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IT Cost  
Under Control

# EPV Technologies

## Newsletter

December 2021

### THIS MONTH HIGHLIGHTS

- Tech Papers publishing will restart in 2022
- EPV Performance University 2022 – Preliminary Agenda
- Did IBM Just Preview The Future of Caches?

### Tech Papers publishing will restart in 2022

Tech Papers publishing has been suspended for the Christmas holidays. The EPV Newsletter editorial staff wishes you a Merry Christmas and a Happy New Year..

### EPV Performance University 2022 – Preliminary Agenda

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The 6th edition of the EPV Performance University will be virtual and held in two weeks from the 21st of February to the 3rd of March 2022.

Mark these dates in your agenda to avoid missing these events.

This is the current plan ...

<b>Course</b>	<b>Dates</b>	<b>Teacher</b>
z/OS Performance Analysis	21-23 February 2022	Danilo Gipponi
MQ Performance Analysis	24 February 2022	Fabio Massimo Ottaviani
Db2 Performance Analysis	28 February - 1 March 2022	Fabio Massimo Ottaviani
WLM update	2-3 March 2022	Fabio Massimo Ottaviani

... and this is the preliminary agenda

## Week 1

### z/OS Performance Analysis - Day 1

Code	Date	Start	End	Description
Z1	21/02/2022	09:00	10:00	z/OS data collection - Part 1
Z2	21/02/2022	10:15	11:15	z/OS data collection - Part 2
Z3	21/02/2022	11:30	12:30	CPU
Z4	21/02/2022	14:30	15:30	WLC and TFP
Z5	21/02/2022	15:45	16:45	zIIP

### z/OS Performance Analysis - Day 2

Code	Date	Start	End	Description
Z6	22/02/2022	09:00	10:00	SMF 113 counters
Z7	22/02/2022	10:15	11:15	Memory
Z8	22/02/2022	11:30	12:30	Coupling Facility
Z9	22/02/2022	14:30	15:30	Disk I/O
Z10	22/02/2022	15:45	16:45	Crypto

### z/OS Performance Analysis - Day 3

Code	Date	Start	End	Description
Z11	23/02/2022	09:00	10:00	Address spaces
Z12	23/02/2022	10:15	11:15	Service and Report classes
Z13	23/02/2022	11:30	12:30	CICS and IMS throughput
Z14	23/02/2022	14:30	15:30	Other workloads throughput
Z15	23/02/2022	15:45	16:45	Daily Trends

### MQ Performance Analysis

Code	Date	Start	End	Description
W1	24/02/2022	09:00	09:30	Data collection
W2	24/02/2022	10:00	10:30	System AS
W3	24/02/2022	11:00	11:30	Logging
W4	24/02/2022	12:00	12:30	Buffer pools and page sets
W5	24/02/2022	14:30	15:00	Coupling facility and SMDS
W6	24/02/2022	15:30	16:00	Queue activity - Part 1
W7	24/02/2022	16:30	17:00	Queue activity - Part 2

## Week 2

### Db2 Performance Analysis - Day 1

Code	Date	Start	End	Description
D1	28/02/2022	09:00	10:00	Data collection
D2	28/02/2022	10:15	11:15	System AS
D3	28/02/2022	11:30	12:15	EDM pools and threads
D4	28/02/2022	14:30	15:15	Buffer Pools
D5	28/02/2022	15:45	16:30	Group Buffer Pools

### Db2 Performance Analysis - Day 2

Code	Date	Start	End	Description
D6	01/03/2022	09:00	09:45	Locks and latches
D7	01/03/2022	10:15	11:00	Workload analysis
D8	01/03/2022	11:30	12:15	Suspension reasons - Part 1
D9	01/03/2022	14:30	15:15	Suspension reasons - Part 2
D10	01/03/2022	15:45	16:30	Trend analysis

### WLM Update - Day 1

Code	Date	Start	End	Description
W1	02/03/2022	09:00	10:00	WLM basics - Part1
W2	02/03/2022	10:15	11:15	WLM basics - Part2
W3	02/03/2022	11:30	12:15	WLM basics - Part3
W4	02/03/2022	14:30	15:15	SYSTEM, SYSSTC and protection
W5	02/03/2022	15:30	16:15	CICS and IMS transaction goals

### WLM Update - Day 2

Code	Date	Start	End	Description
W6	03/03/2022	09:00	10:00	Capping and soft capping
W7	03/03/2022	10:15	11:15	Resource Groups
W8	03/03/2022	11:30	12:15	IRD and HiperDispatch
W9	03/03/2022	14:30	15:15	zIIP and SMT
W10	03/03/2022	15:30	16:15	WLM and software pricing

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.

