

# Learn the Latest Problem Solving Solutions for z/OS and Storage Subsystems with OMEGAMON

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#### Agenda

- OMEGAMON XE on zOS v5.3 overview
- OMEGAMON XE for Storage on zOS v5.3 overview
- OMEGAMON XE on zOS v5.3 details
- OMEGAMON XE on zOS v5.3 problem solving
- Summary





#### **Performance Management Suite**

IBM Tivoli Performance Management Suite for z/OS V5.3 and the IBM Tivoli OMEGAMON z/OS Management Suite V5.3 can help provide cost savings and greater effectiveness while helping you meet your Service Level Agreements by:

- Delivering new Enhanced 3270 User Interface (Enhanced 3270UI) history capability, increased integration, and enhanced install, configuration, and customization capabilities.
- Offering the ability to quickly identify problem situations.
- Isolating and addressing problems quickly.
- Improving resource utilization to maximize investment.
- Improving personnel interaction for better synergy and efficiency.
- Reducing outages or delays.
- Customizing the enhanced user interface based on the scope and control of your day-to-day job.
- Expanding solution throughout IBM z/OS platform.





# **OMEGAMON XE on z/OS v5.3**

#### z/OS Availability and Performance management Tool

- TEM System Storage DS8870
- Overall z/OS Sysplex, LPAR and workload management capabilities providing Availability, Performance, and Workload views to maximize efficiency and effectiveness
- Greater problem determination for zOS Subject Matter Experts can use the Near-Term-History displays in Enhanced 3270 UI using RMF Monitor III collection to glance back to see the start of performance problems for recent issues.
- Reduced time-to-resolution of problems with new improved Enhanced 3270 User Interface workspaces including embedded data from CICS and z/OS for applications monitoring
- Increased ability to deliver service to your user base with new zAware information workplaces and alerts through Enhanced 3270UI and IBM Tivoli Enterprise Portal (TEP).



#### **OMEGAMON XE on zOS v5.3** increased problem determination capability

- SHARE fact - Merci - Merci
- Near-Term-History for critical zOS attribute groups from RMF Monitor III presented directly in the Enhanced 3270 User Interface
- Summary and detail workspaces support historical problem determination and trending analysis for the following objects:
  - Address Space CPU Usage and Delays
  - zOS Common Storage Usage
  - CPC LPAR Summary and Details
  - WLM Service Classes:
    - Performance Index
    - Resource Usage History
  - Device Resource History
  - Device Job Summary
  - Real Storage Usage History
  - Storage Details







#### **OMEGAMON XE on zOS v5.3**

#### increased problem determination capability

- Understand information related to when the problem began with Enhanced 3270 User Interface Near-Term-History
  - Easily see when a CPC CPU busy is very high and select for details

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_ 14/07/09 09:05:00	0FBAA6	82.5
_ 14/07/09 09:00:00	094E15	85.0
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_ ZFSV15B1	0043	DISCRBAT	Z1 Z1	34	35	18	35
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Effortlessly explore data around when a CPU busy occurred





#### **OMEGAMON XE on zOS v5.3**

#### reduced time-to-resolution of problems

 Directly access z/OS address space monitoring data in Enhanced 3270 User Interface workspaces for both MQ MSTR and CHIN

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- Zoom from MQ Current Queue Manager Status to this workspace with z/OS CPU monitoring data
- Zoom on Job Name for direct access to the following z/OS options:

M5MQASZ Navigation Options for Address Space Q Select an action and then press ENTER 1. ! Take Action on Address Space 2. C - Cancel Address Space 3. A Address Space Bottlenecks Summary 4. B Bottleneck Analysis for Address Space 5. D Storage Usage by Address Space 6. M Storage Usage by all Address Spaces 7. S Address Space CPU Usage Details 8. T TCB Storage and LSQA for Address Space 9. W WLM Service Class Resources



