

Alibaba Cloud Elastic Compute Service

Product Introduction

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Generic conventions

Table -1: Style conventions

Style	Description	Example
	This warning information indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	 Danger: Resetting will result in the loss of user configuration data.
	This warning information indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	 Warning: Restarting will cause business interruption. About 10 minutes are required to restore business.
	This indicates warning information, supplementary instructions, and other content that the user must understand.	 Notice: Take the necessary precautions to save exported data containing sensitive information.
	This indicates supplemental instructions, best practices, tips, and other content that is good to know for the user.	 Note: You can use Ctrl + A to select all files.
>	Multi-level menu cascade.	Settings > Network > Set network type
Bold	It is used for buttons, menus, page names, and other UI elements.	Click OK .
<code>Courier font</code>	It is used for commands.	Run the <code>cd / d C :/ windows</code> command to enter the Windows system folder.
<i>Italics</i>	It is used for parameters and variables.	<code>bae log list --instanceid Instance_ID</code>
[] or [a b]	It indicates that it is an optional value, and only one item can be selected.	<code>ipconfig [-all -t]</code>

Style	Description	Example
<code>{}</code> or <code>{a b}</code>	It indicates that it is a required value, and only one item can be selected.	<code>swich {stand slave}</code>

Contents

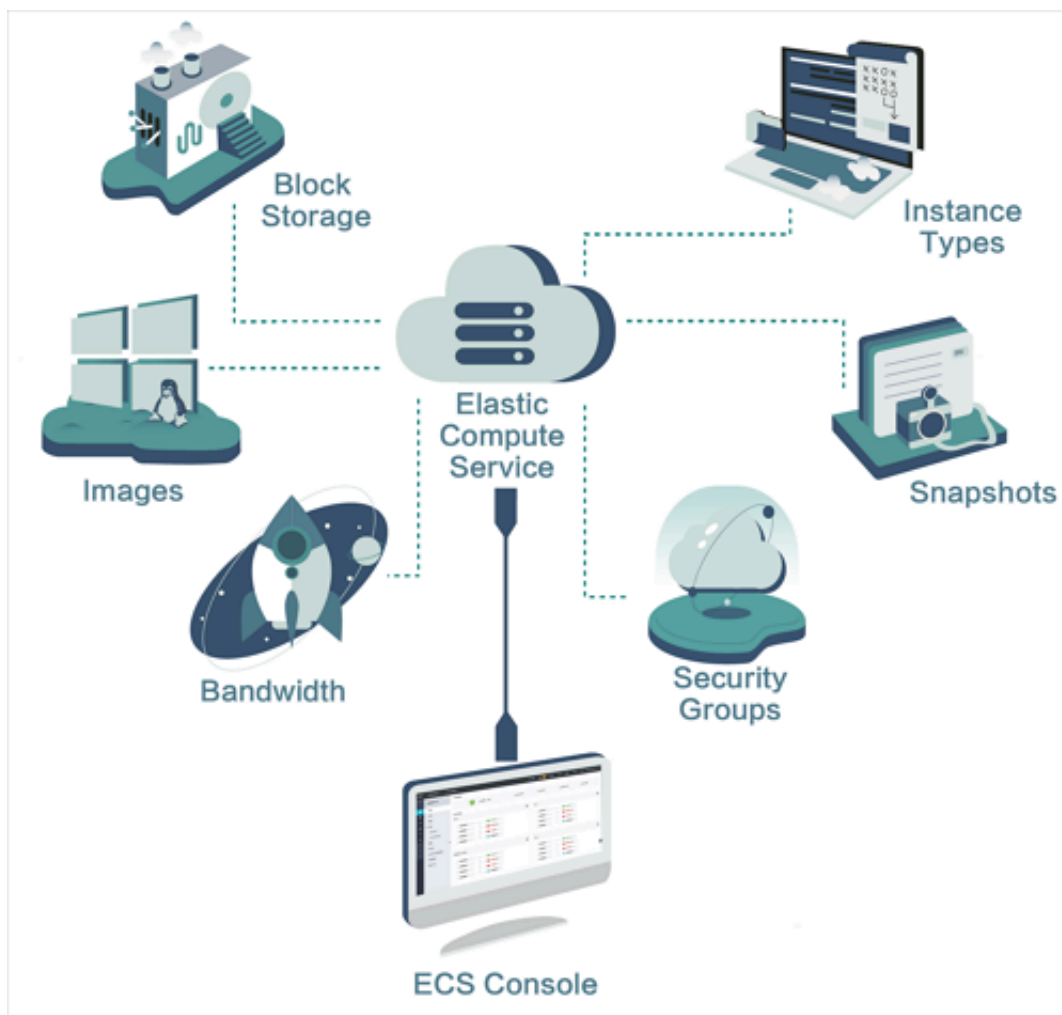
Legal disclaimer.....	I
Generic conventions.....	I
1 What is ECS?.....	1
2 Benefits of ECS.....	5
3 Scenarios.....	10
4 Regions and zones.....	11
5 Limits.....	15
6 Instructions on using ECS.....	23
7 Release notes.....	26

1 What is ECS?

This article gives a brief introduction to what ECS is, and the resources and services that it involves.

Elastic Compute Service (ECS) is a type of computing service that features elastic processing capabilities. ECS has a simpler and more efficient management mode than physical servers. You can create instances, change the OS, and add or release any number of ECS instances at any time to fit your business needs. An ECS instance is a virtual computing environment that includes CPU, memory, and other basic computing components. An instance is the core component of ECS and is the actual operating entity offered by Alibaba Cloud. Other resources, such as disks, images, and snapshots, can only be used in conjunction with an ECS instance.

