Cloud Virtual Machine

Getting Started

Product Documentation
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Last updated : 2020-11-05 15:17:17

Instance

An instance is a Cloud Virtual Machine (CVM), which is a virtual computing resource containing CPU, memory, OS, network, disks, and other basic computing components. CVM instances provide secure, reliable and elastic computing services in the cloud to meet computing requirements. As business demands change, computing resources can be scaled in real time to lower your software and hardware costs and simplify IT OPS work.

Instance Type

Tencent Cloud provides various configurations of CPU, MEM, storage, and networking capacity for CVM instances. For more information, please see Instance Types.

Image

An image is a pre-configured template containing an operating system and applications that CVM instances run on. Tencent Cloud CVM provides pre-configured images for Windows, Linux, etc.

Cloud Block Storage

Cloud Block Storage (CBS) is a highly available, highly reliable, low-cost, and customizable block storage device. It can be used as an standalone and expandable disk for CVM, providing efficient and reliable storage devices.

VPC

A VPC is a logically isolated virtual network space in Tencent Cloud

IP Addresses

Tencent Cloud provides private IP address and public IP address. Private IP address is for the interconnection of CVM instances within the same LAN, while public IP address is for public-facing services.

Elastic IP

Elastic IP (EIP) is static public network IP addresses designed especially for dynamic networks to meet the demands for fast troubleshooting. An EIP is a public IP address that can be applied for independently. It supports dynamic binding and
unbinding. You can bind it to or unbind it from the CVM (or NAT Gateway instances) under your account. Its main uses are:

- To retain an IP. ICP domain name filing is required for Chinese mainland IP and DNS.
- To mask an instance failure. For example, a DNS name is mapped to an IP address through dynamic DNS mapping. It may take up to 24 hours to propagate this mapping to the entire Internet, while an elastic IP enables quick remapping of an IP from one CVM to another. When one CVM fails, you can just start and remap another instance to quickly respond to instance failures.

**Security Group**

A security group is a virtual firewall that features stateful data packet filtering. It is used to configure the network access control of CVMs. You can add CVM instances with the same network security isolation requirements in the same region to the same security group, to filter the inbound and outbound traffic of the CVM through the network policies of the security group.

**Login Method**

The password is a unique login credential for the CVM instance. To ensure instance security, Tencent Cloud provides the following two encrypted login methods:

- **SSH key pairs** are easier to use. You can log in to instances remotely with a few simple configuration steps on the console and your local client, and do not need to enter a password when you log in again.
- **Login password** allows anyone with the password to log in to the CVM instance remotely through a public network address allowed by the security group.

**Regions and Availability Zones**

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 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.
Custom Configurations

Select Billing Mode

Tencent Cloud provides the following billing methods for Cloud Virtual Machine (CVM) instances:

- **Pay as you go** is a flexible billing method for CVM instances. You can activate or terminate a CVM at any time, and you will be billed by the actual usage of the CVM. The billing granularity is accurate to second, and no up-front payment is required. A bill is generated every hour on the dot. This billing method is suitable for use cases such as an e-commerce flash sale where the demand for devices can fluctuate greatly.

- **Spot Instance** is 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.

Both the pay-as-you-go and spot-instances billing methods can satisfy user requirements in different scenarios. For more information, see Pricing Modes.
## Types of Instance

