Legal disclaimer

Alibaba Cloud reminds you to carefully read and fully understand the terms and conditions of this legal disclaimer before you read or use this document. If you have read or used this document, it shall be deemed as your total acceptance of this legal disclaimer.

1. You shall download and obtain this document from the Alibaba Cloud website or other Alibaba Cloud-authorized channels, and use this document for your own legal business activities only. The content of this document is considered confidential information of Alibaba Cloud. You shall strictly abide by the confidentiality obligations. No part of this document shall be disclosed or provided to any third party for use without the prior written consent of Alibaba Cloud.

2. No part of this document shall be excerpted, translated, reproduced, transmitted, or disseminated by any organization, company, or individual in any form or by any means without the prior written consent of Alibaba Cloud.

3. The content of this document may be changed due to product version upgrades, adjustments, or other reasons. Alibaba Cloud reserves the right to modify the content of this document without notice and the updated versions of this document will be occasionally released through Alibaba Cloud-authorized channels. You shall pay attention to the version changes of this document as they occur and download and obtain the most up-to-date version of this document from Alibaba Cloud-authorized channels.

4. This document serves only as a reference guide for your use of Alibaba Cloud products and services. Alibaba Cloud provides the document in the context that Alibaba Cloud products and services are provided on an "as is", "with all faults" and "as available" basis. Alibaba Cloud makes every effort to provide relevant operational guidance based on existing technologies. However, Alibaba Cloud hereby makes a clear statement that it in no way guarantees the accuracy, integrity, applicability, and reliability of the content of this document, either explicitly or implicitly. Alibaba Cloud shall not bear any liability for any errors or financial losses incurred by any organizations, companies, or individuals arising from their download, use, or trust in this document. Alibaba Cloud shall not, under any circumstances, bear responsibility for any indirect, consequential, exemplary, incidental, special, or punitive damages, including lost profits arising from the use or trust in this document, even if Alibaba Cloud has been notified of the possibility of such a loss.
5. By law, all the contents in Alibaba Cloud documents, including but not limited to pictures, architecture design, page layout, and text description, are intellectual property of Alibaba Cloud and/or its affiliates. This intellectual property includes, but is not limited to, trademark rights, patent rights, copyrights, and trade secrets. No part of this document shall be used, modified, reproduced, publicly transmitted, changed, disseminated, distributed, or published without the prior written consent of Alibaba Cloud and/or its affiliates. The names owned by Alibaba Cloud shall not be used, published, or reproduced for marketing, advertising, promotion, or other purposes without the prior written consent of Alibaba Cloud. The names owned by Alibaba Cloud include, but are not limited to, "Alibaba Cloud", "Aliyun", "HiChina", and other brands of Alibaba Cloud and/or its affiliates, which appear separately or in combination, as well as the auxiliary signs and patterns of the preceding brands, or anything similar to the company names, trade names, trademarks, product or service names, domain names, patterns, logos, marks, signs, or special descriptions that third parties identify as Alibaba Cloud and/or its affiliates.

6. Please contact Alibaba Cloud directly if you discover any errors in this document.
# Document conventions

<table>
<thead>
<tr>
<th>Style</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚠️</td>
<td>A danger notice indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.</td>
<td>Danger: Resetting will result in the loss of user configuration data.</td>
</tr>
<tr>
<td>⚠️</td>
<td>A warning notice indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.</td>
<td>Warning: Restarting will cause business interruption. About 10 minutes are required to restart an instance.</td>
</tr>
<tr>
<td>⚠️</td>
<td>A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.</td>
<td>Notice: If the weight is set to 0, the server no longer receives new requests.</td>
</tr>
<tr>
<td>⚠️</td>
<td>A note indicates supplemental instructions, best practices, tips, and other content.</td>
<td>Note: You can use Ctrl + A to select all files.</td>
</tr>
<tr>
<td>&gt;</td>
<td>Closing angle brackets are used to indicate a multi-level menu cascade.</td>
<td>Click Settings &gt; Network &gt; Set network type.</td>
</tr>
<tr>
<td><strong>Bold</strong></td>
<td>Bold formatting is used for buttons, menus, page names, and other UI elements.</td>
<td>Click OK.</td>
</tr>
<tr>
<td><strong>Courier font</strong></td>
<td>Courier font is used for commands.</td>
<td>Run the cd /d C:/window command to enter the Windows system folder.</td>
</tr>
<tr>
<td><em>Italic</em></td>
<td>Italic formatting is used for parameters and variables.</td>
<td>bae log list --instanceid Instance_ID</td>
</tr>
<tr>
<td>[] or [a</td>
<td>b]</td>
<td>This format is used for an optional value, where only one item can be selected.</td>
</tr>
<tr>
<td>Style</td>
<td>Description</td>
<td>Example</td>
</tr>
<tr>
<td>-----------</td>
<td>------------------------------------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>{} or {a</td>
<td>b}</td>
<td>This format is used for a required value, where only one item can be selected.</td>
</tr>
</tbody>
</table>
Contents

