EPV Technologies

Newsletter

January 2021

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Identifying and Reporting CICS Transactions with an Abnormal Elapsed Time

Most of z/OS sites run CICS to serve transactional applications.

These CICS environments are often very complex with thousands of different transaction codes running in hundreds of CICS regions hosted in multiple production systems.

A lot of measurements providing all the needed performance metrics and allowing to analyze in detail CICS transactions elapsed time are available in SMF 110 records.

Unfortunately, the number of these records is normally very big, so it is impossible to prepare and analyze reports showing all this data.
A statistical approach allowing to focus only on the CICS transactions experiencing an abnormal elapsed time is therefore needed.

In this paper we discuss a possible approach we successfully implemented at some customers sites.
In the last chapter, we also describe a reporting drill down methodology that can be used to find problems very easily and follow up on improvement or degradation situations.

If you want to receive the paper you can reply to this e-mail writing **"Identifying and Reporting CICS Transactions with an Abnormal Elapsed Time"** in the subject.

EPV Performance University 2021 – Final Agenda

The fifth edition of the EPV Performance University will be virtual.
Participation is free of charge for EPV customers, partners and invited guests.

For all the others the following subscription fees apply:
•   WLM Update, 23-24 February, € 400,00
•   Db2 Performance Analysis, 25 February, € 200,00
•   z/OS Performance Analysis, 2-4 March, € 600,00

Mark these days in your agenda to avoid missing this opportunity.

These training courses have been designed to provide participants a deeper knowledge about:
•   the most advanced and recent WLM functions;
•   the most relevant performance metrics to use to analyze Db2 performance;
•   the most relevant performance metrics to use to analyze z/OS performance.

EPV products will be used as a map to make the path easier but most of the concepts discussed will be of general interest also for not EPV customers.

The courses language will be English

All details, final agenda and subscription forms are available at:
 www.epvtech.com

DFSORT User Guide
IBM Integrated Accelerator for Z Sort

This paper is the documentation for DFSORT z/OS V2R3 PTF UI90067 and z/OS V2R4 PTF UI90068, which will be made available in SEPTEMBER 25, 2020.

The IBM z15 provides a new on chip sort accelerator known as the IBM Integrated Accelerator for Z Sort. This paper highlights and explains how to take advantage of the z15 Z Sort capabilities using DFSORT and DFSORT's robust ICETOOL utility.

Download this IBM white paper at:
DFSORT User Guide for PH03207 (ibm.com)

Customer Questions

We are using SYNCVAL(00) to synchronize SMF records.
Our mother company is using SYNCVAL(59) since many years.
What is the best setting for this parameter?

EPV Technical Support answer
Setting SYNCVAL to 59 is an obsolete technique which makes performance

analysis and resource accounting more difficult. It makes it impossible to have the complete hour of measurements exactly on the hour.

Let's suppose you are using a 10-minute interval and you set SYNCVAL(59).
If you aggregate using the hour in the start time, hour 9 will contain measurements from 9:09 to 10:09 with a 9-minute displacement.
If you aggregate using the hour in the end time, hour 9 will contain measurements from 8:59 to 9:59. In this case you will a have a 1-minute displacement.

The origin of SYNCVAL(59) is related to the possibility for SMF interval records to be written sometimes before and sometimes after the interval expiration because of timer interrupt imprecision. This is an old issue no longer present in modern z/OS versions.

We use SYNCVAL(00) in EPV and we aggregate using the hour in the start time.
This way hour 9 will contain measurements for the complete hour with no displacement.

We strongly suggest using this setting which is, by the way, the IBM default.

Major suspension reasons for Db2 applications

Lock/Latch suspensions (part 1)

Lock/latch suspensions include both IRLM local lock and IRLM latch suspensions. The suspension time is provided in the QWACAWTL SMF metric.

To have an indication on the amount of each suspension type you can look at the QTXASLOC (number of IRLM local lock suspensions) and QTXASLAT (number of IRLM latch suspensions) SMF metrics.
Unfortunately, they do not tell you anything about the suspension time for each type. Generally speaking, IRLM latch suspensions should be shorter than lock suspensions.

IRLM local lock suspensions

A lock suspension happens when an application tries to get a lock on a resource already owned by another application with incompatible lock attributes.
Local lock contention does not require intersystem communication.
The contention is detected and resolved entirely within the local Db2 subsystem.
Lock suspensions are normally an application design issue.

By looking at the unlock/commit ratio you can understand if lock avoidance is not exploited well.
A best practice is that the unlock/commit ratio should not be higher than 5%.

To calculate that ratio at the subsystem level you can use the metrics available in SMF 100 and the following formula:

QTXAUNLK / (Q3STCOMM + Q3STRDON + Q3STSYNC + Q3STABRT)

where:
*   QTXAUNLK, number of unlock requests
*   Q3STCOMM, phase 2 commits
*   Q3STRDON, read-only commits
*   Q3STSYNC, single phase commits
*   Q3STABRT, rollbacks

The unlock/commit ratio can be also calculated at the application level by using the metrics available in SMF 101 and the following formula:

QTXAUNLK / (QWACCOMM + QWACABRT)

where:
*   QTXAUNLK, number of unlock requests
*   QWACCOMM, phase 1 and 2 commits
*   QWACABRT, rollbacks

From the point of view of database design, the possibility to use row level locking instead of page level locking could be investigated.

Quotes

*"I decided long ago
Never to walk in anyone's shadows
If I fail, if I succeed
At least I'll live as I believe
No matter what they take from me
They can't take away my dignity"*

Whitney Houston

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