The following figure illustrates the concept of an ECS instance. You can use the [ECS console](#) to configure the instance type, disks, OS, and other affiliated resources.



Basic concepts

It is helpful to understand the following concepts before you use ECS:

- **Region and zone:** A physical location where a data center is located.
- **ECS instance:** A virtual computing environment that includes the CPU, memory, OS, bandwidth, disks, and other basic computing components.
- **Instance types:** The specifications of an ECS instance, including the number of vCPU cores, memory, and networking performance. The instance type of an ECS instance determines its compute capability.
- **Images:** A running environment template for ECS instances. It generally includes an OS and preinstalled software.
- **Block storage:** Block level storage products for your ECS, including [#unique_8](#) based on the distributed storage architecture and [local disks](#) located on the physical server that an ECS instance is hosted on.
- **Snapshots:** A copy of the data on an elastic block storage device as it was at a specific point in time.
- **Network types:**
 - **Virtual Private Cloud (VPC):** A private network established in Alibaba Cloud. VPCs are logically isolated from other virtual networks in Alibaba Cloud. For more information, see [What is VPC](#).
 - **Classic network:** A network majorly deployed in the public infrastructure of Alibaba Cloud.
- **Security groups:** A logical group of instances that are in the same region and have the same security requirements and mutual trust. A security group works as a virtual firewall for the ECS instances inside it.

Operations

Alibaba Cloud provides an intuitive operation interface for you to manage your ECS instances.

- You can log on to the ECS console to operate ECS instances. For more information, see [User Guide](#).
- You can use API to manage your ECS instances. For more information, see [API References](#).

- You can also use Alibaba Cloud CLI to call API to manage ECS instances. For more information, see [Alibaba Cloud Command Line Interface](#).
- You can use the open source tool Terraform to provision and manage ECS resources. Terraform provides a simple mechanism for deploying and versioning configuration files to Alibaba Cloud and other supported clouds. For more information, see [What is Terraform?](#).

ECS pricing and billing

ECS supports both Subscription and Pay-As-You-Go billing methods. For more information, see [Billing methods](#).

For pricing details, see the [Pricing](#) page.

Learning path

You can use the [ECS Learning Path](#) as a mentor to learn ECS basics or add to your knowledge.

Related services

The following services are frequently used together with ECS:

- [Alibaba Cloud Marketplace](#) is an online market. You can purchase software infrastructure, developer tools, and business software provided by third-party partners. If you have software you want to sell, you can become a marketplace service provider. For more information, see [Marketplace](#).
- Auto Scaling enables you to dynamically scale your computing capacity up or down to meet the workload of your ECS instances according to scaling policies you specify. It also reduces the need of manual provision. For more information, see [What is Auto Scaling](#).
- Container Service enables you to manage the life cycle of containerized applications by using Docker and Kubernetes. For more information, see [What is Container Service](#).
- Server Load Balancer distributes the incoming traffic among multiple ECS instances according to the configured forwarding rules. For more information, see [What is Server Load Balancer](#).
- CloudMonitor manages ECS instances, system disks, Internet bandwidth, and other resources. For more information, see [What is CloudMonitor](#).

- **Server Guard (Server Security)** provides real-time awareness and defense against intrusion events, which safeguards the security of your ECS instances. For more information, see [What is Server Guard](#).
- **Anti-DDoS Basic** prevents and mitigates DDoS attacks by routing traffic away from your infrastructure. **Alibaba Cloud Anti-DDoS Pro** safeguards your ECS instances under high volume DDoS attacks. For more information, see [What is Anti-DDoS Basic](#) and [What is Anti-DDoS Pro](#).
- **Alibaba Cloud SDK** enables you to access Alibaba Cloud services and to manage your applications by using the programming language of your choice. For more information, see [Developer Resources](#). You can use [OpenAPI Explorer](#) to debug ECS API and generate the SDK Demo.

2 Benefits of ECS

Compared with Internet Data Centers (IDCs) and server vendors, ECS has benefits in terms of availability, security, and elasticity.

Availability

Alibaba Cloud adopts more stringent IDC standards, server access standards, and O & M standards to guarantee data reliability and high availability of cloud computing infrastructure and cloud servers.

In addition, each Alibaba Cloud region consists of multiple zones. For greater fault tolerance, you can build active/standby or active/active services in multiple zones. For a finance-oriented solution with three IDCs in two regions, you can build fault tolerant systems in multiple regions and zones. Those services include disaster tolerance and backup, which are supported by the mature solutions built by Alibaba Cloud.

Switching between services is smooth within the Alibaba Cloud framework. For more information, see [E-Commerce Solutions](#). Alibaba Cloud industry solutions support a variety of services, such as finance, E-commerce, and video services.

Alibaba Cloud provides you with the following support services:

- Products and services for availability improvement, including cloud servers, Server Load Balancer, multi-backup databases, and Data Transmission Services (DTS).
- Industry partners and ecosystem partners that help you build a more advanced and stable architecture and guarantee service continuity.
- Diverse training services that enable you to connect with high availability from the business end to the underlying basic service end.

Security

For cloud computing users, security and stability are priorities. Alibaba Cloud has passed a host of international information security certifications, including ISO 27001 and MTCS, which demand strict confidentiality of user data and user information, as well as user privacy protection. We recommend that you use ECS in an [Alibaba Cloud Virtual Private Cloud \(VPC\)](#).

- Alibaba Cloud VPC offers more business possibilities.