# where the second power to work finding anomalies on your zOS LPARs to prevent an outage !



- The new OMEGAMON warning situation for zAware, based on anomaly scores, has triggered indicating something highly unusual is happening on my LPAR.
- Launch from TEP to the zAware UI next where IMS Log Failure is seen







#### **OMEGAMON XE for Storage on z/OS v5.3**

- Real-time and historical mainframe STORAGE monitoring
- Powerful alerting and "Take Action" capability
- Daily Storage management capability and functions
- New Enhanced 3270 user interface
- A wide breadth of mainframe storage info:
  - Space and Performance management (storage groups all the way down to data set groups, define your own for reporting)
  - Tape / VTS
  - Channels (FICON), Control Units, CACHE
  - DFSMShsm (View , administer your active HSM queues, control Datasets, etc. )
  - DFSMShsm / DFSMSdss / ICKDSF / IDCAMS online toolkit
  - Batch JCL creation from toolkit any JCL
  - SMS constructs
  - DASD & Tape drive physical device support

Complete your session evaluations online at www.SHARE.org/Pittsburgh-Eval



Dynamic Workspace Linking to:

- Advanced DFSMShsm Reporter
- •IBM Tivoli Advanced DFSMShsm Audit
- •IBM Tivoli Advanced Catalog Mgt
- •IBM Tivoli Advanced Backup Recovery
- •IBM Tivoli Advanced Allocation
- Manager
- •IBM Tivoli Tape Optmizer (I
- •IBM Tivoli Automated Tape

DFSMSrmm reporting and toolkit

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# OMEGAMON XE for Storage on z/OS v5.3



Cornerstone for every z/OS Storage management Tool box!



- Overall z/OS Storage management capabilities provide Availability, Performance, Workload views, and Toolkit functions to **maximize efficiency and effectiveness** for daily z/OS Storage Management functions
- Reduce resource consumption, operations Managers will appreciate New Minimal Monitoring Configuration and reduction in Cache and LSpace Collector performance – 20% improvement in CPU collection of data
- **Improve trend analysis and planning -** New Dataset Attribute Group Extraction (DAGX) allows analysis of dataset attribute groups using spreadsheet or other analytics tools outside of Tivoli Data Warehouse for Storage Administrators
- Increased problem determination capability with new E3270UI Embedded Data support makes it easier for Storage Admins to combine displays of related information from OM CICS and OM MQ for better cross storage information analysis
- Reduced Time to Resolution with new Near-Term-History displays in E3270UI simplifying trending analysis



# **OMEGAMON XE for Storage on z/OS v5.3**



Near-Term-History in Enhanced 3270 User Interface

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Reduced Time to Resolution with new Near-Term-History displays in E3270UI simplifying trending analysis





# OMEGAMON XE for Storage on z/OS v5.3 Data Set Attribute Group Extractor (DAGX)

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- Improve trend analysis and planning - New Dataset Attribute Group Extraction (DAGX) allows analysis of dataset attribute groups using spreadsheet or other analytics tools outside of Tivoli Data Warehouse for Storage Administrators
- Easy to use Pull down and panel driven
- Output can be exported to a delimited file where it can be manipulated by Excel or any other program you wish to use





#### OMEGAMON XE for Storage on z/OS v5.3 New flexibility in collection and reduced resource

• Ability to turn off the collection of performance data:

consumption

- Disable the collection of volume performance information
- Disable the collection of cache performance information
- Reduction in resource utilization for volume space data:
  - Collection of volume space data optimized to eliminate the collection of redundant data
  - Estimated reduction of 15% of TEMS CPU utilization
    - Depends on number of logical volume (more volumes, bigger the reduction)
    - Depends on dataset activity across logical volumes
    - Requires z/OS 1.13 or above
- Cache data collection:
  - Rewrite of cache collector optimized for performance and elimination of redundant data
  - Estimated reduction of 5% of TEMS CPU utilization depending upon the number of SSIDs





