Rule DB2-502: Archive log write allocations exceeded guidance

Finding: Archive log write allocations exceeded guidance

Impact: This finding can have a LOW IMPACT, or MEDIUM IMPACT on the performance of the DB2 subsystem.

Discussion: Please refer to Rule DB2-501 for a discussion of DB2 archive logs.

The output log buffers are written to an *active log data set* when the DB2 subsystem forces the log buffer to be written (such as at commit time), when the buffers become full, or when the output log buffer write threshold is reached (as specified on the DSNTIPL panel).

Under certain conditions, DB2 copies the contents of the active log to a DASD or magnetic tape data set called the *archive log*. The process of copying active logs to archive logs is called offloading. An offload of an active log to an archive log can be triggered by several events. The most common[1] are when:

- An active log data set is full.
- Starting DB2, and an active log data set is full
- The command ARCHIVE LOG is issued.

CPExpert compares the QJSTALW variable in DB2STATS (the number of archive log write allocations) with the **QJSTALW** guidance variable in USOURCE(DB2GUIDE). CPExpert produces Rule DB2-502 when the number of archive log write allocations exceed the value specified by the **QJSTALW** guidance variable.

The default value for the **QJSTALW** guidance variable is 0, indicating that CPExpert should produce Rule DB2-502 when there were any archive log write allocations.

The following example illustrates the output from Rule DB2-502:

[1] Off-load is also triggered by two uncommon events (1) an error occurring while writing to an active log data set, and (2) when the last unarchived active log data set becomes full.


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RULE DB2-502: ARCHIVE LOG WRITE ALLOCATIONS EXCEEDED GUIDANCE

   The archive log open and close activity for write allocations was higher
   than the guidance provided to CPExpert.  This finding might indicate a
   need for more or larger active log data sets.  Archive log write open
   and close activity was high during the intervals shown below:

                                          ARCHIVE LOG OPEN
   MEASUREMENT INTERVAL                AND CLOSE WRITE ACTIVITY
    2:23- 2:53, 15SEP1999                        4
    2:53- 3:22, 15SEP1999                        2
    7:22- 7:51, 15SEP1999                        6
```

Suggestion: If Rule DB2-502 is produced regularly, you should consider the following alternatives:

- You should consider increasing the size of the active log.
- You should consider increasing the number of active log data sets.
- You can alter CPExpert's analysis by modifying the **QJSTALW** guidance variable in USOURCE(DB2GUIDE).

Reference: DB2 UDB for z/OS Version 9: Performance Monitoring and Tuning Guide
Chapter 5. Improving resource utilization
DB2 Logging

DB2 10 for z/OS: Administration Guide
Chapter 17. Managing the log and the bootstrap data set
Managing the log

DB2 10 for z/OS: Managing Performance
Improving log write performance

DB2 11 for z/OS: Administration Guide
Chapter 9. Managing the log and the bootstrap data set
Managing the log

DB2 11 for z/OS: Managing Performance
Chapter 9. Improving DB2 log performance
Improving log write performance

