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**Rule WLM256: Service class was in Active state and server was not denied access to CPU**

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**Finding:** CPExpert has determined that the transaction service class that missed its performance goal was in Active state, and the server service class was not denied access to a CPU.

**Impact:** This finding is provided for information purposes only.

**Logic flow:** The following rule causes this rule to be invoked:  
Rule WLM120: Significant transaction time was in Active state

**Discussion:** When CPExpert produces Rule WLM104 or Rule WLM105 to indicate that a subsystem service class did not achieve its performance goal, the logic of these rules tries to identify the cause of the delay. The cause of the delay initially is analyzed from the "served" service class view. Rule WLM120(series) and Rule WLM130(series) describe the results from this analysis.

Address spaces executing in the system can be in a variety of states from the perspective of the Workload Manager: using the CPU, delayed for an identifiable reason, or delayed for some unknown reason.

The System Resources Manager (SRM) periodically samples the state of each address space in each service class. These samples are accumulated into variables that are recorded by RMF in the "Service Class Period Data Section" of SMF Type 72 (Subtype 3) records.

CPExpert produces Rule WLM120 when a significant cause of delay to a subsystem transaction was that the transaction was in Active state. The Active state indicates that a task was executing on behalf of the transaction, from the perspective of CICS or IMS. CPExpert analyzes the CPU requirements of the server service class to determine if the server was denied access to a CPU.

As the System Resources Manager takes its samples of the state of address spaces, it examines whether a TCB or SRB associated with the address space is waiting for dispatching to a CPU, or whether a TCB is waiting for a local lock.

If an address space is waiting for dispatching, it is being denied access to a CPU because processors are active with higher priority address spaces

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or with address spaces at the same dispatching priority as the address space waiting for dispatching. Samples reflecting the time address spaces are denied access to a CPU are recorded by RMF in the SMF Type 72 delay samples, as CPU Delay (R723CCDE).

CPEXpert computes the percent of CPU Delay for the server service class, as a function of the response time of the subsystem transaction service class missing its performance goal. CPEXpert produces Rule WLM255 if the percent of CPU Delay for the subsystem transaction service class is greater than the significance value specified in the **WLMSIG** guidance variable in USOURCE(WLMGUIDE).

CPEXpert produces Rule WLM256 if the percent of CPU Delay for the subsystem transaction service class is not greater than the significance value specified in the **WLMSIG** guidance variable in USOURCE(WLMGUIDE). The finding means that CPU time actually used by tasks processing the subsystem service class transactions accounted for a significant amount of the response time of these transactions. These tasks were not normally preempted from the using a CPU by higher priority processing.

The following example illustrates the output from Rule WLM256:

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RULE WLM256: SERVICE CLASS WAS ACTIVE AND SERVER WAS NOT DENIED CPU

During some of the above measurement intervals, the CICUSRTX Service
Class was in the ACTIVE STATE during a significant portion of its
response time and the CICS RGN server was not denied access to a CPU
for any significant amount of time during these intervals. This
finding means that CPU time actually used by tasks processing CICUSRTX
transactions accounted for a significant amount of the response time
of these transactions, and these tasks were not normally preempted from
the using a CPU by higher priority processing.
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**Suggestion;** Please refer to Rule WLM212 for a discussion of alternatives.