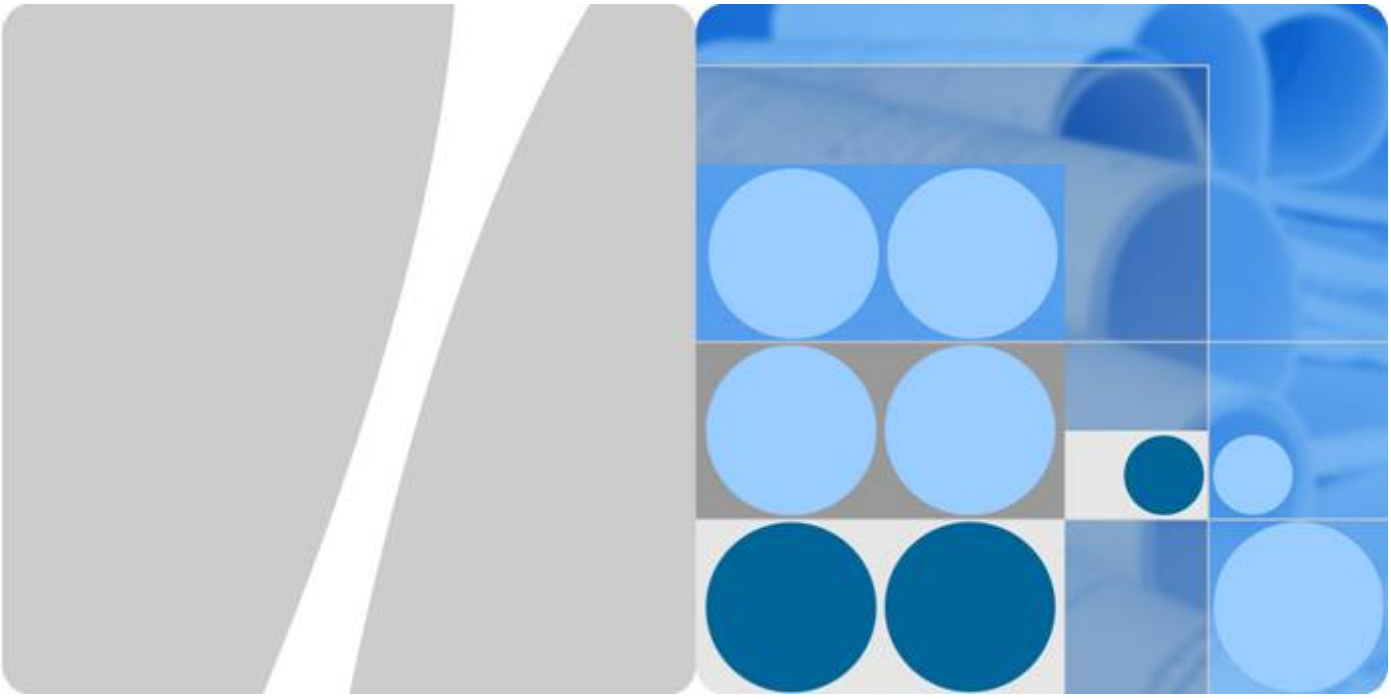

Document Database Service

# FAQs

Issue 09

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# Contents



# 1 Product Consulting

## 1.1 What Precautions Should Be Taken When Using DDS?

1. Failover

   DDS uses multiple mongos, replica sets, and shards to ensure data reliability. When a mongos is faulty, the other mongos takes over services immediately to ensure service continuity. A replica set consists of a primary, a secondary, and a hidden node. When the primary node is faulty, DDS selects the secondary node as the new primary within 30 seconds.

2. ECSs used for DB instances are invisible to you. Your applications can access only the IP addresses and ports corresponding to the database.
3. Backup files stored on OBS are invisible to you. They are only visible in the DDS backend management system.
4. Precautions after applying for DDS:

   After purchasing DDS DB instances, you do not need to perform basic database O&M operations, such as HA and security patches. You need to pay attention to the following:

   a. Whether the vCPUs, IOPS, and storage space for DDS DB instances are sufficient. If any of them is insufficient, optimize or upgrade the related configuration.

   b. Whether the performance of DDS DB instances is satisfying, whether a large number of slow query statements exist, whether query statements need to be optimized, and whether any index is redundant or missing.

## 1.2 What Is the Availability of DDS DB Instances?

Formula for a DDS DB instance availability:

DDS DB instance availability = (1 – Failure duration/Total service duration) × 100%.

# 1.3 Will My DDS DB Instances Be Affected by Other Users' DDS DB Instances?

No. Your DDS DB instances and resources are isolated from others.

# 1.4 Can DDS Instances Be Upgraded from Earlier Versions to Later Versions?

Currently, DDS DB instances cannot be upgraded from an earlier version to a later version.

You can use DRS to migrate data. For details, see **Migrating Data Using DRS**.

# 1.5 Can I Change a Single Node Instance to a Replica Set Instance?

No, a single node instance cannot be changed to a replica set instance. You can buy a replica set instance and use DRS to migrate your data from the single node instance to the replica set instance.

For details about data migration, see **Migrating Data Using DRS**.

# 2 Database Performance

## 2.1 Does DDS Support Read/Write Splitting?

Yes. DDS can perform write operations only on the primary node in a replica set. You can configure DDS to perform read operations on the secondary node to split read and write operations.

## 2.2 What Should I Do If My Query Is Slow?

- You can view the slow query logs to check whether any slowly executed SQL queries exist and view the performance characteristics of queries (if any) to locate the cause of slow queries.

  For details on DDS log queries, see **Slow Query Log**.
- You can view CPU usage metrics of DDS DB instances to facilitate problem locating. For details, see **Viewing DDS Metrics**.

## 2.3 Why Does HA Trigger a Switchover?

### In What Situation Will Switchover Be Triggered?

DDS supports two types of HA architectures: sharded cluster (sharding) and replica set

- A cluster consists of three types of nodes: mongos, shard, and config. shard and config use the three-node replica-set architecture. When a primary node becomes faulty, a switchover is performed.
- The replica-set architecture consists of three nodes: primary, secondary, and hidden. The primary and secondary nodes provide IP addresses for external access. The primary node of a replica set instance is not fixed. When the configuration of the replica set instance changes, or the primary node breaks down, or a switchover is performed, the replica set will elect a node as primary, and the original primary node is demoted to the secondary.

