Error 40613, State 14

Last updated by | Amie Coleman | Mar 13, 2023 at 8:50 AM PDT

Contents

Issue

Error 40613 state 14 is observed when there is an active/in-use Dedicated Administrator Connection (DAC) for the database and the customer attempts to open a new DAC connection.

Background

SQL Server provides a special diagnostic connection for administrators when standard connections to the server aren't possible. This diagnostic connection allows an administrator to access SQL Server to execute diagnostic queries and troubleshoot problems even when SQL Server isn't responding to standard connection requests. Only one DAC is allowed at any one time to guarantee that there are resources available for the connection. For more information on DAC connections, see [Diagnostic connection for database administrators](#) ↗

Error Classification
Client side error:
Sqlcmd: Error: Microsoft ODBC Driver 17 for SQL Server : Database 'Testdb' on server 'TestSvr' is not currently available. Please retry the connection later. If the problem persists, contact customer support, and provide them the session tracing ID of '{2B998A0C-166A-459F-B55D-AC98ddddd0BA}'..

Error:
17810, Severity: 20, State: 2. 2019-08-11 05:00:00.15 Logon [Filtered Args] Could not connect because the maximum number of '%1' dedicated administrator connections already exists. Before a new connection can be made, the existing dedicated administrator connection must be dropped, either by logging off or ending the process.%2_

Troubleshooting

ASC

We detect this issue in ASC and generate the below insight, which includes the impact time frame, CSS internal content and customer ready content to use and share with customer for handling this issue.

ASC Insight

SQL DATABASE	SQL SERVER DATABASE
DAC connection limit reached	LIBRARY

Is this insight helpful? 🙂 ☹

Description	The Dedicated Admin Connections (DAC) limit of 1 was hit for the server **seahawks** containing the database **Library**. This means the customer is attempting to connect to the DAC port (1434) while having 1 admin connection open to the database or elastic pool already. Due to an existing bug in telemetry these manifest as Database Unavailable error messages, while they are actually user errors. Customers can mitigate this issue by closing their existing Dedicated Admin Connection or by using non-admin connections port (1433).
Impacted Resources	Library
Recommended Action	Close the existing connection to the DAC port (1434) before attempting a new connection. Restarting SQL Server will also disconnect existing admin connection however this should be a last resort as it causes unavailability to the customer. For further analysis, use the data explorer view under troubleshooter using the path below: **Tools -> SQL Troubleshooter -> Show report (Choose your report) -> Connectivity -> Data Explorer -> Login Errors Summary** For detailed analysis and troubleshooting, follow the TSG link here
Customer Ready Content	📋 Copy Content 📩 New Email Between 9/28/2020 4:00:00 PM UTC and 9/29/2020 6:16:53 AM UTC, the database Library on server seahawks, DAC (Dedicated Admin Connection) limit of one was reached and therefore new connection(s) were denied. Dedicated Admin connection (DAC) for administrators are solely for diagnosing under rare circumstances and with limitations. To guarantee that there are resources available for the connection, only one DAC is allowed at a time. In your case, DAC connection was already active, and the new request to connect your database through the DAC was denied with error.

In addition, you can check and confirm the occurrence by generating a Troubleshooter Report for the resource:

Kusto

If the ASC insight is not generated for any reason, you should be able to identify this behavior by querying login telemetry in Kusto directly:

```
MonLogin |
where ((logical_server_name =~ "ServerName") and database_name =~ "Databasename") and event == "process_login_
| where (is_success == false and is_user_error == false) or total_time_ms > 14000
| summarize cnt(), min(originalEventTimestamp), max(originalEventTimestamp), max(total_time_ms), avg(total_tim
| sort by count_ desc
```