You only need to perform a simple configuration to connect your business environment to global IDCs, making your business more flexible, stable, and extensible.

- Alibaba Cloud VPC can connect to your IDC

through a leased line to build a hybrid cloud architecture. You can build a more flexible business with robust networking derived from Alibaba Cloud's various hybrid cloud solutions and network products. A superior business ecosystem is made possible with Alibaba Cloud's ecosystem.

- Alibaba Cloud VPC is more stable and secure.

Stable: After you build your business on VPC, you can update your network architecture and obtain new network functions on a daily basis as the network infrastructure evolves constantly, allowing your business to run steadily. You can divide, configure, and manage your network on VPC according to your needs.

Secure: VPC features traffic isolation and attack isolation to protect your services from attack traffic on the Internet. By building your business on VPC, the first line of defense is established.

VPC provides a stable, secure, fast-deliverable, self-managed, and controllable network environment. VPC hybrid cloud brings the technical advantages of cloud computing to traditional industries, in addition to industries and enterprises that are not engaged in cloud computing.

Elasticity

Elasticity is a key benefit of cloud computing. Elasticity is a key benefit of cloud computing. By using Alibaba Cloud, you can have all the IT resources necessary to get an IT company of medium size provisioned within minutes. The available resources and capacities can meet the requirements of most companies, allowing their applications built on the cloud to handle a huge volume of transactions without problems.

- Elastic computing

- Vertical scaling involves modifying the configurations of a server.

After you purchase ECS or storage capacity of Alibaba Cloud, you can configure your server with great flexibility based on your actual transaction volume,

whereas it may be difficult to change configurations in the traditional IDC model. For more information about vertical scaling, see [Change configurations](#).

- Horizontal scaling

Horizontal scaling allows the re-division of resources between applications. For example, at peak hours for game or live video streaming apps, in the traditional IDC model, your hands may be tied if additional resources are required when you are already at full capacity. Cloud computing uses elasticity to provide additional resources to you over that period. When the period ends, you can release unnecessary resources to reduce your business costs. By using both horizontal scaling and auto-scaling that Alibaba Cloud provides, you can determine how and when you scale your resources or apply your scaling based on business loads. For more information about horizontal scaling, see [Auto Scaling](#).

- Elastic storage

Alibaba Cloud provides elastic storage. In the traditional IDC model, if more storage space is required, you can only add servers, but the number of servers that you can add is limited. In the cloud computing model, however, the sky is the limit. Order as much storage space as you need to meet business demand. For more information about elastic storage, see [Resize a disk](#).

- Elastic network

Alibaba Cloud features elastic network as well. When you purchase Alibaba Virtual Private Cloud (VPC), you can set network configurations to be the same as those of data centers. In addition, VPC has the following benefits: interconnection between data centers, separate secure domains in data centers, and flexible network configurations and planning within the VPC. For more information about elastic networks, see [Virtual Private Cloud](#).

Alibaba Cloud incorporates elasticity in computing, storage, network, and business architecture design. By using Alibaba Cloud, you can build your business portfolio in any way you want.

Comparison between ECS and traditional IDCs

The table lists the benefits of ECS compared with traditional IDCs.

Item	ECS	Traditional IDCs
Equipment rooms	Provides independently developed DC powered servers with low PUE.	Provides traditional AC powered servers with high PUE.
	Provides backbone equipment rooms with high outbound bandwidth and dedicated bandwidth.	Provides equipment rooms with various quality levels and shared bandwidth primarily, difficult for users to choose.
	Provides multiline BGP equipment rooms , enabling smooth and balanced access throughout the country.	Provides equipment rooms with single or dual line primarily.
Ease of operation	Provides built-in mainstream OSs, including activated Windows OS.	Purchases and installs OS manually.
	Switches OS online.	Reinstalls OSs manually.
	Provides a Web-based console for online management.	Users must manage and maintain network manually.
	Provides mobile phone verification for password setting, increasing data security.	Has difficulty in resetting passwords, and exposes high risk of password cracking.
Disaster recovery and backup	Each data segment has multiple copies. When one copy is corrupted, the data can be quickly restored.	Users must build disaster recovery environment by themselves, and use traditional storage devices.
	Users can customize automatic snapshot policies to create automatic snapshots for data recovery.	Users must restore all corrupted data manually.
	Faults can be recovered fast and automatically.	Faults cannot be recovered automatically.
Security and reliability	Effectively prevents MAC spoofing and ARP attacks.	Fails to prevent MAC spoofing and ARP attacks.

Item	ECS	Traditional IDCs
	Effectively defends against DDoS attacks by using black holes and cleaning traffic.	Needs additional costs for devices for traffic cleaning and black hole shielding systems.
	Provides additional services, such as port scanning, Trojan scanning, and vulnerability scanning.	Typically encountered problems such as vulnerability, Trojan, and port scanning.
Flexible scalability	Activates cloud servers on demand and upgrades configurations online.	Needs a long time for server delivery.
	Adjusts outbound bandwidth as required.	One-off purchase of outbound bandwidth, unable to adjust.
	Combines with Server Load Balancer online, enabling scaling up applications quickly and easily.	Uses hardware-based server load balancing, which is expensive and extremely difficult to set up.
Cost effectiveness	Low cost.	High cost.
	Small up front investment.	Large up front investment, possible waste of resources.
	Purchases on demand and pay as you go, meeting requirements for constant business changes.	Purchases up front to meet configuration requirements for peak hours.