Legal disclaimer

Document conventions

1 Hot issues

1.1 How to troubleshoot logon issues for the mongo shell

1.2 How to query and limit the number of connections

1.3 How to troubleshoot database connection failures after the number of connections reaches the upper limit

1.4 What do I do if my ApsaraDB for MongoDB instance is locked due to exhausted disk space?

1.5 Why does ApsaraDB for MongoDB trigger primary/standby switchovers?

1.6 Why am I unable to find the ApsaraDB for MongoDB instance that I created?

1.7 How do I understand the names and sources of an IP address whitelist for ApsaraDB for MongoDB?

2 Product features

2.1 Does ApsaraDB for MongoDB support Mongoose?

2.2 Does MongoDB support KMS?

2.3 What is the impact of changes made to the storage space on an ApsaraDB for MongoDB instance?

3 Account and permission management

3.1 How to configure RAM user permissions on ApsaraDB for MongoDB
1 Hot issues

1.1 How to troubleshoot logon issues for the mongo shell

You can use DMS or the mongo shell to log on to ApsaraDB for MongoDB. This topic describes the typical problems that may occur when you use the mongo shell to log on to ApsaraDB for MongoDB and the corresponding solutions.

The message "connection attempt failed" is displayed

Symptom:

```
#mongo --host ali12345678.mongodb.rds.aliyuncs.com:3717 --authenticationDatabase admin -u root -p xxx
MongoDB shell version: 3.2.3
DB Prefix: connecting to: 10.1.2.8:3717/admin
2016-05-31T15:25:58.940+0800 W NETWORK Failed to connect to 10.*.*:3717 after 5000 milliseconds, giving up.
2016-05-31T15:25:58.943+0800 E QUERY Error: couldn't connect to server 10.*.*:3717 (10.1.2.8), connection attempt failed
    at connect (src/mongo/shell/mongo.js:181:14)
    at (connect):1:6 at src/mongo/shell/mongo.js:181
exception: connect failed
```

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
</table>
| The ECS instance on which you run the mongo shell command and the ApsaraDB for MongoDB instance are not in the same VPC or have different network types. | • If they are not in the same VPC, switch the network type of the ApsaraDB for MongoDB instance to classic network and then switch back to VPC.  
  
  **Note:**  
  The VPC must be the same as that of the ECS instance.  
  • If they have different network types, perform troubleshooting by referring to #unique_5. |

Supplementary troubleshooting method: You can run the Telnet command, such as `telnet dds-ali123456789.mongodb.rds.aliyuncs.com 3717`, to check whether the network of the ApsaraDB for MongoDB instance is accessible.
This figure shows that the URL can be resolved and port 3717 works properly.

The message "Authentication failed" is displayed

Symptom:

```
#mongo --host ali12345678.mongdb.rds.aliyuncs.com:3717 --authenticationDatabase
admin -u root -p xxx
MongoDB shell version: 3.2.3
connecting to: 10.1.2.8:3717/test
at DB._authOrThrow (src/mongo/shell/db.js:1271:32)
at (auth):6:8
at (auth):7:2 at src/mongo/shell/db.js:1271
exception: login failed
```

Possible cause | Solution
--- | ---
The username used for database logon is incorrect. | Log on to the database with the correct username.
The password used for database logon is incorrect. | Log on to the database with the correct user password. If you forget the password, reset the password for the root user in the console. For details, see #unique_6.
The logon user does not match the authentication database. | The user must match the authentication database. For example, the root user is a user of the admin database, so the authentication database must be assigned as admin if this user is used to log on.
The client version is outdated. | The mongo shell version must be 3.0 or later. For information about how to install the mongo shell, see Install MongoDB. For version requirements of clients in other programming languages, see Driver compatibility documentation.