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

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Recommended Instance Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal website</td>
<td><strong>Standard instance</strong></td>
<td>Suitable for general workloads, such as small and medium Web applications and databases.</td>
</tr>
<tr>
<td>Enterprise websites/E-commerce/App</td>
<td><strong>Standard instance</strong></td>
<td>Suitable for general workloads, such as small and medium Web applications and databases.</td>
</tr>
<tr>
<td>Relational database/distributed cache</td>
<td><strong>MEM optimized instance</strong></td>
<td>Suitable for use cases that require extensive memory operations, searches, and computing.</td>
</tr>
<tr>
<td>NoSQL database</td>
<td><strong>High IO instance</strong></td>
<td>Suitable for I/O-intensive use cases that require high disk read/write performance and low latency, such as TencentDB for MongoDB and clustered databases.</td>
</tr>
<tr>
<td>High performance computing</td>
<td>- <strong>Computing instance</strong></td>
<td>Suitable for use cases that require a large number of computing resources, such as large PC games, high performance science and engineering applications, and video encoding/decoding.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Computing network enhanced instance</strong></td>
<td></td>
</tr>
<tr>
<td>High performance PC games</td>
<td>- <strong>Computing instance</strong></td>
<td>Suitable for use cases that require a large number of computing resources, such as large PC games, high performance science and engineering applications, and video encoding/decoding.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Computing network enhanced instance</strong></td>
<td></td>
</tr>
<tr>
<td>Use Case</td>
<td>Recommended Instance Type</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Mobile/browser games</td>
<td></td>
<td>Suitable for use cases that require a large number of computing resources, such as large PC games, high performance science and engineering applications, and video encoding/decoding.</td>
</tr>
<tr>
<td>Live streaming</td>
<td></td>
<td>Comes with a 25 GB ENI that is 2.5 times faster than that of regular ten-gigabit data centers, providing an increased bandwidth and reduced latency.</td>
</tr>
<tr>
<td>Finance</td>
<td>CDH standard instance</td>
<td>Features exclusive physical servers and isolated resources. The CDH standard instances are secure, controllable, and fully compliant with the strict regulations in the finance industry. Custom specifications are also supported.</td>
</tr>
<tr>
<td>Scientific computing</td>
<td>GPU computing instance</td>
<td>Suitable for use cases that require deep learning, and scientific computing including computational fluid dynamics, computational finance, genomics research, environmental analysis, high-performance computing, and other server-side GPU computing workloads.</td>
</tr>
<tr>
<td>Machine learning</td>
<td>GPU computing instance</td>
<td>Suitable for use cases that require deep learning, and scientific computing including computational fluid dynamics, computational finance, genomics research, environmental analysis, high-performance computing, and other server-side GPU computing workloads.</td>
</tr>
<tr>
<td>Rendering</td>
<td>GPU rendering instance</td>
<td>Suitable for non-linear editing, video encoding/decoding, graphics acceleration visualization, and 3D design.</td>
</tr>
<tr>
<td>Use Case</td>
<td>Recommended Instance Type</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Hadoop/Spark/Elastic Search</td>
<td><strong>Big data</strong> instance</td>
<td>Suitable for distributed computing services like Hadoop (HDFS/MapReduce/Spark/Hive), massive parallel processing (MPP) data warehouses, B8 logs, and data processing applications.</td>
</tr>
</tbody>
</table>

- For more use cases, see [Instance Types](#).
When configuring an instance, you can choose a local disk or a cloud disk as your system disk or data disk. Before you choose a storage media, please familiarize yourself with the characteristics and the use cases of local disks and Cloud Block Storage.

- The types of system disks and data disks on the purchase page vary by the different instance specifications you select. For example, SSD local disks are only available for IO instances.
- 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.

<table>
<thead>
<tr>
<th>Storage Media</th>
<th>Strengths</th>
<th>Use Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>NVME SSD local disks (only available for IO instances such as IT3 and IT5)</td>
<td>Low latency: provides microsecond-level access latency.</td>
<td><strong>Acts as a temporary read cache:</strong> NVME SSD has excellent random read performance (4 KB/8 KB/16 KB random read) and is suitable for read-only slave databases for relational databases such as MySQL and Oracle. Since the cost of using memories is still higher than the cost of using SSDs, NVME SSD local disks can also be used as the secondary cache of Redis, Memcache, and other cache business. <strong>Note:</strong> NVME SSD carries the risk of a single point of failures. Therefore, we recommend that you implement data redundancy at the application layer to ensure reliability and use SSD cloud disks for your core business.</td>
</tr>
</tbody>
</table>
### Storage Media

<table>
<thead>
<tr>
<th>SATA HDD local disk (only available for big data instances such as D2)</th>
<th>Strengths</th>
<th>Use Cases</th>
</tr>
</thead>
</table>
| • Provides the same data persistence as that of SSD at a fraction of the cost. It can be used as the cold data backup and the archive for important business, with a maximum capacity of 16 TB for a single disk.  
• High throughput: provides the same throughput as those of local HDDs. | It is suitable for **scenarios that involve the sequential reading and writing of large files**, such as EMR and big data processing. | |

