

# transient 'transport-level error' connectivity issue SQLDB, DW

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## Issue

Customer may face with transient connectivity issues happen in Azure SQL Database/Azure Synapse Analytics/SQL server connectors. Here we will provide some knowledge and background about that.

And two major error messages are:

A transport-level error has occurred when receiving results from the server. (provider: TCP Provider, error: 0 - **An existing connection was forcibly closed by the remote host.**)

A transport-level error has occurred when receiving results from the server. (provider: TCP Provider, error: 0 - **The semaphore timeout period has expired.**)

## Root cause

These two error message both indicate to a Network error, not a SQL Server timeout. There is apparently some sort of network problem between ADMS service and the SQL Server.

Usually it will happen when the job (read/write from SQL) takes a very long time.

## Suggestion

The network issue is related to two component, either network issue or SQL server/DW issue.

So for CSS, if customer raised the issue, it usually contains a bunch of failed runs. You should check the average run time of those runs. If they all failed very fast (10~ mins or so), it's definitely due to SQL server/DW. Since in most of the time, network issue will not show up in a short period of time. If the jobs failed after running for a long periods (1+ hours), then it could be either SQL server issue or network issue.

For SQL server/DW issue, you should create a collab ticket to SQL/DW team before reaching out to ADMS. And ask them to check the health status during the job run, including memory, I/O, concurrent connections, exceptions.

For network issue, you should check whether customer uses Azure IR or self-hosted IR. If Azure IR, since Azure IR will use azure batch to create a node for computing, the node will automatically recycled once the job is finished, Azure network team may not be able to find any evidence. But if self-hosted IR, please involve Azure Network team to get network trace during job failed, and find out any issues in network.

## Mitigation



For our team, when these kind of network issue occurs, we have no very good way to provide. So you don't need to open an ICM, the answer will be the same as TSG.

First of all, please check that we guarantee that at least 99.9% of the time, all activity runs will initiate within 4 minutes of their scheduled execution times.

[https://azure.microsoft.com/en-us/support/legal/sla/data-factory/v1\\_2/](https://azure.microsoft.com/en-us/support/legal/sla/data-factory/v1_2/) 

If the SLA meet, we should explain to customer RCA might not be found, and set customer expectation with retry and timeout setting as workaround, however, we still need to follow the steps below to move forward to help our customer as much as possible.

If not, there are a few mitigations that can help customer to decrease the occurrence of this kind of issues.

1. Since this kind of issue always happens in Source, please suggest customer to apply 'parallel copy' and 'dynamics range' in Source. This way it can faster the whole read performance and increase the stability. <https://docs.microsoft.com/en-us/azure/data-factory/connector-azure-sql-database?tabs=data-factory#parallel-copy-from-sql-database> 
2. Please implement retry policy and timeout (timeout should be a little longer than normal successful jobs' run time) in pipeline level, then it can fail fast and do retry for those issues. <https://docs.microsoft.com/en-us/azure/data-factory/concepts-pipelines-activities#activity-policy> 
3. Split the data volume/size (for example, use query mode). Use several Copy activity to read and write the whole data.

## How good have you found this content?

