
Rule DAS232: PENDING DELAY TIME WAS CAUSED BY DIRECTOR PORT

Finding: A significant amount of the PENDING time delay was caused by director port busy.

Impact: This finding may have a MEDIUM IMPACT or HIGH IMPACT on the performance of the device.

Logic flow: The following rules cause this rule to be invoked:
DAS200: Volume with the worst overall performance
DAS230: Major cause of I/O delay was PENDING time

Discussion: PENDING time is the time from the issuance of the SSCH instruction until the device is selected by the control unit. This time is caused by queuing for the path (wait for channel, wait for control unit or wait for head-of-string), and can be caused by other systems sharing the device (wait for device).

The PENDING time due to director port busy, means the director port was busy with another I/O operation from another system image in the same CEC. Since the director port was busy, the SSCH instruction could not result in device selection, and a PENDING condition existed.

SMF Type 74 records contain the PENDING time caused by director port busy (variable SMF74DPB). This variable is contained in MXG as AVGPNDIR and in MICS as DBADPBTM.

CPEXPERT produces Rule DAS130 to report the causes of PENDING delay time. Rule DAS232 is produced when director port busy delay was the major cause of PENDING delay time.

Suggestion: If Rule DAS232 is consistently produced, you should consider the following alternatives:

C Redistribute data sets. The high PENDING time might be solved by redistributing high activity data sets among different volumes on different paths.

If SMF Type 42 (Data Set Statistics) are available, CPEXPERT will identify data sets on the logical volume that have heavy I/O activity. However, please keep in mind that the PENDING time is caused by director port activity. The I/O activity of the particular volume experiencing high PENDING

time might not be (and probably is not) the cause of high PEND time. Consequently, examining the results for the Type 42 (Data Set Statistics) for the volume might not yield satisfactory results.

C Move the logical volume to a different controller referenced by different channels.

C If redistributing the data sets or moving the volume is not feasible, then perhaps more channels can be assigned to the logical control unit through which the device is referenced.