

Alibaba Cloud Dedicated Host

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</code> font	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 a 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>

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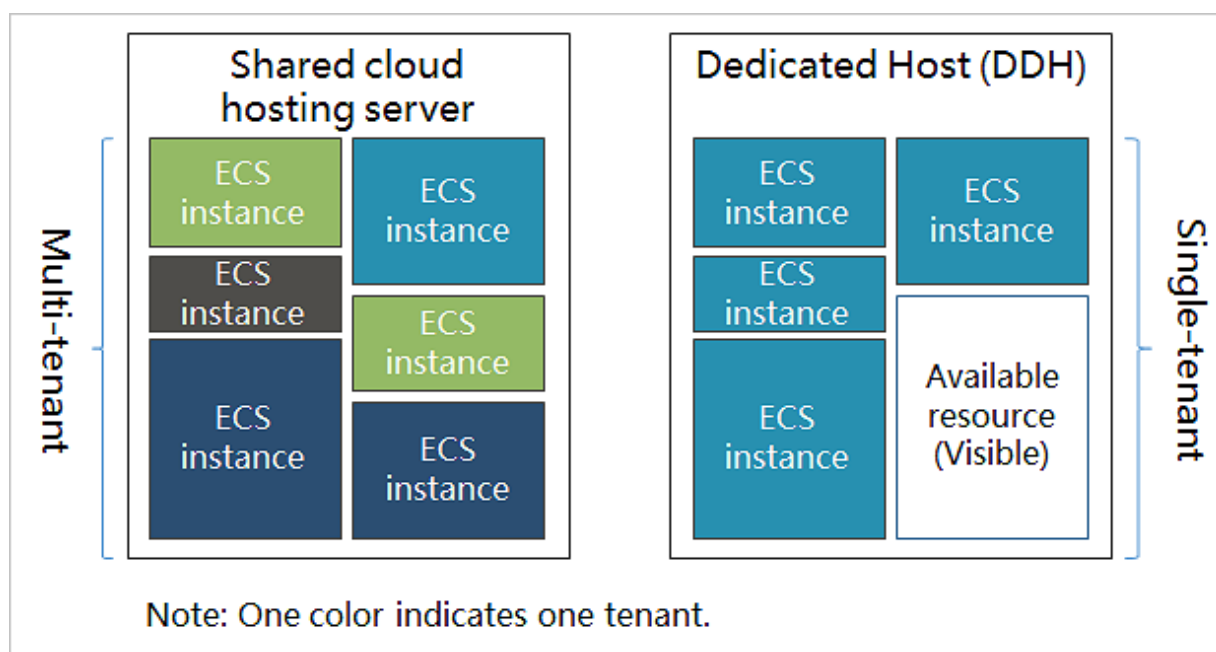
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1 What is a Dedicated Host

You can learn the basic concepts of a dedicated host and the difference between a dedicated host and a shared cloud hosting server.

An Alibaba Cloud *Dedicated Host*, abbreviated to DDH, is a dedicated cloud host that allows you to exercise full control over the physical server, but not to share with other tenants. All the physical server attributes are visible to you, including the number of sockets, physical CPU cores, and the memory size. The Dedicated Host types determine ECS instance type families that are eligible to be created on the DDHs based on [dedicated host types](#).

The difference between a DDH and a shared cloud hosting server is illustrated as follows.



Basic concept

For the DDH related basic concept, see [glossary](#).

Billing and pricing

Subscription is supported for billing. For more information, see [pricing overview](#).

Related services

The ECS instances created on a DDH support the same Alibaba Cloud services as those on shared cloud hosting servers. For more information, see [what is ECS](#).

For the functional differences between the ECS instance on a DDH and that on a shared cloud hosting server, see [comparing ECS features on different hosts](#).

Operations

To manage a DDH, see [limits](#).

You can use the [ECS console](#) to manage a DDH:

- [Create a DDH](#).
- [Create an ECS instance on a DDH](#).
- [Migrate ECS across DDHs](#).
- [Migrate ECS from a shared cloud hosting server to a DDH](#).
- On a Subscription DDH, you can convert the billing method of Pay-As-You-Go to Subscription. For more information, see [Switch from Pay-As-You-Go to Subscription billing](#).
- For a Subscription DDH, you can [auto renewal](#) or [manual renewal](#).