For more information, see **Cluster Architecture** and **Replica Set Architecture**.

### Impact of a Switchover

When the primary node becomes faulty, the system selects the secondary node as the new primary within 30 seconds.

If your application connects to the DB instance through the IP address of the primary node, a switchover may cause connection failure, affecting the read and write operations.

### Service Deployment Suggestion

Ensure that your application supports automatic reconnection. It means that the application can be automatically reconnected to the DB instance to avoid writing errors when intermittent disconnects occur.

It is recommended that you use URLs to connect the cluster and replica set instances. When a node is faulty, the primary/standby switchover does not affect service read and write operations. For details, see **Connecting to a Cluster Instance** and **Connecting to a Replica Set Instance for Read and Write Separation and High Availability**.

## 2.4 What Is the Time Delay for Primary/Secondary Synchronization in a Replica Set?

The delay for primary/secondary synchronization cannot be calculated using a formula. The delay is affected by the following factors:

1. Network communication status
2. Transaction pressure on the primary node, that is, transactions per second (TPS) of the primary node
3. Transaction size executed by the primary node, that is, the duration of a transaction execution
4. Load of the secondary node

If the primary node bears heavy pressure within a period and executes a large number of transactions per second, the synchronization to the secondary node is delayed.

You can view **Replication Lag** of the secondary node on the Cloud Eye console to know the synchronization delay.

## 2.5 What Can I Do If the System Responds Slowly to Cluster Operations?

### Symptom

The system responds slowly when you perform operations on a cluster.

### Possible Cause

There are too many collections in the cluster.

### Solution

Delete some collections.

## 2.6 How Is Data Transferred Between the Primary and Secondary Nodes of a Replica Set?

Data between the primary and secondary nodes is transferred in asynchronous mode.

## 2.7 How Do I Clear the Alarm That the Shard Memory Usage Exceeds 90%?

You are advised to change the value of **enableMajorityReadConcern** to **false** and restart the node.

## 2.8 How Many Shards Does DDS Support?

A cluster instance of Community Edition supports up to 32 shard nodes.

For more details, see **Cluster**.

# 3 Creation and Deletion

## 3.1 Can I Use a Template to Create DDS DB Instances?

You do not need a template to create DDS DB instances. When you create a DB instance, DDS provides different DB instance specifications which are similar to templates.

## 3.2 Why Is Data Missing from My Database?

DDS does not delete or perform any operations on any user data. If this problem occurs, check whether a misoperation has been performed. Restore the data using backup files, if necessary.

Solution:

- Use the DDS restoration function to restore data. For details, see chapter "Backup and Restore" in the *Document Database Service User Guide*.
- Import backups to DDS. For details, see "Migrating Data" in the *Document Database Service User Guide*.

## 3.3 Will My Backups Be Deleted If I Delete My Cloud Account?

If your cloud account is deleted, both your automated and manual backups are deleted.

## 3.4 How Do I Create a Custom Policy?

### Scenarios

When using the enterprise project management function, you need to add system rights (DDS FullAccess or DDS ManageAccess) and customize policies for the user groups under the enterprise project. This section describes how to create a custom policy on the IAM console.

### Procedure

**Step 1** Log in to the management console.

**Step 2** Click  in the upper left corner and select a region and a project.

**Step 3** Under **Management & Deployment**, click **Identity and Access Management**.

**Step 4** On the **Policies** page, click **Create Custom Policy**.

**Step 5** On the displayed page, specify information in the **Basic Information** and **Policy Information** areas. Then, click **OK**.

- **Policy Name**: Enter a custom policy name.
- **Scope**: Select **Project-level service**.
- **Description**: Enter the custom policy description.
- **Policy Information**: Enter the following content.

```
{
    "Version": "1.1",
    "Statement": [
        {
            "Action": [
                "vpc:ports:*",
                "vpc:privateIps:*",
                "vpc:floatingIps:*",
                "ecs:cloudServerNics:update",
                "ecs:serverInterfaces:use"
            ],
            "Effect": "Allow"
        }
    ]
}
```

**Step 6** On the **User Group** page, locate the target user group and click **Modify** in the **Operation** column.

**Step 7** In the **User Group Permissions** area, locate the target project and click **Modify** in the **Operation** column.

**Step 8** In the displayed **Modify Policy** dialog box, select the custom policy you have created and click **OK**.

**----End**

# 3.5 What Are the Differences Between Instance Deletion and Unsubscription?

The method of releasing resources varies depending on the DB instance billing mode.

- For a DB instance billed in pay-per-use mode, no order is generated after you purchase it. To release resources based on service requirements, manually delete the DB instance on the **Instance Management** page.

- For a yearly/monthly DB instance, an order is generated after you purchase it. You need to unsubscribe from the order to release the DB instance resources. For details, see **Unsubscribing from a Yearly/Monthly DB Instance**.

# 4 Database Connection

## 4.1 Can an External Server Access the DDS DB Instance?

You can access the DDS DB instance using the following methods:

- If a DDS DB instance and an ECS are created in the same VPC, you can access the DDS DB instance through the ECS.
- If the DDS DB instance is publicly accessible, you can access the DB instance over public networks.

Case 1

- Symptom: Failed to access a DDS DB instance through the ECS in the container that is created using Cloud Container Engine (CCE).
- Possible cause: The DB instance and ECS are in different VPCs and the VPC peering connection is not established between the two VPCs.
- Solution: Add the CIDR block of the VPC where the container resides to DDS. Establish a VPC peering connection between two VPCs. For more information about VPC peering connections, see **VPC Peering Connection Creation Procedure**.

Case 2

- Symptom: A user can log in to a DDS DB instance through a client but fails to access the DB instance through a VPN.
- Possible cause: No VPC peering connection is configured, and the address mapping is incorrect. As a result, the connection fails.
- Solution: Configure a VPC peering connection to enable local access to the DDS DB instance through a VPN.

