

# Error 33155 State 1

Last updated by | Vitor Tomaz | Dec 15, 2021 at 2:34 AM PST

## Handling Azure AD Error - 33155

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### Issue

Error 33155 typical occurs when Client stopped talking to AAD server, failing Active Directory auth to SQL DB because the client is not being able to grab an authentication token from Active Directory (AD) or Azure Active Directory (AAD).

### Analysis/Triage

From the server side, login will fail with error code 33155 (visible in MonLogin).

From the client side, error will fail with error code 0xCA82EFD

```
// MessageId: ERROR_ADAL_INTERNET_CANNOT_CONNECT
```

```
// MessageText:
```

```
// The attempt to connect to the server failed.
```

```
// #define ERROR_ADAL_INTERNET_CANNOT_CONNECT ((DWORD)0xCA82EFDL)_
```

This is a clear indication that one or more endpoints for authentication are blocked, see "Troubleshooting" and "Required Endpoints" sections below.

### Troubleshooting

When SQL Client uses AD Authentication, there are some extra calls the client needs to do to Azure Active Directory and to the customers' Active Directory in order to generate a token to be sent as part of the LOGIN packet. This diagram explains: [<link>](#)

If the calls client->AAD or client->(on premises AD) fail, client will either timeout or generate an invalid token which SQL DB will reject. At this point should be clear that the problem is within customer configuration and not with SQL DB, however more often than not customer needs hints on where to look next. Most common case is client communication to AD/AAD is being blocked by a firewall or NSG. To confirm

**STEP 1** Ask the customer to take a packet capture of the repro of the problem. (Use [Azure SQL Connectivity Checker](#))

**STEP 2** Open the trace (netmon, wireshark should work) Identify the SQL login traffic, look for the last login: in case of Proxy usage, the last login will go to only Gateway thus only using port 1433. If traffic is redirected, it will use the port of the DB node. If redirected, use Kusto MonLogin to find out port of the DB node (SQL Gateway/Connectivity expert knows how to identify this).

**STEP 3** - Once backend port is identified, filter the trace. In this example, customer logins were getting redirected to DB Node 196.

**STEP 4** Find the first TCP message of the *last* SQL connection (the redirected one in case of redirection). The first TCP message is always a SYN packet (Flags=CE.....S.), first one on screenshot above Note: Network captures is always noisy, it really helps if the machine were the trace is taken is not doing anything else 😊

**STEP 5** - You are seeing a TDS handshake, and SQL Client will try to go to AAD on the client-side Login phase, right after the TLS handshake. Note the "SSL Application Data" on Frames 5886, 5892, 5939 - This is the TLS handshake happening and the next expected message is a Login packet from client. *However in AAD case, a Client will initiate calls on port 443 to get an AuthN token before sending the Login packet.* You should see those next. In this case, client (172.30.237.4) started an AAD HTTPS (port 443) connection to 10.65.8.246 on frame 5945 but that IP rejected it (TCP RST, frame 5945 in yellow). This typically means that a firewall on 10.65.8.246 explicitly rejected the connection. Next step is to let customer know that the client VM needs to talk to their Active Directory sitting on 10.65.8.246 and they need to debug further to find out where the firewall is.

**Pro tip:** Network Monitor has Color Filters (CTRL+D). This case is so typical that I just have a rule to color all TCP RSTs in yellow:

**Pro tip:** Network Monitor has Color Filters (CTRL+D). This case is so typical that I just have a rule to color all TCP RSTs in yellow:

Display Filter: `Tcp.Port == 443 or Tcp.Port == 1433 or Tcp.Port == 11196`

Frame Summary - `Tcp.Port == 443 or Tcp.Port == 1433 or Tcp.Port == 11196`

Frame Number	Time Date Local Adjusted	Time Offset	Process Name	Source	Destination	Protocol Name	Dest Port	Description
5820	9:52:34 AM 1/31/2018	20.3425571		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5821	9:52:34 AM 1/31/2018	20.3425722		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5822	9:52:34 AM 1/31/2018	20.3426630		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5823	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5824	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5825	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5826	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5827	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5828	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5829	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5830	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5831	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5832	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5833	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5834	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5835	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5836	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5837	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5838	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5839	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5840	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5841	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5842	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5843	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5844	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5845	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5846	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5847	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5848	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5849	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5850	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5851	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5852	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5853	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5854	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5855	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5856	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5857	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5858	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5859	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5860	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5861	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5862	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5863	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5864	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5865	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5866	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5867	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5868	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5869	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5870	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5871	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5872	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5873	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5874	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5875	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5876	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5877	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5878	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5879	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5880	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5881	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5882	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5883	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5884	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5885	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5886	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5887	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5888	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5889	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5890	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5891	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5892	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5893	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]Flags=CE.....S., SrcPort=54656, DstPort=11196, PayloadLen=0, Seq=313
5894	9:52:34 AM 1/31/2018	20.3427233		172.30.237.4	database.windows.net	TCP		TCP: [Bad CheckSum]

Using PowerShell, customer can check connectivity from application to the following endpoints: AAD endpoint for password and integrated auth: tnc [login.windows.net](https://login.windows.net) -port 443 AAD endpoint for Universal with MFA auth: tnc [login.microsoftonline.com](https://login.microsoftonline.com) -port 443 [OPTIONAL, check only if domain is Federated, see below how to figure out endpoint] Endpoint to on-premises Active Directory Federation Server (ADFS), this is required for all auth modes when domain is Federated: tnc <customer specific="" adfs="" endpoint=""> -port 443

This is the minimum connectivity requirement, it's possible that additional endpoints are required, which depends on customer's AAD and on-premises AD setup. We have seen in the past issues due to blocked endpoints for certificate revocation list (CRL). Capturing and debugging network traces is what usually helps in those situations.

### How to figure out customer's ADFS endpoint?

This may be determined from "Azure AD Explorer" in ASC report for your CRI: Open Azure AD Explorer tab -> select Domains tab on the left -> select Federation tab on top -> Look at Federation Brand Name column (in this case it's [sts.firstam.com](https://sts.firstam.com)) Then, test connectivity using: tnc [sts.firstam.com](https://sts.firstam.com) -port 443

### Public Doc Reference

<https://docs.microsoft.com/en-us/azure/sql-database/sql-database-aad-authentication>

### Internal Reference

TSG shared above was from Product Team and available for TSG with limitations. If identified the TSG contains [Internal Only] information, please open a repair item to fix it.

### Classification

Root cause Tree - Security/Active Directory Authentication

### How good have you found this content?