Participation is free of charge for EPV customers, partners and invited guests. For all the others a subscription fee will apply.

Complete brochure and subscription form soon available at: [www.epvtech.com](http://www.epvtech.com)

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## Did IBM Just Preview The Future of Caches?

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This is a very interesting article you should definitely read.

“At Hot Chips last week, IBM announced its new mainframe Z processor. It’s a big interesting piece of kit that I want to do a wider piece on at some point, but there was one feature of that core design that I want to pluck out and focus on specifically. IBM Z is known for having big L3 caches, backed with a separate global L4 cache chip that operates as a cache between multiple sockets of processors – with the new Telum chip, IBM has done away with that – there’s no L4, but interestingly enough, there’s no L3. What they’ve done instead might be an indication of the future of on-chip cache design.”

Full article available at: [Did IBM Just Preview The Future of Caches?](#)

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Hello dear EPV support team, I contact you because I need some information about Database I/O activities. Is it possible with EPV to get the total amount of Sync I/O delay time spent in Db2?

***EPV Technical Support answer***

You can find this info in EPV for Db2, at the plan and package level, in the views showing the TOP PLANS and TOP PACKAGES both by Db2 subsystem and Db2 connection.

To get the right view you should:

- go to WORKLOADS,

- select a Sharing group and a Db2 or a Connection type
- in the page menu choose TOP PLAN TOTALS or TOP PACKAGE TOTALS and click the + icon close to the Db2 WAIT header

As you will see, you can select the metric you need (total wait time, number of events or average wait time) in the combo box.

If you need a more complete statistics, and not only information about the TOP objects, you can run a query on:

- the DB2ACC3 table for plans (QWACAWTI is the total Synch I/O wait time, QWACARNE is the total number of Synch I/O waits);
- the DB2ACC8 table for packages (QPACAWTI is the total Synch I/O wait time, QPACARNE is the total number of Synch I/O waits).



## STP and UDF TCB suspensions

When a Db2 application calls an external stored procedure (STP) or user defined function (UDF), it needs to run on a TCB in a server address spaces provided by a WLM application environment (AE).

If no TCB is available, the application is suspended waiting for it.

The total number of TCBs in an AE depends on the settings of the following WLM parameters:

- the number of address spaces allowed; it can be managed by WLM or fixed to just one;
- the number of TCBs allowed in each address space; it is determined by the NUMTCB value; the default is 8).

In case the average suspension time is too long, you should check if you can increase the number of TCBs by changed the above parameters or if you can separate STPs and UDFs into different AEs.

To avoid the delay of starting new address spaces, you can specify the MNSPAS parameter in the start-up procedure to set the minimum number of address spaces that are to be started and maintained by WLM. The value can be 0 through 50. The default value is 0, which means that no minimum number of address spaces is required.

On a busy system the suspension delay can also be due to a lack of WLM priority; if this is

the case you can increase the importance and/or change the goal of the service class where the calling application runs.

Metrics about STP and UDF TCB suspensions are provided, both at plan level (IFCID 003), in the following fields of SMF 101 records:

- QWACCAST, total wait time for an available TCB before the stored procedure could be scheduled;
- QWACCANM, number of suspensions due to no TCB available to schedule a stored procedure;
- QWACUDST, total wait time for an available TCB before the UDF could be scheduled.

## Quotes



*"Your time is limited, so don't waste it living someone else's life. Don't be trapped by dogma—which is living with the results of other people's thinking."*

**Steve Jobs**

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