
Rule CIC120: A storage violation occurred in a production CICS region

Finding: CPExpert has detected that a storage violation occurred in a production CICS region.

Impact: This finding should normally have a HIGH IMPACT on the performance of the CICS region, since storage violations should never occur in a production CICS region.

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

Discussion: Storage violations are detected by the CICS storage control program. A storage violation can occur in two basic situations:

- When the CICS storage manager detects an error during its normal processing of a GETMAIN or FREEMAIN request.
- When a program check occurs and the system recovery process determines that the storage manager was in control at the time. The storage manager deliberately references storage when it is following chains of allocated or free areas. This is done to force a program check if the pointer is bad.

Storage violations can be categorized as minor or severe. Minor storage violations are ones that can be recovered and usually involve only one storage area. Severe storage violations are ones that cannot be recovered. They usually are the result of many areas being corrupted in such a way that recovery is unable to rebuild the chains. If the recovery procedures are not successful, CICS is terminated and must be reinitialized.

Any storage violation is costly; it involves processor overhead and page faults. If storage violations occur in a production CICS region, the result may be that the region must be terminated and restarted. Such an occurrence would, of course, have serious performance implications.

CPExpert produces Rule CIC120 if any storage violation is reported for a production region.

Suggestion: CPExpert suggests that you immediately investigate and correct the causes of the storage violations.

CPExpert will identify the task **experiencing** the storage violation if data is available (that is, if CICS shutdown statistics are available for analysis or if the performance data base retains the information).

However, the task experiencing the storage violation may not be the task **causing** the storage violation. This is because one task may damage the storage chain and not experience a storage violation. The storage violation may not be experienced until another task references the storage chain.

Reference: *CICS/OS/VS Version 1.7 Performance Guide*: pages 51 and 160.

CICS/MVS Version 2.1.2 Performance Guide: pages 91 and 421.

CICS/ESA Version 3.1.1 Performance Guide: pages 118 and 176.

CICS/ESA Version 3.2.1 Performance Guide: pages 80 and 331.

CICS/ESA Version 3.3.1 Performance Guide: pages 90 and 303.

CICS/ESA Version 4.1.1 Performance Guide: Section 3.2.6 and Appendix A.1.29.

CICS/TS Release 1.1 Performance Guide: Section 3.2.6 and Appendix 1.1.29

CICS/TS Release 1.2 Performance Guide: Section 3.2.6 and Appendix 1.1.29.

CICS/TS Release 1.3 Performance Guide: Section 3.2.6 and Appendix 1.1.32.

CICS/TS for z/OS Release 2.1 Performance Guide: Chapter 11 (Recovery from storage violation) and Appendix A (Table 111).

CICS/TS for z/OS Release 2.2 Performance Guide: Section 3.2.4 (Detecting storage violation) and APPENDIX1.1.25. |