ClusterName	NodeName	AppName	AppTypeName	logical_server_name	database_name	package	lookup_error_code	lookup_state	error	state	conn_dup_result	count_	min_originalEventTimestamp	max_originalEventTimestamp
tr5.southcentralus1-a.worker.database.windows.net	DB.109	Worker	Worker	holcim	HOLCIM_SV	xdbhost			40613	14	0	8939	2019-08-10 05:49:23.4852227	2019-08-11 05:55:17.7190637
tr5.southcentralus1-a.worker.database.windows.net	DB.240	Worker	Worker	holcim	HOLCIM_SV	xdbhost			40613	14	0	8012	2019-08-08 03:36:38.0460089	2019-08-08 08:05:28.4139355
tr5.southcentralus1-a.worker.database.windows.net	DB.109	Worker	Worker	holcim	HOLCIM_SV	xdbhost			40613	13	0	305	2019-08-10 06:02:46.6183500	2019-08-11 05:58:42.5225794
tr5.southcentralus1-a.worker.database.windows.net	DB.240	Worker	Worker	holcim	HOLCIM_SV	xdbhost			40613	13	0	282	2019-08-08 03:37:36.2296356	2019-08-08 08:05:49.6087663
cr1.southcentralus1-a.control.database.windows.net	GW.40	Gateway	Gateway	holcim	HOLCIM_SV	xdbgateway	0	SERVICE_ENDPOINT	0	0		15	2019-08-08 08:05:35.2980826	2019-08-11 05:57:55.5695472

Client Side

From the client side, the customer can run the below T-SQL query (in the user database) to check that there is an active DAC connection:

```
SELECT Session_id, most_recent_session_Id, connect_time, net_packet_size, client_net_address,
    net_transport, protocol_type, endpoint_id, last_read, last_write
FROM sys.dm_exec_connections WHERE node_affinity = 64
```

If the connection is active, you will see a result similar to the below:

	Session_id	most_recent_session_Id	connect_time	net_packet_size	client_net_address	net_transport	protocol_type	endpoint_id	last_read	last_write
1	70	70	2023-03-11 20:37:23.987	4154		TCP	TSQL	1	2023-03-11 20:37:33.487	2023-03-11 20:37:33.553

Mitigation

To identify more information about the active DAC connection, use the following T-SQL query. From the results the customer can identify a Session ID, Host Name, Login Name, and Program Name. This information should be sufficient to then move forward with closing the problematic connection.

```
SELECT s.* FROM sys.dm_exec_sessions AS s
INNER JOIN sys.dm_resource_governor_workload_groups AS wg ON s.group_id = wg.group_id
WHERE wg.name = 'DACGroup';
```

session_id	login_time	host_name	program_name	host_process_id	client_version	client_interface_name	security_id	login_name	nt_domain	nt_user_name	status
70	2023-03-11 20:37:23.987	LAPTOP-	Microsoft SQL Server Management Studio - Query	22880	7	.Net SqlClient Data Provider	0x0106000000001640000000000000003A902F41221581...	amcolema	NULL	NULL	sleeping

To mitigate this issue, there are two options:

1. Once the DAC connection has been identified using the above steps, the customer should close the DAC connection.

2. If for any reason, it hasn't been possible to identify or disconnect the DAC connection, then restarting the SQL Server will disconnect all existing connections. **This should be a last resort as it will impact the customer resource availability briefly**

Note, if you observed error 40613 state 14 and didn't observe any 17810 in the error, then the issue could be related to socket duplication. For more information, see [Socket Duplication TSG - 40613 state 13](#)

RCA Template

Summary of Impact : Between *<starttime>* and *<endTime>* on *<dd/mm/yyyy>*, database *<database Name>* on server *<server name>* was not reachable. The unavailability issue reported was caused by user action and it is by-design behavior.

Root Cause: The Dedicated Administrator Connection (DAC) is for administrators and is solely used for diagnosing under rare circumstances and with limitations. To guarantee that there are resources available for the connection, only one DAC is allowed at a time. In your case, there was an active DAC connection, and the new request to connect your database through the DAC was denied with error.

Mitigation : Closing the existing DAC connection will allow you to open a fresh connection.

Additional Information : Please refer azure docs to learn more about dedicated admin connections and it's limitations - [Dedicated admin connection - DAC](#) ⧉

Classification

Root Cause: Azure SQL DB v2\Connectivity\Login\User Error

How good have you found this content?

😊 🙁