RDS for SQL Server

Troubleshooting

Issue	01
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1 Account Creation Failure for a SQL Server Database Migrated from Alibaba Cloud to Huawei Cloud

Description

An error was reported when an account was created for a SQL Server database migrated from Alibaba Cloud to Huawei Cloud.

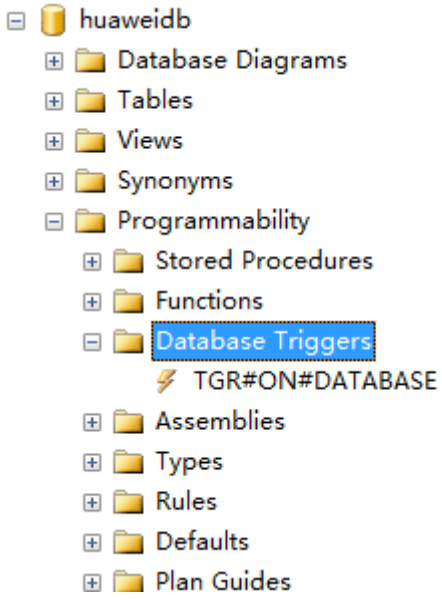
Fault Analysis

The SQL Server database on Alibaba Cloud has a TGR#ON#DATABASE trigger that prevents SQL Server Management Studio from creating and authorizing users. Database users can only be created on the Alibaba Cloud management console. On Huawei Cloud, database users can be created using SQL Server Management Studio.

Before migrating a SQL Server database from Alibaba Cloud to Huawei Cloud, you need to disable the TGR#ON#DATABASE trigger of Alibaba Cloud first and then create and authorize database users on SQL Server Management Studio.

Step 1 Log in to the SQL Server Management Studio client.

Step 2 Set **TGR#ON#DATABASE** to **disable**.



Step 3 Create database users on SQL Server Management Studio and authorize them.

CAUTION

The new user authorization must be mapped to the msdb database.

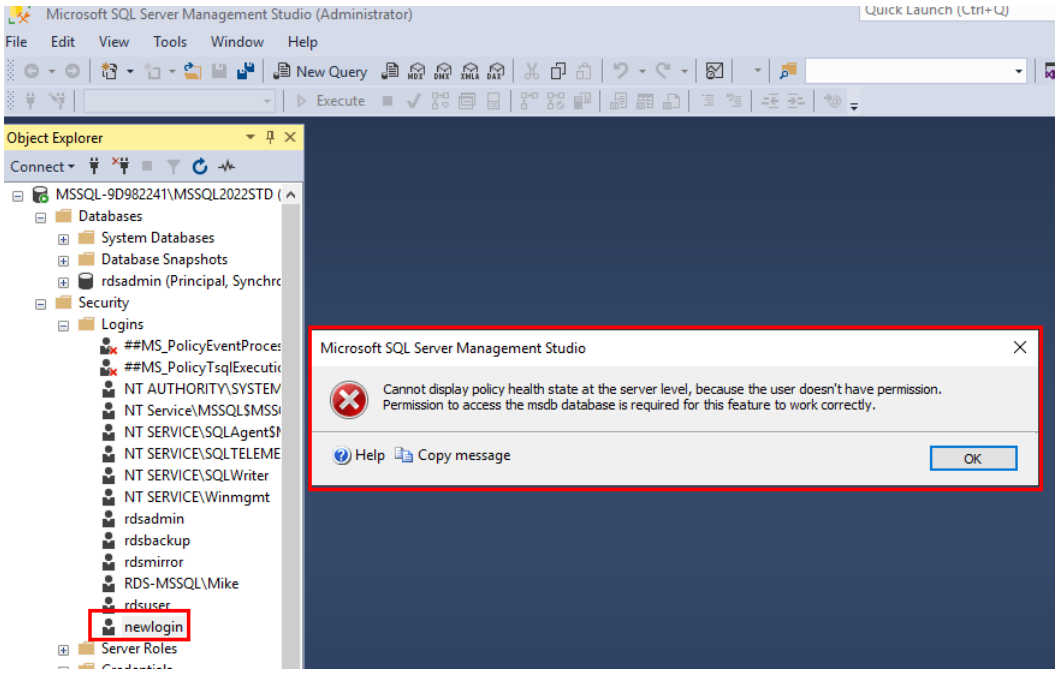
----End

2 Error Reported When a New Account Is Used to Log In to an RDS for SQL Server Instance

Scenario

When a new account (for example, **newlogin**) is used to log in to an RDS for SQL Server instance after being created using **rdsuser**, an error message is displayed, indicating that the account does not have the permission to log in to the **msdb** database.