## 4.2 What Is the Number of DDS Database Connections?

The number of connections indicates the number of applications that can be simultaneously connected to the database. The number of connections is

irrelevant to the maximum number of users allowed by your applications or websites.

- For a cluster instance, the number of connections indicates the number of connections between the client and the mongos.
- For a replica set instance, the number of connections indicates the number of connections between the client and the primary and secondary nodes.
- For a single-node instance, the number of connections indicates the number of connections between the client and the node.

# 4.3 What Can I Do If the Number of Connections of an Instance Reaches Its Maximum?

## Message

- If the following information is displayed when you use Mongo Shell to connect to a DB instance, the number of connections reaches its maximum.

  **Figure 4-1** Message displayed

  ```
  [root@623-[redacted] ~]# mongo "mongodb://rwuser:[redacted]@192.168.0.180:8635,192.168.0.50:8635/test?authSource=admin&replicaSet=replica"
  MongoDB shell version v3.4.17
  connecting to: mongodb://rwuser:623_Huawei@192.168.0.180:8635,192.168.0.50:8635/test?authSource=admin&replicaSet=replica
  2019-10-16T17:43:45.203+0800 I NETWORK  [thread1] Starting new replica set monitor for replica/192.168.0.180:8635,192.168.0.50:8635
  2019-10-16T17:43:45.205+0800 W NETWORK  [ReplicaSetMonitor-TaskExecutor-0] No primary detected for set replica
  2019-10-16T17:43:45.205+0800 I NETWORK  [ReplicaSetMonitor-TaskExecutor-0] All nodes for set replica are down. This has happened for 1 check
  s in a row.
  2019-10-16T17:43:45.708+0800 W NETWORK  [thread1] No primary detected for set replica
  2019-10-16T17:43:45.708+0800 I NETWORK  [thread1] All nodes for set replica are down. This has happened for 2 checks in a row.
  2019-10-16T17:43:46.210+0800 W NETWORK  [thread1] No primary detected for set replica
  2019-10-16T17:43:46.210+0800 I NETWORK  [thread1] All nodes for set replica are down. This has happened for 3 checks in a row.
  2019-10-16T17:43:46.712+0800 W NETWORK  [thread1] No primary detected for set replica
  2019-10-16T17:43:46.712+0800 I NETWORK  [thread1] All nodes for set replica are down. This has happened for 4 checks in a row.
  2019-10-16T17:43:47.215+0800 W NETWORK  [thread1] No primary detected for set replica
  2019-10-16T17:43:47.215+0800 I NETWORK  [thread1] All nodes for set replica are down. This has happened for 5 checks in a row.
  2019-10-16T17:43:47.717+0800 W NETWORK  [thread1] No primary detected for set replica
  2019-10-16T17:43:47.717+0800 I NETWORK  [thread1] All nodes for set replica are down. This has happened for 6 checks in a row.
  2019-10-16T17:43:48.218+0800 W NETWORK  [thread1] No primary detected for set replica
  2019-10-16T17:43:48.218+0800 I NETWORK  [thread1] All nodes for set replica are down. This has happened for 7 checks in a row.
  2019-10-16T17:43:48.721+0800 W NETWORK  [thread1] No primary detected for set replica
  2019-10-16T17:43:48.721+0800 I NETWORK  [thread1] All nodes for set replica are down. This has happened for 8 checks in a row.
  2019-10-16T17:43:49.222+0800 W NETWORK  [thread1] No primary detected for set replica
  2019-10-16T17:43:49.222+0800 I NETWORK  [thread1] All nodes for set replica are down. This has happened for 9 checks in a row.
  2019-10-16T17:43:49.724+0800 W NETWORK  [thread1] No primary detected for set replica
  2019-10-16T17:43:49.724+0800 I NETWORK  [thread1] All nodes for set replica are down. This has happened for 10 checks in a row.
  2019-10-16T17:43:50.226+0800 W NETWORK  [thread1] No primary detected for set replica
  2019-10-16T17:43:50.226+0800 I NETWORK  [thread1] All nodes for set replica are down. This has happened for 11 checks in a row.
  2019-10-16T17:43:50.727+0800 W NETWORK  [thread1] No primary detected for set replica
  2019-10-16T17:43:51.230+0800 W NETWORK  [thread1] No primary detected for set replica
  2019-10-16T17:43:51.731+0800 W NETWORK  [thread1] No primary detected for set replica
  ```

- If the following information is displayed when you use Python to connect to a DB instance, the number of connections reaches its maximum.

  pymongo.errors.ServerSelectionTimeoutError: connection closed, connection closed

## Solution 1

You can query the current number of connections on a node and the connection source, analyze the number of connections established between each client and the DB instance, and adjust the connections. For details, see **How Do I Query and Limit the Number of Connections?**.

## Solution 2

You can change the maximum number of connections of a DB instance by modifying the **net.maxIncomingConnections** parameter. Then, restart the DB instance for the modification to take effect. For details about how to change parameter values, see **Editing a Parameter Group**.

- If the value is **default**, the maximum number of connections is the default value and is related to the DB instance specifications. For details, see **DB Instance Specifications**.
- If there are too many connections, the service may break down. In this case, you can only increase the number of connections by changing the DB instance specifications. For details, see **Changing the CPU or Memory of a Cluster DB Instance**.

NOTE

If a parameter group is a default parameter group, you are not allowed to change its parameter values. You can create a parameter group and change the corresponding parameter values. After the change, associate the new parameter group with the DB instance. For details, see **Changing Associated Parameter Group**.

# 4.4 How Do I Query and Limit the Number of Connections?

The following uses a replica set instance as an example to describe how to query the connection status and set the number of connections in the connection pool.

## Querying the Number of Connections

The maximum number of connections varies according to the DB instance specifications.

NOTE

The maximum number of connections refers to the maximum number of connections of each node in an instance.

Example: If you purchase a replica set instance with two vCPUs and 4 GB memory for each node, the maximum number of connections of the primary and secondary nodes is 400 respectively. The hidden node does not provide services because of its architecture features.

