

# Alibaba Cloud ApsaraDB for MySQL

FAQs

Issue: 20190718

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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.	 <b>Danger:</b> 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.	 <b>Warning:</b> 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.	 <b>Notice:</b> 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.	 <b>Note:</b> You can use Ctrl + A to select all files.
>	Multi-level menu cascade.	Settings > Network > Set network type
<b>Bold</b>	It is used for buttons, menus, page names, and other UI elements.	Click OK.
Courier 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 an optional value, and only one item can be selected.	<code>ipconfig [-all -t]</code>

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



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# 1 How to connect/cannot connect

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## 1.1 What do I do if I cannot connect an ECS instance to an ApsaraDB for RDS instance?

This topic describes what you can do if you cannot connect an ECS instance to an RDS instance in various situations.

If you fail to connect ECS to RDS, one common reason is that the network type of the ECS instance differs from that of the RDS instance. Another common reason is that the IP address whitelist for the RDS instance does not contain the required IP addresses. The most common reasons and corresponding solutions are as follows:

### ECS and RDS belong to different network types

The ECS instance runs in a VPC while the RDS instance runs in a classic network.

- **Solution 1 (recommended):** Switch the RDS instance from its classic network to the VPC where the ECS instance resides. For detailed steps, see [Set network type](#).



**Note:**

The RDS instance must run in the same VPC as the ECS instance after the switching so that they can communicate with each other through the intranet.

- **Solution 2:** Purchase another ECS instance that runs in the classic network because ECS instances cannot be switched from a VPC to the classic network. A VPC is safer than the classic network. Therefore, we recommend that you use a VPC.
- **Solution 3:** Connect the ECS instance to the RDS instance through the Internet by using the public address of the RDS instance. This solution is inferior to solutions 1 and 2 in terms of performance, security, and stability.

The ECS instance runs in the classic network while the RDS instance runs in a VPC.

- **Solution 1 (recommended):** Switch the ECS instance from the classic network to the VPC where the RDS instance resides.



**Note:**

The ECS instance must run in the same VPC as the RDS instance after the switching so that they can communicate with each other through the intranet.

- Solution 2: Switch the RDS instance from its VPC to the classic network. However, a VPC is safer than the classic network. Therefore, we recommend that you use a VPC.
- Solution 3: Use the [ClassicLink](#) function. This function allows the ECS instances in the classic network to communicate with the resources in a VPC through the intranet.
- Solution 4: Connect the ECS instance to the RDS instance through the Internet by using the public address of the RDS instance. This solution is inferior to solutions 1, 2, and 3 in terms of performance, security, and stability.

#### ECS and RDS are in different VPCs

Each VPC is a logically isolated network on Alibaba Cloud. If the ECS instance and RDS instance both run in VPCs, they must be in the same VPC so that they can communicate with each other through the intranet.

- Solution 1 (recommended): Switch the RDS instance to the VPC where the ECS instance is located.

Specifically, switch the RDS instance from its VPC to the classic network and then switch from the classic network to the VPC where the ECS instance resides. For detailed steps, see [Set network type](#).

- Solution 2: Establish an Express Connect channel between the two VPCs. For detailed steps, see [Interconnect two VPCs under the same account](#).
- Solution 3: Connect the ECS instance to the RDS instance through the Internet. This solution is inferior to solutions 1 and 2 in terms of performance, security, and stability.

#### ECS and RDS are in different regions

If the ECS instance is located in a region different from the RDS instance, they cannot communicate with each other through the intranet.

- Solution 1: Release the ECS or RDS instance and purchase instances again.
- Solution 2: Set the network types of the ECS instance and RDS instance to VPCs, and establish an Express Connect channel between the two VPCs. For detailed steps, see [Set network type](#) and [Interconnect two VPCs under the same account](#).
- Solution 3: Connect the ECS instance to the RDS instance through the Internet. This solution is inferior to solutions 1 and 2 in terms of performance, security, and stability.

## Incorrect IP address whitelist settings

- The whitelist contains only the default IP address 127.0.0.1, which indicates that no devices are allowed to access the RDS instance. You need to add the IP address of the ECS instance to the whitelist. For detailed steps, see [Set the whitelist](#).
- The IP address in the whitelist is 0.0.0.0. However, the correct format is 0.0.0.0/0.



### Note:

0.0.0.0/0 indicates that all devices are allowed to access the RDS instance. Please use it with caution.

- The whitelist is set to the [enhanced security mode](#). In this case, you need to check the following:
  - If you want the ECS instance to connect to the RDS instance through the VPC address, ensure that the private IP address of the ECS instance is added to the VPC whitelist of the RDS instance.
  - If you want the ECS instance to connect to the RDS instance through the classic network address, ensure that the private IP address of the ECS instance is added to the classic network whitelist of the RDS instance.
  - If you want the ECS instance to connect to the RDS instance through the Internet address, ensure that the public IP address of the ECS instance is added to the classic network whitelist of the RDS instance. The VPC whitelist does not restrict access from the Internet.
- The public IP address that you add to the whitelist is not the real outbound IP address of the ECS instance. Possible reasons are as follows:
  - The public IP address is not fixed and may change.
  - The IP address query tool or website may provide inaccurate IP addresses.

To find out the real IP address, see [Locate the real IP address](#).

## Domain name resolution failures

If your Domain Name Server (DNS) fails or its network interface card (NIC) configuration is changed, domain name resolution may fail. You can run the `ping` and `telnet` commands to check whether you can properly connect to the RDS instance.

```
ping < domain name >
```

```
telnet < domain name >< port number >
```

### Example:

If the communication is abnormal, you can modify the NIC configuration file of your DNS to resolve the problem by completing the following steps:

#### 1. Modify the NIC configuration file.

```
vi / etc / sysconfig / network - scripts /< name of the NIC configuration file >
```



#### Note:

Fill the name of the NIC used by the ECS server in the <name of the NIC configuration file> field. You can run the `ifconfig` command to check the suffix. The default suffix is `ifcfg-eth0`.

