

## Cheryl's Hot Flashes #10

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## Ain't it the Truth!

- Found on IBM-Main:

"Give a person a fish and they will eat for a day, teach them to use the Internet and they'll leave you alone forever..."

## Agenda



- Interesting Items
  - EOS Dates, z/OS, IBM Migration Offering, On/Off Capacity on Demand, APARs, DDF, Fun, DB2 Web site
- User Experiences
  - IRD CPU Management, DFSMS Trace, Spin Loop, Moving to Fewer but Faster CPs
- 6-Month Update
  - GRS/MIM
- This SHARE
  - Gartner Group, VSAM, WLM Goal Mode, IBM Scholars Program

## Interesting Items



- EOS Dates
  - IBM announcement on 8/5/03 - #903-149
  - EOS date for OS/390 R10 – 9/30/04
    - That means no support for MVS on IBM G3 (Rx4), G4 (Rx5), HDS Pilot-x4 to x7, and HDS Skylines after that date
  - EOS date for z/OS 1.4 – 3/31/07
    - Extended from 9/05 - This is GREAT news!
  - Remember EOS date for z/OS 1.5 – 3/31/07
    - Last MVS release supported on IBM G5 (xx6), G6 (xx7), MP3000, HDS Pilot-x8, x9, HDS Triniums and Amdahl (Fujitsu) Millennium and Omniflex machines
  - For more information, see Cheryl's List #80

## Interesting Items



- z/OS
  - In the spring, I strongly recommended going to z/OS 1.4 (Cheryl's List #75, 3/12/03)
  - Constraints have been removed for zSeries machines (WLC not required, bimodal support is now available, most z/Architecture bugs have been removed)
  - OS/390 will hit End of Service on 9/30/04
  - Many sessions this SHARE on migration
  - As Bette Brody mentioned in session 2855, most bad experiences are old experiences – most problems have been resolved for a year
  - Recommendations:
    - Use IBM's Migration Guide – Excellent!
    - Remove MSO (we recommend MSO=0; IBM recommends 0.0001)
    - Increase page data sets

## Interesting items



- z/OS
  - Typical of comments in the past few months:

“Just a piece of good news about z/OS. When we implemented z/OS on our production online systems which do over 4 million transactions a day, we experienced a 15-20% response time improvement. We had been doing expanded storage paging in and out of over 15,000/sec so going from 2 GB of real memory to 8 GB real memory was very useful for online performance. Paging in the DB2 buffer pools was greatly reduced as well.”

## Interesting Items



- Survey Questions
  - Who is running OS/390 R10 in production?
  - Of those people, how many will migrate to z/OS 1.4 on those machines within the next six months?
  - Who is running z/OS in production?
  - Of those people, who is running on a zSeries machine?
  - Who is running z/OS.e?
  - Who is using Variable WLC pricing?
  - Who is planning to investigate On/Off Capacity on Demand in the next year?

## Interesting Items



- How would you prefer no upgrade path for software?

“Because Windows XP 64-Bit Edition requires entirely new hardware, there will be no upgrade from 32-bit operating systems to Windows XP 64-Bit Edition. Windows XP 64-Bit Edition will be available through OEMs who offer Itanium-based hardware and available via the Microsoft Developers Network (MSDN).”

## Interesting Items



- New IBM Migration Offering
  - Intention: move customers from older systems to the current zSeries machines running z/OS
  - Only for and 1500 MIPS and who are running OS/390
  - Offer: 50% off on z/OS for 36 months and lower maintenance costs delivered with the newer hardware; software price will revert back to normal pricing after 3 years
  - For some, the 3 year savings can offset hardware acquisition costs by 70%
  - Applies only to new z900 and z990 machines

## Interesting Items



- New Migration Offering
  - Not applicable to z800 because other offerings provide similar savings
  - IBM example
    - A move from a 536 MIPS G6-Z37 to a 575 MIPS z900-2C2
    - Without the offering, cost would be almost \$900,000 over 3 years
    - With offering, the move would cost about \$185,000
- See Cheryl's List #79

## Interesting Items



- Daily On/Off Capacity On Demand
  - On z990, you can add a CPU dynamically and only pay for the number of days you use it
  - Need to plan ahead
  - Break even is 45 days, but if you purchase then you own it. If you use On/Off CoD then its simply lost rental
  - IBM announced On/Off CoD Software Charges for z990 on 8/12/03
  - Most ISVs are planning to address the issue on an individual basis as it comes up