Use Mongo Shell to connect to the primary node, and run the **db.serverStatus().connections** command to query the number of connections on the node.

```
replica:PRIMARY> db.serverStatus().connections
{ "current" : 7, "available" : 398, "totalCreated" : 818364 }
```

Pay attention to the following parameters and their values:

- **current**: Existing connections
- **available**: Number of available connections.

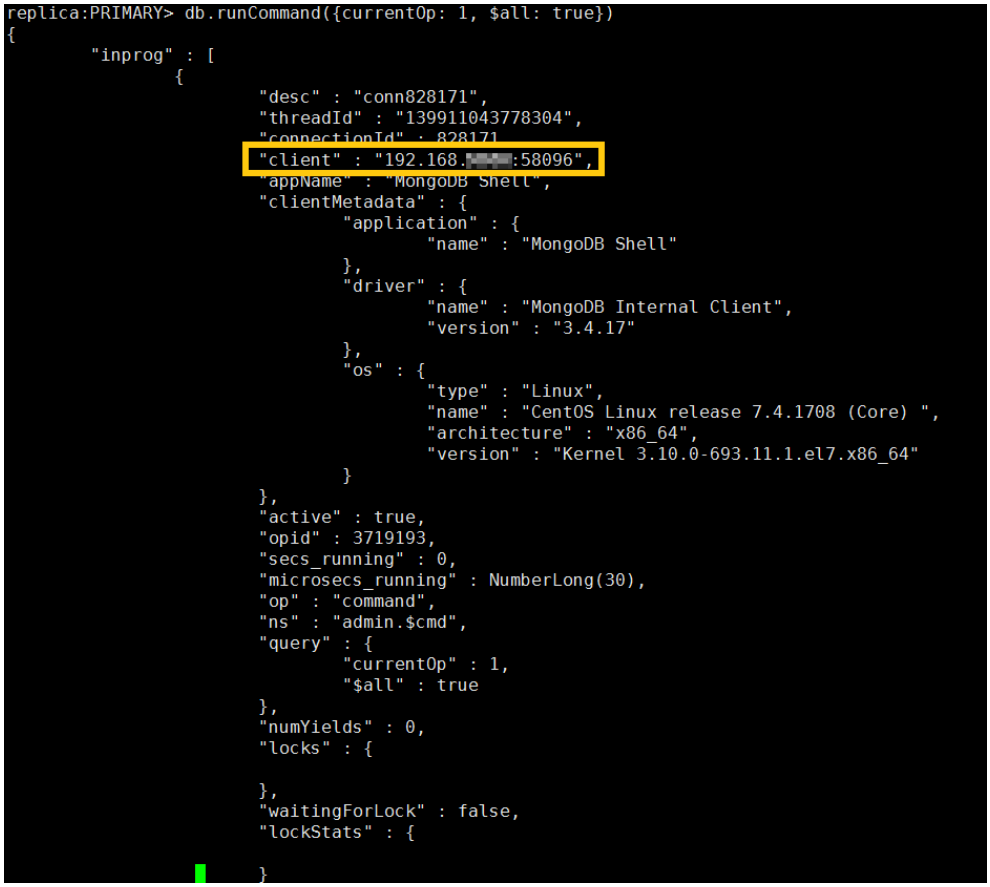
## Querying the Source of Connections

1. Use Mongo Shell to connect to the primary node and switch to the **admin** database.
   ```
   replica:PRIMARY> use admin
   ```
2. Run the **db.runCommand({currentOp: 1, $all: true})** command to query the connection source.

By analyzing the command output, you can query the source IP address of each connection. In this way, the number of connections between each client and DDS DB instance is obtained.

**Figure 4-2** Command output




## Limiting the Number of Connections

DDS allows you to log in to the database using Connection String URI. When logging in to the database using Connection String URI, you can add **&maxPoolSize=<integer>** to the end of the URI to set the number of connections in the connection pool.

Example: When Mongo Shell is used to connect replica set instances, run the following command to set the number of connections in the connection pool to 10:

**mongo "mongodb://**
**rwuser:*xxxxxxxxxx*@192.168.168.116:8635,192.168.200.147:8635/test?**
**authSource=admin&replicaSet=replica&maxPoolSize=10"**

**Figure 4-3** Limiting the number of connections

NOTE

For details about how to limit the number of connection pools on **clients in different languages**, see the API documents of clients in different languages on the MongoDB official website.

# 4.5 What Should I Do If an ECS Cannot Connect to a DDS DB Instance?

Perform the following steps to identify the problem: The following uses the cluster instance as an example.

**Step 1** Check whether the ECS and DDS DB instance are located in the same VPC.

- If yes, go to **Step 2**.
- If no, create an ECS in the VPC where the DDS DB instance is located.

**Step 2** Check whether a security group has been added to the ECS.

- If yes, check whether the security group rules are suitable. For details, see **Setting a Security Group**. Then, go to **Step 3**.
- If no, go to the VPC console from the ECS details page and click **Security Groups** to add a security group.

**Step 3** On the ECS, check whether the DDS DB instance address port can be connected.

```
telnet <DB instance address> {8635}
```

- If yes, the network is normal. Check the database account and password. For details, see **Connecting to a DB Instance**.
- If no, contact post-sales technical support for troubleshooting.

**----End**

# 4.6 What Should I Do If a Database Client Problem Causes a Connection Failure?

Identify a DDS DB instance connection failure caused by a client problem from the following aspects.

1. ECS security policy

   In Windows, check whether the DDS port is enabled in the Windows security policy.

   In Linux, run the **iptables** command to check whether the DDS port is enabled in firewall settings.

2. Application Configuration

   Check whether the IP address, port parameter, and Java database connectivity (JDBC) are configured correctly.

NOTE

If the problem persists, contact post-sales technical support.

# 4.7 What Should I Do If a DDS Server Problem Causes a Connection Failure?

Check whether the following problems occur on the DDS database. Check the following one at a time.

1. The maximum number of connections is reached.

   **Solution**: Use the Cloud Eye resource monitoring function to check whether the number of current connections and the CPU usage are normal. If the number of connections or CPU usage reaches the maximum, restart the DDS database, disconnect DB instances, or increase the node quantity.

