

# Cheryl's Hot Flashes

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# Cheryl's Hot Flashes

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- WLM
- Parallel Sysplex
- Good Reading
- Y2K
- Language Environment
- ISPF Exposure
- APARs of Interest
- Rumors
- Biggest Mistakes When Upgrading a Processor
- Processor Speeds

# WLM

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- More sites now successfully going to goal mode with very few problems
- APARs
  - CICS overhead - **APAR OW32140**
    - Very large CICS sites see increase in CPU time after turning on CICS collection in goal mode (Chuck Hopf had a large CICS environment, 350 test regions and 40-50 production regions with a total MAXTASKS of 30,000 and found WLM taking total 40-50% of one CPU across a sysplex; reducing MAXTASKS to 8000 reduced CPU time to 16% of one CPU or 1.3% of total sysplex); still OPEN
  - Low importance work impacting high importance work
    - **APARs OW31890, OW31894** reported by Tim Vanderhoek at a prior SHARE describe this problem (which caused Tim to back off goal mode); few sites are experiencing this, but this caused Tim's site to back off to compat mode; still OPEN

# WLM

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- Batch Initiator Management

- I've talked to three sites who have implemented WLM Batch Initiator Management; two are using it for test job classes and love it; the other is using it for **all** job classes and is also quite pleased

- Two Cautions:

- Keep current with maintenance; see **APAR II10760** for cautions and list of additional APARs

- See **WSC Flash #9817** about warning for JES2 \$ACTIVATE

- Keep Current With WLM Web Site

- Several important papers at:

- <http://www.s390.ibm.com/products/wlm>

# Parallel Sysplex

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- CFMON - Coupling Facility Monitor
  - New, little-advertised, free online monitor for parallel sysplex
  - Plan is to be included in RMF for OS/390 R6, retrofitted back to R4
  - You can download a free version now that works for SP 5 to OS/390 R5 (expires 12/31/2000)
  - Look at Redbook **SG24-5153** (Parallel Sysplex Coupling Facility Online Monitor) for download directions & instruction
    - Redbook home page:  
<http://www.redbooks.ibm.com/redbooksonline.html>

# Parallel Sysplex

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- ICF and LPAR Single Exposure
  - Is an ICF (Internal Coupling Facility) usable for a production Coupling Facility (CF)?
  - Understand that the machine represents a single point of failure
    - In a parallel sysplex (P//S), you may lose an image and recover from it since other systems can use the CF to determine the status of the applications and can recover them; and you may lose a CF and recover from it since the applications from all systems can recover from their in-storage buffers (or other means); but you can't recover from the loss of both an image and a CF at the same time
    - Therefore, if a P//S system and a CF are in the same machine and the machine is lost, then the entire P//S is lost; this true whether the CF is in an ICF or an LPAR
  - Recommendation: Use a stand-alone CF for production and an ICS or LPAR for backup
  - Future hardware improvements may change this recommendation

# Good Reading

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- ISPF News
  - Newsletter & tips - <http://booksrv2.raleigh.ibm.com/ispf>
- COBOL News
  - Newsletter, white papers - <http://www.software.ibm.com/ad/cobol>
- TalkLink
  - Customer forum; \$18/month - <http://www.ibm.link.ibm.com/talklink>
- RMF
  - Newsletter - <http://www.s390.ibm.com/rmf>
- Neat DB2 Redbook
  - DB2 V5 Performance - **SG24-2213**
- OS/390 Support
  - <http://service.software.ibm.com/390>

# Y2K

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- Some sites are seeing an increase of 10% to 30% in programs after converting to Y2K
  - Reasons: inexperienced COBOL programmers making changes (e.g. using zoned decimal for numeric data); conversion to dynamic loading from static (can add 5-10%); addition of Language Environment (LE) for the first time (5-20%); lack of tuning in applications and LE
  - Recommendation: measure applications before and after conversion; tune LE; use application monitor (e.g. Strobe from Programart or InTune from Boole & Babbage) to analyze programs at time of conversion



# Y2K

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- OS/390 R2 was first Y2K compliant release, BUT...
  - There were LOTS of year-end APARs that must be applied
  - This just applied to MVS, not necessarily other products (e.g. CICS, IMS, DB2, etc.)
  - PTFs are being created all the time for things that were missed
  - Check PSP bucket **YEAR2000** for latest APARs
- Check out IBM's Y2K Web site for status of IBM and non-IBM products
  - <http://www.software.ibm.com/year2000>

# Language Environment

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- Hottest topic today - see many SHARE sessions
- There is a LOT of maintenance needed - check APARs
  - e.g. **APAR PQ14007** corrects problem in PL/I where CPU time increased 25-35%
- LE needs tuning
  - Change from defaults:  
ALL31(ON),CBLPSHPOP(OFF),CHECK(OFF),DEBUG(OFF),  
RTEUS(ON)
- Read tuning tips in LE Installation & Customization Guide, **SC26-4817**
- RTLS (Run Time Library Service) - investigate performance improvement in OS/390 R4