<table>
<thead>
<tr>
<th>Premium Cloud Storage</th>
<th>Strengths</th>
<th>Use Cases</th>
</tr>
</thead>
</table>
| 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.  
It meets the I/O demands for testing core business and developing joint testing environments. | |

<table>
<thead>
<tr>
<th>SSD</th>
<th>Strengths</th>
<th>Use Cases</th>
</tr>
</thead>
</table>
| High performance and high data reliability: SSD uses the best-in-class NVMe solid state storage as the disk media. It is suitable for I/O-intensive business and provides long-term and ultra-excellent single disk performance. | Applicable use cases:  
• **Medium and large databases**: supports medium and large relational database applications containing tables with millions of rows, such as MySQL, Oracle, and SQL Server.  
• **Core business systems**: supports I/O-intensive applications and other core business systems with high data reliability requirements.  
• **Big data analysis**: supports the distributed processing of TB- and PB-level data for data analysis, data mining, business intelligence, and other applications. | |

- For more information about the types and use cases of cloud disks, see [Cloud Disk Types](#).  
- For more information about the prices of cloud disks, see [Pricing List](#).
Network Planning

Last updated: 2020-04-24 13:58:52

A Tencent Cloud Virtual Private Cloud (VPC) instance is a user-defined logically isolated network space on Tencent Cloud. In this instance, users can customize IP ranges, IP addresses, and routing policies. Therefore, Tencent Cloud recommends that you use a VPC instance for your businesses.

To help you better use Tencent Cloud VPC instances, Tencent Cloud provides the following network planning recommendations.

**Determining the number of VPC instances**

**Features:**
- VPC instances are region-specific. By default, CVMs in different regions cannot communicate with each other. If cross-region communication is required, establish a peer connection.
- By default, different VPC instances in the same region cannot communicate with each other. If cross-VPC communication is required, establish a peer connection.
- By default, different availability zones in the same VPC instance can communicate with each other.

**Recommendations:**
- If your business requires cross-region system deployment, multiple VPC instances are required. In this case, you can build a VPC instance that is close to the region where your customers are located to reduce access latency and improve the access speed.
- If you have deployed multiple businesses in the current region and want to implement network isolation among different businesses, you can build a VPC instance for each business in the current region.
- If you do not require cross-region business deployment or network isolation among businesses, you can use one VPC instance.

**Determining subnet division**

**Features:**
- Subnets are IP address blocks in a VPC instance. All cloud resources in a VPC instance must be deployed in subnets.
- In the same VPC instance, the IP ranges of subnets must not overlap.
- Tencent Cloud automatically assigns initial private IP addresses from VPC IP ranges. The Tencent Cloud VPC CIDR block can be any of the following VPC IP ranges. For an IP address within these ranges, its mask ranges from 16 to 28, and the actual mask is determined by the private network where the instance resides.
  - **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 instance is created, its IP range cannot be modified.

**Recommendations:**

- If only VPC subnets need to be divided and communication with the basic network or IDC is not involved, choose any of the preceding IP ranges to create a subnet.
- If communication with the basic network is required, establish a VPC instance with the IP range of 10.0.0-47.0.0/16 and its subsets as required.
- If a VPN is required, the local IP range (of the VPC instance) and the peer IP range (of your IDC) cannot overlap. Therefore, do not use the peer IP range when creating a subnet.
- During subnet division, you also need to consider the number of available IP addresses within an IP range.
- We recommend that subnets be divided according to the business modules for businesses in the same VPC instance. For example, subnet A is used for the web layer, subnet B is used for the logic layer, and subnet C is used for the database layer. This facilitates access control and filtering by using the network ACL.

### Determining route policies

**Features:**

- A route table consists of a series of routing rules that control the traffic flow of subnets in a VPC instance.
- Each subnet must be associated with only one route table.
- A single route table can be associated with multiple subnets.
- When a VPC instance is created, the system automatically generates a default route table for the instance, which defines that VPC instances can communicate with each other through the private network.

**Recommendations:**

- If you do not need to control the traffic flow of subnets and VPC instances are interconnected through the private network by default, you can use the default route table without needing to configure a custom routing policy.
- If you need to control the traffic flow of subnets, see [Overview](#) on the official website.