Figure 2-1 Error message

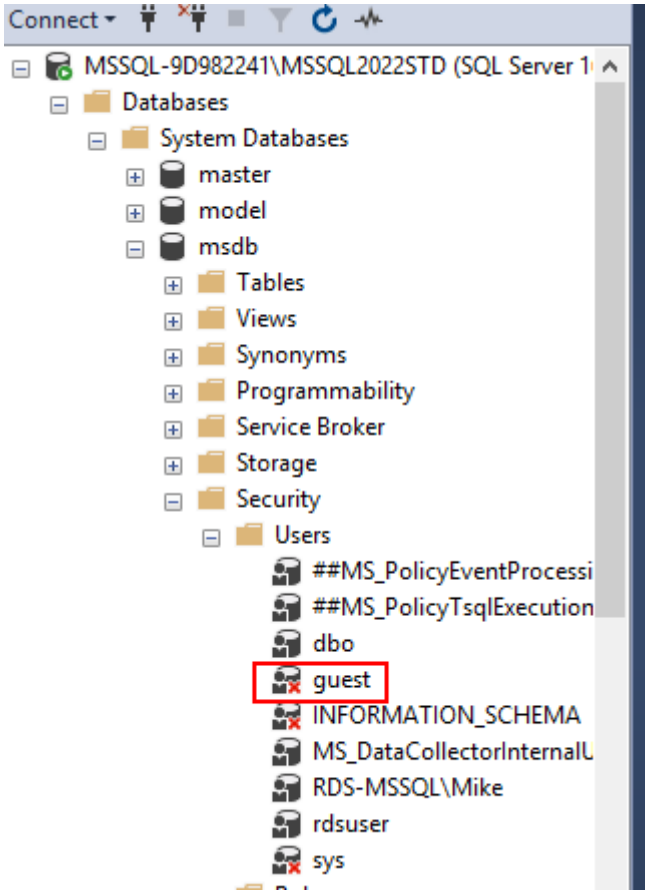


Possible Causes

To prevent unknown accounts from easily obtaining permissions on the **msdb** database, RDS for SQL Server has been hardened and the default guest login

permission on the **msdb** database is revoked. As a result, new accounts cannot log in to this database by default.