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#### **OMEGAMON Product Architecture changes**

- The v511/v530 OMEGAMON XE on z/OS provides:
  - Enhanced 3270 User Interface (e-3270UI) and the Tivoli Enterprise
     Portal (TEP) to view enterprise wide performance information.
  - Also the powerful OMEGAMON Classic interface for single LPAR
  - Two other LPAR specific monitors, the OMEGAMON II Common User Interface facility and the Epilog zOS historical presentation
  - V 530 Statement of Direction Future: Epilog zOS component will be retired along with CUA's and OMEGAVIEW



#### **OMEGAMON** architecture – pre v5.3 (with z/OS focus)





#### **OMEGAMON Product v 530 changes:**

- Use of RMF Monitor III DDS based history support in the OMEGAMON XE on z/OS v530 agents and new workspaces in the Enhanced 3270 User Interface.
- No need for the OMEGAMON CUA, Epliog zOS and maybe Classic environments.
- Eliminates 4 or 5 started tasks per LPAR while retaining all the real time and historical performance information.













# Near-Term History – OM XE zOS v5.3

- SUMMARY workspaces are provided for:
  - Central Processing Complex (CPC).
  - Workload Manager Service Class Periods.
  - DASD Devices.
- SNAPSHOT workspaces are provided for:
  - CPC LPARs and LPAR Details
  - Service Class Period Address Space CPU consumption.
  - Real Storage and Common Storage for an Address Space.
  - Execution and Delays for Address Spaces across the Sysplex, System, Sysplex Service Class and System Service Class.
  - Memory Objects and 1 Megabyte Page statistics by System and Address Space.
  - Address spaces using a DASD device.





# NEAR TERM HISTORY for CPCS AND LPARS





# NTH For CPCs and LPARs e3270UI- Navigation





#### NTH For CPCs and LPARs – Enterprise Summary (KOBSTART)

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NTH For CPCs and LPARs-Historical Summary For CPCs Serving

