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**Rule CIC185:** The number of Temporary Storage buffers may be too high

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**Finding:** CPEXpert believes that the number of temporary storage buffers may be too high.

**Impact:** This finding should normally have a fairly LOW IMPACT on the performance of the CICS region. However, the finding is a result of CPEXpert detecting a CICS storage constraint. Consequently, the finding may have more indirect impact by freeing storage.

**Logic flow:** The following rule caused this rule to be invoked:  
Rule CIC110: CICS encountered a Short-on-Storage condition

**Discussion:** Multiple VSAM buffers allow multiple VSAM control intervals to be available in storage at the same time. The CICS temporary storage programs can then respond to several requests for temporary storage, by using different buffers.

Using multiple VSAM buffers also increases the probability that the control interval required by any particular request will already be available in a buffer. From this view, buffers can be viewed as a "in storage" caching device, and can result in substantially fewer physical I/O operations required of VSAM.

If no buffer is available when a task attempts to access temporary storage, the task must wait. This situation is called "wait on buffers" and tasks are queued serially by temporary storage queue name. However, VSAM can continue servicing requests for other temporary storage queue names by other tasks.

It is generally desirable to minimize the number of times tasks must wait for access to a VSAM buffer. When the tasks wait, they continue to hold system resources (e.g., real storage), and may cause additional performance problems because the resources are not available to service other tasks.

However, a large number of buffers allocated to VSAM causes increased storage requirements. If the buffers are unused, the storage required to support the buffers is wasted.

The CICS statistics analyzed by CPEXpert indicated that none of the temporary storage I/O operations waited for VSAM buffers. This usually indicates that more buffers are allocated than are necessary to service the

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requests for temporary storage. If more buffers are allocated than necessary, storage is wasted. Under many circumstances, this would not be a concern. However, the CICS region experienced a short-on-storage condition, so it is important to conserve the use of storage. Consequently, unnecessary buffers should not be defined.

**Suggestion:** CPExpert suggests that you consider decreasing the number of VSAM buffers allocated for temporary storage. The number of VSAM buffers that CICS allocates for temporary storage is specified by the second parameter of the TS operand in the System Initialization Table (SIT).

**NOTE:** The significance of this finding depends upon whether the finding is based upon analyzing daily information or based upon analyzing historical information.

- If this finding is based upon an analysis of daily information, the finding may be applicable only to the performance of CICS for this day. Unless you feel that the analysis is generally applicable (or unless the workload processed on this day is particularly critical), please wait until CPExpert performs an analysis of historical information before taking action.
- If this finding is based upon an analysis of historical data covering a prolonged period, the finding is more definite than a tentative finding based upon analysis of only a single day's data.

**Reference:** *CICS/OS/VS Version 1.7 Performance Guide*: page 79 and pages 264-268.

*CICS/MVS Version 2.1.2 Performance Guide*: pages 193-197 and page 408.

*CICS/ESA Version 3.1.1 Performance Guide*: page 125 and pages 259-263.

*CICS/ESA Version 3.2.1 Performance Guide*: pages 231-235 and page 339.

*CICS/ESA Version 3.3.1 Performance Guide*: pages 249-253 and page 357.

*CICS/ESA Version 4.1.1 Performance Guide*: Section 4.10.1 and Appendix A.1.26.

*CICS/TS Release 1.1 Performance Guide*: Section 4.10 and Appendix 1.1.25.

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*CICS/TS Release 1.2 Performance Guide*: Section 4.10 and Appendix 1.1.26.

*CICS/TS Release 1.3 Performance Guide*: Section 4.14 and Appendix 1.1.29.

*CICS/TS for z/OS Release 2.1 Performance Guide*: Chapter 26 (CICS temporary storage) and Appendix A (Table 124).

*CICS/TS for z/OS Release 2.1 Performance Guide*: Section 4.13.1 Tuning the use of CICS temporary storage and Appendix 1.1.29. |