## Interesting Items



- APARs
  - **OA02909** (OS/390 R10-z/OS 1.4, 6/19/03) - WLM Classification Of OMVS Work With UI Attribute Incorrect. WLM classification of OMVS work with the userid (UI) attribute no longer works after APAR **OW54709** is applied.
  - **OA03364** (OS/390 R10-z/OS 1.4, 8/7/03) - High Importance Service Class Blocked By Lower Importance Work. Running in WLM goal mode with the fix for **OW46675** applied, if the system is extremely busy, IRAPAPPP tries to help work that is not getting service for an extended period of time by increasing the dispatching priority of the blocked service class period. However, it can potentially move lower importance work to a higher dispatching priority than higher importance work, resulting in the higher importance work not receiving any processor service.
  - Thanks to **Jerry Urbaniak** from Acxiom

## Interesting Items



- APARs
  - **Brian Currah** of BDC Computer Services, Inc. found a very interesting SPE APAR, **OA02710** (New Function - Change Granularity in MP Factors on a z990, 6/4/03):
    - Base MP factor changed from 100 to 255 (high interest to software developers)
    - Scheduling Environment (SE) qualifier added for DDF
    - LPAR change for Diagnose 304 to correct problem where WLM couldn't manage Linux LPARs

## Interesting Items



- DDF (and new Redbook)
  - If you're running DDF, this redbook is a **must - SG24-6952, Distributed Functions of DB2 for z/OS and OS/390** (6/3/03) with a very good chapter on performance
    - We consider the following extremely important
    - DB2 V7 "thread pooling" is an option that allows DB2 to separate the distributed connections from the threads that do the work (also called "Type 2 inactive thread support")
    - The use of thread pooling results in reduced consumption of processor cycles, real memory and virtual storage. You can turn on thread pooling by coding CMTSTAT=INACTIVE in the DSNZPARM specification. Unfortunately, the default is ACTIVE.
    - Read the redbook!

## Interesting Items



- Fun Web site:
  - [www.computerhistory.org/timeline](http://www.computerhistory.org/timeline)
- Fun SHARE session (not in scheduler):
  - 8737 – History of Mobile Computing (found beyond entrance to SCIDS) – had slide rules, 1-pound calculators, and even an Osbourne!
- New SAS book coming from **Michael Raithel**: second edition of his successful “Tuning SAS Applications in the MVS Environment” (Note – I can’t find it on the SAS Web site yet, but look for it!)

## Interesting Items



- DB2 Web site
  - [www.ibm.com/software/data/db2](http://www.ibm.com/software/data/db2)
  - Over 500 white papers providing performance, installation tips, interfaces with ERPs, etc. A huge repository of knowledge.
  - Excellent FAQs



## User Experiences



- IRD CPU Management
  - Available on zSeries and z/OS to dynamically change LPAR weights and number of LPs
- Survey Questions
  - Who is running IRD CPU Management?
  - Who is running IRD with Dynamic Channel Path (CHPID) Management?
  - Who is running IRD with Channel Subsystem Priority Queuing (also available on OS/390)?

## User Experiences



- IRD CPU Reporting
  - LPAR weights can change every 10 seconds (although probably won't)
  - Number of logical CPs can change every 10 seconds (and will probably change on active system at least once every RMF/CMF interval)
  - You can't depend on "average CPU Busy" as calculated by most monitors
  - For most reporting, you'll really be looking at work running on x.y number of LPs

## User Experiences



- IRD Reporting
  - The concept of available capacity is constantly changing
  - Monitors and software products will need to change (and I haven't seen many products changed yet)
  - See **Walt Caprice's** session 2840– A Systems Programmer View of Intelligent Resource Director
  - See **Mary Astley's** session 2568 – Self Optimizing Capabilities of zSeries, z/OS and OS/390
- Focus article in our TUNING Letter, 2001, No. 3
  - More is coming

## User Experiences



- DFSMS Trace
  - We suggested turning this off in our Nov/Dec 1993 TUNING Letter
  - Default is TRACE(ON), which is IBM's recommendation
  - But CPU overhead is incurred (one site saved about 45 minutes of CPU time a day by setting trace off)
  - To see if it's on, use operator command: d sms,trace

## User Experiences



- Spin Loop
  - A site experienced several spin loops (and IPLs) because fixed frames filled up storage between 16 MB and 2 GB; SRM did not detect this critical storage shortage
  - This condition can occur in any site with lots of real storage and large enough CPs to keep the system very busy
  - APAR **OA03577** - Spin Loop Abend071 IAXUA Fixed Storage Between 16Meg and 2Gig, 7/30/03; changed to HIPER after it came out (OS/390 R10-z/OS 1.4)

## User Experiences



- Moving to Fewer, Faster, CPs
  - Customers experience the following: high importance work is exceeding its goals while low importance work (especially discretionary) is not getting as many resources as before
  - Example:

