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EPV Technologies

Newsletter

March 2021

THIS MONTH HIGHLIGHTS

- Capacity Management in the TFP world
- EPV Next Generation
- Preview: IBM z/OS V2.5

Capacity Management in the TFP world

On May 14th, 2019, IBM announced Tailored Fit Pricing (TFP). This new pricing model includes the following options:

- Enterprise Capacity solution,
- Enterprise Consumption solution.

Both options have an impact on some capacity management activities, such as:

- the use of capping,
- performance analysis and tuning,

- capacity planning.

In this paper we shortly discuss the possible impacts of TFP on the above capacity management activities.

Please note that all the considerations about software costs refer to MLC products.

If you want to receive the paper you can reply to this e-mail writing "**Capacity Management in the TFP world**" in the subject.

EPV Next Generation

The EPV product suite continues to evolve introducing new products and technologies.

In this virtual conference we will focus on the most recent and interesting of them.

The conference will be held on May 5th and 6th 2021.

It is reserved to EPV customers, partners and invited guests.

Preliminary Agenda		
Start	End	Description
09:00	09:15	Introduction
09:15	09:30	Dynamic queries in EPV V16
09:45	10:15	EPV zParser Realtime
10:30	11:00	EPV Control Center
11:15	11:30	EPV SMF2XL V15E
11:45	12:00	MyEPV Quick View DB Explorer
12:15	12:45	MyEPV Quick View Systems and Workloads
14:30	15:00	MyEPV Quick View Jobs
15:15	15:45	MyEPV Quick View CICS
16:00	16:30	MyEPV Quick View IMS

All details, final agenda and subscription forms soon available at:

www.epvtech.com

Withdrawal of Country Multiplex Pricing offering

Adaptive business and operating models, driven by accelerated disruptions, are shaping the future of enterprises today. Enterprises are embracing the next normal with an accelerated and strategic focus on application modernization, cloud-native processes, and artificial intelligence (AI), all in an effort to ensure timely and resilient business use cases and enhanced business applications for a continuous and positive user experience.

The IBM hybrid cloud approach is at the core of the plan to provide a solution for this swift and massive transformation. It provides a consistent, standards-based approach to development, security, and operations. In a hybrid cloud architecture, IBM Z provides the privacy and security clients need with the common cloud experience they want to:

- Create better experiences for end users through application modernization
- Fuel business growth with a standard cloud-native approach
- Innovate with integrity with cyber solutions to address evolving threats and new regulations
- Build competitive advantage with a cyber resilient infrastructure that predicts, responds, and recovers
- By leveraging the strengths of the IBM Z platform's computing power and resources, IBM z/OS plays an important role in providing a secure, scalable environment for the underlying transformation process on which organizations are embarking to deliver swift innovation.

IBM z/OS V2.5 is designed to enable and drive innovative development to support new hybrid cloud and AI business applications. This is accomplished by enabling next-generation systems operators and developers to have easy access and a simplified experience with IBM z/OS, all while relying on the most optimal usage of computing power and resources of IBM Z servers for scale, security, and business continuity...

Full announcement letter at:

[Preview: IBM z/OS V2.5](#)



Customer Questions

We did some queries against the ASLOAD table in the MWKLA DB in EPV for z/OS and we could not find data for the XCFAS started task.
Is this a problem or are these data in another table?

EPV Technical Support answer

In this case our customer was quicker than us in finding the answer...

Here is what he found:

"... in the meantime, we found out that the necessary SMF records do not be written, because of GDPS.

SMF 30 records are not written by the two HyperSwap address spaces and by the XCFAS address space, because in the case of a HyperSwap, locks could arise here, which could negatively affect the HyperSwap."

We remembered that there was some issue concerning XCFAS SMF 30 interval records years ago. To be honest, we thought it was fixed.

We did some research and we found this old (2007) but very interesting entry on the MXG web site at <https://www.mxg.com/news/news51.asp> :

"SMF 30 interval records are NOT written for GDPS HyperSwap Address Spaces GEOHSWP, GEOXCFST, and XCFAS. The IBM claim is that the SMF recording must be stopped otherwise the HyperSwap tasks can be left hanging, which in turn may result in production systems being shutdown because the HyperSwap cannot complete.

At the present time, this appears to ONLY be documented in an explanation provided by a GDPS support specialist (PMR 31381,070,618).

We turn off SMF interval recording in three address spaces (GEOHSWP, GEOXCFST and XCFAS), for the following reason. SMF interval processing is done by scheduling an SRB to run in each address space. This SRB gets the CMS and local lock of the address space and then builds the SMF interval record. In the process of building the interval record the SRB code references SMF control blocks in the address space that are not page fixed.

On systems that have real storage contention these control blocks are going to be paged out, because they don't get referenced very often. If we are in the process of doing a HyperSwap where we have I/O suspended to all of the PPRC volumes and the paging volumes are included in these volumes, this SMF SRB effectively dead locks the address space because it has the CMS and local lock and has taken a page fault that can not complete until the HyperSwap completes.

The HyperSwap process is completely dependent on these three address space functioning. In our testing before we created this capability to turn off SMF interval processing in an address space, we certainly saw hangs in the HyperSwap process because of this problem in the GEOHSWP and GEOXCFST.

I don't believe that we saw a hang because of this problem in the XCFAS address space, but I just wanted to make sure that it would not happen.

Based on this you will not get the interval records.”



Db2 Latch suspensions

Latches are a kind of Db2 'internal locks' not involving IRLM.

Db2 uses them to serialize access to resources to control physical consistency.

