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

Date of change: November 2017

#### Topic: Multiple

**Change description:** Documentation changes made in support of PTF UI51687 APAR PI84052 – Started task auto attach enhancement

- Topic "What's new" in chapter "Overview"
- Topic "Considerations for DB2 data sharing environments" in chapter "Preparing to customize"
- Topic "Accelerator Loader messages" in chapter "Troubleshooting"
- Topic "Console commands for the Accelerator Loader started task" in chapter "Reference"

#### Chapter "Overview"

#### Topic: "What's new"

Add the following description:

When the primary DB2 subsystem to which Accelerator Loader is connected goes down, the Accelerator Loader started task now remains active and will automatically attach to another member of the data sharing group on the same LPAR, if applicable. Previously, this condition caused the started task to terminate.

If a subsystem has been in maintenance mode, you can run the following z/OS MODIFY command to update the Accelerator Loader started task so that Accelerator Loader will begin to monitor that subsystem:

#### MODIFY <started\_task\_name>,--REFRESH DB2

where *started\_task\_name* is the name of the Accelerator Loader started task.

#### Chapter "Preparing to customize"

#### Topic: "Considerations for DB2 data sharing environments"

Add the following new section, "When the primary subsystem goes down," to this topic.

#### When the primary subsystem goes down

This section describes Accelerator Loader behavior when the primary subsystem goes down.

When the primary DB2 subsystem to which Accelerator Loader is connected goes down, the Accelerator Loader started task remains active and will automatically attach to another member of the data sharing group on the same LPAR, if applicable.

The primary DB2 subsystem is identified by the SSID or data sharing group attach name that is coded as the attribute value of the **DB2\_SSID** parameter in the Accelerator Loader started task initialization options XML document. An SSID uniquely identifies the primary DB2 subsystem. A group attach name identifies a data sharing group; a member of the group that is currently up and running on the LPAR is selected by DB2 at CONNECT time and that member becomes the primary DB2 subsystem. The Accelerator Loader started task maintains a persistent connection to the primary DB2 subsystem in order to insert log and audit rows to DB2 tables.

Secondary DB2 subsystems are specified in the Accelerator Loader policy XML document (*hloid*PLCY). These subsystems can be accessed by the Accelerator Loader started task and client applications for the purpose of loading and backing up accelerator tables in addition to other administrative functions. A persistent connection to secondary DB2 systems is not maintained by the Accelerator Loader started task. Accelerator Loader log and audit tables are not required to be defined on secondary subsystems.

The following message indicates the current primary subsystem: HLOS0609I 248 12:27:10.29 TCB: 008BB4B8 DB2 system SSID is the primary subsystem for this instance

Accelerator Loader behavior varies depending on the following conditions:

- **DB2\_SSID** option specifies a standalone subsystem versus a data sharing group name
- Accelerator Loader started task is starting up versus already active
- Primary DB2 subsystem shuts down versus starts up
- Number of data sharing group members that are active on the LPAR is one versus multiple

The following scenarios describe the resultant behaviors depending on the conditions:

## Scenario 1: Accelerator Loader started task starts up and the primary DB2 subsystem is a standalone SSID which is not active on the LPAR

In this scenario, the primary DB2 subsystem is a standalone DB2 subsystem; however, the same behavior would be seen if the primary subsystem was a member of a data sharing group and the only member of the group running on the LPAR when the Accelerator Loader started task is started. The Accelerator Loader started task comes up but the primary subsystem is disabled. Logging and auditing are disabled. The secondary DB2 systems will allow client connections and will perform requiredAccelerator Loader functions.

The following messages are issued, where RA1B is the primary DB2 subsystem: HLOS0409W 248 13:50:54.82 Cannot connect to the primary DB2 subsystem RA1B as required. HLOS0002I 248 13:50:54.82 Started task initialization is complete

The Accelerator Loader started task will detect when the primary DB2 subsystem is started and will then allow client connections to the primary subsystem and will write log and audit data to the DB2 tables. When the primary subsystem starts up, the following messages are issued, where RA1B is the primary DB2 subsystem:

HLOS0607I 254 10:56:38.79 TCB: 008C2190 DB2 subsystem RA1B startup detected. HLOS0600I 254 10:56:38.79 DSNUTILB interception for DB2 SSID=RA1B is enabled. HLOS0606I 254 10:56:38.79 DB2 SSID=RA1B has DB2 Sort Enabled=YES HLOS0830I 254 10:56:38.81 DSNUTILB Intercept Policy: HLOS0831I 254 10:56:38.81 DB2 SSID: RA1B ACTION: LOAD\_ACCELERATOR HLOS0203I 254 10:56:38.82 TCB: 008BF448 Connection to DB2 was successful. SSID=RA1B HLOS0609I 254 10:56:38.92 TCB: 008BF448 DB2 system RA1B is the primary subsystem for this instance HLOS0020I 254 10:56:38.98 Logging has been started. HLOS0022I 254 10:56:38.98 Auditing has been started.