A network error occurs when you run the isMaster command

Symptom:

```
root@mongotest:~# telnet .mongodb.rds.aliyuncs.com 3717
Trying 7...
Connected to .mongodb.rds.aliyuncs.com.
Escape character is '^]'.
```

```
Symptom:

```
#mongo --host ali12345678.mongdb.rds.aliyuncs.com:3717 --authenticationDatabase
test -u root -p xxxxxx
MongoDB shell version v3.4.10
connecting to: mongodb:ali1234567878.mongodb.rds.aliyuncs.com:3717/
2018-12-18T14:26:11.946+0800 E QUERY    
[cookie1] Error: network error while attempting to run command 'ismaster' on host 'ft12345678.mongodb.rds.aliyuncs.com:3717' :
connect@src/mongo/shell/mongo.js:237:13
 @(connect):1:6
```
**exception: connect failed**

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>The IP address of the ECS instance is not in the whitelist of the ApsaraDB for MongoDB instance.</td>
<td>Add the IP address of the ECS instance to the whitelist of the ApsaraDB for MongoDB instance. For more information, see Configure a whitelist.</td>
</tr>
</tbody>
</table>

**The message "Timeout while receiving message" is displayed**

`org.springframework.data.mongodb.UncategorizedMongoDbException: Timeout while receiving message; nested exception is com.mongodb.MongoSocketReadTimeoutException: Timeout while receiving message`

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abnormal slow queries occupy instance resources, causing CPU usage to surge or even peak.</td>
<td>Check for slow queries. We recommend that you create indexes for optimization. For more information, see Analyze slow database requests.</td>
</tr>
<tr>
<td>The configuration of the application connection pool, such as the timeout setting, is incorrect.</td>
<td>For more information, see Limit the number of connections for terminals.</td>
</tr>
</tbody>
</table>

**Common connection scenarios**

- #unique_10
- #unique_5
- #unique_11
- #unique_12

### 1.2 How to query and limit the number of connections

You can use DMS or the mongo shell to log on to ApsaraDB for MongoDB. This topic describes how to query the connection usage and how to set the maximum number of connections for a connection pool.

#### Query the number of current connections

The maximum number of connections depends on the specifications of the ApsaraDB for MongoDB instance you purchased. For more information, see Instance specifications.
The maximum number of connections takes effect on each node in the instance. For example, if you have purchased a three-node replica set instance with one core and 2 GB memory, the maximum number of connections of the primary and secondary nodes of the instance is 500, respectively. The hidden node does not provide services for external systems due to its special architecture.

Use the mongo shell to connect to the instance. For more information, see #unique_14. Then, run the `db.serverStatus().connections` command.

```
mgset-123456:PRIMARY> db.serverStatus().connections
{
   "current" : 1,
   "available" : 999,
   "internal_current" : 10,
   "internal_available" : 990,
   "totalCreated" : 632
}
```

**Note:**
You need to pay attention to the following parameters and their values.
- "current": indicates the number of established connections.
- "available": indicates the number of available connections.

**Query the source IP addresses of current connections**

1. Use the mongo shell to connect to an ApsaraDB for MongoDB instance. For more information, see #unique_14. Then, switch to the admin database.

```
use admin
```

2. Run the `db.runCommand({currentOp: 1, $all: true})` command.

```
mgset-123456:PRIMARY> db.runCommand({currentOp: 1, $all:[{"active" : true}]})
```

You can query the source IP address of each connection by analyzing the command output. In this way, you can learn the number of connections that have been established between each terminal and the ApsaraDB for MongoDB instance.

**How to query and limit the number of connections**

You can use a connection string URI to connect to ApsaraDB for MongoDB. If you use a connection string URI to connect to a database, append `&maxPoolSize=<integer>` to the URI. In this way, you can set the maximum number of connections in the connection pool.
The following code is an example of using the mongo shell to connect to the database (the maximum number of connections is set to 10):