2. DB instance status is normal, such as a restarting or system failure.

   **Solution**: Restart the DB instance to see if the problem is resolved. If the problem persists, contact post-sales technical support.

# 4.8 How Can My Applications Access a DDS DB Instance in a VPC?

Ensure that the ECS in which your applications are located is in the same VPC and subnet as the DDS DB instance. If the ECS and the DDS DB instance are in different subnets or VPCs, modify the VPC route table and network access control list (ACL) to ensure the ECS can access the DDS DB instance.

# 4.9 Do Applications Need to Support Automatic Reconnecting to the DDS Database?

It is recommended that your applications support automatic reconnections to the database. After a database reboot, your applications will automatically reconnect to the database to increase service availability and continuity.

In addition, you are advised to set your applications to connect to the database using a long connection to reduce resource consumption and improve performance.

# 4.10 How Do I Create and Log In to an ECS?

For details on how to create and log in to an ECS, see **Purchasing and Logging In to a Windows ECS** and **Purchasing and Logging In to a Linux ECS**.

- The ECS to be created must be in the same VPC with the DDS DB instance to which it connects.
- When you create an ECS, select an OS, such as Red Hat 6.6, and bind an EIP to it.
- Configure the security group to enable the ECS to access the DB instance through the private IP address, that is, the node address in the **Private IP Address** column on the **Basic Information** page.

# 4.11 How Can I Install a MongoDB Client?

MongoDB official website provides client installation packages for different OSs. Download the official binary installation package at **https://www.mongodb.com/download-center#community**.

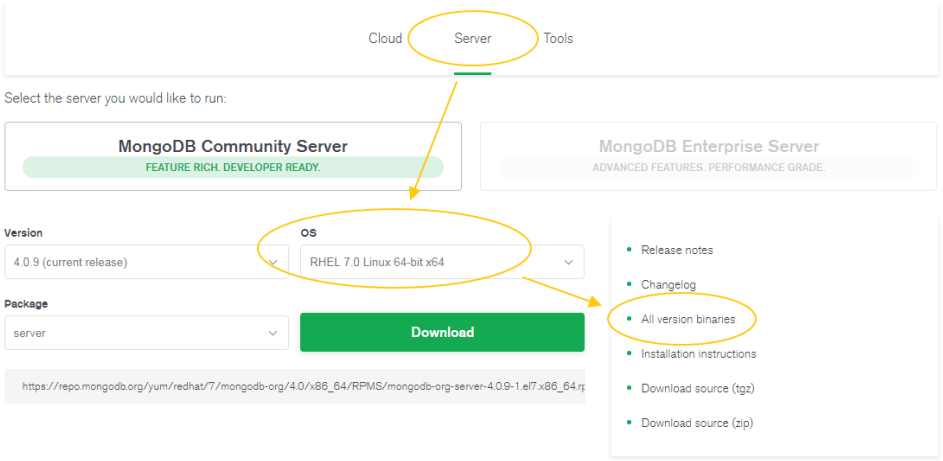
The following uses Red Hat Linux 7 and MongoDB 3.4.0 as examples to describe how to obtain the required installation package and install the MongoDB client.

## Procedure

**Step 1** Obtain the installation package.

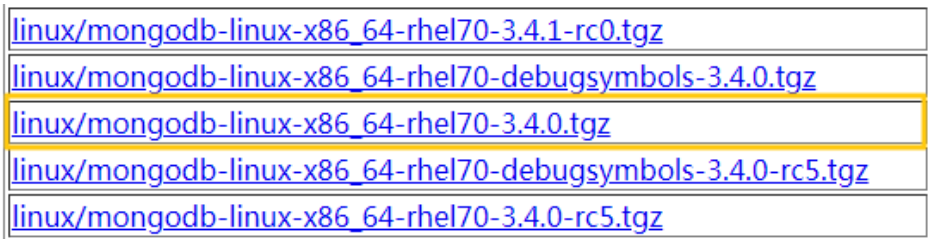
1. Log in at **https://www.mongodb.com/download-center/community**.
2. Choose **Server**, select **RHEL 7.0 Linux 64-bit x64** for **OS**, and click **All version binaries**. **Figure 4-4** shows an example.

**Figure 4-4** MongoDB official webpage




3. Open the downloading page, click **linux/mongodb-linux-x86_64-rhel70-3.4.0.tgz** to download the binary installation package of MongoDB 3.4.0. **Figure 4-5** shows an example.

**Figure 4-5** Downloading page




**Step 2** Upload the installation package to the ECS. For details about how to log in to an ECS, see **How Do I Create and Log In to an ECS?**.

**Step 3** Decompress the installation package on the ECS.

**tar zxvf mongodb-linux-x86_64-rhel70-3.4.0.tgz**

**Step 4** Obtain the client tool from the **bin** directory of the installation package.

**cd mongodb-linux-x86_64-rhel70-3.4.0/bin**

The common tools are as follows:

- MongoDB client mongo
- Data export tool mongoexport
- Data import tool mongoimport

**Step 5** Before using a client tool, assign the execute permission to it.

- Run the **chmod +x mongo** command to grant a client permission to connect to a DB instance.
- Run the **chmod +x mongoexport** command to grant a client permission to export data.
- Run the **chmod +x mongoimport** command to grant a client permission to import data.

**Step 6** Connect to a DB instance from the client. For details, see section "Connecting to a DB Instance" in *Document Database Service Getting Started*

**----End**

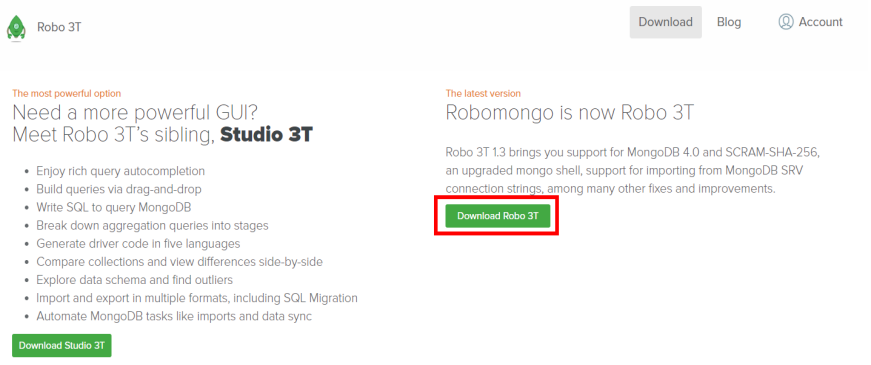
# 4.12 How Do I Install Robo 3T?

