Rule CIC113: Peak EDSA usage is approaching EDSALIM value

Finding: CPExpert has detected that the peak usage of the Extended Dynamic Storage Area (EDSA) is approaching the maximum amount specified by the EDSALIM keyword in the System Initialization Table.

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

Logic flow: This is a basic finding, based upon an analysis of the daily CICS statistics.

Discussion: The value of the EDSALIM keyword in the System Initialization Table (SIT) specifies the upper limit of the total amount of storage within which CICS can allocate the individual extended dynamic storage areas (EDSAs) that reside above the 16MB boundary. CICS allocates the following extended dynamic storage areas from the storage value that you specify on the EDSALIM parameter:

- The **Extended User DSA (EUDSA)**, which is the user-key storage area for all user-key task-lifetime storage above the 16MB boundary.
- The **Extended Read-only DSA (ERDSA)**, which is the key-0 storage area for all reentrant programs and tables above the 16MB boundary.
- The **Extended Shared DSA (ESDSA)**, which is the user-key storage area for any non-reentrant user-key RMODE(ANY) programs, and also for any storage obtained by programs issuing CICS GETMAIN commands for storage above the 16MB boundary with the SHARED option.
- The **Extended CICS DSA (ECDSA)**, which is the CICS-key storage area for all non-reentrant CICS-key RMODE(ANY) programs, all CICS-key task-lifetime storage above the 16MB boundary, and CICS control blocks that reside above the 16MB boundary.

The default EDSA limit is 20MB (20,971,520 bytes). The maximum value allowed depends on a number of factors, such as:

- The size of the region specified on the MVS REGION parameter in the CICS job or procedure.
- How much storage is required for the CICS internal trace table.

- How much private storage that must be left free to satisfy MVS GETMAIN requests for storage above the 16MB boundary outside the Dynamic Storage Areas.

Too small a dynamic storage area for the workload being processed by the CICS region results in increased program compression, SOS (short on storage) conditions, or storage deadlock ABENDS when program compression is not sufficient. None of these results are desired, and they particularly are not desired in an important CICS region. Consequently, it can be important to be aware of the percent of EDSA that is used.

The CICS interval statistics contain information about the amount of EDSA allocated. CPExpert compares the peak EDSA allocated against a percent of the value specified for the EDSALIM keyword. CPExpert produces Rule CIC113 when the peak EDSA allocated storage is greater than this percent. The percent used by CPExpert is specified by the **PCTEDSA** guidance variable in USOURCE(CICGUIDE).

Suggestion: Rule CIC113 is intended to alert you to a potential problem, in that the peak allocated EDSA is approaching the limit specified by the EDSALIM keyword in the SIT. CPExpert suggests that you consider the following alternatives:

- Determine whether the default value of the PCTEDSA guidance variable in USOURCE(CICGUIDE) is appropriate for the CICS region being analyzed. Please alter the PCTEDSA guidance variable if appropriate.

- Determine whether the value of the EDSALIM keyword is appropriate. If possible, consider increasing the value of the EDSALIM keyword.

- Take action to reduce the amount of storage required by the CICS region. CPExpert suggests that you review the suggested actions in the "**Virtual storage above and below 16MB line checklist**" in the IBM CICS Performance Guide appropriate to your version of CICS.

Reference: *CICS/OS/VS Version 1.7 Performance* Guide: pages 155 and 339.

CICS/MVS Version 2.1.2 Performance Guide: pages 87 and 278.

CICS/ESA Version 3.1.1 Performance Guide: pages 173 and 319.

CICS/ESA Version 3.2.1 Performance Guide: pages 78, 216, and 330.

CICS/ESA Version 3.3.1 Performance Guide: pages 88, 214, and 349.

CICS/ESA Version 4.1 Performance Guide: Section 4.7.6.8 and Appendix A.1.30.

CICS/TS Release 1.1 Performance Guide: Section 4.7.6.8 and Appendix 1.1.27, and Appendix 6.6.

CICS/TS Release 1.2 Performance Guide: Section 4.7.7.8, Appendix 1.1.24, and Appendix 6.6.

CICS/TS Release 1.3 Performance Guide: Section 4.11.6.8, Appendix 1.1.25, and Appendix 6.6.

CICS/TS for z/OS Release 2.1 *Performance Guide*: Chapter 23 (Extended dynamic storage areas) and Appendix F (Dynamic Storage Areas).

CICS/TS for z/OS Release 2.2 *Performance Guide*: Section 4.10.7.1 (Extended dynamic storage areas) and APPENDIX1.1.25.4 Storage manager: Dynamic storage areas statistics.

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