Figure 2-2 Checking login permissions



Solution

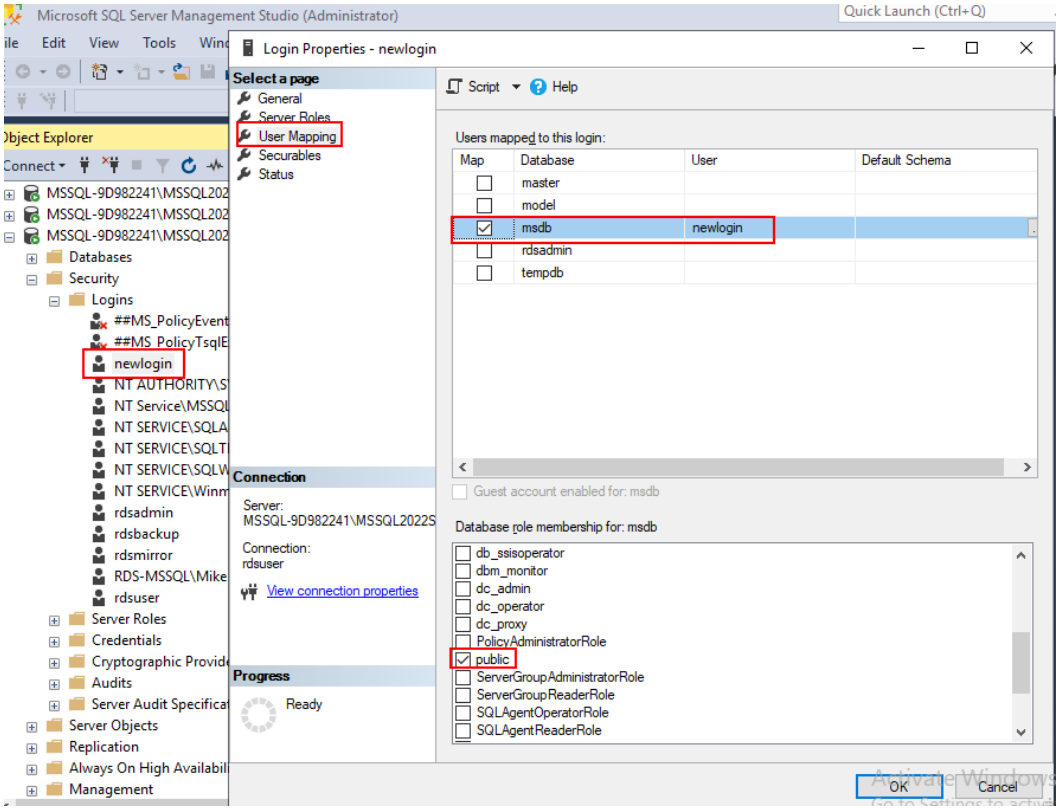
Grant the public permission on the **msdb** database to the new account as user **rdsuser**. The procedure is as follows:

Method 1:

1. Use SQL Server Management Studio (SSMS) to log in to the instance as user **rdsuser**.
2. Right-click the new account (for example, **newlogin**) and view its properties.

   Click **User Mapping**, select **msdb**, ensure that the public role is selected, and click **OK**.

Figure 2-3 Granting the public permission



3. Use the new account (**newlogin**) to log in to the instance again. No error is reported.

Method 2:

1. Use Data Admin Service (DAS) to log in to the instance as user **rdsuser**.
2. Run the following SQL statements to grant permissions on **msdb** to the new account (for example, **newlogin**):

```
USE [msdb]
 GO
 CREATE USER [newlogin] FOR LOGIN [newlogin]
 GO
```

3. Use the new account (**newlogin**) to log in to the instance again. No error is reported.

3 Failed to Change the Instance Class of an RDS for SQL Server Instance or Perform a Primary/Standby Switchover

Scenarios

- When you change the instance class of your RDS for SQL Server instance on the console, the error message "Primary/standby replication is abnormal. Try again later." is displayed in the upper right corner.
- When you perform a primary/standby switchover on the console, the error message "Failed to perform the switchover because the primary/standby replication status is abnormal." is displayed in the upper right corner.

Fault Analysis

One possible cause is that the replication between the primary and standby instances is abnormal. You can use either of the following methods to analyze the fault:

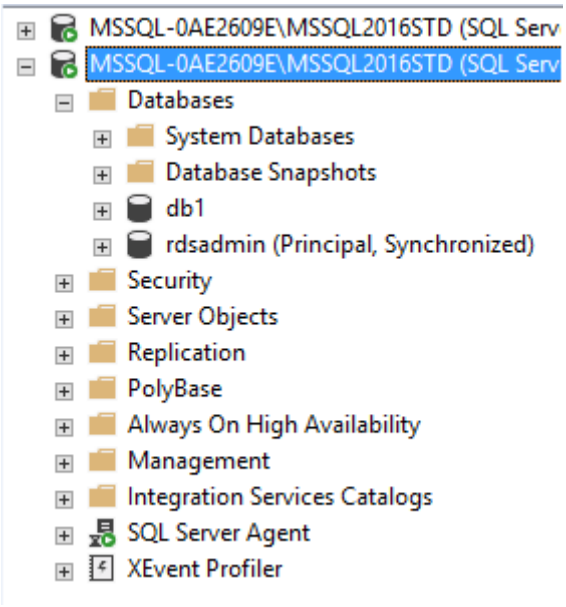
- Method 1: Checking the Metric **Replication Delay** on the Console
  a. Log in to the management console.
  b. On the **Instances** page, locate the DB instance and click **View Metrics** in the **Operation** column.
     You can also click the DB instance name and, on the displayed page, click **View Metrics** in the upper right corner.
  c. On the displayed page, you can see the replication delay of the instance. If the value is too large, for example, 99999, the replication between the primary and standby instances is abnormal.
- Method 2: Checking the Database Replication Status Using SQL Server Management Studio (SSMS)
  As shown in **Figure 3-1**, **(Principal, Synchronized)** is displayed following the database name for databases with a normal replication, for example, **rdsadmin**.
  If the **db1** database does not have a replication status displayed, the replication is not set up. In this case, a primary/standby switchover cannot be

