Java Reactive Database Driver for Db2

Debugging Guide

Version 1.0.0

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Contents

1. Introduction

This document explains how to enable debug logging for the reactive drive and study the log file for failures or any other problems you may face.

2. Debug Logging Configuration File

Java Reactive Database Driver for DB2 uses Simple Logging Facade for Java (http://www.slf4j.org/). Any logging framework implementing slf4j abstraction can be used with reactive driver. The rest of the document assumes use of logback (http://logback.qos.ch/) logging framework.

Logback looks for logback.xml configuration in the directories specified in the CLASSPATH environment variable. Below is a sample content for logback.xml. For more details on the various XML elements please refer logback documentation (http://logback.qos.ch/documentation.html).

```
<?xml version="1.0" encoding="UTF-8"?>
<configuration>
  <appender name="FILE" class="ch.qos.logback.core.FileAppender">
    <file>r2dbc_db2.log</file>
    <encoder>
      <Pattern>%d{HH:mm:ss.SSS} [%thread] %-5level %logger{36} - %msg%n</Pattern>
    </encoder>
  </appender>

  <appender name="STDOUT" class="ch.qos.logback.core.ConsoleAppender">
    <layout class="ch.qos.logback.classic.PatternLayout">
      <Pattern>%d{HH:mm:ss.SSS} [%thread] %-5level %logger{36} - %msg%n</Pattern>
    </layout>
  </appender>

  <logger name="com.ibm.db2.r2dbc" level="DEBUG"/>

  <turboFilter class="ch.qos.logback.classic.turbo.MarkerFilter">
      <Name>parsed_object_filter</Name>
      <Marker>parsed_object</Marker>
      <OnMatch>DENY</OnMatch>
  </turboFilter>

  <root level="ERROR">
    <!-- <appender-ref ref="STDOUT"/> -->
    <appender-ref ref="FILE"/>
  </root>
</configuration>
```

3. Enabling Debug Logging

To enable debug logging, make sure level is set to DEBUG for the package com.ibm.db2.r2dbc, as shown below.

```
<logger name="com.ibm.db2.r2dbc" level="DEBUG"/>
```

Enabling debug logging prints more information on how the client requests are processed in the log file. It also mentions the messages sent to the server and responses received from the server. This will help debug for the issues faced by the driver.

To disable debug logging, change the level to ERROR for the package com.ibm.db2.r2dbc as shown below.

```
<logger name="com.ibm.db2.r2dbc" level="ERROR"/>
```

4. Enabling DRDA Parsed Object Logging

Reactive drive logging supports turbo filter. There is one turbo filter defined with name "parsed_object_filter". This filter is used to decide whether the binary stream sent to the server and received from the server must be printed in parsed object form. This will help understand the actual data values sent to the server and received from the server. Some sensitive data like user password will be masked from being printed in the log file. Because of the formatted printing of the data, objects may spawn several pages. When needed, this parsed object printing can be enabled or disabled to help debugging.

To enable parsed object printing use, ALLOW flag for on match operation as shown below.

```
<turboFilter class="ch.qos.logback.classic.turbo.MarkerFilter">
    <Name>parsed_object_filter</Name>
    <Marker>parsed_object</Marker>
    <OnMatch>ALLOW</OnMatch>
</turboFilter>
```

To disable parsed object printing use, DENY flag for on match operation as shown below.

```
<turboFilter class="ch.qos.logback.classic.turbo.MarkerFilter">
    <Name>parsed_object_filter</Name>
    <Marker>parsed_object</Marker>
    <OnMatch>DENY</OnMatch>
</turboFilter>
```

5. Collecting Reactive Driver Log File for Customer Support

If you need Customer Support in the event you faced any driver issues, you will be asked to provide debug log file of the driver for the scenario causing the issue. Please use the configuration file template shown in section 2 above for the reactive driver. Enable logging to DEBUG level. Enable parsed object printing using ALLOW flag. Specify the file name in the appender section as shown below.

```
<appender name="FILE" class="ch.qos.logback.core.FileAppender">
  <file>r2dbc_db2.log</file>
```

Run the scenario causing driver issue. Stop and save the log file. Send the same along with your queries to the Customer Support.