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- 14/07/10 13:40:00 14/07/10 13:40:00 14/07/10 13:35:00 14/07/10 13:35:00 14/07/10 13:30:00 14/07/10 13:30:00 14/07/10 13:25:00 14/07/10 13:25:00 14/07/10 13:25:00 14/07/10 13:25:00 14/07/10 13:15:00 14/07/10 13:15:00 14/07/10 13:15:00 14/07/10 13:15:00 14/07/10 13:15:00 14/07/10 13:15:00 14/07/10 13:00:00 14/07/10 13:05:00 14/07/10 13:05:00 14/07/10 13:05:00 14/07/10 12:55:00 14/07/10 12:55:00 14/07/10 12:55:00 14/07/10 12:55:00 14/07/10 12:55:00 14/07/10 12:55:00 14/07/10 12:45:00 14/07/10 12:35:00 14/07/10 12:35:00 14/07/10 12:35:00 14/07/10 12:45:00 14/07/10 12:35:00 14/07/10 12:35:00 14/07/10 12:35:00 14/07/10 12:35:00 14/07/10 12:35:00 14/07/10 12:35:00 14/07/10 12:35:00 14/07/10 12:25:00 14/07/10 12:00:00 14/07/10 12:00:00 14/07/10 12:00:00 14/07/10 12:00:00 14/07/10 12:00:00 14/07/10 12:00:00 14/07/10 12:00:00 14/07/10 12:00:00 14/07/10 12:00:00 14/07/10 11:55:00 14/07/10 11	OFBAA6 094E15 000000000	61.2 82.1 80.6 59.2 68.6 75.1 73.7 80.5 62.2 60.3 87.5 92.0 61.8 92.4 65.0 94.1 65.0 94.1 65.0 94.1 65.0 94.4 65.0 94.4 65.0 94.1 65.0 94.3 65.2 96.3 65.2 96.3 65.2 96.3 65.2 95.0 72.8 73.2 95.0 72.8 75.8 55.5 92.0 72.8 75.5 95.0 72.8 75.5 95.0 72.8 75.5 95.0 72.8 75.5 95.5 75.1 73.2 95.5 75.1 73.2 75.5 75.1 75.5 75.5 75.5 75.5 75.5 75.5	No ZAAPs Online No ZAAPS Online	54.4 96.1 93.1 53.6 55.8 93.3 98.5 57.1 100.0 30.0 36.9 100.0 36.9 100.0 37.0 100.0 37.0 100.0 37.0 100.0 37.4 35.5 100.0 100.0 37.4 35.5 100.0 100.0 37.4 35.5 32.1 100.0 100.0 37.4 35.5 32.1 100.0 100.0 37.4 35.5 32.1 100.0 100.0 37.4 35.5 32.1 100.0 100.0 37.4 35.5 32.1 100.0 100.0 37.4 35.5 100.0	2.5 5.6 5.6 5.4 5.4 5.4 5.4 5.6 6.1 2.5 2.6 6.3 5.7 2.7 5.7 2.7 5.7 2.7 5.7 2.7 5.8 2.7 5.9 2.7 5.9 2.7 5.9 2.7 5.9 2.7 5.9 2.7 5.9 2.7 5.9 2.7 5.9 2.7 5.9 2.7 5.9 2.7 5.9 2.7 5.9 2.7 5.9 2.7 5.9 2.7 5.9 2.7 5.9 2.7 5.9 2.6 6.4 5.9 2.7 5.9 2.7 5.9 2.6 6.4 5.9 2.7 5.9 2.7 5.9 2.6 6.4 5.9 2.7 5.9 2.6 6.4 5.9 2.7 5.9 2.7 5.9 2.6 6.4 5.9 2.7 5.9 2.6 6.4 5.9 2.6 6.4 5.9 2.6 6.4 5.9 2.6 6.0 5.9 2.7 7 2.6 5.9 2.7 7 2.6 5.9 2.7 7 2.6 5.9 2.7 7 2.6 5.9 2.7 7 2.6 5.9 2.7 7 2.6 5.9 2.7 7 2.6 5.9 2.7 7 2.6 5.9 2.7 7 2.6 5.9 2.7 7 2.6 5.9 2.7 7 2.6 5.9 2.7 7 2.6 5.9 2.7 7 2.6 5.9 2.7 7 2.6 5.9 2.7 7 2.6 5.9 2.7 7 2.6 5.9 2.7 7 2.6 5.9 2.6 5.9 2.7 7 2.6 5.9 2.7 7 2.6 5.9 2.5 5.9 2.5 5.9 2.6 5.9 2.5 5.9 2.5 5.9 2.5 5.9 2.5 5.9 2.5 5.9 2.5 5.9 2.5 5.9 5.5 5.9 5.5 5.9 5.5 5.5 5.5 5.5 5	100.0           100.0 </td <td>6477 5001 5001 5001 5001 5001 6477 5001 647 6477 5001 6477 6477 6477 6477 6477 6477 6477 647</td> <td>nd specialty 100 100 100 100 100 100 100 10</td> <td>20022222222222222222222222222222222222</td>	6477 5001 5001 5001 5001 5001 6477 5001 647 6477 5001 6477 6477 6477 6477 6477 6477 6477 647	nd specialty 100 100 100 100 100 100 100 10	20022222222222222222222222222222222222			
			10 Jul	y 11:43 to 10 July	13:43			(d H)	STORY			