This section describes how to obtain the Robo 3T installation package and install Robo 3T.

## Procedure

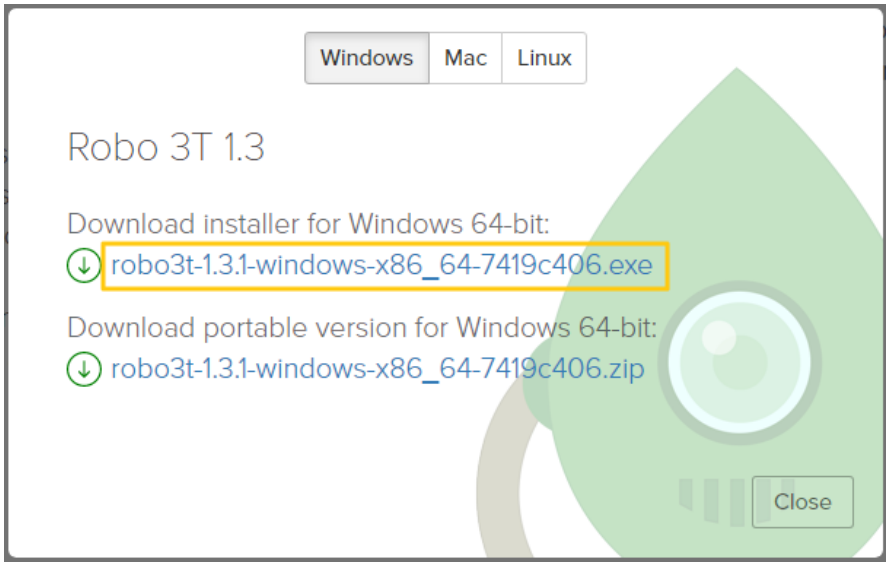
**Step 1** Download Robo 3T from **https://robomongo.org/download**.

**Figure 4-6** Downloading page




**Step 2** In the displayed dialog box, download **robo3t-1.3.1-windows-x86_64-7419c406.exe**.

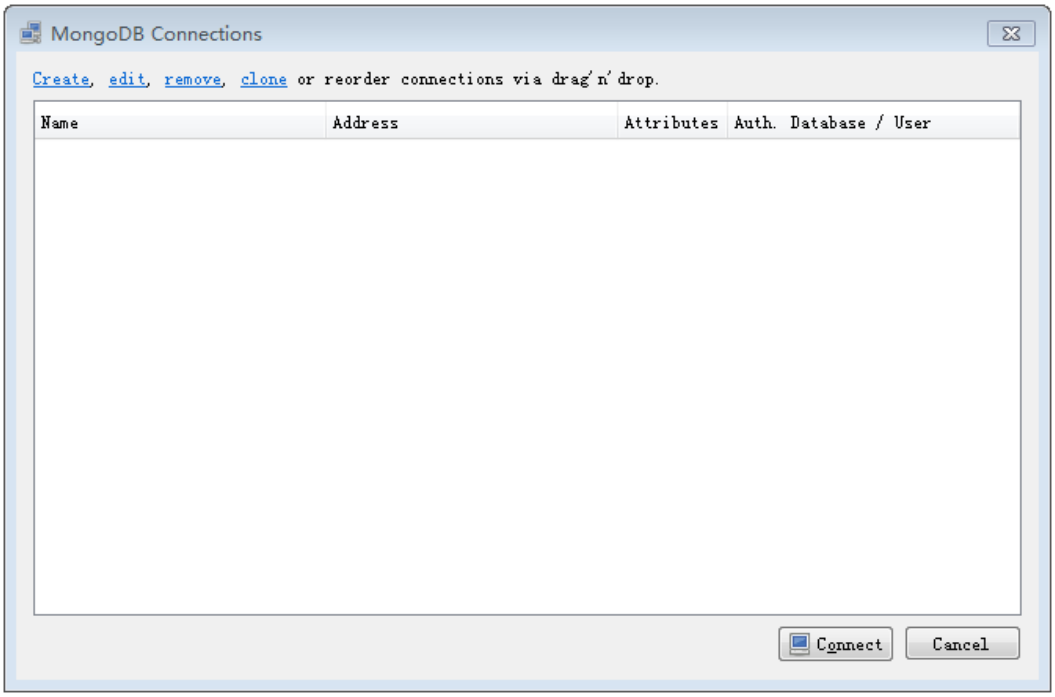
**Figure 4-7** Downloading Robo 3T




**Step 3** Double-click the **robo3t-1.3.1-windows-x86_64-7419c406.exe** file to start the installation.

**Step 4** After the installation is complete, start the tool.

**Figure 4-8** Main window




**Step 5** Connect to a DB instance using the tool over public networks. For details, see section "Connecting to a DB Instance" in *Document Database Service Getting Started*

**----End**

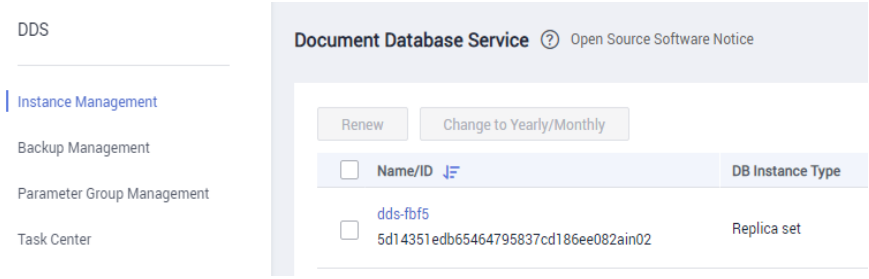
# 5 Database Usage

## 5.1 Viewing the Primary/Standby Nodes of a Replica Set Instance

You can view the node information of the current DB instance on the DDS console.