3 Scenarios

ECS is a highly flexible solution. It can be used independently as a simple web server, or used with other Alibaba Cloud products, such as Object Storage Service (OSS) and Content Delivery Network (CDN), to provide advanced solutions.

ECS can be used in the following applications.

Official corporate websites and simple web applications

During the initial stage, corporate websites have low traffic volumes and require only low-configuration ECS instances to run applications, databases, storage files, and other resources. As your business expands, you can upgrade the ECS configuration and increase the number of ECS instances at any time. You no longer need to worry about insufficient resources during peak traffic.

Multimedia and large-traffic apps or websites

ECS can be used with OSS to store static images, videos, and downloaded packages, reducing storage fees. In addition, ECS can be used with CDN or Server Load Balancer to greatly reduce user access waiting time, reduce bandwidth fees, and improve availability.

Databases

A high-configuration I/O-optimized ECS instance can be used with an SSD cloud disk to support high I/O concurrency with higher data reliability. Alternatively, multiple lower-configuration I/O-optimized ECS instances can be used with Server Load Balancer to deliver a highly available architecture.

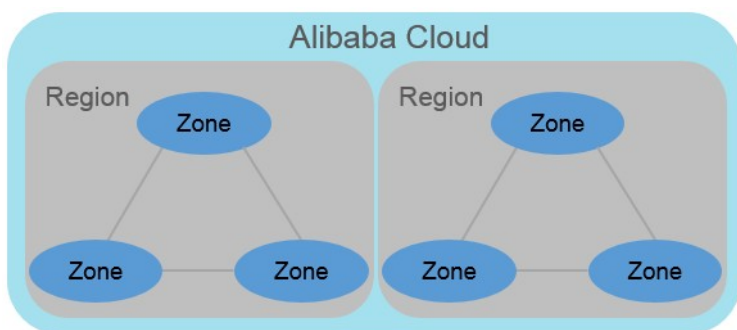
Apps or websites with large traffic fluctuations

Some applications may encounter large traffic fluctuations within a short period. When ECS is used with Auto Scaling, the number of ECS instances is automatically adjusted based on traffic. This feature allows you to meet resource requirements while maintaining a low cost. ECS can be used with Server Load Balancer to deliver a high availability architecture.

4 Regions and zones

This topic provides a complete list of Alibaba Cloud regions and zones.

Regions in Alibaba Cloud are independent. Zones in Alibaba Cloud are completely isolated. However, zones in the same region are connected through links with low latency. The following figure shows the relationship between regions and zones in Alibaba Cloud.



Regions

Alibaba Cloud regions are physical locations (data centers) that spread all over the world to reduce the network latency. The region cannot be changed once a resource is created in it. The following table lists all Alibaba Cloud regions, corresponding cities, and Region IDs.



Note:

The available regions vary according to the product. To view the list of regions available for each product, see [Alibaba Cloud Global Infrastructure](#).

• Regions in Mainland China

Region name	City	Region ID	Number of zones
China North 1	Qingdao	cn-qingdao	2
China North 2	Beijing	cn-beijing	7
China North 3	Zhangjiakou	cn-zhangjiakou	2
China North 5	Hohhot	cn-huhehaote	2
China East 1	Hangzhou	cn-hangzhou	8
China East 2	Shanghai	cn-shanghai	6
China South 1	Shenzhen	cn-shenzhen	5

- International regions

Region name	City	Region ID	Number of zones
Hong Kong	Hong Kong	cn-hongkong	2
Asia Pacific SE 1	Singapore	ap-southeast-1	3
Asia Pacific SE 2	Sydney	ap-southeast-2	2
Asia Pacific SE 3	Kuala Lumpur	ap-southeast-3	2
Asia Pacific SE 5	Jakarta	ap-southeast-5	2
Asia Pacific SOU 1	Mumbai	ap-south-1	2
Asia Pacific NE 1	Tokyo	ap-northeast-1	2
US West 1	Silicon Valley	us-west-1	2
US East 1	Virginia	us-east-1	2
EU Central 1	Frankfurt	eu-central-1	2
UK (London)	London	eu-west-1	2
Middle East 1	Dubai	me-east-1	1

When choosing a region, consider the following factors:

- Geographic location

Choose a region based on the geographic locations of you and your target users.

- Regions in mainland China

In general, we recommend that you choose the data center closest to your target users so that they have fast access. Alibaba Cloud's data centers of the regions in mainland China are similar to each other in terms of infrastructure, BGP network quality, service quality, ECS operation and configuration. The regions offer BGP backbone network lines covering all provinces, autonomous regions, and municipalities to guarantee fast, stable access within mainland China.

- International regions

Alibaba Cloud's international regions are data centers outside mainland China. They offer access at international bandwidth, targeting areas outside mainland China. Users in mainland China that access services deployed in these regions

may experience high latency. Therefore, we do not recommend deploying services in international regions if users from mainland China require access.

- If you have business operations in Hong Kong or Southeast Asia, choose the region Hong Kong, Asia Pacific SE 1, Asia Pacific SE 3, or Asia Pacific SE 5.
- If you have business operations in Japan and Korea, choose the Asia Pacific NE 1.
- If you have business operations in India, choose the region Asia Pacific SOU 1.
- If you have business operations in Australia, choose the region Asia Pacific SE 2.
- If you have business operations in America, choose the region US East 1 or US West 1.
- If you have business operations in Continental Europe, choose the region EU Central 1.
- If you have business operations in the Middle East, choose the Eastern Middle East 1 region.

