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**Rule WLM058: Device response for local page data sets was significantly imbalanced**

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**Finding:** CPExpert has detected that the device response time for a local page data set was significantly worse than the average device response time for other local page data sets in the paging subsystem.

**Impact:** This finding can have a LOW impact, MEDIUM impact, or HIGH impact on performance of your computer system. The level of impact depends upon the amount of page delay being experienced.

**Logic flow:** The following rule causes this rule to be invoked:  
Rule WLM400: Page-in from auxiliary storage was a major performance problem

**Discussion:** The device response time experienced by local page data sets will usually vary somewhat between DASD devices on which the local page data sets reside. This variance is typically caused by such factors as the number of pages transferred in a single I/O operation, the activity of other devices on the device controller, the activity of other devices on the path, etc.

A relatively minor variance in device response times between local page data sets is unavoidable.

However, if the device response time for an particular local page data set is significantly worse than the average for other local page data sets, there may be opportunities for performance improvement by eliminating the cause of the poor device response. These opportunities exist because the paging I/O is experiencing unusual contention at the device, controller, or path.

CPExpert analyzes the average device response time for all devices containing local page data sets. For each device, CPExpert computes the average device response time of **other** devices containing local page data sets.

CPExpert produces Rule WLM058 if the device response time for any device containing a local page data set was significantly worse than the average for the other local page data sets, and if page-in from auxiliary storage was a major performance problem for any service class.

The following example illustrates the output from Rule WLM058:

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RULE WLM058: LOCAL PAGE RESPONSE WAS SIGNIFICANTLY WORSE THAN AVERAGE

CPEXpert has detected that the device response time for a local page data set was significantly worse than the average device response time for other local page data sets. This situation usually is caused by overloading the path to the local page data set or by placing local page data sets on volumes with other data sets. During the below intervals, there was a significant imbalance of page transfer times among the local page data sets, and at least one service class missed its performance goal because of delays for page-in from auxiliary storage.

MEASUREMENT INTERVAL	AVERAGE PAGE XFR TIME	VOLUME WITH POOR XFR TIME	PAGES XFR'D	VOLUME AVG PAGE XFR TIME
8:00- 8:30, 16AUG1995	0.006	PG3040	10,875	0.010

**Suggestion:** CPEXpert suggests that you determine and correct the cause of the poor device response time provided to the local page data set. These actions should be taken if the problem is persistent, or if the problem occurs at times when page response time is critical. (That is, you probably shouldn't worry if the problem doesn't happen often or if it happens only at relatively unimportant times.)

If you have licensed the DASD Component of CPEXpert, you may wish to select the specific VOLSER for detailed analysis (using the SELECT option). If you do not license the DASD Component of CPEXpert, you may be able to identify the cause of the problem by simple inference using standard RMF reports.

- You can examine the activity of other devices on the controller, using the RMF *Device Activity Report*. If the activity of these devices is high, then the problem probably is at the controller level. You may wish to move the local page data set to a different controller.
- You can examine the activity of all paths through which the device is accessed, using the RMF *Channel Path Activity Report*. If the activity of all paths is high (and the problem was not at the controller level), then the problem probably is at the path level. You may wish to move the local page data set to different paths (or provide more paths).

Please refer to the suggestions in Rule WLM400 for general ways to improve the performance of your paging subsystem.

You can alter the value CPEXpert uses to assess whether page-in delay is unacceptable (unbalanced) by changed the OKPAGEIN value in USOURCE(WLMGUIDE).