NTH For CPCs -LPARs-Hist Summary For A CPC (KM5CPC2H)SHARE

File	Edit View Tool:	s Navigate Help	07/11/2014 11:24	:36				
							!	Display : <mark>HISTORY</mark>
Command ==> KM5CPC2H			Historical Summa	ru For A CPC				Plex ID : <u>ZPETPLX</u> CPC : 0EBAA6
-			Historicae odilila	igital hara				
Y			CPC OF	BAA6				
Columns 3 to 9 of	9		+ +	↑ ↓			Rows1 to	<u>24</u> of <u>24</u>
<pre></pre>	∆Physical % ⊽Standard CP	∆Physical %  ⊽ZAAP	∆Physical % ⊽zIIP	∆Physical % VIFL	∆Physical % VICF	Effective MSU Capacity	Capacity Indicator	Adjustment Reason
- 14/07/11 11:20:00 14/07/11 11:15:00 14/07/11 11:15:00 14/07/11 11:05:00 14/07/11 11:05:00 14/07/11 10:55:00 14/07/11 10:55:00 14/07/11 10:45:00 14/07/11 10:35:00 14/07/11 10:35:00 14/07/11 10:25:00 14/07/11 10:15:00 14/07/11 10:15:00 14/07/11 10:15:00 14/07/11 10:05:00 14/07/11 10:05:00 14/07/11 10:05:00 14/07/11 09:55:00 14/07/11 09:55:00 14/07/11 09:35:00 14/07/11 09:25:00	71.4 66.0 60.7 64.0 60.8 60.6 68.7 62.4 61.6 66.0 60.8 71.0 83.4 87.5 89.0 86.3 95.1 95.9 97.9 95.9 97.9 95.9 92.9 89.1 97.9 98.8	No zAAPs Online No zAAPs Online	$\begin{array}{c} 49.6\\ 33.6\\ 33.9\\ 35.3\\ 35.3\\ 34.5\\ 35.7\\ 34.9\\ 37.0\\ 56.5\\ 42.3\\ 41.3\\ 56.0\\ 58.1\\ 59.5\\ 52.1\\ 34.7\\ 34.9\\ 36.0\\ 37.1\\ 38.0\\ 42.4\\ 54.6\\ 56.2\\ \end{array}$	2.5 2.6 2.6 2.6 2.6 2.6 2.5 2.6 2.5 2.6 2.5 2.6 2.5 2.6 2.5 2.6 2.5 2.6 2.7 3.5 2.8 <b>KM5CF</b> except 2.6 2.6	100.0 100.0	6477 6477 6477 6477 6477 6477 6477 6477	100 100 100 100 100 100 100 100 100 100	None None None None None None None None



# Scenario : Near-Term History: CPC and LPAR





 As a systems programmer I received a call from operations that application users reported a variety of response time problems and batch delays earlier today on the ZPETPLX2 Sysplex LPAR Z2 in the 1:00pm to 2:00pm timeframe. This report is fairly general so I decide to investigate starting at the CPC level where LPAR Z2 is running by selecting option "H" from KOBSTART.





 I know that system Z2 runs on the CPC 0FBAA6 and select the 5 minute interval ending at 13:05 for that CPC in the Recording Date/Time column, using the default navigation to navigate to the Historical Details For A CPC workspace.