There are many more types of latches than the number of latch classes so, more than one latch type (in 32 increments) can be included in the same latch class. For example, class 12 (X'0C') include both latch class X'0C' and X'4C'.

In order to be sure which type of latch is actually causing the number of latch suspensions (contentions) to be incremented, it is necessary to analyze the content of IFCID 51, 52, 56 and 57 produced by running a class 11 performance trace.

Only some latch classes are documented because IBM consider an excessive latch

contention rate a sign of Db2 internal problems to be reported to Db2 support.
A very short and general description can be found in the DSNDQVLS macro of the SDSNMACS library
Some more info in the "Subsystem and Transaction Monitoring and Tuning with Db2 11 for z/OS" Redbook.

A best practice is that the latch contention rate, for each class, should be:

- not higher than 5.000; this is the warning threshold; you have to keep it under control;
- not higher than 10.000; this is the critical threshold; you have to investigate it.

To calculate the latch contention rate for each class you can use the metrics available in SMF 100 records and the following formula:

$$QVLSLC_{xx} / \text{interval}$$

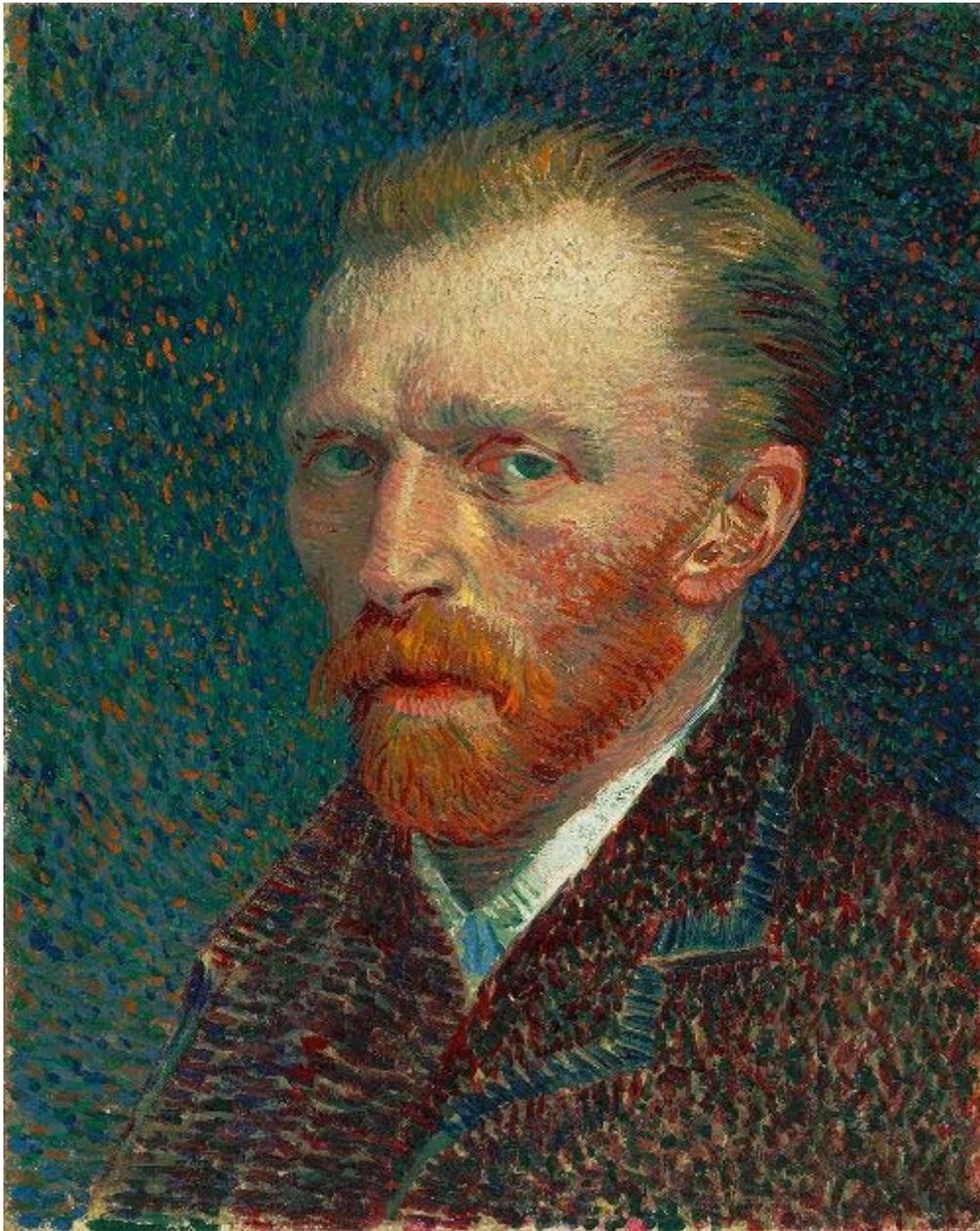
where xx is the latch class.

The reasons of high latch contention rate and the possible actions depends on the latch type.

At plan (IFCID 003) and package (239) level, only information about the total Db2 latch suspensions is provided in the following fields of in SMF 101 records:

- QWACAWLH, accumulated wait time because of latch contention (IFCID 003);
- QWACARLH, number of wait trace events processed for waits for latch contention (IFCID 003);
- QPACAWLH, accumulated latch elapsed wait time for latch suspensions that occurred while executing this package (IFCID 239);
- QPACANLH, number of wait trace events processed for waits on latches while executing this package (IFCID 239).

Quotes



I dream my painting and I paint my dream.

Vincent van Gogh

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