- **Intranet communication between Alibaba Cloud products across regions**

Intranet communication between Alibaba Cloud products that are not in the same region is not supported, which means:

- ECS instances and other products, such as ApsaraDB for RDS and OSS instances , cannot communicate with one another over the intranet if they are in different regions.
- Server Load Balancer cannot be deployed for ECS instances in different regions.

- **Resource pricing**

The price of resources may vary according to the region. For details, see the [product pricing page](#).

- **Business license filing**

When you choose a region, consider the special requirements of some areas. If you have purchased an ECS instance in mainland China and used it for a web server, complete business license filing first.

To complete business license filing, pay attention to the following points:

- If your company is located in Beijing, choose the China North 2 region for the ECS instance you have purchased.
- If your company is located in Guangdong, choose the China South 1 region for the ECS instance you have purchased.



Note:

The communications administrations in different provinces, autonomous regions, and municipalities have different approval requirements for business license filing. In case of any change, the information published on the business license filing website of your local administration prevails. For the different approval requirements, see [provincial communications administrations](#).

Zones

Zones are physical areas with independent power grids and networks within one region. The network latency for instances within the same zone is lower.

Intranet communication can take place between instances in different zones of the same region, and fault isolation can be achieved between zones. Whether or not instances can be deployed in the same zone depends on the requirements for disaster recovery and network latency.

- If your applications require high disaster recovery capabilities, we recommend that you deploy your instances in different zones of the same region.
- If your applications require low network latency between instances, we recommend that you create your instances in the same zone.

For more information about regions and zones, see the [Alibaba Cloud Global Infrastructure](#)

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5 Limits

When using ECS, note the following limitations:

- ECS does not support virtual application installation or revirtualization (such as installation of VMware). Currently, only [ECS Bare Metal Instance and Super Computing Clusters](#) support revirtualization.
- ECS does not support sound card applications.
- ECS does not support external hardware devices directly (such as dongles, USB drives, or external hard drives). Instead, it supports a software protection dongle or two-step verification with dynamic passwords.
- ECS does not support IP address translation services such as SNAT. Instead, it supports a VPN or proxy.
- ECS does not support multicast protocols. If multicasting services are required, we recommend that you use point-to-point unicast instead.
- Currently, Log Service does not support 32-bit Linux ECS instances. For information about regions that support Log Service, see [Service endpoint](#). For information about operating systems that support Log Service, see [Overview](#).

In addition to the preceding limits, the following table details further limits of ECS and states whether you can open a ticket to request changing the limits.

ECS instances

Item	Limitation	Can I open a ticket to change the limitation?
Permission to create instances	Complete real-name registration before creating ECS instances in any mainland China regions.	No
Instance types for which you can create Pay-As-You-Go instances	Instance types with less than 16 vCPUs	Yes
Default quota of Pay-As-You-Go instances in each region for one account	50 vCPUs (increases with membership levels)	Yes

Item	Limitation	Can I open a ticket to change the limitation?
Default quota of preemptible instances in each region for one account	Up to 50 vCPUs are allowed after the permission is granted. The quota increases with membership levels.	Yes
Default quota of launch templates in each region for one account	30	No
Default quota of versions of one launch template	30	No
Switch from Pay-As-You-Go to Subscription	The following instance types (families) are not supported: t1, s1, s2, s3, c1, c2, m1, m2, n1, n2, and e3.	No
Switch from Subscription to Pay-As-You-Go	<ul style="list-style-type: none"> Depends on the membership level 5,000 vCPUs × hours for each month. The quota increases with membership levels. Maximum refund limit per month (varies with the membership level). 	No

Block storage

Item	Limitation	Can I open a ticket to change the limitation?
Create Pay-As-You-Go cloud disks	Complete real-name registration before creating cloud disks in any Mainland China regions.	No
Default quota of Pay-As-You-Go cloud disks in all regions for one account	Number of Pay-As-You-Go instances in all regions under the user account × 5	Yes

Item	Limitation	Can I open a ticket to change the limitation?
Default quota of system disks for one instance	1	No
Default quota of data disks for one instance	16 (including cloud disks and Shared Block Storage)	No
Default quota of instances to which one Shared Block Storage can be attached	8	No
Default quota of Shared Block Storage in all regions for one account	10	Yes
Capacity of one Basic Cloud Disk	5 GiB–2,000 GiB	No
Capacity of one SSD Cloud Disk	20 GiB–32,768 GiB	No
Capacity of one Ultra Cloud disk	20 GiB–32,768 GiB	No
Capacity of one local SSD disk	5 GiB–800 GiB	No
Capacity of local SSD disks for one instance	1,024 GiB	No
Capacity of one local NVMe SSD disk	1,456 GiB	No
Capacity of local NVMe SSD disks for one instance	2,912 GiB	No
Capacity of one local SATA HDD disk	5,500 GiB	No
Capacity of local SATA HDD disks for one instance	154,000 GiB	No
Capacity of one SSD Shared Block Storage	32,768 GiB	No
Capacity of SSD Shared Block Storage for one instance	128 TiB	No
Capacity of one Ultra Shared Block Storage	32,768 GiB	No

Item	Limitation	Can I open a ticket to change the limitation?
Capacity of Ultra Shared Block Storage for one instance	128 TiB	No
Capacity of one ESSD disk	32,768 GiB	No
Capacity of one system disk	<ul style="list-style-type: none"> • Windows: 40 GiB–500 GiB • Linux (excluding CoreOS) and FreeBSD: 20 GiB–500 GiB • CoreOS: 30 GiB–500 GiB 	No
Capacity of one data disk	<ul style="list-style-type: none"> • Basic Cloud Disk: 5 GiB–2,000 GiB • SSD Cloud Disk/Ultra Cloud Disk/SSD Shared Block Storage/Ultra Shared Block Storage: 20 GiB–32,768 GiB • Local disk: dependent on specific disks 	No
Attach a new local disk to an instance with local disks	This feature is not supported.	No
Change configuration of an instance with local disks	Only bandwidth changes are allowed.	No
System disk mount points	/dev/xvda	No
Data disk mount points	/dev/xvd[b-z]	No

**Note:**

Block storage capacity is measured in binary units. 1 KiB is 1,024 bytes. 1 MiB is 1,024 KiB. 1 GiB is 1,024 MiB. 1 TiB is 1,024 GiB.