```bash
mongo "mongodb://root:xxxxxx@dds-bpxxxxxxxx-pub.mongodb.rds.aliyuncs.com:3717,dds-bpxxxxxxxx-pub.mongodb.rds.aliyuncs.com:3717/admin?replicaSet=mgset-xxxxxx&maxPoolSize=10"
```

**Note:**
For more information about how to limit the number of connections in the connection pool for clients in different programming languages, see [MongoDB API documentation](#).

### 1.3 How to troubleshoot database connection failures after the number of connections reaches the upper limit

After the number of connections to an ApsaraDB for MongoDB instance reaches the limit, new connection requests cannot be responded. This topic describes how to handle database connection failures after the number of connections reaches the upper limit.

The maximum number of connections varies depending on ApsaraDB for MongoDB instance types. For more information, see [#unique_13](#).

**Symptom**

- The application fails to connect to the database.
- The whitelist has been properly set. However, the following error message is displayed when you use the mongo shell to connect to the database:

```
2019-07-10T10:30:43.597+0800 E QUERY    [js] Error: network error while attempting to run command 'isMaster' on host 'dds-bpxxxxxxxx.mongodb.rds.aliyuncs.com:3717': connect@src/mongo/shell/mongo.js:328:13
 @(connect):1:6
exception: connect failed
```

- The whitelist has been properly set. However, the following error message is displayed when you use DMS to connect to the database.

```
Timed out after 3000 ms while waiting for a server that matches
ReadPreference&ServerSelector(readPreference=primary). Client view of cluster state is
{type=UNKNOWN, servers=[{address=**********:60276, type=UNKNOWN, state=CONNECTING, exception={com.mongodb.MongoSocketReadException: Prematurely reached end of stream}}]}
```

Before you begin

To obtain the required monitoring information, we recommend that you set the monitoring granularity of the ApsaraDB for MongoDB instance to seconds. For more information, see #unique_16.

Check whether the number of connections has reached the upper limit

1. Log on to the ApsaraDB for MongoDB console.
2. In the upper-left corner of the page, select the region of the instance.
3. In the left-side navigation pane, click Replica Set Instances or Sharding Instances.
4. Find the target instance and click its ID.
5. In the left-side navigation pane, click Monitoring Info.
6. On the Monitoring Info page, check the Connections information. The following figure shows that the number of connections to the instance is 500.

   ![Diagram showing connections and opcounters]

   **Note:**
   If the instance is a sharded cluster instance, you must select the Mongos node in use in the upper-right corner on the page.

7. In the left-side navigation pane, click Basic Information.
8. On the Basic Information page, query the maximum number of connections corresponding to the current instance specifications. In this example, the number is 500.

   **Note:**
Based on the number of current connections, you can confirm that the number of connections has reached the upper limit.

### Solution

You can restart the instance to temporarily release all connections. For more information, see #unique_17. To prevent this problem from occurring again, we recommend that you perform the following operations after restarting the instance:

#### Note:

If you restart the instance, all instance nodes are restarted one by one. Each node has a transient disconnection of about 30 seconds. If there are a large number of collections (more than 10,000), the transient disconnections last longer. Before restarting the instance, arrange your business and ensure that your application has a reconnection mechanism.

- Configure the connection pool. For more information, see How to query and limit the number of connections.
- Analyze the connection sources. For more information, see Query the source IP addresses of current connections. If the service uses all the connections, upgrade the instance specifications. For more information, see #unique_18.

### 1.4 What do I do if my ApsaraDB for MongoDB instance is locked due to exhausted disk space?

If the disk space of an ApsaraDB for MongoDB instance is exhausted, the instance is locked and you cannot write data to or delete data from it.

#### Note:
If the disk space of your ApsaraDB for MongoDB instance is exhausted and you cannot run write or delete commands, refer to Solutions.

Symptoms

- You can read but cannot write data in the instance.
- The administrator enters the following command in the mongo shell, and not authorized on xxxx to execute command is returned.

