
Rule DAS102: VOLUME WITH NEXT WORST OVERALL PERFORMANCE

Finding: The identified volume had the next worst overall performance during the entire measurement period.

Impact: The impact of this finding will depend upon the importance of the volume to overall system performance. If this is a critical volume, then this finding will have a HIGH impact. However, if the volume is accessed by low priority workloads, then this finding will have a LOW IMPACT or MEDIUM IMPACT.

Address spaces are retained in storage so long as they have uncompleted I/O operations. While the address spaces are in storage, they occupy page frames and may delay other address spaces. Additionally, the SRB time required to service I/O operations executes at a higher dispatching priority than a TCB, regardless of the dispatching priority of the TCB. Thus, there may be an overall system impact even though the volume may be accessed only by low priority workloads.

Logic flow: This is a basic rule finding; there are no predecessor rules.

Discussion: Rule DAS100 identified the volume that had the worst overall performance during the entire measurement period. Rule DAS102 is produced for each successive "worst performing" device selected from an ordered list (Rule DAS050 shows the ordered list of devices).

The number of devices analyzed by Rule DAS102 (and successive rules resulting from the analysis of each device) is controlled by the **ANALYZE** guidance variable (see Section 3: Specifying Guidance Variables).

Exhibit DAS102-1 provides a sample output resulting from the analysis. The VOLSER and device number of the "worst" performing device are identified in the narrative. Information is provided about the overall average I/O rate and the device utilization for the entire measurement period being analyzed.

Please refer to Rule DAS100 for a discussion of the information presented with Rule DAS102.

Suggestion: There are no suggestions directly associated with this rule. Subsequent rules will analyze the device problems and attempt to determine the cause of poor performance.

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VOLSER RSA002 (device 72FA) had the next worst overall performance during the entire measurement period (0:30, 31JUL2003 to 0:15, 01AUG2003). This pack had an overall average of 153.8 I/O operations per second, was busy processing I/O for an average of 18% of the time, and had I/O operations queued for an average of 3% of the time. Please note that percentages greater than 100% and Average Per Second Delays greater than 1 indicate that multiple I/O operations were concurrently delayed. This can happen, for example, if multiple I/O operations were queued or if multiple I/O operations were PENDING. The following summarizes significant performance characteristics of VOLSER SVS10F:

MEASUREMENT INTERVAL	I/O RATE	--- RESP	AVERAGE CONN	PER SECOND DISC	DELAYS--- PEND	IOSQ	MAJOR PROBLEM
0:30- 0:45,31JUL2003	88.2	0.107	0.063	0.012	0.028	0.004	CONN TIME
0:45- 1:00,31JUL2003	26.4	0.033	0.020	0.004	0.009	0.000	CONN TIME
1:03- 1:15,31JUL2003	23.2	0.027	0.017	0.003	0.007	0.000	CONN TIME
1:15- 1:30,31JUL2003	134.0	0.315	0.095	0.024	0.052	0.144	QUEUING
1:30- 1:45,31JUL2003	90.9	0.130	0.065	0.012	0.037	0.016	CONN TIME

VOLUME WITH WORST OVERALL PERFORMANCE

EXHIBIT DAS102-1