For more information on VPC instances, see [VPC](#).
Configure Security Group

This document uses security group creation as an example to describe how to configure security groups for the first time based on security group rules provided by Tencent Cloud when you customize instances. For other security-group-related operations, see the Security Group page in the CVM console. For more details on security groups, see Security Groups.

Configuring Security Groups

1. Select Create Security Group, as shown in the following figure.

   ![Security Group Rule](image)

   If you already 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**: enable ICMP and allow the public network to ping the server.
   - **TCP:80**: open port 80 and allow web service access through HTTP.
   - **TCP:22**: open port 22 and allow SSH remote connection to the Linux CVM.
   - **TCP:443**: open port 443 and allow web service access through HTTPS.
   - **TCP:3389**: open port 3389 and allow RDP connection to the Windows CVM.
   - **Private network**: open the private network and allow intercommunication (IPv4-based) between different cloud resources through the private network.
Security Group Rules

**Inbound rule**: allows traffic to CVMs associated with a security group.

**Outbound rule**: indicates outbound traffic from the CVMs.

- Rules in a security group are **prioritized from the top down**.
- 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 CVM is bound to multiple security groups, the security groups **with smaller numbers have higher priority**.
- When a CVM is bound to multiple security groups, the rejection rule takes effect for the security group with the lowest priority by default.

Security Group Restrictions

For details, see [Use Limits](#).
Estimate Costs

Last updated: 2020-03-06 10:51:53

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

- Billing method
- Resource used
- Quantity

**Billing method**

- **Pay as you go** is a flexible billing method for CVM instances. You can launch/terminate a CVM at any time and are billed by the actual usage of the CVM. You pay by the second and no up-front payment is required. A bill is generated every hour on the dot. This billing method is suitable for use cases such as an e-commerce flash sale where the demand for resources can fluctuate greatly.

- **Spot Instance** is a new way to use and pay for CVM instances. Similar to Pay as you go, you pay for Spot Instances by the second, every hour. The price of Spot Instances fluctuates according to market demand. You get a sizable discount for them when the demand is low (usually 10 to 20%). However, they might be repossessed automatically by the system as the demand becomes high.

**Resources 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: all public images in Mainland China hosted by Tencent Cloud are free. Windows images outside Mainland China require licensing fees.
  - 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.
• Refer to this article for details on the public network billing method.
• For details on charges for NAT Gateway, VPN Gateway, and Cross-region Peering connection.

• Storage:
  For the prices of local disks and cloud disks, refer to this article

**Quantity**

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

Custom configuration provides more image platforms and advanced configurations for storage, bandwidth, and security group. You can select the configuration mode as needed. This document uses custom configuration as an example.

Registration and Verification

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

1. Sign up for a Tencent Cloud account and complete identity verification.
   A new user needs to sign up for an account on the Tencent Cloud website. For details, see Signing up for a Tencent Cloud Account.
2. Visit the Tencent CVM Introduction page, and click Get Started.

Selecting a Device Model
1. Configure the following information as prompted by the page:

