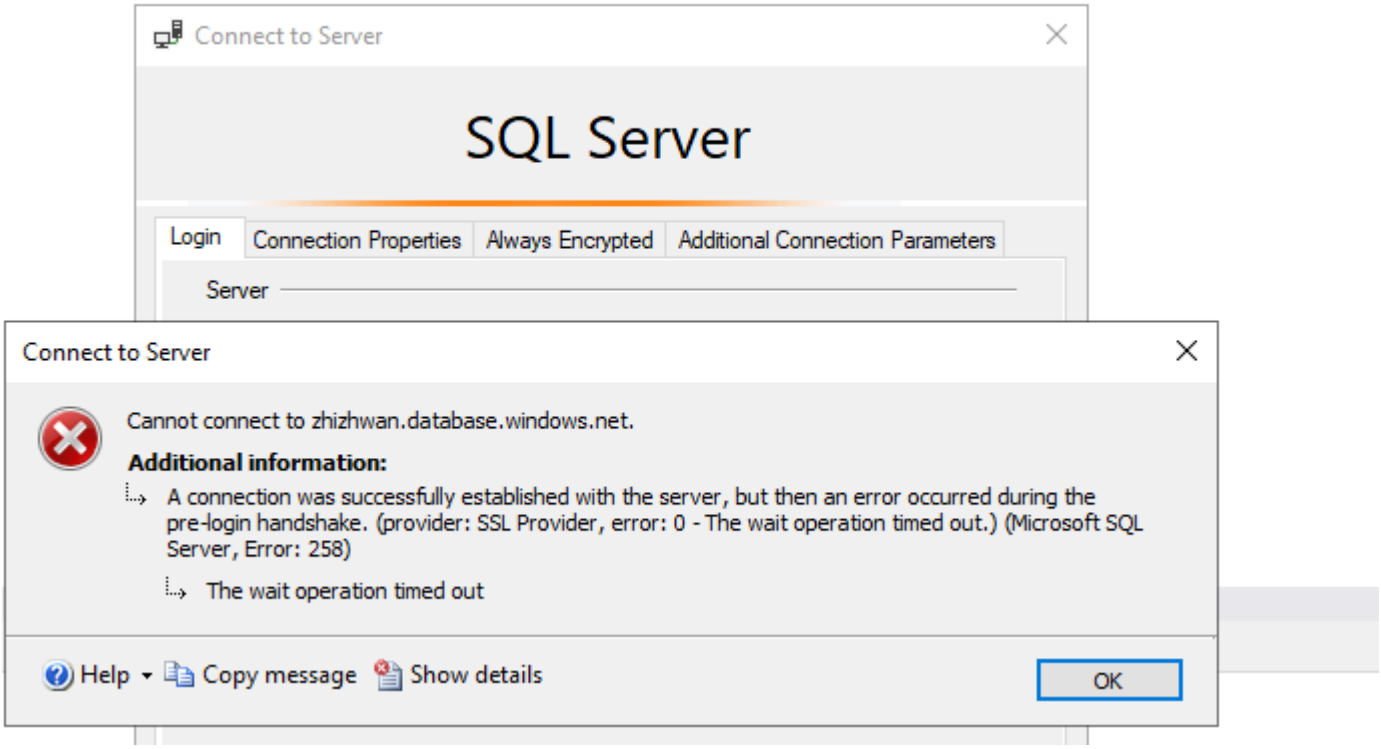
Contained user login timeout due to blocking

