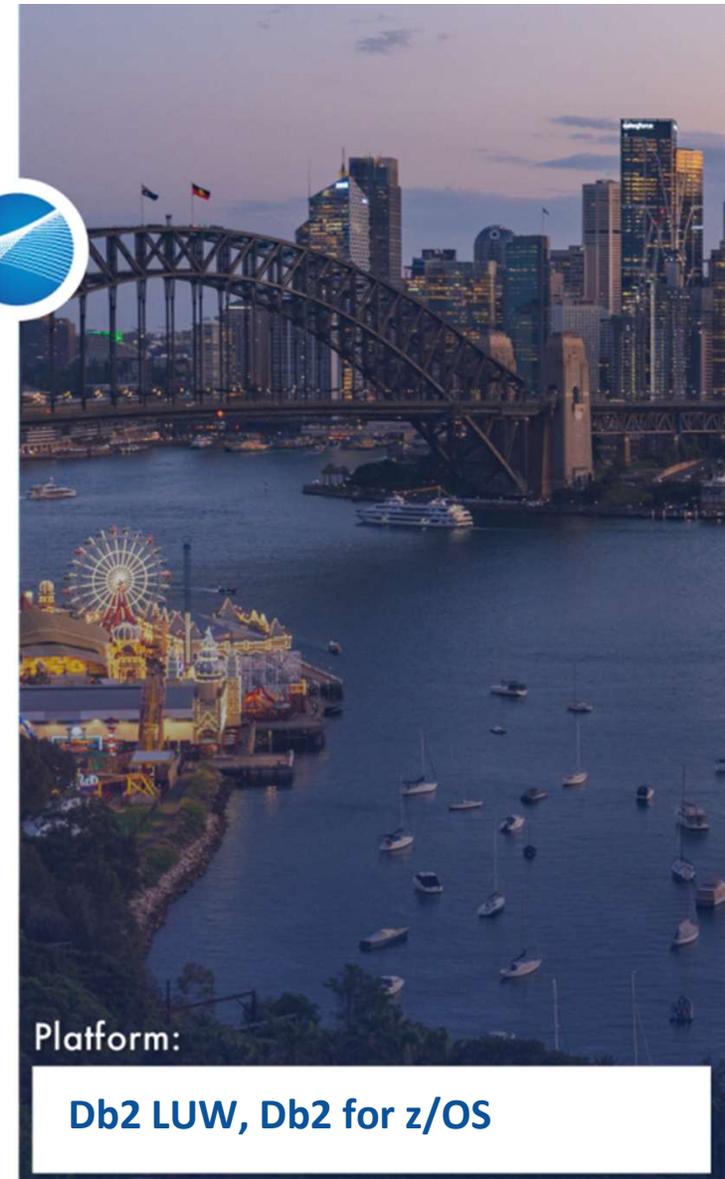# IDUG

2026

Sydney | March 16 - 18

AU Db2
TECH
CONFERENCE

Latest/Greatest in Db2 Connect Driver Version 12.1 while connecting to Db2 z/OS 13 and Db2 LUW 12.1

Shilu Mathai, *Rocket Software*

Session Code: B12

Platform:

Db2 LUW, Db2 for z/OS

AGENDA

- Open Telemetry Support
- ARM 64 bit driver binary for MAC M1/M2/M3
- License propagation to Db2 for z/OS
- Reconnect without acr/wlb
- TLS support for resync port
- JRE 25 support and minimum JRE requirement 1.8
- TLS Hostname validation enabled by default
- JWT Authentication support for Db2 z/OS
- Capability to choose certificate from keystore
- Other Important Enhancements

Open Telemetry Support in JDBC driver - Architecture
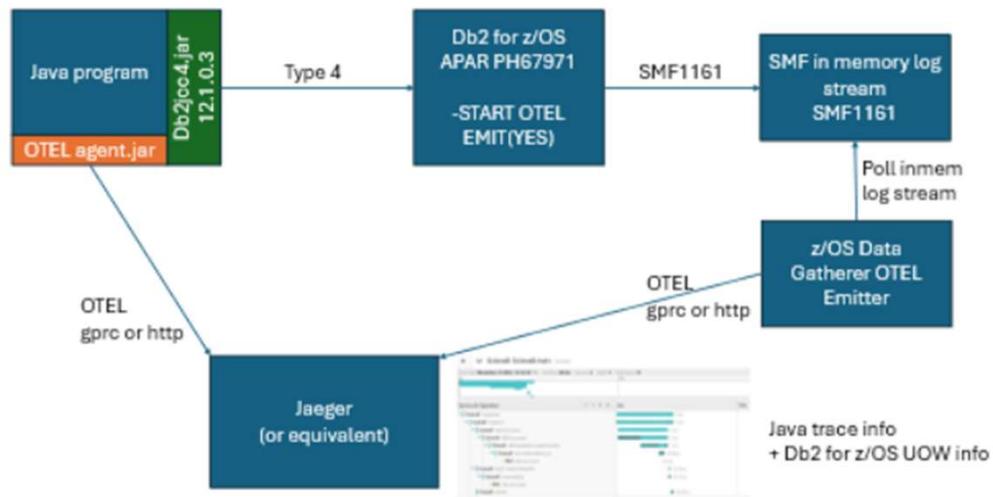
Open Telemetry Support in JDBC driver