<table>
<thead>
<tr>
<th>Category</th>
<th>Required/Optional</th>
<th>Configuration Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Billing Mode</td>
<td>Required</td>
<td>Pay as you go: an elastic billing mode for the CVM.</td>
</tr>
<tr>
<td>Region</td>
<td>Required</td>
<td>We recommend you select a region closest to your customer to reduce access latency and increase access speed.</td>
</tr>
<tr>
<td>Availability Zone</td>
<td>Required</td>
<td>Select an availability zone as needed. If you want to purchase multiple CVMs, we recommend you select different availability zones to implement disaster recovery.</td>
</tr>
<tr>
<td>Requirement</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-----------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Network</td>
<td>Required</td>
<td>A logically isolated network space built in Tencent Cloud. A virtual private cloud (VPC) includes at least one subnet. The system provides a default VPC and subnet for each region. If the existing VPC or subnet does not meet your requirements, you can create a VPC or subnet on the VPC Console. <strong>Note:</strong> - resources in the same VPC can be shared within the private network. - When purchasing the CVM, ensure that the CVM and the subnet where the CVM is created have the same availability zones.</td>
</tr>
<tr>
<td>Instance</td>
<td>Required</td>
<td>Tencent Cloud provides different instance types based on the underlying hardware. For optimal performance, we recommend you use the instance types of the latest generation. For more information on instances, see Instance Types.</td>
</tr>
<tr>
<td>Image</td>
<td>Required</td>
<td>Tencent Cloud provides public images, custom images, and shared images. For more information on images, see Image Types Overview. If you have just started using Tencent Cloud, we recommend you choose public images.</td>
</tr>
<tr>
<td>System Disk</td>
<td>Required</td>
<td>Used to install the operating system. Its default capacity is 50 GB. Available Cloud Block Storage (CBS) types vary with regions. Please select a value as instructed by the page. For more information on CBS, see CBS Types.</td>
</tr>
<tr>
<td>Data Disk</td>
<td>Optional</td>
<td>Used to scale up the storage capacity of the CVM to ensure high efficiency and reliability. CBS data disks are not added by default. For more information on CBS, see CBS Types.</td>
</tr>
<tr>
<td>Public Network Bandwidth</td>
<td>Required</td>
<td>Tencent Cloud provides two network billing modes. Set a value as needed. <strong>Bill-by-bandwidth:</strong> select a fixed bandwidth. Packet loss will occur when the bandwidth exceeds this value. This is applicable to scenarios where the network connection fluctuates slightly.</td>
</tr>
</tbody>
</table>
- **Bill-by-traffic**: billing is based on traffic that is actually used. You can specify a peak bandwidth to prevent charges incurred by unexpected traffic. Packet loss will occur when the instantaneous bandwidth exceeds this value. This is applicable to scenarios where the network connection fluctuates significantly.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Gateway</td>
<td>Optional</td>
</tr>
</tbody>
</table>

As a network interface between the VPC and the public network, the public gateway can forward requests of CVMs that are within different subnets of the VPC and have no public IP addresses. **Note**: Tencent Cloud discontinued configuring the public gateway on the CVM purchase page after December 6, 2019. To configure the public gateway, see Configuring a Public Gateway.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of CVMs to be purchased.</td>
</tr>
</tbody>
</table>

2. Click **Next: Complete Configuration** to access the CVM configuration page.

**Configuring the CVM**
1. Configure the following information as prompted by the page:

<table>
<thead>
<tr>
<th>Category</th>
<th>Required/Optional</th>
<th>Configuration Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
<td>Required</td>
<td>The default project is selected. You can select an existing project as needed to manage different CVMs.</td>
</tr>
<tr>
<td>Security Group</td>
<td>Required</td>
<td>Used to configure the network access policies for one or more CVMs. <strong>Ensure that login port 22 is open.</strong> For more information, see Security Groups.</td>
</tr>
<tr>
<td>Instance Name</td>
<td>Optional</td>
<td>The name of the CVM to be created. It is defined by the user. We recommend <strong>CVM-01</strong>.</td>
</tr>
</tbody>
</table>
| Login Method     | Required       | Configure the method to log in to the CVM as needed.  
|                 |                | - **Custom Password**: customize the password for logging in to the instance.  
|                 |                | - **SSH Key Pair**: associate the instance with a SSH key to ensure a secure login to the CVM. If no key is available or existing keys are inappropriate, click "Create Now" to create a key. For more information on SSH keys, see [SSH Keys](#).  
|                 |                | - **Random Password**: an automatically generated password will be sent through the [Message Center](#).  
| Security Service | Optional       | By default, security service is enabled for free to help you build a CVM security system to prevent data leakage.  
| Cloud Monitoring | Optional       | By default, cloud monitoring is enabled for free. It provides comprehensive CVM data monitoring, intelligent data analysis, real-time fault alarms, and custom data reports to precisely monitor Tencent Cloud services and the health conditions of CVMs.  
| Advanced Settings | Optional       | Configure additional settings for the instance as needed.  
|                 |                | - **Hostname**: you can customize the name of the computer in the CVM operating system. After a CVM is created, you can log in to the CVM to view the hostname.  
|                 |                | - **Placement Group**: you can add an instance to a placement group as needed to improve service availability. For more information, see [Placement Group](#).  
|                 |                | - **Tag**: you can specify a tag to manage CVM resources by category. For more information, see [User Guide on Tags](#).  
|                 |                | - **Custom Data**: you can configure an instance by specifying custom data, and the configured scripts will run when an instance is launched. If multiple CVMs are purchased together, the custom data will run on all CVMs. The Linux operating system supports the Shell format and a maximum of 16 KB of raw data. For details, see [Configuring Custom Data (Linux CVM)](#).  
|                 |                | **Note**: custom data configuration only supports
2. Click **Next: Confirm Configuration** to access the configuration information confirmation page.

