Updates that apply to IBM® DB2® Analytics Accelerator Loader for z/OS® V2R1 User's Guide (SC27-6777-00)

Date of change: September 2016
Topic: Multiple
Change description: Documentation changes made in support of PTF UI40805 APAR PI63948 and PTF UI40787 APAR PI65565 Direct access to Oracle via DRDA

- Topic: “What's new” in Ch. 1 Overview
- Topic: “Worksheets: Gathering parameter values for Tools Customizer” in Ch. 2 Preparing to customize
- Topic: “Configuring access to data in an Oracle database” in Ch. 3 Customizing DB2 Analytics Accelerator Loader
- Topic: “Oracle authentication” in Ch. 10 Administering the Accelerator Loader server

Topic: “What’s new” in Ch. 1 Overview
Add the following description:

To access Oracle data, you can configure the Accelerator Loader server to access Oracle’s application server using a DRDA connection. Using DB2 LUW AESE or InfoSphere Federation Server is no longer required.

Topic: “Worksheets: Gathering parameter values for Tools Customizer” in Ch. 2 Preparing to customize
In the section, “Task: Create the server and the server components (required)”, add the following new parameters:

Oracle DRDA application server provider

Specifies the four-character identifier (SUBSYSID) for the Oracle DRDA application server provider. To use DRDA to access Oracle data to load to the accelerator, you must specify the server name.

Required?	No
Discovered?	No
Default value:	No default

Oracle application server domain name

Specifies the domain name services identification for the remote Oracle DRDA application server provider. If you want to use DRDA to access Oracle data to load to the accelerator and you have specified the Oracle DRDA application server provider, then you must specify the domain name.

Required?	No
Discovered?	No
Default value:	No default

Oracle listener alias name

Specifies the alias of the Oracle listener server that Oracle will use to connect to the database associated with this server name. If you want to use DRDA to access Oracle data to load to the accelerator and you have specified the Oracle DRDA application server provider, then you must specify the listener server.

Required? No
Discovered? No
Default value: No default

Oracle listener port number

Specifies the listener server port number for the specified listener alias name. If you want to use DRDA to access Oracle data to load to the accelerator and you have specified the Oracle application server provider, then you must specify the Oracle listener port number.

Required? No
Discovered? No
Default value: No default

Topic: "Configuring access to data in an Oracle database" in Ch. 3 Customizing DB2 Analytics Accelerator Loader

The following topic and sub-topics will be added under "Configuring access to DRDA data sources (optional)".

Configuring access to data in an Oracle database

Configuring the server parameter file
Mapping DECFLOAT fields

Configuring access to data in an Oracle database

To access an Oracle database directly using the Oracle Database Provider for DRDA, you must configure the server parameter file and Server Event Facility rules.

About this task

Perform this task to configure access to an Oracle database directly using the Oracle Database Provider for DRDA.

This task requires use of the Oracle Database Provider for DRDA. To configure access to an Oracle database using DB2 LUW AESE or InfoSphere Federation Server, see "Configuring access to DRDA data sources (optional)".

Ensure that you are using a supported version of the following software:

- Oracle Database Provider for DRDA and Oracle Database 12.1.0.2.0 or later.
  Note: See **Oracle Database Provider for DRDA User's Guide (http://docs.oracle.com/cd/E57425_01/121/DRDAS/install_config.htm**) for information on setting up Oracle Database Provider for DRDA.
- DB2 V11 for z/OS

Procedure
To configure access to data in an Oracle database using an Oracle Database Provider for DRDA connection, perform the following tasks.

1. Configuring the server parameter file
   Enable the Oracle Database Provider for DRDA access method in the server parameter file.
2. Mapping DECFLOAT fields (optional)
   DECFLOAT is not directly supported in IBM DB2 Analytics Accelerator Loader for z/OS. However, you can create a view in the Oracle database to remap the DECFLOAT data type. You can then load data from the Oracle view into Accelerator Loader.
3. Configuring Server Event Facility rules
   Configure Server Event Facility (SEF) rules to provide access to an Oracle database. This information is provided in Ch. 10 **Administering the Accelerator Loader server** in the topic "Oracle authentication."

Configuring the server parameter file
Enable the Oracle Database Provider for DRDA access method in the server parameter file.