performed. If the status **(Principal, Disconnected)** is displayed, the replication was interrupted and a primary/standby switchover cannot be performed.

NOTE

If your database engine uses 2017 Enterprise Edition and the database replication is normal, only **(Synchronized)** is displayed.

Figure 3-1 Database replication status

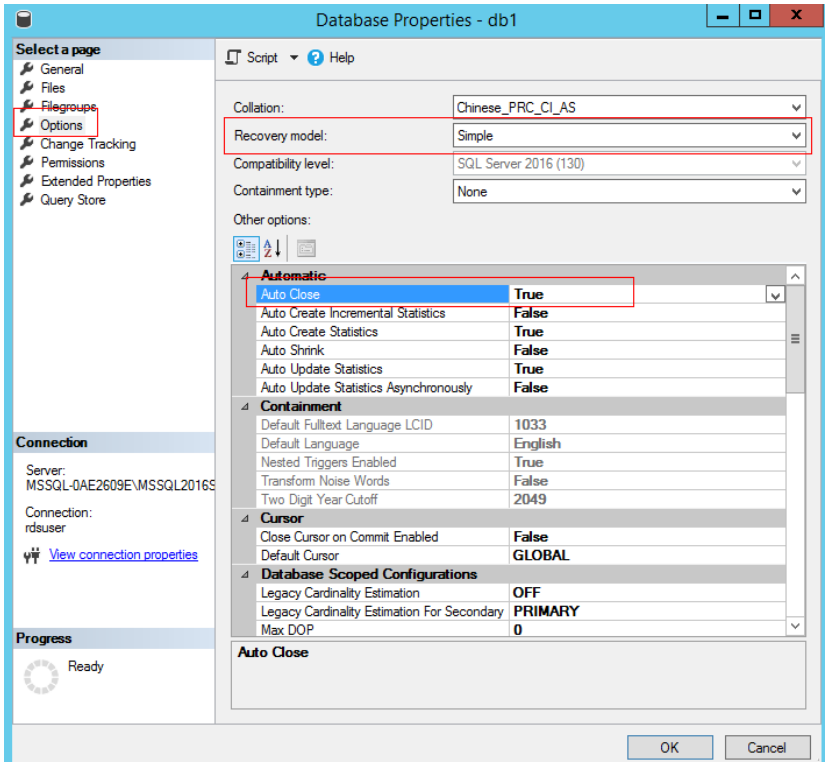


Solution

Check the properties of the database for which no replication is set up.

Log in to the SSMS client. Right-click the problem database and choose **Properties** from the shortcut menu to view the values of **Recovery model** and **Auto Close**.

Figure 3-2 Viewing database properties



- If **Recovery model** is set to **Simple**, no replication can be established. Change it to **full** through the SSMS or run the following SQL statement:

  ```
  ALTER DATABASE [database_name] SET RECOVERY FULL WITH NO_WAIT
  ```

  [*database_name*]: name of the database

  Example:

  ```
  ALTER DATABASE [db1] SET RECOVERY FULL WITH NO_WAIT
  ```

- If **Auto Close** is set to **True**, no replication can be established, either. Change it to **False** through the SSMS or run the following SQL statement:

  ```
  ALTER DATABASE [db1] SET AUTO_CLOSE OFF WITH NO_WAIT
  ```

Replication setup begins several minutes after the modification is complete. The time required for establishing a replication depends on how much data there is.