#### 2. Add the following information to the end of the NIC configuration file:

```
DNS1 = 100 . 100 . 2 . 136  
DNS2 = 100 . 100 . 2 . 138
```



#### Note:

If the `DNS1` and `DNS2` parameters are set, you need to change their settings to the IP addresses shown above.

```
DEVICE=eth0  
BOOTPROTO=dhcp  
ONBOOT=yes  
DNS1=100.100.2.136  
DNS2=100.100.2.138
```

#### 3. Run the following command to restart your network service:

```
systemctl restart network
```

#### 4. Run the following command to check whether the modification is successful:

```
cat / etc / resolv . conf
```

### Common connection failures and solutions

Database type	Error message	Cause	Solution
MySQL or MariaDB TX	<ul style="list-style-type: none"> <li>ERROR 2003 (HY000): Can't connect to MySQL server on 'XXX' (10038, 10060, or 110)</li> <li>Cannot connect to the database: XXX</li> </ul>	The network connection is abnormal.	<a href="#">Click here.</a>
	<ul style="list-style-type: none"> <li>ERROR 1045 (HY000): #28000ip not in whitelist</li> <li>ERROR 2801 (HY000): #RDS00ip not in whitelist, client ip is XXX</li> </ul>	The IP address whitelist is set improperly.	<a href="#">Click here.</a>
	<ul style="list-style-type: none"> <li>ERROR 1045 (28000): Access denied for user 'XXX' @'XXX' (using password: YES or NO)</li> </ul>	The user name or password is incorrect.	<a href="#">Click here.</a>
	<ul style="list-style-type: none"> <li>ERROR 2005 (HY000): Unknown MySQL server host 'xxxxxxx' (110 or 11004)</li> <li>SQLSTATE[HY000] [2002] php_network_getaddresses: getaddrinfo failed: Name or service not known</li> <li>Name or service not known</li> </ul>	The DNS cannot parse IP addresses properly.	<a href="#">Click here.</a>
SQL Server	<p>Cannot connect to XXX.</p> <p>A network-related or instance-specific error occurs when a connection is being established with SQL Server. The server cannot be found or accessed. Check whether the instance name is correct. Also check whether the SQL Server is configured and allows remote access. (provider: TCP Provider, error: 0 - The receiver fails to respond correctly within the specified period or the host to be connected does not respond.) (Microsoft SQL Server, error: 10060 or 258)</p>	The network connection is abnormal.	<a href="#">Click here.</a>

Database type	Error message	Cause	Solution
	<p>Cannot connect to XXX.</p> <p>A connection is established with the server, but an error occurs during the login. provider: TCP Provider, error: 0 - The specified network name is no longer available.)( Microsoft SQL Server, error: 64)</p>	The IP address whitelist is set improperly.	<a href="#">Click here.</a>
PostgreSQL/PPAS	<p>Unable to connect to server:</p> <p>could not connect to server: Connection timed out (0x0000274C/10060)Is the server running on host “XXX.rds.aliyuncs.com” and acceptingTCP/IP connections on port XXX?</p>	The network connection is abnormal.	<a href="#">Click here.</a>
	<ul style="list-style-type: none"> <li>server closed the connection unexpectedly This probably means the server terminated abnormally before or while processing the request.</li> <li>Error connecting to the server: FATAL: no pg_hba.conf entry</li> </ul>	The IP address whitelist is set improperly.	<a href="#">Click here.</a>

## 2 Data backup/recovery

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### 2.1 FAQ on binlogs

1. Q: Two binlog files have a similar start time and end time. Why has this occurred?  
Is the start time of one file consecutive with that of another?

A: The two files contain binlogs that were generated during the backup of the primary and secondary nodes. As a result, the two files have a similar start time and end time. The start time of each file is not the same.

2. Q: Are binlog files compressed?

A: Binlog files are not compressed.

3. Q: How are the generation, upload, and clearing of binlogs triggered?

A: When more than 500 MB of log data is written to a binlog file, a new binlog file is generated. Backup logs are uploaded to OSS based on local backup settings, and then local logs are cleared.

## 3 Functions and billing methods

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### 3.1 Why does RDS for MySQL not support the MyISAM engine?

The following lists the major reasons why RDS for MySQL does not support the MyISAM engine:

- MyISAM has defects in data integrity protection, and these defects may cause corruption or even loss of database data. Additionally, many of these defects are design issues and cannot be fixed without compromising compatibility.
- Most data corruption issues of MyISAM can only be manually fixed, and therefore MyISAM cannot be used for product services.
- For RDS storage, MyISAM is not the best solution for I/O operations. Therefore, MyISAM does not necessarily surpass InnoDB in terms of performance.
- It is easy to migrate from MyISAM to InnoDB because most applications simply need to modify the table creation code.
- MyISAM is developing towards InnoDB. MySQL 5.7 can be completely different from MyISAM and the system's data control is also switched to InnoDB.



## 4 Space/Memory

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### 4.1 What occupies the capacity of new RDS for MySQL instances?

In RDS for MySQL instances, system files `ib_logfile0` and `ib_logfile1` occupy certain storage capacity.

After creating an RDS for MySQL instance, you can see that a few GB of storage space has been used. This is because of the system files `ib_logfile0` and `ib_logfile1`.

The two log files are used to store the transaction log of the InnoDB engine table. Their size is always approximately 2 GB and cannot be changed. Due to the large size of the two files, the transaction log files do not need to be switched frequently when there are highly concurrent transactions. Therefore, the instance performance is improved.