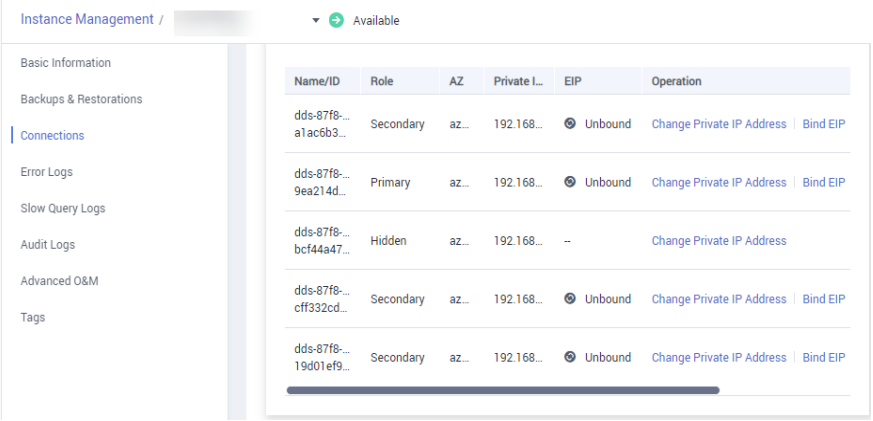
1. **Log in to the DDS console.**
2. On the **Instance Management** page, click the target DB instance.

**Figure 5-1** Instance Management




3. In the navigation pane on the left, choose **Connections**. The node information is displayed in the right area.

**Figure 5-2** Connections



# 5.2 Can I Delete an Index That Fails to Be Created in DDS?

Run the **db.cooperatorManager_module.stats()** statement to query the indexes that fail to be created in the database and then delete them.

# 5.3 What Can I Do If a Query Error Is Reported After Data Is Written Into the DDS Cluster?

## Symptom

Data is continuously written into the DDS cluster. After the data is written into the DDS cluster, an error is reported during query.

Example:

```
W SHARDING [Balancer] Failed to enforce tag ranges :: caused by :: ExceededTimeLimit: Unable to obtain shard utilization information for shard01 due to Operation timed out, request was RemoteCommand xxx -- target: 192.168.*.*:8635, db: admin, cmd:{ getShardStatistics: 1, maxTimeMS: 30000 }
```

## Possible Cause

Data is continuously written into the storage system, causing chunk splitting timeout in the background.

## Solution

This is a normal warning error and does not affect operations. You can try again later.

# 5.4 Are My DDS DB Instances Available When Scaling?

Yes. Adding shards does not affect the existing shards. Services are still available.

# 5.5 Can I Change the Time of the Server Where the DDS DB Instance Is Installed to Beijing Time?

The server time is in UTC format and cannot be changed to Beijing time (UTC +08:00). You are advised to control the data insertion time on the application.

# 5.6 How Do I Deploy DDS Instances Across AZs?

Currently, you can purchase 3-AZ cluster or replica set instance of the Community Edition. The created instances are randomly distributed in different AZs.

The deployment policies for different types of instances are as follows:

- Cluster instance: If the instance is deployed across three AZs, the mongos, shard, and config nodes are deployed in three AZs for disaster recovery.
- Replica set instance: If the replica set instance is deployed across three AZs, the primary, secondary, and hidden nodes are deployed in three AZs for disaster recovery.

# 6 Database Migration

## 6.1 Does DDS Support Cross-Region Migration?

You can use the Data Replication Service (DRS) to migrate databases across regions on the cloud.

For details, see **Migrating Data Using DRS**.

# 7 Database Storage

## 7.1 What Can I Do If the Disk Usage Is Too High?

### Symptom

The disk usage of a shard node reaches 95%, and the disk space is not released after deleting data.

### Solution

- For details about how to shard a database collection, see **Enabling Sharding on a Database**.
- For details about how to scale up storage space for a shard node, see **Scaling Up Storage Space**.

## 7.2 What Is the DDS DB Instance Storage Configuration?

The EVS is used for data storage of DDS DB instances. For details on the EVS, see *Elastic Volume Service User Guide*.

The DDS DB instance backup data is stored in the OBS and does not occupy the storage space you have. For details on the DDS DB instance storage configuration, see the *Object Storage Service User Guide*.

## 7.3 Why Is the Storage Space Usage Displayed on the GUI Smaller Than the Actual Usage?

Data stored on DDS disks is compressed before being stored. Therefore, the storage space usage displayed on the GUI is less than the actual usage.

# 7.4 What Should I Do If My Data Exceeds the Database Storage Space of a DDS DB Instance?

If the storage space required by your applications exceeds the allowed maximum space allocated to you, you can do either of the following:

- Scale up storage space.
- Add shards for the DDS cluster instance of Community Edition.

# 7.5 Which Items Occupy the Storage Space of DDS DB Instances?

The following types of data will occupy the storage space:

- User data except backups
- Data required for ensuring DB instance proper running occupy, such as system database data, rollback logs, and indexes
- Log output files that are generated by DDS ensure the stable operating of DDS DB instances. For example, Oplogs occupy 10% of storage space and cannot be resized.

# 7.6 What Overhead Does the Storage Space Have After I Applied for a DDS DB Instance?

The storage space you applied for will contain the system overhead required for inode, reserved block, and database operation.

# 8 Database Parameter Modification

## 8.1 What DB Instance Monitoring Metrics Do I Need to Pay Attention To?

Related parameters are described as follows:

- For details on parameter descriptions, visit **MongoDB official website**.
- The default value of the **net.maxIncomingConnections** parameter varies according to DB instance specifications. Therefore, this parameter is set to **default** before being specified.
- **disableJavaScriptJIT** and **security.javascriptEnabled** are used together to set the statistical function.
  - **disableJavaScriptJIT**: The default value is **true**, indicating that the JavaScriptJIT compiler is disabled.
  - **security.javascriptEnabled**: The default value is **false**, indicating that JavaScript cannot be executed on mongod and the mapReduce and group commands cannot be used.

