to meet computing requirements. As business demands change, computing resources can be added or removed in real time to reduce software and hardware costs and simplify IT Ops.

Instance Type

Tencent Cloud offers various CPU, memory, storage, and network configurations for CVMs. For more information, see Instance Specifications.

Video flipping

An image refers to a pre-configured template for cloud servers, containing a pre-configured environment installed with an operating system and other software programs. Tencent Cloud CVMs offer a variety of pre-built images, including Windows and Linux.

Cloud Disk

Cloud Block Storage (CBS) is a highly available, highly reliable, low-cost, and customizable block storage device that can be used as a system disk or standalone scalable disk for cloud servers, providing efficient and reliable storage devices for CVM instances.

VPCs

A logically isolated virtual network space in Tencent Cloud.

IP Addresses

Tencent Cloud provides Private IP Addresses and Public IP Addresses. In simple terms, private IPs offer Local Area Network (LAN) services for communication between CVM instances, while public IPs are used when users need to access Internet services on their CVM instances.

Elastic IP (EIP)

Designed for dynamic networks, static public IPs meet rapid troubleshooting requirements.
Elastic IPs (EIPs) are independently applied public IP addresses that support dynamic binding and unbinding. You can bind or unbind them with CVM instances (or NAT gateway instances) in your account. Their primary functions are:

- To retain an IP. ICP domain name filing is required for Chinese mainland IP and DNS.
- Shield instance failures, for example: Dynamic DNS mapping maps DNS names to IP addresses, and propagating this mapping change across the entire Internet may take up to 24 hours. However, Elastic IPs enable the migration of IPs from one cloud server to another. In the event of a cloud server failure, simply launch another instance and remap it to quickly respond to instance failures.

Security Group

Security Group is a virtual firewall with the state-based packet filtering feature, which is used to set network access control for one or more CVMs. You can add CVM instances with the same network security isolation requirements within the same region to the same security group, and filter the inbound and outbound traffic of the CVMs based on the network policies of the security group.

Login Options

The password is a unique login credential for each cloud server instance. To ensure the security and reliability of instances, Tencent Cloud offers two encrypted login methods:

- SSH Key Pair: With a simple configuration on the console and local client, you can remotely log in to the instance without entering a password again. This login method is more secure and reliable, effectively preventing brute force attacks.
- Login password: Anyone with the instance login password can remotely access the CVM instance through a public network address allowed by the security group.

Region and Availability Zone

Physical locations where CVM instances and other resources reside and are launched.

- A region refers to a geographical location where data centers hosted by Tencent Cloud are distributed. Each region has multiple availability zones.
- An availability zone is a Tencent Cloud IDC with an independent power supply and network in the above region. It can ensure business stability, as failures in one AZ are isolated without affecting other AZs in the same region.