Snapshots

Item	Limitation	Can I open a ticket to change the limit?
Quota of snapshots	Each cloud disk and Shared Block Storage can have up to 64 snapshots	No

Images

Item	Limitation	Can I open a ticket to change the limit?
Quota of custom images in one region for one account	100 (increases with membership levels)	Yes
Maximum number of users with whom a single image can be shared	50	Yes
Usage of images on instance types	32-bit images are not supported on an instance with 4 GiB or more RAM.	No

Key pairs

Item	Limitation	Can I open a ticket to change the limit?
Quota of key pairs in one region for one account	500	No
Instance types supporting key pairs	All instance types except non-I/O optimized instance types in Generation I	No
Images supporting key pairs	Linux images only	No

Internet bandwidth

Item	Limitation	Can I open a ticket to change the limit?
Maximum inbound Internet bandwidth	200 Mbit/s	No

Item	Limitation	Can I open a ticket to change the limit?
Maximum outbound Internet bandwidth	<ul style="list-style-type: none"> Subscription instance: up to 200 Mbit/s Pay-As-You-Go instance : up to 100 Mbit/s 	No
Change the assigned Internet address for one instance	The instance has existed for less than six hours. You can change the Internet address of an instance three times.	No

Security groups

Item	Limitation	Can I open a ticket to change the limit?
Quota of security groups in one region for an account	100 (increases with membership levels)	Yes
Quota of instances/IP addresses for one security group	<ul style="list-style-type: none"> Security groups for classic network instances: 1,000 classic network instances Security groups for VPC instances: 2,000 private IP addresses (shared by primary and secondary network cards) 	No
Quota of security groups to which each Elastic Network Interface (ENI) belongs for one instance	500	No
Quota of security groups to which each Elastic Network Interface (ENI) belongs for one instance	5	Open a ticket to raise the upper limit to 10 or 16

Item	Limitation	Can I open a ticket to change the limit?
Quota of rules for one security group	100	No It decreases as the security group quota increases. For detailed restrictions, see Security groups
Port	For the outbound Internet traffic, the default STMP port is 25, which is disabled by default and cannot be enabled through security group rules.	Open a ticket to enable it. For more information, see Request for enabling TCP port 25

Deployment sets

Item	Limit	Can I open a ticket to change the limit?
Quota of deployment sets in one region for an account	2	No
The number of instances that can be included in a deployment set	Seven instances are allowed in one zone. The number of instances allowed in one region equals the number of zones \times 7.	No
Instance types that can be created in a deployment set	c5, g5, hfc5, hfg5, r5, se1ne, sn1ne, and sn2ne	No

Cloud assistants

Item	Limit	Can I open a ticket to change the limit?
Quota of cloud assistant scripts in one region for one account	100	Yes

Item	Limit	Can I open a ticket to change the limit?
Quota to invoke cloud assistant scripts in one region for one account	500	Yes

ENIs

Item	Limit	Can I open a ticket to change the limit?
Quota of ENIs in one region for one account	100 (increases with membership levels)	Yes

Tags

Item	Limit	Can I open a ticket to change the limit?
Quota of tags that can be bound to one instance	20	No

API

Item	Limit	Can I open a ticket to change the limit?
Quota of CreateInstance calls	200 times per minute	Yes

**Note:**

For the limits of VPC products, see [Limits](#).

6 Instructions on using ECS

This article describes usage restrictions and recommendations of an ECS instance.

General instructions

Restrictions

- You are prohibited from using your instances for flow-through services. Any violations will lead to punishments including shutdown and lockout of instances, and termination of services.
- You are prohibited from using instances for click farming, advertising, or fraudulent transactions.
- Do not enable SELinux.
- Do not uninstall relevant hardware drivers.
- Do not arbitrarily modify the MAC address of the network adapter.

Recommendations

- For an instance with more than 4 GiB RAM, we recommend that you use a 64-bit operating system as a 32-bit operating system only supports up to 4 GiB RAM. Currently, the following 64-bit operating systems are supported (please refer to the instance purchase page for the latest details):
 - Aliyun Linux 64-bit
 - CoreOS 64-bit
 - CentOS 64-bit
 - Debian 64-bit
 - FreeBSD 64-bit
 - OpenSUSE 64-bit
 - SUSE Linux 64-bit
 - Ubuntu 64-bit
 - Windows 64-bit
- Windows 32-bit supports vCPUs with up to 4 cores.
- A minimum of 2 GiB RAM is required for building a website or deploying a Web environment on a Windows instance.
- An instance type with 1 vCPU core and 1 GiB RAM cannot be used for MySQL service.

