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**Rule CIC332:** Excess buffers defined for TS queue index buffer pool

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**Finding:** The CICS Shared Temporary Storage Queue Server statistics showed that excess buffers had been defined for the shared temporary storage queue index buffer pool.

**Impact:** This finding has a LOW IMPACT on the performance of the CICS region.

**Logic flow:** This is a basic finding, based on an analysis of the data. The finding applies only with CICS/Transaction Server for OS/390 or for z/OS.

**Discussion:** A queue index buffer holds a queue index entry plus up to 32K of queue data (for a small queue). When a READ or WRITE request completes, the queue index information is retained in the buffer. Retaining the queue index information in the buffer can avoid the need to reread the queue index if the same queue is referenced from the same MVS image before the buffer has been reused.

The shared temporary storage queue server uses the queue index buffer pool to read and write queue index entries. The queue index buffer pool also is used for data associated with queue index entries if the total queue size does not exceed 32K bytes. The queue index buffer pool holds recently accessed index entries in storage to reduce coupling facility I/O.

The number of buffers in the queue index buffer pool is defined using the `BUFFERS=` keyword in the TS queue server parameters. The default specification is `BUFFERS={100}`, which specifies that 100 buffers should be allocated to for the server address space. The maximum specification is 999999, but IBM states that it is not worth defining extra buffers beyond the point where the definition might cause MVS paging, as it is more efficient to reread the index entry than to page in the buffer from auxiliary storage.

CPEXpert analyzes the number of buffers used in the queue index buffer pool to determine whether excess buffers were defined. CPEXpert concludes that excess buffers were defined if a small percent of the buffers in the queue index buffer pool were used.

Shared temporary storage queue server buffer pool statistics are available in MXG file CICXQ2. CPEXpert uses data in CICXQ2 to calculate the maximum percent of the queue index buffer pool buffers that had been used, using the following algorithm:

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$$\text{Maximum percent queue index buffer pool buffers used} = \frac{S2BFENTH}{S2BFQTY}$$

where    S2BFENTH = Maximum number of queue index buffer pool buffers used  
          S2BFQTY  = Number of buffers defined for the queue index buffer pool

CPEXpert produces Rule CIC332 when the percent queue index buffer pool buffers used is less than the value specified by the **TSPCTUSE** guidance variable in USOURCE(CICGUIDE). The default value for the **TSPCTUSE** is 10, indicating that CPEXpert should produce Rule CIC332 whenever less than 10% of the queue index buffer pool buffers were used. CPEXpert suppresses this finding if 100 buffers or less are defined.

**Suggestion:** If this finding is produced **consistently**, you should consider the following alternatives:

- Reduce the number of buffers specified for the queue index buffer pool.
- Change the TSPCTUSE guidance variable in USOURCE(CICGUIDE) so Rule CIC332 is produced only when you wish to make a change in the number of buffers.
- You can specify **%LET TSPCTUSE = 0;** in USOURCE(CICGUIDE) to suppress this finding (the percent used cannot be less than zero), or you can “turn off” the rule using the process described in Section 3 of this User Manual.

**Reference:**    *CICS/TS for OS/390 Release 1.1*  
                  *CICS System Definition Guide: Section 3.4.3.4 (Primary parameters)*

*CICS/TS for OS/390 Release 1.2*  
                  *CICS System Definition Guide: Section 3.4.3.4 (Primary parameters)*

*CICS/TS for OS/390 Release 1.3*  
                  *CICS System Definition Guide: Section 4.2.2.4 (Primary parameters)*

*CICS/TS for z/OS Release 2.1*  
                  *CICS System Definition Guide: Chapter 21 (Starting a temporary storage server)*

*CICS/TS for z/OS Release 2.2*  
                  *CICS System Definition Guide: Chapter 21 (Starting a temporary storage server)*