- Type 4 driver supports it in 12.1.3.0(4.36) release

- Type 2 driver supports it in 4.36.10 available through PTFs

- Db2 for z/OS server should be configured with open telemetry

- No application code change is required to enable open telemetry from application side

- JDBC driver will pick the w3 trace context from the java application environment and pass it to Db2 for z/OS

Open Telemetry Support in JDBC driver

- Blogs available on how to enable open telemetry through JDBC driver
https://community.ibm.com/community/user/blogs/jrn-thyssen1/2025/12/16/practical-guide-to-opentelemetry-tracing-for-java1

- Open Telemetry support for non-java drivers like .NET and python is planned on 12.1.6.0 (November 2026)

ARM 64 bit binary for MAC M1/M2/M3

- 64 bit ARM binary is available for MAC from Db2 Connect driver version 12.1

- INTEL driver binary was available for MAC till Db2 Connect driver version 11.5

- INTEL driver binary can be installed in ARM machines but all dependant libraries has to be intel binaries. This makes the installation complex

License propagation to Db2 for z/OS

- Drivers will send information about the Db2 Connect license used by the application to Db2 for z/OS during connect.

- This license information will be available in the new DDF trace record (IFCID 417) at the Db2 for z/OS server

- Same license information will be available in the Omegamon UI as well.

- Above license information can be reconciled with the Db2 Connect subscription purchased by the customer to ensure license compliance

License Information Propagated

- License Type
  - Client Side
  - Server Side
  - Both

- License Editions
  - EE – Enterprise Edition
  - AS – Application Server Edition
  - AAS – Advanced Application Server Edition
  - ZS – Unlimited Edition for System z
  - AZS – Advanced unlimited Edition for System z
  - TL – Trial License
  - LU – Limited Use or Restricted License

License Information Propagated

- Client Side License Version - 1201

- Server Side License Version – 1205

- Trial License Expiry Date

Behaviour changes with JDBC driver license in 12.1

- Customer need to download new Db2 Connect license for non-java drivers from PPA when they move to major Db2 Connect versions(Example: 11.1 to 11.5 or 11.5 to 12.1)

- With 12.1, for jdbc driver as well, new license need to be downloaded from PPA.

- Blogs on this behaviour change
https://www.idug.org/news/db2-connect-version-12-is-now-available--important-changes-you-should-know
https://community.ibm.com/community/user/blogs/shilu-mathai2/2024/11/15/points-to-consider-while-upgrading-to-db2-connect?hlmlt=BL
https://www.ibm.com/support/pages/node/7176210

Reconnect without acr/wlb configured

- Non-java driver will retry once to the same Db2 Server if communication error(-30081) occurs even if acr or wlb is not configured

- This is to reestablish the connection in case of network failures even in non-sysplex or purescale environment.

- To disable this feature, one can set maxReconnectRetries keyword value to 0 in db2dsdriver.cfg configuration file.

TLS Support for resync port

- xa_recover returns the xids those are in doubt and resync host/port information to driver in case of in doubt transactions

- Driver tries to establish a non encrypted connection to resync host/port to rollback the xa transactions those are in doubt

- With this feature, driver will now establish encrypted connection(TLS) to resync host/port if the primary connection where xa_recover happens is encrypted. If this attempt fails driver will establish a non encrypted connection

- Driven will establish non encrypted connection to resync host/port if the primary connection is non encrypted.

JRE 25 support and minimum JRE req of 1.8

- JDBC driver now supports JRE 25

- Minimum JRE requirement is 1.8

- 12.1 driver is built with JDK 21

TLS Hostname validation enabled by default

- Hostname validation during TLS handshake was not enabled by default till 11.5.9.0

- From 12.1, hostname validation is enabled by default

- With this, driver will check whether the hostname in the Db2 Server certificate matches with the Db2 Server hostname that the driver is connecting to during TLS handshake during connection by default.

- If the Db2 Server certificate does not have the hostname, one can get a certificate with the hostname or configure sslclienthostnamevalidation keyword value to OFF

TLS Hostname validation enabled by default

- Blogs on this behaviour change
https://www.idug.org/news/db2-connect-version-12-is-now-available--important-changes-you-should-know
https://community.ibm.com/community/user/blogs/shilu-mathai2/2024/11/15/points-to-consider-while-upgrading-to-db2-connect?hlmlt=BL
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JWT Authentication support against Db2 for z/OS

- This authentication method replaces user id and password based authentication with tokens

- Need to ensure token support is enabled at the Db2 for z/OS server

- Tokens are generated outside Db2 and applications are expected to pass it to the driver during connect.