2 Scenarios

In some scenarios, DDH enables you to deploy your business flexibly, guarantee business safety and compliance, and reduce the cloud migration cost.

DDHs are ideal for the following scenarios:

- BYOL (Bring-Your-Own-License)

If you have your own per-socket, per-core, or per-VM software licenses, you can use these licenses on a DDH the same way you use them on a physical server, subject to your license terms. DDHs can lower the costs while migrating your business to cloud. The licenses involved include, but are not limited to Microsoft Windows Server, Microsoft SQL Server or other software licenses.

- Strict regulatory and compliance requirements

DDHs are ideal for the businesses that require strict regulatory compliance, because you can have the full control over the resources of the physical servers, which enables physical isolation on physical server level. Besides, you can create ECS instances on a specified DDH, which meets the regulatory requirements for your business running environment.

- Performance stability sensitive

Some businesses, such as those in the gaming industry, require higher computing capability and stability of the servers. DDHs guarantee the stability of the CPU and the I/O, assuring the performance of your business.

- Deployment flexibility

You can specify a DDH to create ECS instances, migrate an ECS instance between DDHs or from shared cloud hosting to your DDH. Flexible deployment improves your orchestration ability of applications.

3 Benefits

Using a DDH can cut the costs of migration to cloud and business deployment, and meet strict regulatory compliance requirements.

A DDH provides single-tenant running time based on the virtualized service platforms provided by Alibaba Cloud. It enables you to exercise full control over all the resources of a physical server and at the same time to benefit from the flexibility and elasticity of cloud services. All the ECS instances created on a DDH have the same features and performance as those on shared cloud hosting servers, which is easy for you to deploy and use. For more information about ECS, see [what is ECS](#).

Compared to ECS on shared cloud hosting, ECS on DDH can bring the following benefits:

- You do not have to share the resources of a physical server with other tenants.
- High security can be guaranteed.
- Your business can meet the strict regulatory and compliance requirements.
- You can bring your own license to Alibaba Cloud.
- You can deploy server clusters according to your own business requirements.

For more information, see the following table.

Item	ECS on Dedicated Host	ECS on shared cloud hosting
Isolation	Physical isolation. Resources are isolated on physical server level, including CPU, memory , and networking, which guarantees higher security .	Virtual isolation. Resources are isolated on virtual machine level. Tenants share the host resources, such as networking and memory.

Item	ECS on Dedicated Host	ECS on shared cloud hosting
Regulatory compliance	<p>Strict regulatory compliance.</p> <p>Dedicated Hosts provide you with further visibility and control by allowing the placement of instances on a specific, physical server and showing the physical attributes of the host, in order to meet the compliance and regulatory requirements for businesses in certain industries (for example , financial regulatory compliance).</p>	<p>Common regulatory compliance.</p> <p>Multiple tenants share the resources of a physical server.</p>
Bring-Your-Own-License (BYOL)	<p>Supported.</p> <p>The machine serial number and the number of sockets and physical CPU cores are visible to you, which enables you to use your own software license on the cloud, saving your costs of migrating business to cloud.</p>	<p>Not supported.</p> <p>Less visibility of physical server information.</p>

Item	ECS on Dedicated Host	ECS on shared cloud hosting
Deployment flexibility	<p>Supports deploying applications on a specified physical server.</p> <p>You can create ECS instances on a specified DDH, or migrate ECS instances from shared cloud hosting to DDH.</p>	<p>Supports deploying applications randomly.</p> <p>You cannot specify a physical server to deploy applications.</p>

4 Dedicated Host types

A Dedicated Host type determines the ECS instance type family and the number of ECS instances that you can create on a DDH.

A Dedicated Host type is determined on the basis of a scenario, which defines the configurations of physical cores, sockets, memory, and local disks of a DDH. A Dedicated Host type is determined on the basis of a scenario which is used by ECS instance type family on a sharing host. You can create ECS instances of the permitted type family on a DDH and flexibly combine the different instance types until its resources are used out. For example, on a DDH of compute optimized type with enhanced network performance, you can create ECS instances of all `sn1ne` types. For more information about ECS instance type family, see *Elastic Compute Service (ECS)*. For all the ECS instances running on a DDH, make sure that the packet forwarding rate and the bandwidth capacity of the DDH are not exceeded. Network performance for each instance type, see [instance type families](#).