Confirming the Configuration Information

1. Validate the information of the CVM to be purchased and the cost details of each configuration item.
2. Click **Purchase** and complete the payment. Then, you can log in to the **CVM Console** to see your CVM.

   Information such as the instance name, public IP address, private IP address, login username, and initial login password of the CVM will be sent to your account through the **Message Center**. You can use this information to log in to and manage your instances. To ensure the security of your CVM, please change your CVM login password as soon as possible.

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:

- Log in to a Linux Instance Using Standard Login Mode (Recommended)
- Log in to a Linux Instance Using Remote Login Software.
- Log in to a Linux Instance Using SSH

Partitioning and Formatting the Data Disk

If you added a data disk when **selecting the instance type**, you need to format and partition the data disk after logging in to the CVM instance. **If you have not added any data disks, 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:
  - Initializing a Cloud Disk (Linux)
For a disk equal to or larger than 2 TB:

*Initializing a Cloud Disk (Linux)*

For more operations, see *Initialization Scenarios*. 
Customizing Windows CVM Configurations

Custom configuration provides more image platforms and advanced configurations for storage, bandwidth, and security group. You can select the configuration mode as needed. This document uses custom configuration as an example.

Registration and Verification

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

1. Sign up for a Tencent Cloud account and complete identity verification.
   - A new user needs to sign up for an account on the Tencent Cloud website. For details, see Signing up for a Tencent Cloud Account.
2. Visit the Tencent CVM Introduction page, and click Get Started.

Selecting a Device Model
1. Configure the following information as prompted by the page:

<table>
<thead>
<tr>
<th>Category</th>
<th>Required/Optional</th>
<th>Configuration Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Billing Mode</td>
<td>Required</td>
<td>- <strong>Pay as you go</strong>: an elastic billing mode for the CVM.</td>
</tr>
<tr>
<td>Region</td>
<td>Required</td>
<td>We recommend you select a region closest to your customer to reduce access latency and increase access speed.</td>
</tr>
<tr>
<td>Availability Zone</td>
<td>Required</td>
<td>Select an availability zone as needed. If you want to purchase multiple CVMs, we recommend you select different availability zones to implement disaster recovery.</td>
</tr>
<tr>
<td>Requirement</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Network           | Required | A logically isolated network space built in Tencent Cloud. A virtual private cloud (VPC) includes at least one subnet. The system provides a default VPC and subnet for each region. If the existing VPC or subnet does not meet your requirements, you can create a VPC or subnet on the VPC Console. **Note:**  
  - resources in the same VPC can be shared within the private network.  
  - When purchasing the CVM, ensure that the CVM and the subnet where the CVM is created have the same availability zones. |
| Instance          | Required | Tencent Cloud provides different instance types based on the underlying hardware. For optimal performance, we recommend you use the instance types of the latest generation. For more information on instances, see Instance Types.                                                                                                                                  |
| Image             | Required | Tencent Cloud provides public images, custom images, and shared images. For more information on images, see Image Types Overview. If you have just started using Tencent Cloud, we recommend you choose public images, which contain the activated official Windows operating system and do not require extra payments (except for North America regions). |
| System Disk       | Required | Used to install the operating system. Its default capacity is 50 GB. Available Cloud Block Storage (CBS) types vary with regions. Please select a value as instructed by the page. For more information on CBS, see CBS Types.                                                                                     |
| Data Disk         | Optional | Used to scale up the storage capacity of the CVM to ensure high efficiency and reliability. CBS data disks are not added by default. For more information on CBS, see CBS Types.                                                                                                                                   |
| Public Network Bandwidth | Required | Tencent Cloud provides two network billing modes. Set a value as needed. **Bill-by-bandwidth:** select a fixed bandwidth. Packet loss will occur when the bandwidth exceeds |
this value. This is applicable to scenarios where the network connection fluctuates slightly.