Last updated by | Mustafa Ashour | Mar 1, 2023 at 5:40 AM PST

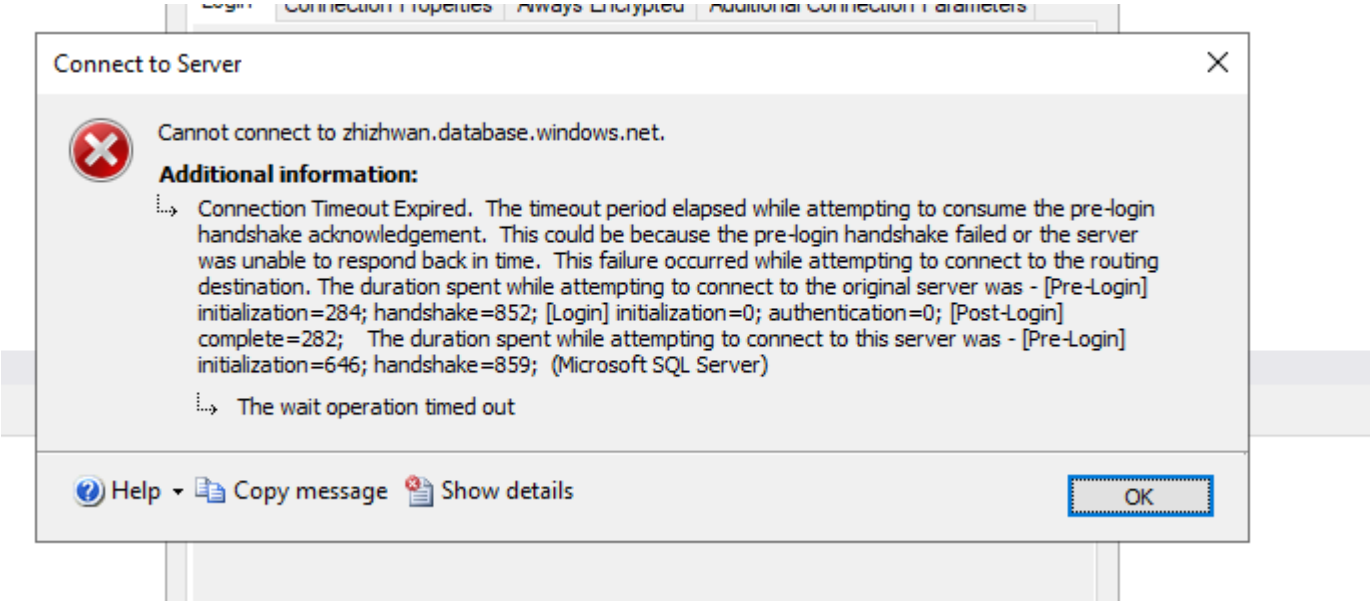
Contents

Issue

The customer is not able to use contained user to connect to Azure SQL DB. The below error messages would appear:



or



Investigation/Analysis

Using Azure support center (ASC)

We don't have insight for this error, but SQL Troubleshooter can capture this error as shown below:

After generating ASC report for the issue and its timeframe; open **Downtime Reasons** tab and scroll-down to **Login Outages** section, you will notice the below outage reasons:

- "xdbhost/0/0 (Success)","xdbhost/26078/15 (FailedToWaitInQueueTimeout)","sqlserver/40613/129 (FindLoginForContainedDBAuthUnexpectedFailure)".
- HighLatencyLogin for "TopWaitStat_LCK_M_SCH_S".