Eile	<u>E</u> dit <u>V</u> iew	<u>I</u> ools <u>N</u> avigate	Help 07/24/2014	14:52:46					OT OF
Command ==> (M5CPC1H			Historical Summary	For CPCs Serving	Sysplex			Plex ID : ZP SMF ID :	ETPLX2
			Sysp	lex ZPETPLX2					
Columns 3 to 10 of	10		-				Rows1 to	•24 of	24
<pre></pre>	<pre></pre>	Physical % Standard CP	Physical % zAAP	Physical % zIIP	Physical % IFL	Physical % ICF	Effective MSU Capacity	Capacity Indicator	+Adj Rea
$\begin{array}{c} 14/07/24 & 14:00:00\\ -14/07/24 & 14:00:00\\ -14/07/24 & 13:55:00\\ -14/07/24 & 13:55:00\\ -14/07/24 & 13:55:00\\ -14/07/24 & 13:50:00\\ -14/07/24 & 13:45:00\\ -14/07/24 & 13:45:00\\ -14/07/24 & 13:45:00\\ -14/07/24 & 13:45:00\\ -14/07/24 & 13:40:00\\ -14/07/24 & 13:40:00\\ -14/07/24 & 13:30:00\\ -14/07/24 & 13:35:00\\ -14/07/24 & 13:35:00\\ -14/07/24 & 13:35:00\\ -14/07/24 & 13:35:00\\ -14/07/24 & 13:30:00\\ -14/07/24 & 13:25:00\\ -14/07/24 & 13:25:00\\ -14/07/24 & 13:25:00\\ -14/07/24 & 13:25:00\\ -14/07/24 & 13:25:00\\ -14/07/24 & 13:25:00\\ -14/07/24 & 13:25:00\\ -14/07/24 & 13:25:00\\ -14/07/24 & 13:15:00\\ -14/07/24 & 13:15:00\\ -14/07/24 & 13:15:00\\ -14/07/24 & 13:15:00\\ -14/07/24 & 13:10:00\\ -14/07/24 & 13:0$	094E15 0FBAA6 094E15 0FBAA6 094E15 094E15 0FBAA6 094E15 0FBAA6 094E15 0FBAA6 094E15 0FBAA6 0FBAA6 0FBAA6 0FBAA6 0FBAA6 0FBAA6 0FBAA6 0FBAA6 0FBAA6 0FBAA6	84.5 88.9 84.6 88.9 80.8 80.3 80.3 80.3 80.3 80.3 80.5 81.9 82.4 81.3 80.4 81.3 80.4 81.4 81.4 81.4 81.6 82.1 82.3 80.4 81.6 82.3 80.4 81.6 82.9 80.4 81.6 82.9 80.4 81.6 82.9 80.4 81.9 82.9 80.4 81.9 82.9 80.4 81.9 82.9 80.4 81.9 82.9 80.4 81.9 82.9 80.4 81.9 82.4 81.9 82.4 81.9 82.4 81.9 82.4 81.9 82.4 81.9 82.4 81.9 82.4 81.9 82.4 81.9 82.4 81.9 82.4 81.9 82.4 81.9 82.4 81.9 82.4 81.9 82.5 80.4 81.9 82.4 81.9 82.4 81.9 82.4 81.9 82.4 81.9 82.4 81.9 82.4 81.9 82.4 81.4 81.4 81.4 81.4 81.4 81.4 81.4 81	No zAAPs Online No zAAPs Online	$\begin{array}{c} 100.0\\ 28.7\\ 99.8\\ 30.4\\ 33.0\\ 99.5\\ 99.9\\ 35.8\\ 52.4\\ 100.0\\ 100.0\\ 100.0\\ 54.9\\ 99.9\\ 56.3\\ 56.3\\ 59.9\\ 99.7\\ 55.0\\ 47.8\\ 99.8\\ 99.7\\ 55.0\\ 47.8\\ 99.8\\ 99.7\\ 55.0\\ 47.8\\ 99.8\\ 99.7\\ 55.0\\ 47.8\\ 99.8\\ 99.7\\ 55.0\\ 47.8\\ 99.8\\ 99.7\\ 55.0\\ 47.8\\ 99.8\\ 99.7\\ 55.0\\ 47.8\\ 99.8\\ 99.7\\ 55.0\\ 47.8\\ 99.8\\ 99.7\\ 55.0\\ 47.8\\ 99.8\\ 99.7\\ 55.0\\ 47.8\\ 99.8\\ 99.7\\ 55.0\\ 47.8\\ 99.8\\ 99.7\\ 55.0\\ 47.8\\ 99.8\\ 99.8\\ 99.7\\ 55.0\\ 47.8\\ 99.8\\ 99.7\\ 55.0\\ 47.8\\ 99.8\\ 99.7\\ 55.0\\ 47.8\\ 99.8\\ 99.7\\ 55.0\\ 5$	3 3 4 3 9 4 5 4 9 9 3 9 4 7 4 3 7 6 4 3 3 9 4 7 4 6 2 6 2 7 6 7 2 8 6 6 2 6 2 6 2 7 6 7 8 6 6 2 6 7 8 6 7 8 6 6 2 6 7 8 6 7 8 6 6 2 6 7 8 6 6 2 6 7 8 6 7 8 6 6 2 6 7 8 6 6 2 6 7 8 6 6 2 6 7 8 6 6 2 6 7 8 6 6 2 6 7 8 6 6 2 6 7 8 6 6 2 6 7 8 6 6 2 6 7 8 6 7 8 6 6 2 6 7 8 7 8	$\begin{array}{c} 100.0\\ 10$	$\begin{array}{c} 5001\\ 6396\\ 5001\\ 6396\\ 6396\\ 5001\\ 5001\\ 6396\\ 5001\\ 6396\\ 5001\\ 6396\\ 5001\\ 6396\\ 6396\\ 6396\\ 6396\\ 6396\\ 5001\\ 5000\\ 5001\\ 5000\\ 5001\\ 5000\\ 500\\ 5000\\ $	$\begin{array}{c} 100\\ 100\\ 100\\ 100\\ 100\\ 100\\ 100\\ 100$	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