Currently, the available Dedicated Host types are shown in the following table.

Dedicated Host type	Compute optimized type with enhanced network performance	General-purpose type with enhanced network performance	Memory optimized type with enhanced network performance	General-purpose type	Compute type	Memory type	Local SSD disks type
ECS instance type family	sn1ne	sn2ne	se1ne	g5	c5	r5	i2
Number of CPUs (Socket)	2	2	2	2	2	2	2

Physical CPU model (2.5 GHz)	Intel Xeon E5-2682 v4 (Broadwell)	Intel Xeon E5-2682 v4 (Broadwell)	Intel Xeon E5-2682 v4 (Broadwell)	Xeon Platinum 8163 (Skylake)	Xeon Platinum 8163 (Skylake)	Xeon Platinum 8163 (Skylake)	Xeon Platinum 8163 (Skylake)
Physical CPU cores	32	32	32	48	48	48	48
vCPU cores	56	56	56	84	86	86	80
Memory (GiB)	112	224	448	336	172	688	640
Local SSD disk (GiB)	N/A	N/A	N/A	N/A	N/A	N/A	17880
Bandwidth (Gbit/s)	10	10	10	25	25	25	25
Packet forwarding rate (Thousand pps)	4,500	4,500	4,500	5,500	5,500	5,500	5,500

$\text{vCPU cores} = \text{physical CPU cores} * 2 - \text{vCPU cores reserved by the host}$

For more information about local SSD disks, see [local disks](#) in the *ECS Product Introduction*.

For all the ECS instances running on a DDH, make sure that the packet forwarding rate and the bandwidth capacity of the DDH are not exceeded. Network performance for each instance type, see [instance type families](#).

5 Life cycle of DDH

This topic describes all the statuses of a DDH from its creation to its release.

A life cycle of a DDH starts right from its creation and ends with its release. The following table displays the various statuses of a DDH.

Status	Attribute	Description	Visible in the console
Starting	Transitory	A DDH is in the status before <code>Running</code> during its time of creation. If a DDH is in this status for a long time, an exception occurs.	Yes
Running	Stable	The DDH is running properly. You can create and manage ECS instances on a DDH in such a status.	Yes
Error	Stable	An error occurs to the DDH. You can open a ticket to report and solve the problem.	Yes
Expired	Stable	DDH falls in this status, when a Subscription DDH expires. You must renew the subscribed DDH. With this action, the status changes from <code>Expired</code> to <code>Running</code> . For more information about renewal, see manual renewal .	Yes
Released	Stable	When a Subscription DDH is released because of expiration, it enters this status. When a DDH is released, all its resources become unavailable.	No

6 Limits

DDHs have the following limits.



Note:

If you are using an ECS instance on a DDH, besides the following limits, you must also consider the limits to ECS. For more information, see [limit](#) of *Elastic Compute Service (ECS)* .

Item	Limit	Supply for higher configuration or unlock configuration rights
Permission to create a DDH	Complete real-name registration to create a DDH in the mainland China regions.	Not supported.
Supported network types	Virtual Private Cloud (VPC). For more information about VPC, see what is VPC .	Not supported.
Billing methods links between a DDH and its ECS instances	Subscription DDH: For both Pay-As-You-Go and Subscription ECS instances.	Not supported.
Configurations of Subscription ECS instances on a Subscription DDH	The expiration time of the ECS instance cannot be later than that of the DDH.	Not supported.
Auto-renewal Subscription ECS instances on a Subscription DDH	The expiration of the ECS instance after auto-renewal cannot be later than that of DDH. If the time for auto-renewal is against the rule, auto-renewal fails.	Not supported.