- To guarantee service continuity and avoid service downtime, we recommend that you enable auto-start upon instance boot for relevant software. In the case of databases that are connected to service applications, auto-reconnect should be enabled for them.
- For I/O-optimized instances, do not disable the aliyun-service process.
- For Windows users, exercise caution when using the administrator or other accounts to perform actions involving capacity expansion, spanned volume , registry, system update, and other related actions, in order to avoid data corruption due to misoperations.
- For Linux users, exercise caution when using the root or other accounts to perform actions involving fio, mkfs, fsck, capacity expansion, and other related actions, in order to avoid data corruption due to misoperations.
- We do not recommend that you upgrade the kernel and the operating system. If you need to upgrade the kernel, see [How to avoid Linux instance startup failure after kernel upgrade](#).

Windows instructions

- Do not kill the built-in shutdownmon.exe process. Otherwise, the server may take a longer time to restart.
- Do not rename, delete, or disable the administrator account.
- We do not recommend that you use the virtual memory if Basic Cloud Disks are used. For Ultra Cloud Disks or SSD Cloud Disks, you can use the virtual memory as needed.

Linux instructions

- Do not modify the contents of the default `/etc/issue` file on Linux instances . Otherwise, if you create a custom image of the instance and then use it to create a new instance, the new instance cannot start properly because the operating system edition cannot be recognized.
- Do not arbitrarily modify permissions of the directories in the root partition, especially `/etc` , `/sbin` , `/bin` , `/boot` , `/dev` , `/usr` , and `/lib` . Improper modification of permissions may cause errors.
- Do not rename, delete, or disable the Linux root account.
- Do not compile or perform any arbitrary operations on the Linux kernel.

- We recommend you do not use the swap partition if Basic Cloud Disks are used. For Ultra Cloud Disks or SSD Cloud Disks, you can use the swap partition as needed.
- Do not enable the NetWorkManager service. This service conflicts with the internal network service of the system which can result in network errors.

For more information, see [Limits](#).

7 Release notes

This topic describes the release notes of ECS features.

For information about image release notes, see [Release notes](#).

Feature	Release date	Documentation
gn6i (GPU computing instance type family) is released.	2019-03-21	Instance type families
sccgn6 (GPU computing Super Computing Cluster (SCC) instance type family) is released.	2019-03-20	Instance type families
vgn5i (lightweight GPU computing instance type family) is released.	2019-03-19	Instance type families
The Reserved Instance (RI) feature is released.	2019-03-18	Reserved Instances
The Cloud Migration tool is updated to v1.3.2.5.	2019-02-02	Cloud Migration tool overview
ECS instances support status change events and preemptible instances recycle alarm events.	2019-01-29	System events
The cloud assistant client supports the UK (London) region.	2018-12-31	Cloud assistant
Preemptible instances are billed by the second.	2018-12-17	Preemptible instances
Instance release protection is supported.	2018-12-14	Enable instance release protection
IPv6 addressing in ECS is supported.	2018-12-06	IPv6
The DescribeNetworkInterfaces API outputs the public IP address to which an ENI is attached.	2018-12-04	#unique_42
Custom images can be created by using Packer.	2018-11-30	Use Packer to create a custom image
re4e (memory optimized instance type family with enhanced performance) is released.	2018-11-30	Instance type families

Feature	Release date	Documentation
Subscription cloud disks can be created separately and attached to a Subscription instance.	2018-11-29	Create a Subscription cloud disk
Alibaba Cloud Deployment Set is released.	2018-11-16	Deployment set
The new generation FaaS f3 (VU9P) instance is released.	2018-10-31	Instance type families
Open API best practices of critical features are released.	2018-10-19	Create an instance by using the wizard
The t5 instance type family supports the unlimited feature.	2018-09-30	t5 unlimited instances
Instance metadata supports O&M system events.	2018-09-14	Metadata
The health status of ECS instances is displayed on the instance details page.	2018-09-14	View instance health status
The new generation GPU cloud host GN6 (V100 model) is released.	2018-09-12	Instance type families
Batch renewal of instances and batch purchase of historical instances are supported.	2018-09-07	Manual renewal
An interface for simulated events can be created and canceled.	2018-09-03	<ul style="list-style-type: none"> • #unique_51 • #unique_52
Subscription instances can be converted to Pay-As-You-Go instances.	2018-09-01	Switching the billing method from Subscription to Pay-As-You-Go
The O&M of instances to which local disks are attached is optimized.	2018-08-31	Local disks
The cloud assistant is supported in the ECS console.	2018-08-17	Cloud assistant
The Super Computing Cluster (SCC) is released.	2018-08-16	Super Computing Clusters
Images in qcow2 format can be imported.	2018-07-30	<ul style="list-style-type: none"> • Import custom images • ImportImage

Feature	Release date	Documentation
Security group rules can be modified.	2018-07-25	Manage security group rules
Instances can be tagged when being created.	2018-07-20	Add a tag to resources
ebmc4 (computing ECS Bare Metal Instance type family) is released.	2018-07-18	Instance type families
The estimated time remaining can be displayed when a snapshot is created.	2018-07-17	Create a snapshot
Quota management is supported.	2018-07-15	Manage privileges and quotas
ESSD cloud disks (open beta test) are available in Zone G, China North 2 (Beijing).	2018-07-14	Cloud disks and Shared Block Storage
System logs and screenshots can be viewed.	2018-07-13	Console output and screenshot
The number of instances added in a security group and the number of security group rules can be modified by opening a ticket.	2018-07-10	Limits
ic5 (intensive computing instance type family) is released.	2018-07-09	Instance type families
System images can be set to Red Hat or other operating systems when an ECS instance is created.	2018-06-29	Create an instance by using the wizard
Support to display an overview of risky security groups is added.	2018-06-22	View an overview of risky security groups
Cross-type configuration changes of Pay-As-You-Go instances in real time are supported.	2018-06-15	Instance type families that support instance type upgrades
Subscription instances can be renewed on a weekly basis.	2018-06-12	Manual renewal
Security groups in a classic network can be cloned to a VPC in one click.	2018-06-06	Manage security groups
Phase II of active O&M is released.	2018-06-01	System events
The image compliance tool is released.	2018-05-28	Image compliance tool