outageStartTime	outageEndTime	durationSeconds	OutageType	OutageReasonLevel1	OutageReasonLevel2	OutageReasonLevel3
2020-11-03 14:49:12	2020-11-03 14:49:27	15	Unplanned	Unknown	["sqlserver/40613/129 (FindLoginForContainedDBAuthUnexpectedFailure)"]	GeoRole: Primary
2020-11-03 16:49:04	2020-11-03 16:49:19	15.01	Unplanned	Unknown	["xdbhost/0/0 (Success)","xdbhost/26078/15 (FailedToWaitInQueueTimeout)","sqlserver/40613/129 (FindLoginForContainedDBAuthUnexpectedFailure)"]	GeoRole: Primary
2020-11-03 16:51:05	2020-11-03 16:51:20	15.01	Unplanned	Unknown	["xdbhost/0/0 (Success)","xdbhost/26078/15 (FailedToWaitInQueueTimeout)","sqlserver/40613/129 (FindLoginForContainedDBAuthUnexpectedFailure)"]	GeoRole: Primary
2020-11-03 16:53:05	2020-11-03 16:53:20	15.01	Unplanned	Unknown	["sqlserver/40613/129 (FindLoginForContainedDBAuthUnexpectedFailure)","xdbhost/0/0 (Success)","xdbhost/26078/15 (FailedToWaitInQueueTimeout)"]	GeoRole: Primary
2020-11-03 16:55:05	2020-11-03 16:55:20	15.01	Unplanned	Unknown	["xdbhost/0/0 (Success)","xdbhost/26078/15 (FailedToWaitInQueueTimeout)","sqlserver/40613/129 (FindLoginForContainedDBAuthUnexpectedFailure)"]	GeoRole: Primary
2020-11-03 16:57:06	2020-11-03 16:57:21	15.01	Unplanned	Unknown	["xdbhost/0/0 (Success)","xdbhost/26078/15 (FailedToWaitInQueueTimeout)","sqlserver/40613/129 (FindLoginForContainedDBAuthUnexpectedFailure)"]	GeoRole: Primary
2020-11-03 16:59:06	2020-11-03 16:59:21	15.01	Unplanned	Unknown	["xdbhost/0/0 (Success)","xdbhost/26078/15 (FailedToWaitInQueueTimeout)","sqlserver/40613/129 (FindLoginForContainedDBAuthUnexpectedFailure)"]	GeoRole: Primary
2020-11-03 17:01:06	2020-11-03 17:01:21	15.01	Unplanned	HighLatencyLogin	TopWaitStat_LCK_M_SCH_S	WaitTime: 00:01:55.3270000
2020-11-03 17:03:07	2020-11-03 17:03:22	15.01	Unplanned	Unknown	["xdbhost/0/0 (Success)","xdbhost/26078/15 (FailedToWaitInQueueTimeout)","sqlserver/40613/129 (FindLoginForContainedDBAuthUnexpectedFailure)"]	GeoRole: Primary
2020-11-03 17:05:07	2020-11-03 17:05:22	15.01	Unplanned	Unknown	["xdbhost/0/0 (Success)","sqlserver/40613/129 (FindLoginForContainedDBAuthUnexpectedFailure)","xdbhost/26078/15 (FailedToWaitInQueueTimeout)"]	GeoRole: Primary
2020-11-03 17:07:08	2020-11-03 17:07:23	15.01	Unplanned	Unknown	["xdbhost/0/0 (Success)","xdbhost/26078/15 (FailedToWaitInQueueTimeout)","sqlserver/40613/129 (FindLoginForContainedDBAuthUnexpectedFailure)"]	GeoRole: Primary
2020-11-03 17:09:08	2020-11-03 17:09:23	15.01	Unplanned	Unknown	["xdbhost/0/0 (Success)","sqlserver/40613/129 (FindLoginForContainedDBAuthUnexpectedFailure)","xdbhost/26078/15 (FailedToWaitInQueueTimeout)"]	GeoRole: Primary
2020-11-03 17:11:08	2020-11-03 17:11:23	15.01	Unplanned	Unknown	["xdbhost/0/0 (Success)","xdbhost/26078/15 (FailedToWaitInQueueTimeout)","sqlserver/40613/129 (FindLoginForContainedDBAuthUnexpectedFailure)"]	GeoRole: Primary
2020-11-03 17:13:09	2020-11-03 17:13:24	15.02	Unplanned	Unknown	["xdbhost/0/0 (Success)","xdbhost/26078/15 (FailedToWaitInQueueTimeout)","sqlserver/40613/129 (FindLoginForContainedDBAuthUnexpectedFailure)"]	GeoRole: Primary
2020-11-03 17:15:09	2020-11-03 17:15:24	15	Unplanned	Unknown	["sqlserver/40613/129 (FindLoginForContainedDBAuthUnexpectedFailure)"]	GeoRole: Primary
2020-11-03 17:17:09	2020-11-03 17:17:24	15.01	Unplanned	Unknown	["xdbhost/0/0 (Success)","sqlserver/40613/129 (FindLoginForContainedDBAuthUnexpectedFailure)"]	GeoRole: Primary
2020-11-03 17:19:10	2020-11-03 17:19:52	42.63	Unplanned	Unknown	["xdbhost/0/0 (Success)","sqlserver/40613/129 (FindLoginForContainedDBAuthUnexpectedFailure)","sqlserver/0/0"]	GeoRole: Primary