Item	Limit	Supply for higher configuration or unlock configuration rights
<i>Conversion of billing methods</i> of ECS instances on a DDH	Available for the Pay-As-You-Go ECS instances on a Subscription DDH. After conversion, the expiration time of an ECS instance cannot be later than that of a DDH.	Not supported.
Conversion of billing methods of a DDH	Not supported.	Not supported.
ECS instance migration between shared cloud hosting and DDH	Only Pay-As-You-Go ECS instances can be migrated. Subscription ECS instances and Preemptible instances cannot be migrated.	Not supported.
ECS instance migration between DDHs	Instances can be migrated only between DDHs of the same <i>dedicated host type</i> under one account. ECS instances on a DDH with local SSD disks cannot be migrated.	Not supported.

7 Glossary

This topic describes the basic concepts about DDH.

DDH related terminology is as follows.

Terminology	Description
Dedicated Host	Abbreviated to DDH, a physical server that you can exercise full control over the resources. It enables physical isolation on physical server level for tenants. For more information, see what is a dedicated host .
Tenant	An Alibaba Cloud account, which may own multiple RAM users, has full control over the resources of a Dedicated Host. For RAM user, see what is RAM .
Dedicated Host Type	The configurations of a Dedicated Host, including the physical cores, sockets, local disks, virtual CPU (vCPU) cores, and memory. Dedicated Host types are defined according to business scenarios. For more information, see dedicated host types .
Region	The physical location of the data center where physical servers are located. For more information, see regions and zones .
Elastic Compute Service (ECS)	A basic cloud compute service provided by Alibaba Cloud. For more information, see what is ECS .
ECS instance	A cloud server on shared cloud hosting or a Dedicated Host. It is virtual computing environment, working as a virtual machine. It is comprised of essential computing components, including CPU, memory, operating system, networking, and storage. For more information, see what are ECS instances .



Terminology	Description
ECS console	The Web application for managing ECS and DDH.

8 Comparing ECS features on different hosts

ECS instances running on a DDH and a shared hosting server have differences.

The differences between ECS instances running on a DDH and a shared hosting server are listed in the following table.

Item	ECS on shared cloud hosting	ECS on Dedicated Hosts
Network Type	VPC and classic network. For more information, see network types .	VPC
Chargeable resources	See pricing overview .	For more information, see billing of ECS resources on a DDH .
Billing methods	Subscription, Pay-As-You-Go, and Spot instances	Subscription
Renewal period	Set the renewal period according to your business needs.	After renewal, the ECS instance must expire earlier than the DDH. For more information, see limits .
No fees for stopped instances (VPC-Connected)	For more information, see no fees for stopped VPC instances .	In the Stop Instance, No Fees mode, the computing resources, including vCPU and memory, are retained, but other ECS resources keep being charged. For more information, see billing of ECS resources on a DDH

Item	ECS on shared cloud hosting	ECS on Dedicated Hosts
Pay-As-You-Go to Subscription	For more information, see switch from Pay-As-You-Go to Subscription billing , the function limit conditions must be met	Besides all the limitations of the feature, only ECS instances running on a Subscription DDH supports this feature, and after conversion, the expiration time of an ECS instance cannot be later than that of a DDH.
ECS instance type	For more information, see what is ECS .	Determined by the Dedicated Host types. For more information, see dedicated host types
Create an ECS instance	For more information, see create an instance .	For more information, see create an ECS instance on a DDH .
Change instance configurations	For more information, see upgrade or downgrade instance configurations	Not supported.
Adjust the Internet bandwidth	For more information, see adjust Internet bandwidth .	For more information, see adjust Internet bandwidth .  Note: You cannot change the configurations of a Subscription instance while adjusting the Internet bandwidth.
Assign a public IP address	For more information, see assign a public IP address .	For more information, see assign a public IP address .  Note: You cannot change the configurations of a Subscription instance while adjusting the Internet bandwidth.

Item	ECS on shared cloud hosting	ECS on Dedicated Hosts
Release an ECS instance	<ul style="list-style-type: none">• Pay-As-You-Go instances can be released automatically or manually. For more information, see release an instance.• When a Subscription ECS instance expires or a Pay-As-You-Go ECS instance is out of service because of payment overdue, it is released automatically.	When a Subscription DDH expires and is not renewed, the ECS instances hosted on it are released automatically.