# 9 Backup and Restoration

## 9.1 Will I Be Charged for Manual Backups of Deleted DB Instances?

Yes. Manual backups are retained by default after your DB instances are deleted. The manual backups are billed based on the OBS pricing.

## 9.2 How Do I Back Up DDS Databases to an ECS?

You can store DDS backup data on the ECS using mongoexport. However, you are advised not to store database backups on ECSs. To ensure high data reliability and service assurance, you can use the DDS backup function to store backups to a professional storage object, such as OBS.

## 9.3 How Long Does DDS Store Backup Data For?

The automated backup retention period is 7 days by default. You can set a backup retention period from 1 to 732 days. There is no limit on the manual backup retention period. You can delete manual backup files as needed.

## 9.4 Does DDS Support Cross-Region Data Backup?

No, DDS does not support cross-region data backup.

# 10 Network Security

## 10.1 What Security Protection Policies Does DDS Have?

DDS allows you to set the VPC which DDS DB instances belong to, ensuring that the DDS DB instances are isolated from other services. In addition, the IAM service is provided, achieving access control over DDS resources.

## 10.2 Do I Need to Use DDS in a VPC?

A VPC allows you to create virtual network environment in a private and isolated network to control the private IP address range, subnets, route tables, and network gateways. The VPC also allows you to define the virtual network topology and network configuration to make the network similar to the traditional IP network you are operating in the data center.

You may need to use DDS in the VPC in the following cases:

You want to run Internet-oriented web applications and retain the backend server that the public cannot access. To do so, you can create an ECS and a DDS DB instance in the same VPC, allocate a public IP address for the ECS, and deploy a web server on the ECS.

## 10.3 How Do I Ensure the Security of DDS in a VPC?

The VPC security group helps ensure the security of DDS in a VPC. In addition, ACL can be used to allow or reject I/O network traffic for each subnet. Use the internal security infrastructure (including the network firewall, intrusion detection, and protection system) to monitor all IPsec VPN connection-based input and output network traffic for VPC.

# 11 Resource Monitoring

## 11.1 What DB Instance Monitoring Metrics Do I Need to Pay Attention To?

You need to focus on the CPU, memory, and storage space usage.

For more information about monitoring indicators, see **DDS Metrics**.

You can configure DDS to report alarms as needed. If an alarm is reported, you can take proper measures to clear it.

**Configuration examples:**

- Configure DDS to report alarms to Cloud Eye if CPU utilization reaching or exceeding a certain value (90% for example) for multiple times (3 for example) within a period of time (5 minutes for example).
- Configure DDS to report alarms to Cloud Eye if its memory utilization reaches or exceeds a specific value (for example, 90%) multiple times (for example, 4 times) within a set period (for example, 5 minutes).
- Configure DDS to report alarms to Cloud Eye if its storage utilization reaches or exceeds a specific value (for example, 85%) multiple times (for example, 5 times) within a set period (for example, 5 minutes).

NOTE

For details on Cloud Eye alarm configuration, see "Alarm Rule Management" in *Cloud Eye Service User Guide*.

If the CPU and memory usage stay high for a long time and the disk capacity cannot be expanded, you can change the CPU and memory specifications.

**Measures:**

If a storage usage alarm is reported, perform either of the following operations:

- Check the storage space consumption and see whether any space can be freed up by deleting data from DB instances or dumping the data to another system.
- Scale up the storage space. For details, see **Scaling Up Storage Space**.

# 12 Log Management

## 12.1 Which Types of Logs and Files Occupy DDS DB Instance Storage Space?

Logs and files listed in the following table occupy storage space.

| Database Type | File Type |
| --- | --- |
| DDS | Log files: DDS log files |
| | Data files: database content and index file |
| | Other files: some DDS temporary files |

# A Change History

| Released On | Description |
| --- | --- |
| 2020-08-30 | This issue is the ninth official release, which incorporates the following changes:<br>Added section **Can I Change a Single Node Instance to a Replica Set Instance?**<br>Added section **How Do I Clear the Alarm That the Shard Memory Usage Exceeds 90%?**<br>Added section **How Many Shards Does DDS Support?** |
| 2020-07-30 | This issue is the eighth official release, which incorporates the following changes:<br>Added section **Can DDS Instances Be Upgraded from Earlier Versions to Later Versions?**<br>Added section **How Is Data Transferred Between the Primary and Secondary Nodes of a Replica Set?** |
| 2020-05-30 | This issue is the seventh official release, which incorporates the following change:<br>Added section **How Do I Deploy DDS Instances Across AZs?** |
| 2020-04-30 | This issue is the sixth official release, which incorporates the following change:<br>Added section **What Are the Differences Between Instance Deletion and Unsubscription?** |

| Released On | Description |
| --- | --- |
| 2019-11-11 | This issue is the fifth official release, which incorporates the following changes:<br>• Added section **Why Does HA Trigger a Switchover?**<br>• Added section **What Can I Do If the Number of Connections of an Instance Reaches Its Maximum?**<br>• Added section **What Can I Do If a Query Error Is Reported After Data Is Written Into the DDS Cluster?**<br>• Added section **What Can I Do If the System Responds Slowly to Cluster Operations?**<br>• Modified section **What DB Instance Monitoring Metrics Do I Need to Pay Attention To?**<br>• Added section **What Can I Do If the Disk Usage Is Too High?**<br>• Added section **Will I Be Charged for Manual Backups of Deleted DB Instances?** |
| 2019-10-18 | This issue is the fourth official release, which incorporates the following changes:<br>• Added section **How Do I Query and Limit the Number of Connections?**<br>• Added section **How Do I Install Robo 3T?** |
| 2018-11-02 | This issue is the third official release, which incorporates the following changes:<br>Modified the content in section **How Can I Install a MongoDB Client?** |
| 2018-09-06 | This issue is the second official release, which incorporates the following change:<br>Added section **How Do I Create a Custom Policy?** |
| 2018-05-04 | This issue is the first official release. |