Feature	Release date	Documentation
ECS system events are migrated to CloudMonitor and can be queried.	2018-05-25	System events
The ECS instance launch template is added.	2018-05-11	Create a template
Pay-As-You-Go instances can be converted to Subscription instances.	2018-04-23	Switch from Pay-As-You-Go to Subscription billing
Subscription ECS instances can be renewed and their configurations can be changed after expiration.	2018-04-13	Renew for configuration downgrade
The ECS console provides a dashboard of instances and storage resources.	2018-04-01	Resource overview
The NGC GPU-accelerated container is released.	2018-03-28	Deploy an NGC on gn5 instances
The system event feature is released.	2018-03-26	System events
ECS Bare Metal Instance is released.	2018-03-14	ECS Bare Metal Instance and Super Computing Clusters
The ECS instance identifier feature is released.	2018-03-01	Instance identity
The interface of querying resource configuration upgrade/downgrade capabilities is added.	2018-02-10	DescribeResourcesModification
The number of days before a Subscription instance is released after its expiration is changed from 7 days to 15 days.	2018-02-07	Subscription
The resource creating and querying interface is opened.	2018-02-02	DescribeAvailableResource
The "No fees for stopped VPC instances" feature is released.	2017-12-14	No fees for stopped VPC instances
The Elastic Network Interface (ENI) feature is released.	2017-12-08	ENI overview
FPGA cloud server f1 is released.	2017-12-02	Instance type families
The batch instance creating interface is opened.	2017-12-01	RunInstances

Feature	Release date	Documentation
The ECS console supports real-time diagnosis.	2017-12-01	Self-diagnostic system
The Cloud Migration tool is released.	2017-11-27	Cloud Migration tool overview
Security group rules can be imported and exported.	2017-11-23	Manage security group rules
Subscription instances can have the auto-renew function disabled.	2017-11-23	ModifyInstanceAutoRenewAttribute
Pay-by-week instances can be created and renewed by using APIs.	2017-11-03	CreateInstance
RAM roles can be assigned to ECS instances.	2017-11-01	What is the RAM role of an instance
The public IP address of instances in a VPC can be converted to an Elastic IP (EIP).	2017-10-31	Change an ECS public IP address to an EIP
The preemptible instance is released .	2017-10-18	Preemptible instances
t5 (burstable instance) is released.	2017-10-09	Basic concepts
Fees for Pay-As-You-Go instances and cloud disks are calculated by the second and charged by the hour.	2017-09-29	Billing method comparison
gn5i (instance type family applicable for deep learning and online reasoning scenarios) is released.	2017-09-23	Instance type families
Cloud disk encryption is supported.	2017-09-05	ECS disk encryption
Security group quintuple rules are supported.	2017-08-31	Security group quintuple rules
Instances in a classic network can be connected with instances in a VPC through ClassicLink.	2017-08-25	Network types
The Skylake-based processor and new generation ECS instance with high clock speed and local SSD instance for 25G networks are released.	2017-08-22	Instance type families

Feature	Release date	Documentation
The bandwidth of instances can be changed by using an API.	2017-08-17	ModifyInstanceNetworkSpec
Custom images can be imported.	2017-08-10	Notes for importing images
Instances in a security group can be isolated from each other.	2017-07-07	Isolation of instances within a security group
APIs are released for the RAM roles of instances.	2017-05-26	Use the instance RAM role by calling APIs
The network-optimized instance is released.	2017-05-23	Instance type families
d1 (storage-intensive instance type family) is released.	2017-05-12	Instance type families
The default security group policy is modified to support ICMP and expose TCP (22) and TCP (3389) ports only.	2017-05-11	Security group overview
Security groups can be backed up, overwritten, and restored.	2017-05-10	Manage security group rules
SSH key pairs are available.	2017-04-25	SSH key pairs
The cloud-init tool supports some custom images.	2017-02-24	Install cloud-init for Linux images
i1 (high-I/O local ephemeral disk storage instance type family) is released.	2017-02-17	Instance type families
The system disk snapshot can be used to create data disks.	2017-02-15	Create a cloud disk by using a snapshot
gn4 (GPU computing instance type family) is released.	2017-02-14	Instance type families
ga1 (GPU visualization instance type family) is released.	2017-01-24	Instance type families
se1 (exclusive instance type family) is released.	2017-01-21	Instance type families
Snapshot 2.0 is released.	2016-03-15	Snapshot overview
The system disk resizing feature is released.	2016-01-15	Resize a cloud disk offline

Feature	Release date	Documentation
The image import feature is released.	2015-12-15	Import custom images
Security groups are supported in the ECS console.	2015-11-02	Create a security group
The image Marketplace is released.	2015-09-02	Marketplace images
The attach tag feature is released.	2015-08-20	Limits
The operating system of Pay-As-You-Go instances can be changed.	2015-08-13	Replace the system disk by using a public image
Images in a security group can be shared.	2015-05-15	Share images
Disks in a security group can be resized offline.	2015-04-20	Disk resizing overview
The image copying feature is released.	2015-01-26	Copy images
The independent cloud disk is released.	2014-08-22	What is block storage?