## Scenario 2: Accelerator Loader started task is active, the primary DB2 subsystem is a standalone SSID or the only member of a data sharing group that is active on the LPAR, and the primary subsystem shuts down

If the primary subsystem is a standalone DB2 system or is the only member of a data sharing group that is active and running on the LPAR, then the Accelerator Loader started task will disable logging and auditing and issue the following messages:

HLOS0409W 254 11:03:12.11 Cannot connect to the primary DB2 subsystem RA1B as required. HLOS0610I 254 11:03:12.11 TCB: 008BF448 DB2 subsystem RA1B shutdown detected. HLOS0021I 254 11:03:12.11 Logging has been terminated. HLOS0023I 254 11:03:12.11 Auditing has been terminated.

The primary subsystem is disabled. Logging and auditing are disabled. Secondary DB2 systems will allow client connections and perform required Accelerator Loader functions.

# Scenario 3: Accelerator Loader started task is active, the primary DB2 subsystem is defined with a group attach name and there are multiple members of the data sharing group on the LPAR, and the primary subsystem shuts down

If the primary DB2 system is a member of a data sharing group and there is another member of the group running on the LPAR, then the Accelerator Loader started task will assign primary status to that member. The member must be identified in the currently active Accelerator Loader policy member (*hloid*PLCY) and the group attach name must be coded as the **DB2\_SSID** parameter in the Accelerator Loader started task initialization options module.

The following messages are issued:

HLOS0609I 254 11:24:40.99 TCB: 008BF9D8 DB2 system QBB is the primary subsystem for this instance HLOS0610I 254 11:25:11.38 TCB: 008BF528 DB2 subsystem QBB shutdown detected. HLOS0204I 254 11:25:11.39 TCB: 008BF528 Disconnection from DB2 was successful. SSID=QBB HLOS0203I 254 11:25:11.40 TCB: 008BF9D8 Connection to DB2 was successful. SSID=QBC HLOS0609I 254 11:25:11.40 TCB: 008BF9D8 DB2 system QBC is the primary subsystem for this instance HLOS0203I 254 11:25:11.41 TCB: 008BF528 Connection to DB2 was successful. SSID=QBC HLOS0203I 254 11:25:11.41 TCB: 008BF528 Connection to DB2 was successful. SSID=QBC HLOS0202I 254 11:25:11.45 Logging has been started. HLOS022I 254 11:25:11.45 Auditing has been started.

# Scenario 4: Accelerator Loader started task is active, the primary DB2 subsystem is defined with a group attach name and there are multiple members of the data sharing group on the LPAR, and the primary subsystem shuts down for maintenance

The primary DB2 subsystem (DB2A) is shut down and the Accelerator Loader started task rolls over to another member of the data sharing group (DB2B). DB2B is now the primary subsystem. DB2A is started with ACCESS(MAINT). The Accelerator Loader started task detects this event and attempts to connect to DB2A. This connect attempt will fail because of ACCESS(MAINT), and the DB2 system is flagged as a system in MAINT mode. Maintenance is completed on

DB2A and the system is shut down and restarted in normal operational mode. Because of the prior connect failure when DB2A was started with ACCESS(MAINT), the Accelerator Loader started task cannot be notified by DB2 when the system is restarted for normal operation. As a result, the Accelerator Loader administrator must issue the following z/OS **MODIFY** command to refresh the status tracking of subsystem DB2A by the Accelerator Loader started task: MODIFY <started task name>,--REFRESH DB2

where *started\_task\_name* is the name of the Accelerator Loader started task.