After the replication is established, change the instance class or perform a primary/standby switchover again.

4 How Do I Remove and Re-establish a Replication of My RDS for SQL Server Instance?

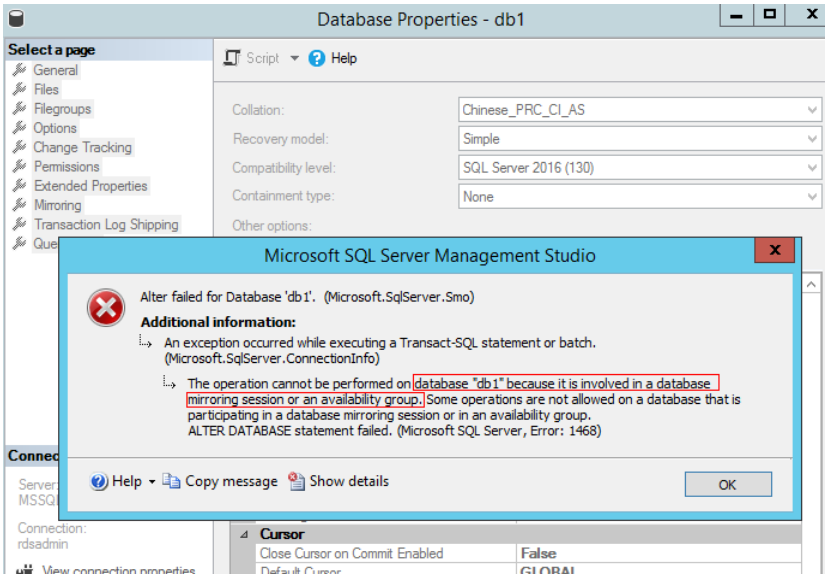
Scenarios

A replication is automatically established for your primary and standby instances in a few minutes after you create or migrate databases to an RDS for SQL Server instance. The time required for a replication depends on the size of your databases.

When necessary, you can remove a replication in either of the following ways:

- Remove the replication temporarily before you change the database name, configure the snapshot isolation level, or set database properties, to avoid an error similar to the following:

  Figure 4-1 Error message

- (Not recommended) If your databases have high performance and throughput requirements, you can remove the replication for a longer period of time.

Fault Analysis

The replication needs to be removed before you perform an ALTER DATABASE operation for your database.

Solution

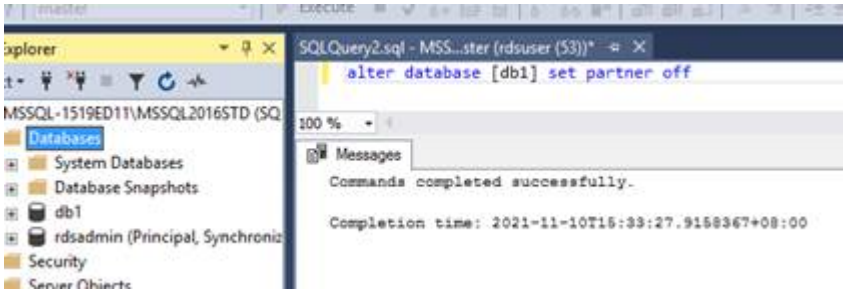
1. Remove the replication temporarily.

   a. RDS for SQL Server instances excluding 2017 Enterprise Edition

   Run the following SQL statement to remove the replication of your database:

   ```
   alter database [@DBName] set partner off
   ```

   [@DBName]: name of the database from which you want to remove the replication

   NOTE

   1. The operation to be performed after the replication is removed must be executed in the same batch as the statement. After the operation is performed, RDS automatically re-establishes a replication for the database.

   b. RDS for SQL Server instances running Microsoft SQL Server 2017 Enterprise Edition

   Run a stored procedure to remove your database from an availability group. For details, see **Removing a Custom Database from an Availability Group**.