Using Kusto

1. From **MonLogin**, you can see a long login with total time more than 14s due to long wait time on schema lock(LCK_M_SCH_M or LCK_M_SCH_S). (**Note:** The error and stat could be different)

```
MonLogin
| where TIMESTAMP >= datetime(2018-05-23 09:00:00)
| where TIMESTAMP <= datetime(2018-05-23 14:00:00)
| where logical_server_name =~ "servername" and database_name =~ "dbname"
| where package == "sqlserver"
| where total_time_ms > 14000
| where error > 0
| project originalEventTimestamp, LogicalServerName, database_name, AppName, package, error, state, total
```

2. From **MonBlockedProcessReportFiltered**, you can summarize the blocking count by **lock_mode** and see the blocking happens on schema lock during issue time.

```
MonBlockedProcessReportFiltered
| where TIMESTAMP >= datetime(2018-05-23 09:00:00)
| where TIMESTAMP <= datetime(2018-05-23 14:00:00)
| where AppName =~ "appname" and database_name =~ "dbname"
| project TIMESTAMP, lock_mode, blocked_process_filtered
| summarize count(), min(TIMESTAMP), max(TIMESTAMP) by lock_mode
```

3. From **MonBlockedProcessReportFiltered**, you can get the blocking details. A blocked process is holding schema lock which blocks the new contained user login, while blocking header is a client session.

```
MonBlockedProcessReportFiltered
| where TIMESTAMP >= datetime(2018-05-23 09:00:00)
| where TIMESTAMP <= datetime(2018-05-23 14:00:00)
| where AppName =~ "appname" and database_name =~ "dbname"
| where lock_mode == "SCH_M" or lock_mode == "SCH_S"
| project TIMESTAMP, lock_mode, blocked_process_filtered
```

Blocking header(spid: x) -> blocked session(spid: y) hold a schema lock -> Other new contained user logins are blocked.

Mitigation

Check open transactions on the blocking header to see why transaction is running too long. If the issue is happening now, check with customer if they can kill the blocking header to quickly mitigate it.

RCA Template

Summary of Impact: Between <*StartTime*> and <*EndTime*> on <*dd/mm/yyyy*>, contained user connections to database <*database Name*> on server <*server name*> failed due to schema lock wait timeout.

Root Cause: Logins are failing due to FindLoginForContainedDBAuthUnexpectedFailure. From telemetry, we see that the primary wait type is LCK_M_SCH_S. This is the schema stability lock that the login process must obtain on login metadata in the database. When this lock cannot be obtained, xdbhost times out with FailedToWaitInQueueTimeout error.

Mitigation: Kill the blocking header based on customer's agreement or solve the blocking by modifing transactin logic.

More Information

Note: Please don't share the below information with customer.

How to identify if login is using cache or not?

xodbc_authentication_type column in MonLogin will tell whether the login lookup is from the cache or not.

value	Type
0	Login was through Contained User
1	Login was through Login Cache
2	Login was through XODBC

Contained users are not cached in XODBC cache as they are locally available from the DB that you are logging in. Only users/logins stored in the Master DB are cached in the xodbc login cache. Lifetime of the cache is 5 minutes.

Root Cause Classification

Cases resolved by this TSG should be coded to the following root cause:
Root Cause: Azure SQL v3\Connectivity\Disconnects\Other

How good have you found this content?