

Error 40971 State 27 Cannot open Failover Group requested by the login

Last updated by | Holger Linke | Mar 6, 2023 at 1:41 AM PST

Contents

- [Issue](#)
- [Investigation / Analysis](#)
 - [Check ASC Troubleshooter](#)
 - [Check XTS](#)
 - [Check Kusto](#)
- [Mitigation](#)

Issue

The customer is unable to connect to SQL Database using its Failover Group name. It fails with the following error message:

Error 40971 State 27

Cannot open Failover Group "[failovergroupname.database.windows.net](#) [?]" requested by the login. The login failed. (Microsoft SQL Server, Error: 40971)

Investigation / Analysis

Error 40971 occurs if the customer tries to connect directly to a database, specifying the database in the connection string, and either of the following applies:

- The database exists at the underlying SQL server, but is not a member of the Failover Group.
- The database doesn't exist, e.g. mistyped database name in the connection string

If the login name, user name, or password is incorrect, the connection will fail with the usual error 18456. If the Failover Group name is wrong and doesn't exist, or it exists but its DNS name resolution fails, the connection will fail with error 11001 "no such host is known".

The key for troubleshooting is:

- confirm that the requested database is in a Failover Group
- confirm the error on MonLogin in Kusto

Check ASC Troubleshooter

Create an ASC Troubleshooter report for the database that the customer is trying to connect to. If it doesn't exist, choose any other existing database on the affected server.

On the troubleshooter, check the page "Connectivity -> Legacy Data Explorer Queries -> ControlRingErrors", as this will show you login attempts for databases that didn't exist at the time of the attempt.

Check the troubleshooter for information about the Failover Group at "GeoDR -> General -> Failover Group, Databases in the failover group".

Check XTS

If ASC doesn't show the information about the Failover Group, you can get it from XTS instead. Connect to the region and open the view "Sterling Servers and Databases". The top-right window has a "Failover Groups" tab. Use this view to verify that the customer's database belongs to the FG.

If it doesn't, then it is possible that the database had been created after the FG was configured; the customer might have forgotten to add it into the FG.

Check Kusto

The error 40971 will be recorded in MonLogin like any other login attempt:

```
let srv = "servername";
let startTime = datetime(2023-02-28 04:00:00Z);
let endTime = datetime(2023-02-28 18:00:00Z);
let timeRange = ago(1d);
MonLogin
| where TIMESTAMP >= startTime
| where TIMESTAMP <= endTime
//| where TIMESTAMP >= timeRange
| where logical_server_name =~ srv
| where is_success == 0
| where event == "process_login_finish"
| project TIMESTAMP, logical_server_name, alias_name, database_name, event, is_success, error, state, peer_add
| limit 1000
```

Sample output (abbreviated):

TIMESTAMP	logical_server_name	alias_name	database_name	event	is_succ
2023-02-28 15:02:54.7884378	servername		master	process_login_finish	False
2023-02-28 15:03:24.7884525	servername		master	process_login_finish	False
2023-02-28 15:08:34.5257643	servername	servernamefg	AdventureWorks2	process_login_finish	False
2023-02-28 15:40:11.5663118	servername		AdventureWorks	process_login_finish	False
successful login:					
2023-02-28 15:08:15.3160928	servername	servernamefg	AdventureWorks	process_login_finish	True

All connections in this example were attempted on the correct FG name. Note how the `alias_name` column for the error 40971 reflects the FG name and shows a wrong database name ("AdventureWorks2" didn't exist). The `logical_server_name` column always contains a real server name and not a FG name. For the errors 18456, the `alias_name` remains empty. A wrong FG name is not logged as it never reaches the gateway.

Mitigation

The customer should use the correct Failover Group name to connect and verify the following:

- Is the requested database a member of the Failover Group? If not, then add the database into the Failover Group.
- Does the connection string use the correct database name? Check for any typos, special characters, etc.

How good have you found this content?