		6-way	2-way
CICS	I=1	30%	50%
TSO	I=2	15%	20%
BATCH	I=4	15%	15%
Discretionary		40%	15%

CICS response time was .5 seconds before and .2 seconds after

## User Experiences



- Moving to Fewer, Faster CPs
  - What is result?
    - CICS users are thrilled with new response time
    - Capacity planners and performance analysts are baffled
    - Customer complains that WLM isn't working correctly because CICS is using all the resources
    - Those running in discretionary are ANGRY
    - I (being the techie that I am) agree that it shouldn't work that way – I would like WLM to keep everything around its goal and not let anyone exceed it severely

## User Experiences



- Moving to Fewer, Faster CPs
  - **Kathy Walsh** of WSC made two good points:
    - That's the way it's designed to work
    - The reason is that many (most?) customers want their highest priority work (e.g. CICS) to get as many resources as they need at the expense of lower importance workloads
    - I can understand that, but don't think that many managers appreciate how important the "importance" assignment in WLM really is

## User Experiences



- Moving to Fewer, Faster CPs
  - But what if you don't want to run that way – what can you do?
    - Move work out of discretionary and give it a small velocity so that some work is always running (probably best option)
    - Put resource cap on CICS (ugly - and I wouldn't want to do that, because it will bite me some day)
    - Move work out of discretionary to a resource group with a minimum specified on a resource group to guarantee the discretionary work will get a minimum amount of the processor
    - The first option is safest in case higher importance work gets into trouble

## 6-Month Update



- *GRS/MIM Update*
  - We've discussed an overhead problem related to GRS and the GRS exit, ISGNQXIT in the past: Cheryl Watson's TUNING Letter 2002, No. 6 (pg 31), Cheryl's List #74 (1/14/03) and Hot Flashes #8. Now **Scott Fagen** (IBM z/OS Core Technology Design team and GRS guru) has written an excellent online paper that explains the history, the problems and the solutions. This is a must-read, especially for GRS and MIM customers running z/OS 1.2 and later. Take a look at:

[www.ibm.com/zseries/library/whitepapers/pdf/gm130328.pdf](http://www.ibm.com/zseries/library/whitepapers/pdf/gm130328.pdf)

## This SHARE



- Great Sessions
  - 2570 – DASD I/O Performance on FICON Channels, **Tom Beretvas**
    - Survey - How many people are using FICON today?
  - 8737 – History of Mobile Computing (great display at SCIDs with slide-rule, TI Programmer calculator, an Osbourne computer, etc.). It brought back such memories! (Sorry, but it won't be in the proceedings.)

## This SHARE



- Rumor: Gartner Group's first two recommendations for reducing software costs:
  1. Pit software vendors against each other
  2. Eliminate technical people from the decision making process
- Has anyone else heard this?

**That's Insane!**

## This SHARE



- Rumor:
  - VSAM RLS isn't stable
  - Rash of APARs (many HIPER) in April, May and June
  - Look carefully – many of those were simply updates to 18-month old APARs
  - There WAS a lot of maintenance in those months as a major cleanup occurred in VSAM RLS development
  - A couple of non-IBM players feel that RLS is close enough to try again
  - If you want to use it, get current with maintenance

## This SHARE



- VSAM Survey Questions
  - Who is running VSAM RLS?
  - Who is planning to investigate VSAM TVS within the next year?
- Redbooks:
  - **VSAM Demystified - SG24-6105-01**, 8/5/03
  - **DFSMSvs Overview and Planning Guide - SG24-6971-00**, 6/20/03
  - **DFSMSvs Application Migration Guide - SG24-6972-00**, 6/12/03

## This SHARE



- WLM Goal Mode
  - Not present in z/OS 1.3 and 1.4
  - Who is still running WLM compatibility mode in production?
  - Who is running with WLM managed batch initiators?
- Our Quickstart Policy (free download) was updated in April (see Cheryl's List #76)
  - See my SHARE session 2541 (will be on our home page by Tuesday)
- **Jim McCoy** of WSC has offered to review anyone's policy (for free) before they migrate to production – send request to [jemccov@us.ibm.com](mailto:jemccov@us.ibm.com)

## This SHARE



- IBM Scholars zSeries Program
  - From session 2412 – What's New in z/OS
  - “Helps pull together selected universities, sponsors, and IBM resources to provide a link between the academic world and the business world and potential future job opportunities.”
  - See [www.ibm.com/university/zseries](http://www.ibm.com/university/zseries)
  - I wish this had come ten years ago!



## Questions



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