```javascript
db.customer.insert({"name":"zhangsan"})
WriteCommandError({
    "operationTime" : Timestamp(1563437183, 1),
    "ok" : 0,
    "errmsg" : "not authorized on db1 to execute command { insert: "customer\", ordered: true, lsid: { id: UUID("8d43461c-5c51-49ef-b9b3-9xxxxxx009c") }, $clusterTime: { clusterTime: Timestamp(1563437183, 1), signature: { hash: BinData(0, 0C3FAAE747xxxxxx), keyId: 668293399xxxxxx } }, $db: "db1" }",
    "code" : 13,
    "codeName" : "Unauthorized",
    "$clusterTime" : {
        "clusterTime" : Timestamp(1563437183, 1),
        "signature" : {
            "hash" : BinData(0,"DD+q50dPTuIQKTzytT5SiTPYX4Q="),
            "keyId" : NumberLong("66xxxxxx")
        }
    }
})
```

- The administrator finds that the instance status is Locked in the ApsaraDB for MongoDB console.

**Note:**

Sharded cluster instances are a special case. When the disk space of a sharded cluster instance is exhausted, the instance does not enter the Locked state.

Check whether disk space is exhausted

1. Log on to the ApsaraDB for MongoDB console.
2. In the upper-left corner of the page, select the region of the instance.
3. In the left-side navigation pane, click Replica Set Instances or Sharding Instances.
4. Find the target instance and click its ID.
5. Check whether disk space is exhausted.

**Note:**
The system collects data on disk space usage at intervals of five minutes.

- **Standalone or replica set instances**
  
  On the **Basic Information** page, view the instance status and its disk space usage. In this example, the instance status is **Locked**, and the disk space usage of the instance exceeds 100%, which indicates that the disk space is exhausted.

- **Sharded cluster instances**
  
  a. In the left-side navigation pane, click **Monitoring Info**.
  
  b. On the **Monitoring Info** page that appears, select the target shard.

  ![Monitoring Info](image)

  **Note:**
  
  If an ID starts with the letter d, it indicates a shard. If an ID starts with the letter s, it indicates a mongos.

  c. View disk space usage. In this example, the disk space usage of the shard exceeds 100%, which indicates that the disk space is exhausted.

  ![Disk Space Usage](image)

**Solutions**

- Expand the disk space of the instance. For more information, see **#unique_18**.

  **Note:**
  
  Maximum disk space varies with instance types. For more information, see **#unique_13**.
• A replica set instance supports up to 3,000 GB of disk space. If you need greater disk space, we recommend that you deploy a sharded cluster instance where you can add shards to expand the disk space up to 96,000 GB.

Note:
You can use Data Transmission Service (DTS) to migrate data from a source instance to a new sharded cluster instance. For more information, see #unique_21.

Suggestions
If you have executed the `db.collection.remove` command to delete a large volume of data or you have not defragmented your disk, you can still increase disk space by performing defragmentation. For more information, see #unique_22.

1.5 Why does ApsaraDB for MongoDB trigger primary/standby switchovers?

ApsaraDB for MongoDB uses high availability (HA) architecture. When an ApsaraDB for MongoDB instance detects that one of its nodes is unavailable, it triggers a primary/standby switchover. It also sends a Short Message Service (SMS) message or internal notice to inform you of the switchover.

Internal notice

[Alibaba Cloud] Dear *****: Your ApsaraDB for MongoDB instance dds-bpxxxxxxxx (name: xxxxxx) has an error. A switchover is triggered to ensure stable running of your instance. Please check whether your application is still connected to your instance. We recommend that you configure your application to reconnect to the instance after it is disconnected.

Why do I receive the internal notice?

ApsaraDB for MongoDB uses HA architecture. A replica set instance of ApsaraDB for MongoDB contains three nodes by default, and a sharded cluster instance of ApsaraDB for MongoDB has each of its shards contain three nodes. Primary and secondary nodes are used for you to connect your application, and hidden nodes are used for primary/standby switchovers, which ensures HA. For more information, see #unique_24 or #unique_20.

ApsaraDB for MongoDB supports node health monitoring. When the monitoring results show an unavailable node, a primary/standby switchover is triggered.
Impact of primary/standby switchovers