- JWT Authentication is already supported against Db2 for LUW from 11.5.4

Properties for configuring JWT authentication

- AccessTokenType property should be set to JWT

- AccessToken property should contain the actual JWT token

- Authentication property should be set to token

Capability to choose certificate from keystore

- If there are more than one client certificate in keystore, application can now specify the certificate that need to be used as client certificate during mutual or certificate authentication

- sslClientCertificateAlias property can be set to the label or alias name of the client certificate that need to be picked up

- This feature is already supported in non-java driver. SSLClientLabel is the equivalent property for non-java driver.

Enabling automatic certificate selection

- If there is only one client certificate in keystore and application has not specified SSLClientLabel property, driver will that certificate automatically during mutual or certificate authentication

- This feature is already supported in java driver.

Other Important Enhancements

- JDBC 4.3 specification is fully supported

- Db2connectactivate now capable of specifying global configuration property file using –dsDriverCfgFile option

- currentLockTimeout property is now supported against Db2 for z/OS as well

- New property to stop the IBM Data Server Driver for JDBC and SQLJ trace when errors occur. Specify the list of comma separated error codes in db2.jcc.stopTraceOnDiagErrorCodes property

Other Important Enhancements

- To reduce unnecessary network flow, when com.ibm.db2.jcc.DB2ConnectionPool.testConnectionOnCheckin property is set to true and enableSysplexWLB property is set to true, automatic connection alive checking is disabled when application releases a connection to a pool

- The db2.jcc.traceFileGlobalIdentifier property specifies a suffix(PID) that is added to the trace file name so that applications that use the same IBM Data Server Driver for JDBC and SQLJ configuration properties file and run in different Java virtual machines (JVMs) write trace data to different trace files

- Support for MongoDb 8.x client applications against Db2 for LUW

Other Open Source driver/orm enhancements

- Django 5.2 support
- Node.js v24.x support
- Rails 7.2x and Ruby 3.3x support
- .NET 10 support
- .NET 9 and .NET EF Core 9 support
- Visual Studio 2022 Support

Enhance seamless failover for lob during MRI

- If MRI is on and lob datatype is used, during chaining driver will check whether connection is alive using PingDb before actually starting chaining. If connection is broken due to dynamic thread recycling, driver first establish the connection and then start the chaining.
- If chaining is started and connection gets broken, there is no way for driver to replay the failed chaining with the data as the data is already given to DRDA before the failure.
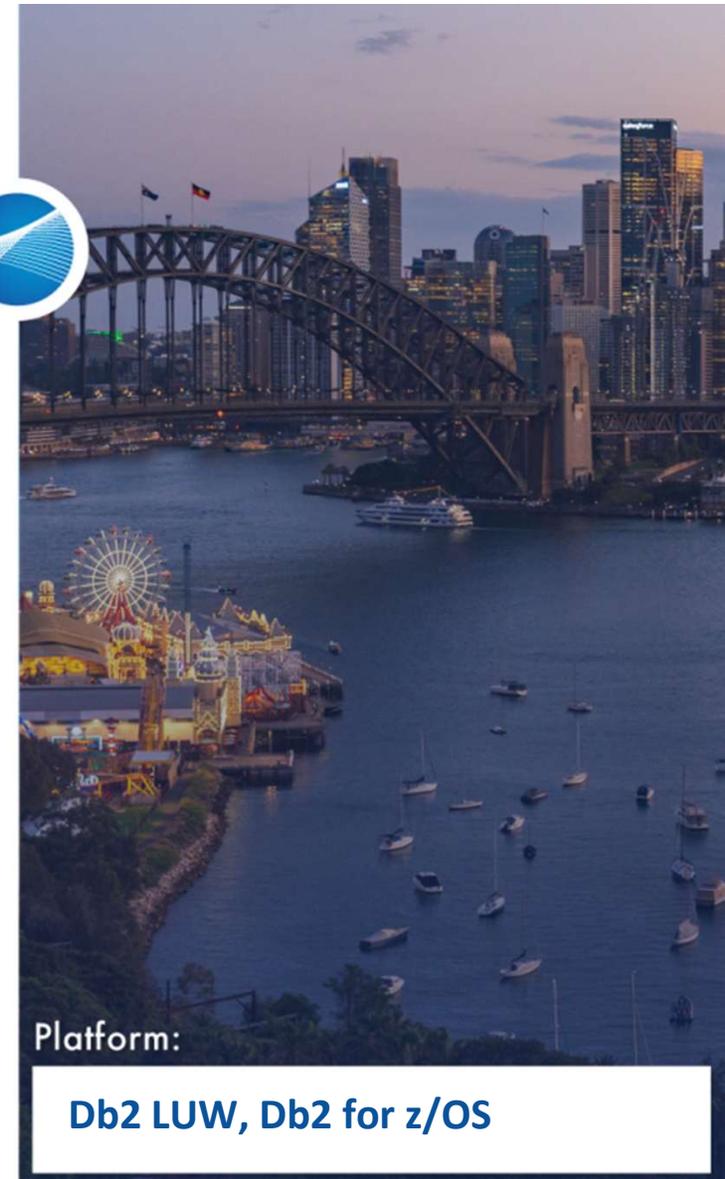
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