For configuring access to an Oracle database using the Oracle Database Provider for DRDA, use the Tools Customizer to specify the Oracle-specific fields. This step is performed during product customization; the fields are located in the **Create the server and the server components** task on the Product Parameters panel.

Tools Customizer uses the values that you provide to generate a `DEFINE DATABASE` statement that defines the Oracle database to the Accelerator Loader server, as shown in the following example:

```
"DEFINE DATABASE TYPE(ORACLE)"       ,
                 "NAME(ORD3)"        ,
                 "DOMAIN(ORGATEWAY)" ,
                 "LOCATION(DB2DS4M)" ,
                 "DDFSTATUS(ENABLE)" ,
                 "PORT(1446)"        ,
                 "CCSID(1047)"       ,
                 "IDLETIME(110)"     ,
```

This statement is located in *hlq*.SHLVEXEC(*hlvid*IN00), where *hlvid* represents the name of the Accelerator Loader server started task that was customized by Tools Customizer.

The following table describes the parameters used to define an Oracle database:

Tools Customizer parameter	DEFINE DATABASE parameter	Description and valid values
	TYPE	The type of subsystem that you are configuring. When connecting directly to the Oracle database using the Oracle Database Provider for DRDA, this value must be **ORACLE**.
Oracle DRDA application server provider	NAME	An alphanumeric identifier for the Oracle DRDA application server provider. This value identifies this DRDA definition to the Accelerator Loader server. In the example, ORD3 is the name by which this Oracle instance is known to the server.
Oracle application server domain name	DOMAIN	The DNS name of the IP address for the Oracle DRDA provider server connection. In the example, ORGATEWAY is the Linux machine where the Oracle Database Provider (Gateway) resides.
Oracle listener alias name	LOCATION	The alias of the Oracle listener server that Oracle will use to connect to the Oracle database associated with the specified domain/port. In the example, DB2DS4M is the alias.
	DDFSTATUS	Specifies whether the subsystem is enabled or disabled in the Accelerator Loader server. Valid values are as follows: • ENABLE indicates that the server will connect to the data source. (Default) • DISABLE indicates that the server will not connect to the data source, and therefore will not use the entry as a data source.
Oracle listener port number	PORT	The listener server port number for the specified listener alias name. In the example, port 1146 is the port on the ORGATEWAY for the Oracle listener server.
	CCSID	The code page of the Oracle database. Default value is **500**. To modify this value, you must edit your *hlvid*IN00 member. In the example, the code page is defined as 1047.
	IDLETIME	Default value is 0.

Mapping DECFLOAT fields (optional)

DECFLOAT is not directly supported in IBM DB2 Analytics Accelerator Loader for z/OS. However, you can create a view in Oracle DB to remap the DECFLOAT data type. You can then load data from the Oracle view into Accelerator Loader.

This is an example of how you cast data to support the DECFLOAT data type.

```
CREATE OR REPLACE FORCE EDITIONABLE VIEW "MYSCHEMA"."STAFF_VIEW"
   ("ID", "NAME", "DEPT", "JOB", "YEARS", "SALARY", "COMM") AS SELECT
 CAST(ID as NUMBER(5)) as ID, NAME, DEPT, JOB,
 CAST(YEARS as NUMBER(5)) as YEARS, SALARY, COMM
    FROM MYSCHEMA.STAFF;
```

The view casts the columns ID and YEARS which are reported as DECFLOAT(34) into INTEGER values. For additional information refer to the Oracle Provider for DRDA information on how Oracle NUMBER(nn,nn) columns are processed by the Oracle Provider for DRDA. DECFLOAT(16) and DECFLOAT(34) are normally the default for Oracle NUMBER columns which do not specify scale and precision.

Topic: "Oracle authentication" in Ch. 10 Administering the Accelerator Loader server
The following topic and sub-topics will be added after "LUW authentication".

Oracle authentication
- **Enabling Oracle authentication**
- **Creating global variables for Oracle authorization**

Enabling Oracle authentication
A System Event Facility (SEF) Rule can be enabled through the ISPF panels to connect to an OracleAS provider server via DRDA.