- A primary/standby switchover causes a brief disconnection of less than 30 seconds.
- If you connect your application to a primary node, the read/write operations of your application are affected as a result of the primary/secondary switchover.

Suggestions

- We recommend that you configure your application to reconnect to an ApsaraDB for MongoDB instance after it is disconnected.
- If your application runs in a production environment, we recommend that you use a connection string URI to connect your application to the instance. In this way, the read/write operations of your application remain available even if a node fails as a result of a primary/secondary switchover. For more information, see #unique_25 or #unique_26.

1.6 Why am I unable to find the ApsaraDB for MongoDB instance that I created?

If you cannot find your instance in the ApsaraDB for MongoDB console, see the following table.

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Troubleshooting</th>
</tr>
</thead>
<tbody>
<tr>
<td>You selected the wrong region</td>
<td>Follow these steps to select the correct region:</td>
</tr>
<tr>
<td>in the console.</td>
<td>1. Log on to the ApsaraDB for MongoDB console.</td>
</tr>
<tr>
<td></td>
<td>2. In the top navigation bar, select the region where your instance resides.</td>
</tr>
<tr>
<td>Possible cause</td>
<td>Troubleshooting</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------------</td>
</tr>
</tbody>
</table>
| Your instance does not belong to the instance list you selected. | Follow these steps to switch to the instance list:  
1. Log on to the ApsaraDB for MongoDB console.  
2. In the top navigation bar, select the region where your instance resides.  
3. In the left-side navigation pane, click **Replica Set Instances** or **Sharding Instances**.  

**Note:**  
Standalone and replica set instances both appear on the **Replica Set Instances** page. |
| The instance list in the ApsaraDB for MongoDB console was not updated or was updated before your instance was created. | Wait several minutes and then update the instance list to check whether the instance appears on the **Replica Set Instances** or **Sharding Instances** page. |
| Resources are insufficient. | The system may fail to create your instance due to insufficient resources. In this case, your payment is refunded. You can check the refund on the **Orders** page.  

After you confirm the refunded fees, you can try to create your instance in another region or zone. If you cannot select another region or zone, **submit a ticket**. |
1.7 How do I understand the names and sources of an IP address whitelist for ApsaraDB for MongoDB?

This topic describes the names and sources of an IP address whitelist for ApsaraDB for MongoDB. After you create an ApsaraDB for MongoDB instance, it has a default IP address whitelist. While you perform operations such as configuring data migration, more whitelists are generated.

<table>
<thead>
<tr>
<th>IP address whitelist name</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>default</td>
<td>The default IP address whitelist. You cannot delete it.</td>
</tr>
<tr>
<td>ddsdt</td>
<td>The IP address whitelist automatically generated when you migrate your ApsaraDB for MongoDB instance. It contains the IP addresses of DTS servers.</td>
</tr>
</tbody>
</table>

**Note:**
While you migrate data, do not delete this IP address whitelist. Otherwise, data migration fails.
2 Product features

2.1 Does ApsaraDB for MongoDB support Mongoose?

Yes, ApsaraDB for MongoDB is fully compatible with MongoDB Community Edition.

2.2 Does MongoDB support KMS?

Currently MongoDB does not support KMS, but will support in a few months.

2.3 What is the impact of changes made to the storage space on an ApsaraDB for MongoDB instance?

If the storage space of an ApsaraDB for MongoDB instance is insufficient, you can expand the storage space. For more information, see #unique_34.

When you change the storage space of an ApsaraDB for MongoDB instance, there is a brief disconnection of about 30 seconds. This brief disconnection does not affect data in the instance.

Note:

If your application is in a production environment, we recommend that you use a connection string URI to connect to the instance. This way, the read/write operations of your application remain available even if there is a primary/secondary switchover. For more information, see #unique_25.
3 Account and permission management

3.1 How to configure RAM user permissions on ApsaraDB for MongoDB