The following messages report on DB2 startup in ACCESS(MAINT) mode and normal startup after ACCESS(MAINT) mode:

HLOSO611I 257 14:34:19.68 TCB: 008C2650 DB2 subsystem DB2A is now running in ACCESS(MAINT) mode HLOSO612I 257 14:37:28.33 TCB: 008C2130 ACCESS(MAINT) cleared for DB2 subsystem DB2A

#### **Chapter** "Troubleshooting"

#### Topic: "Accelerator Loader messages"

Add or update the following messages:

#### HLOS0227E TCB: <tcb\_address> Session: <session\_token> Start TRACE(<trace type>) failed on SSID: <ssid>. RC: <ifca\_rc\_code> RSN: <ifca\_rsn\_code>

**Explanation:** DB2 Analytics Accelerator Loader attempted to start the DB2 monitor trace facility prior to a call to the instrumentation facility interface. However, this attempt failed. **User response:** Contact IBM Software Support.

#### HLOS0409W Cannot connect to the primary DB2 subsystem <*db2\_subsystem*> as required.

**Explanation:** DB2 Analytics Accelerator Loader was unable to connect to the DB2 subsystem that is necessary for logging and auditing functions because that subsystem is not active. Processing continues, however, logging and auditing cannot be performed.

**User response:** Ensure that the DB2 subsystem that is specified in the initialization options file is started and available for use by DB2 Analytics Accelerator Loader.

## HLOS0410E Primary DB2 subsystem <*db2\_subsystem*> does not exist. Processing will be terminated.

**Explanation:** DB2 Analytics Accelerator Loader could not connect to the DB2 subsystem that is necessary for logging and auditing functions because that subsystem does not exist. **User response:** Ensure that the DB2 subsystem that is specified in the initialization options member exists and is available for use by DB2 Analytics Accelerator Loader.

#### HLOS0607I TCB: < *tcb\_address*> DB2 subsystem <*db2\_ssid*> startup detected.

**Explanation:** The DB2 Analytics Accelerator Loader started task detected that a DB2 system that is referenced in the policy has started.

User response: No action is required.

## HLOS0608W TCB: <tcb\_address> Count of DB2 systems exceeds 256. Startup detection disabled for SSID <db2\_ssid>

**Explanation:** The DB2 Analytics Accelerator Loader started task detected that the number of DB2 subsystems referenced by the policy exceeds the maximum of 256.

User response: Refine the policy to reduce the number of referenced DB2 subsystems.

## HLOS0609I TCB: <*tcb\_address*> DB2 system <*db2\_ssid*> is the primary subsystem for this instance

**Explanation:** The DB2 Analytics Accelerator Loader started task is using the DB2 system as its primary subsystem. All log and audit records are inserted using the connection established for this DB2. If this DB2 system is stopped while the DB2 Analytics Accelerator Loader started task is running, logging and auditing will terminate.

User response: No action is required.

#### HLOS0610I TCB: <*tcb\_address*> DB2 subsystem <*db2\_ssid*> shutdown detected.

**Explanation:** The DB2 Analytics Accelerator Loader started task detected that a DB2 system that is referenced in the policy has shutdown.

User response: No action is required.

## HLOS06111 TCB: <*tcb\_address*> DB2 subsystem <*db2\_ssid*> is now running in ACCESS(MAINT) mode

**Explanation:** The DB2 Analytics Accelerator Loader started task detected that a DB2 system referenced in the policy has started in ACCESS(MAINT). **User response:** No action is required.

HLOS0612ITCB: <tcb\_address> ACCESS(MAINT) cleared for DB2 subsystem <db2\_ssid>Explanation:The DB2 Analytics Accelerator Loader started task detected that a DB2 systemreferenced in the policy has started in normal operational mode after having been up inACCESS(MAINT) mode.

User response: No action is required.

### **HLOU5714E** Target table status conflict with detected LOAD status *<load\_status>* Explanation: The target TABLE specified in the LOAD utility syntax cannot be loaded on the IDAA because the IDAA table is set to a status that is incompatible with the load process. User response: Check the status of the table on the IDAA for more informati on about the error.

#### **Chapter ''Reference''**

#### Topic: "Console commands for the Accelerator Loader started task"

#### --REFRESH DB2

After a subsystem has been in maintenance mode, the Accelerator Loader started task is not notified by DB2 when the system is restarted for normal operation. Use this command to return a DB2 subsystem that had been in maintenance mode to active status with the Accelerator Loader started task.

It is recommended to use this command only when there are no active sessions in the Accelerator Loader started task. Active sessions, which represent active intercepts of a DB2 utility, can be displayed using the **DISPLAY SESSIONS** command.