Procedure
1. On the main menu, select **Server administration**.
2. On the Administer Accelerator Loader server panel, select **Manage Rules**.
3. On the Event Facility (SEF) Control panel, select **SEF Rule Management**.
4. On the Event Facility (SEF) Ruleset Entry Profile panel, for **Display Only the Ruleset Named**, leave the asterisk to see a list of all rulesets, or specify ATH, (short for AUTHORIZATIONS), to see specific rules, and press Enter.
5. Beside **ATH**, type S and press Enter.
6. Beside HLVAODBG, type B and press Enter. The rule is enabled and auto-enabled so that, after an IPL, the server keeps this member enabled. The status next to this member is enabled.
7. Press PF3 to navigate back to the Event Facility (SEF) Ruleset Entry Profile panel.
8. For **Display Only the Ruleset Named**, leave the asterisk to see a list of all rulesets, or specify SQL to see specific rules, and press Enter.
9. Beside **SQL**, type S and press Enter.
10. Beside HLVSORAC, type B and press Enter. The rule is enabled and auto-enabled so that, after an IPL, the server keeps this member enabled. The status next to this member is enabled.
11. Verify that ISPF statistics are on for modified members HLVAODBG and HLVSORAC. To turn on the statistics, open the member in EDIT mode in ISPF, issue a STATS ON command, and SAVE the member. If the STATS ON is issued correctly, you will see the statistics.

    Note: After applying HLO APAR PI65565 and HLV APAR PI63948, use the same procedure to make sure that ISPF statistics are on for all of the following members:
    - Members in SHLVXATH: HLVADASG, HLVADB2G, HLVADRBG, HLVAIFXG, HLVALUWG, HLVAMSSG, HLVAODBG, HLVAQMFG
    - Members in SHLVXSQL: HLVSDRBC, HLVSIFXC, HLVSLUWC, HLVSORAC, HLVSQMFC

Creating global variables for Oracle authorization

The SEF authentication rule HLVAODBG, when enabled, is called whenever a user attempts to access an Oracle database. Global variables are read by HLVAODBG to set the appropriate logon credentials for the Oracle database. You can define credentials where:

- One set of credentials is used for ALL Oracle databases.
- One set of credentials is used for each different Oracle database.
- Credentials are determined by incoming user ID.
- A combination of the previous options, with defaults.

Procedure

1. On the main menu, select **Server administration**.
2. Select **Manage rules** and press Enter.
3. Select **Global Variables** and press Enter.
4. In **Global Prefix** type GLOBAL2, over the existing value.
5. On the command line, type S DRDA and press Enter. This step creates a global variable named DRDA. Note that global variables are case-sensitive and for this process should all be in uppercase.
6. Beside DRDA, type S and press Enter to select DRDA. Global prefix displays GLOBAL2.DRDA.
7. On the command line, type S ATH. This step creates subnode ATH.
8. Beside ATH, type S and press Enter to select it. Global prefix displays GLOBAL2.DRDA.ATH.
9. On the command line, type S HLVAODBG and press Enter to select the rule HLVAODBG. The **Subnode Value** column displays GLOBAL2.DRDA.ATH.HLVAODBG.
10. Beside HLVAODBG, type S and press Enter.
11. On the command line, type S GLOBAL.
12. Beside GLOBAL, type S and press Enter to select it. Global prefix displays GLOBAL2.DRDA.ATH.HLVAODBG.GLOBAL.
13. If you want to create a set of global credentials:
    a. On the command line, type S DEFAULT and press Enter. The **Subnode Value** column displays GLOBAL2.DRDA.ATH.HLVAODBG.GLOBAL.DEFAULT.
    b. In the **Subnode Value** column, type over the existing value with new credentials in the format userid:password;comment. Note that this value is all lower case. For example, oracleuser:oraclepswd; Global UserID for Everyone.

    You can use logon ID oracleuser with password oraclepswd for access to the Oracle databases.
14. If you want to create credentials for a specific user, for example, a DBA whose TSO user ID is DBA001 and uses Oracle credentials db2admin:admin:
    a. On the command line, issue the Select command for the user ID and press Enter. For example, type S DBA001.
    b. In the **Subnode Value** column, type over the existing value with new credentials in the format userid:password;comment. Note that this value is all lower case. For example, db2admin:admin; Only for the DBA.