To implement fine-grained access control and improve account security, you can use Resource Access Management (RAM) to grant the management permissions on ApsaraDB for MongoDB to RAM users. In this way, RAM users can manage ApsaraDB for MongoDB instances.

Grant permissions to RAM users

1. Log on to the RAM console by using an Alibaba Cloud account.
2. #unique_37.
3. In the left-side navigation pane, click Users under Identities.
4. In the User Logon Name/Display Name column, find the target RAM user.
5. Click Add Permissions in the Actions column.
6. In the **Add Permissions** dialog box that appears, select permission policies as needed.

   ![Add Permissions dialog box](image)

   a. Enter `mongodb` in the search box to display related permission policies.

   **Note:**
   - **AliyunMongoDBFullAccess**: grants RAM users full management permissions on ApsaraDB for MongoDB.
   - **AliyunMongoDBReadOnlyAccess**: grants RAM users the read-only permissions on ApsaraDB for MongoDB.

   b. Click a policy name to add it to the **Selected** section.

7. Click **OK**.

8. Click **Finished**.

**Customize permission policies in the RAM console**

You can use system permission policies to grant RAM users permissions on all ApsaraDB for MongoDB resources. You can also customize permission policies as needed to grant RAM users specific operation permissions on specific instances. For information about the syntax of custom permission policies, see [Policy structure and syntax](#).

Use RAM to grant permissions on ApsaraDB for MongoDB resources

You can only use RAM to grant permissions on ApsaraDB for MongoDB instances of the `dbinstance` type. When granting permissions using RAM, you can describe resources in the `Resource` field of the policy as follows.
## ApsaraDB for MongoDB

### Resource Management

#### Resource type

<table>
<thead>
<tr>
<th>Resource type</th>
<th>Resource description in the permission policy</th>
</tr>
</thead>
</table>
| dbinstance    | • acs:dds:$regionid:$accountid:dbinstance/$dbinstanceid  
|               | • acs:dds:$regionid:$accountid:dbinstance/  
|               | • acs:dds:::dbinstance/                        |

#### Parameter Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$regionid</td>
<td>The region ID, which can be an asterisk (&quot;*&quot;).</td>
</tr>
<tr>
<td>$dbinstanceid</td>
<td>The instance ID, which can be an asterisk (&quot;*&quot;).</td>
</tr>
<tr>
<td>$accountid</td>
<td>The ID of your Alibaba Cloud account, which can be an asterisk (&quot;*&quot;).</td>
</tr>
</tbody>
</table>

#### Actions that you can authorize

In the RAM console, you can authorize RAM users to perform the following actions on a single ApsaraDB for MongoDB resource.

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CreateDBInstance</td>
<td>Creates an instance.</td>
</tr>
<tr>
<td>ModifyDBInstanceSpec</td>
<td>Modifies instance specifications.</td>
</tr>
<tr>
<td>DeleteDBInstance</td>
<td>Deletes an instance.</td>
</tr>
<tr>
<td>DescribeDBInstances</td>
<td>Queries instances.</td>
</tr>
<tr>
<td>RestartDBInstance</td>
<td>Restarts an instance.</td>
</tr>
<tr>
<td>DescribeSecurityIps</td>
<td>Queries IP addresses in the whitelist.</td>
</tr>
<tr>
<td>ModifySecurityIps</td>
<td>Modifies IP addresses in the whitelist.</td>
</tr>
<tr>
<td>ResetAccountPassword</td>
<td>Resets the password of an account.</td>
</tr>
<tr>
<td>DescribeBackupPolicy</td>
<td>Queries the backup policy.</td>
</tr>
<tr>
<td>ModifyBackupPolicy</td>
<td>Modifies the backup policy.</td>
</tr>
<tr>
<td>CreateBackup</td>
<td>Creates a backup.</td>
</tr>
<tr>
<td>RestoreDBInstance</td>
<td>Restores an instance.</td>
</tr>
<tr>
<td>DescribeAccounts</td>
<td>Queries account information.</td>
</tr>
<tr>
<td>DescribeDBInstancePerformance</td>
<td>Queries the instance status.</td>
</tr>
<tr>
<td>Action</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>DescribeReplicaSetRole</td>
<td>Queries the primary/secondary attribute of an instance.</td>
</tr>
<tr>
<td>ModifyDBInstanceDescription</td>
<td>Modifies the description of an instance.</td>
</tr>
<tr>
<td>ModifyAccountDescription</td>
<td>Modifies information about an account.</td>
</tr>
<tr>
<td>DescribeDBInstanceAttribute</td>
<td>Queries attributes of an instance.</td>
</tr>
<tr>
<td>RenewDBInstance</td>
<td>Renews an instance.</td>
</tr>
<tr>
<td>ModifyDBInstanceNetworkType</td>
<td>Modifies the network type of an instance.</td>
</tr>
</tbody>
</table>