# ISPF Exposure

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- How to look at a file?
  - Edit - one person may be in edit mode at one time; provides full edit facilities
  - Browse - multiple people may be reading the same file; no facilities to allow changing the data
  - View - multiple people may be reading the same file; provides full edit facilities; allows user to REPLACE original document; Note: View brings in whole member; TSO working set sizes much larger
- Scenario
  - Jack opens FILEA in view; so does Jill
  - Jack sees change that *MUST* be made and does it; so does Jill
  - Jack does a REPLACE on the member; so does Jill
  - Jill's copy overlays Jack's; Jack is clueless!
- Options: disallow View from use

# APARs of Interest

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- Catalog CPU Overhead - **APAR II10752** describes possible solutions, describes how to report increases to IBM
- Old WSC Flashes of Importance
  - **9609** - CF Reporting Enhancements to RMF
  - **9609** - LPAR Performance in a Parallel Sysplex
  - **9723** - Parallel Sysplex Performance XCF Performance Considerations
  - **9731** - Dynamic CF Dispatching
  - **9731** - XCF Performance Considerations
  - Find them at: <http://www.ibm.com/support/techdocs/wsc/>

# Rumors

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- PeopleSoft on MVS

- One site reported that they had installed the first 1/10th of a PeopleSoft application on MVS and the CPU time was many times what was planned for. DB2 CPU time went through the roof. PeopleSoft said that the application wasn't designed for DB2 and maybe the customer should consider using an Oracle Server instead of MVS. Customer is in a quandry. Recommendation - talk to other users to help determine resource requirements and move to latest releases of OS/390 and DB2. Any other experiences? Please let me know...

- Lotus Domino Notes on MVS

- User experience - Users love Notes on MVS! In one site, the resource usage was VERY high (this was OS/390 R3 and TCP/IP 3.2); IBM's recommendation: get to latest release of OS/390 (R5 at least) and be sure that the most current release of TCP/IP is installed

# Biggest Mistakes When Upgrading a Processor

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- Not insisting on a performance guarantee from the vendor
  - Caution about penalties; customers can't afford to simply accept a new CP to improve capacity due to increased software costs
- Limiting the capacity of a new machine by neglecting to:
  - Increase CNSTR in IEAIPSxx
  - Increase RCCCPUT in IEAOPTxx (e.g. 106 max when 10 CPUs)
  - Increase Resource Group cap in goal mode
  - Increase number of VTAM LUs for TSO users; increase max users
  - Increase storage sufficiently

# Biggest Mistakes When Upgrading a Processor

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- Not determining the full software cost of a new processor (all ISV software, for example)
- Not understanding about latent demand
  - Typical problem; user is at 100% and doubles the speed/capacity of the machine; expects CPU to be at 50% busy and finds it's 70% busy - the difference is latent demand for that time period - could be change in user behavior and could be due to movement of work from off-peak to peak period

# Processor Speed vs Capacity

- Speed & Capacity Aren't the Same Thing

- Example - go from many CPUs to fewer but faster

- Example

● Model	CPs	MIPS	MIPS/CPU	Uni-Speed
● 9021-9X2	10	465.1	46.5	62
● Skyline	5	522.9	104.6	124
● Difference	-50%	+12%	+12%	+100%

- Therefore, Skyline has 1/2 the CPUs, double the uni-speed, but 12.4% more capacity - why?

- Skyline has less MP-overhead (overhead due to multiple CPUs)
- If no MP overhead, then Skyline should be equal capacity

- Is user getting what he paid for?

- Contracts are typically set up to guarantee capacity
- Users look at data that measures speed or performance
- The two are not the same



# Processor Speed vs Capacity

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- Speed & Capacity Aren't the Same Thing

- Example - Continued

- What happens to biggest CICS region?

- On 9X2 it has high enough priority to sit on a CP and not move to other CPs, thus running at 62 MIPS, not 45.6
- On 525 it does the same thing and runs at 124 MIPS, not 104.6; it takes .5 times the CPU time
- User concludes that Skyline appears to be double the speed with half the CPs or equal capacity, not 12% more

- What happens to lower priority work?

- On 9X2, they fall to bottom of dispatch queue, so get bounced from CP to CP, thus running closer to 45.6, maybe even less
- On 525, they do the same thing and run close 104.6 MIPS; these jobs see the 12% (or more) improvement in capacity

# Processor Speed vs Capacity

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- Speed & Capacity Aren't the Same Thing
  - Why did you buy your machine?
    - For faster CICS response; then look for speed
    - For more users; more batch work; then look for capacity
  - This isn't simply a Skyline issue! It occurs every time you move to a faster machine with fewer CPs (e.g. the new IBM Rx6 models)
  - P.S. When will IBM get the G5/Rx6 series back in sync?

# The End!

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- Was this useful? Please fill out evaluations
- If useful, what is your preferred time for next SHARE?  
Please fill out question 1 on evaluation card:
  - Monday afternoon - answer A(Yes) to question 1
  - Friday 9:30 before Bit Bucket - answer B (No) to question 1