   ```
   EXEC rdsadmin.dbo.rds_remove_database_from_ag '@DBName';
   ```

   @DBName: name of the database to be removed from an availability group

   Example:

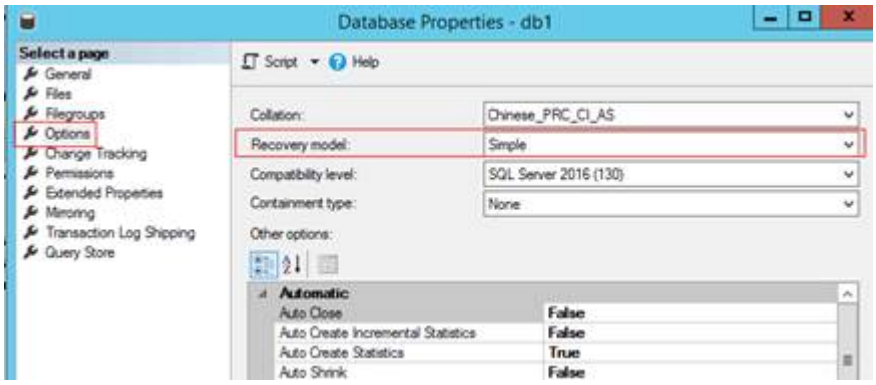
   Remove database **testDB_1** from the availability group **[AG-RDS-YUN]**.

   ```
   EXEC rdsadmin.dbo.rds_remove_database_from_ag 'testDB_1';
   ```

2. (Not recommended) If the replication is no longer required after being removed, do as follows:

   Remove the replication by following the instructions in **1**. If you do not want RDS to automatically re-establish the replication, change the recovery model of the database to **Simple** in either of the following ways:

   – Log in to the SSMS client, right-click the target database, choose **Properties** from the shortcut menu, and change the value of **Recovery model** to **Simple**.



– Run the following SQL statement:

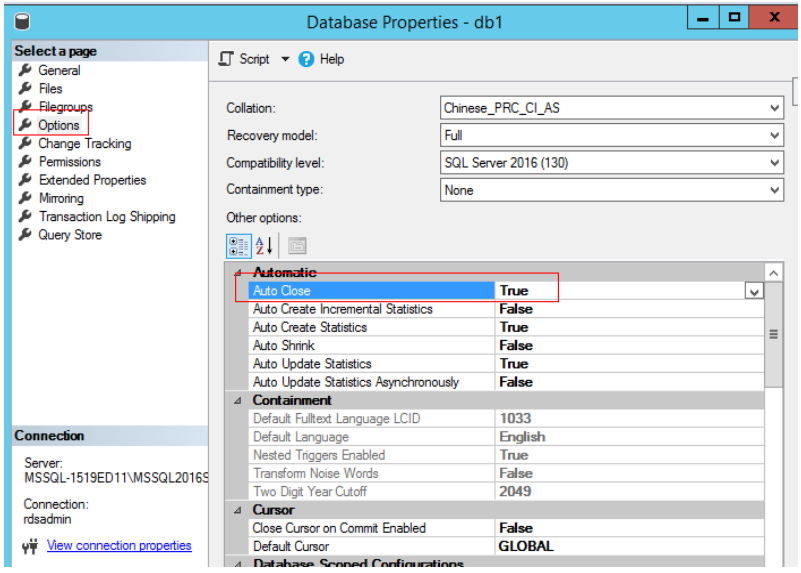
```
alter database [db1] set recovery simple with no_wait
```

NOTICE

In the simple recovery model, no incremental backup is generated. It means that your database cannot be restored to a specified point in time. If you want to restore the replication, set **Recovery model** to **full**.

```
alter database [db1] set recovery full with no_wait
```

3. Check the value of the property **Auto Close**. If **Auto Close** of your database is set to **True**, no replication can be established and no replication alarm is generated.



To restore the replication, change the value of **Auto Close** to **False**.

```
alter database [db1] set auto_close off with no_wait
```