- **Bill-by-traffic**: billing is based on traffic that is actually used. You can specify a peak bandwidth to prevent charges incurred by unexpected traffic. Packet loss will occur when the instantaneous bandwidth exceeds this value. This is applicable to scenarios where the network connection fluctuates significantly.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Required</th>
<th>Number of CVMs to be purchased.</th>
</tr>
</thead>
</table>

2. Click **Next: Complete Configuration** to access the CVM configuration page.

### Configuring the CVM
1. Configure the following information as prompted by the page:

<table>
<thead>
<tr>
<th>Category</th>
<th>Required/Optional</th>
<th>Configuration Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
<td>Required</td>
<td>The default project is selected. You can select an existing project as needed to manage different CVMs.</td>
</tr>
<tr>
<td>Security Group</td>
<td>Required</td>
<td>Used to configure the network access policies for one or more CVMs. <strong>Ensure that login port 3389 is open.</strong> For more information, see Security Groups.</td>
</tr>
<tr>
<td>Instance Name</td>
<td>Optional</td>
<td>The name of the CVM to be created. It is defined by the user. We recommend <strong>CVM-</strong></td>
</tr>
<tr>
<td>Feature</td>
<td>Required/Optional</td>
<td>Details</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------</td>
<td>---------</td>
</tr>
</tbody>
</table>
| Login Method       | Required          | Configure the method to log in to the CVM as needed.  
|                    |                   | - **Custom Password**: customize the password for logging in to the instance.  
|                    |                   | - **Random Password**: an automatically generated password will be sent through the Message Center.  
| Security Service   | Optional          | By default, security service is enabled for free to help you build a CVM security system to prevent data leakage.  
| Cloud Monitoring   | Optional          | By default, cloud monitoring is enabled for free. It provides comprehensive CVM data monitoring, intelligent data analysis, real-time fault alarms, and custom data reports to precisely monitor Tencent Cloud services and the health conditions of CVMs.  
| Advanced Settings  | Optional          | Configure additional settings for the instance as needed.  
|                    |                   | - **Hostname**: you can customize the name of the computer in the CVM operating system. After a CVM is created, you can log in to the CVM to view the hostname.  
|                    |                   | - **CAM role**: you can set a role and use it to grant role entity the permissions to access CVM services and resources and perform operations in Tencent Cloud. For more information about the settings, see Managing Roles.  
|                    |                   | - **Placement Group**: you can add an instance to a placement group as needed to improve service availability. For more information, see Placement Group.  
|                    |                   | - **Tag**: you can specify a tag to manage CVM resources by category. For more information, see User Guide on Tags.  
|                    |                   | - **Custom Data**: you can configure an instance by specifying custom data, and the configured scripts will run when an instance is launched. If multiple CVMs are purchased together, the custom data will run on all CVMs. The Windows operating system supports the PowerShell format and a maximum of 16 KB of raw data. For details, see Configuring Custom Data (Windows CVM).  

**Note**: custom data configuration only supports
2. Click **Next: Confirm Configuration** to access the configuration information confirmation page.

**Confirming the Configuration Information**

1. Validate the information of the CVM to be purchased and the cost details of each configuration item.
2. Click **Purchase** and complete the payment. Then, you can log in to the **CVM Console** to see your CVM.

Information such as the instance name, public IP address, private IP address, login username, and initial login password of the CVM will be sent to your account through the **Message Center**. You can use this information to log in to and manage your instances. To ensure the security of your CVM, please change your CVM login password as soon as possible.

**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:

- Log in to a Windows CVM Instance Using the RDP File (Recommended)
- Log in to a Windows CVM Instance Using Remote Desktop

**Formatting and Partitioning the Data Disk**

If you added a data disk when selecting the instance type, you need to format and partition the data disk after logging in to the CVM instance. **If you have not added any data disks, 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:
  - Initializing a Cloud Disk (Windows)
- For a disk equal to or larger than 2 TB:
  - Initializing a Cloud Disk (Windows)
For more operations, see Initialization Scenarios.