The physical Standard CP utilization across the CPC looks OK so utilization overloading is probably occurring at the LPAR level if at all.

4 July 13:00 to 24 July 14:00



 After navigating through the 13:00 to 14:00 interval in Historical Details For A CPC it is apparent that system Z2 is running at much higher standard CP utilization than expected I need to determine what's causing this.





I might also have further navigated to Historical Details For An LPAR to isolate the statistics to just system Z2 and only for the processor pool types configured to it.

Command ==>	Detaile 5	a A 1000	Display Plex ID	: HISTORY ZPETPLX2
LPAR Z2 On CPI	C OFBAA6 -	Standard CP Pool	LPHR	
Defined MSU Capacity. Effective Logical CP Percent. Effective Physical CP Percent. Physical CP Overhead Percent. Current Weight. High Share LPs. LP %Share Of Physical. LPAR Configured Storage MB. Initial Capping Option. Absolute Capacity Limit.	None 99,2 17,3 0,0 133 6 6 6 5,2 142336 142336 No Vnavaila	Actual HSUs Consumed. Total Logical CP Percent. Total Physical CP Percent. Average Logical CPs. Initial Weight Maximum Weight Hedium Share LPs. Low Share LPs. LPAR Cluster Name. Capping Option.		1109 99.3 17.3 11.0 140 0 2 2 2 2 2 PETPLX2 No
LPAR Z2 On	CPC OFBAA6	- zIIP Pool	/	
Effective Logical CP Percent. Effective Physical CP Percent. Physical CP Overhead Percent Current Weight. Hinimum Weight. High Share LPs LP %Share Of Physical. Initial Capping Option.	77.8 12.3 0.0 170 <u>1</u> 99.3	Total Logical CP Percent Total Physical CP Percent Average Logical CPs Initial Weight Maximum Weight Hedium Share LPs Low Share LPs		77.9 12.3 3.0 1
	Vavigating	"horizontally" in Historical Details For An LPAR using the bottom of the workspace I see Total Logical standa	the navi ard CP a	igation around

the 99% level most of the intervals. This is well beyond th uuiizauon on Z2 at this time of day ...



I want to find out if there are any heavy CPU consuming address spaces on system Z2 during the 13:00 to 14:00 time-frame. Since this time-frame falls inside the last 4 hours I can take advantage of the fact that the 4-Hour Rolling Average MSU Statistics workspace has been enhanced to show address space CPU consumption in each of the 5-minute intervals over the 4-hour period. I back out to KOBSTART and select option "Z" from the Options

#### menu.

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Eile Edit View Iools Navigate Help 07/24/2014 10:14:30														. Undat	
Command ==> KOBSTART	Options	Menu			se	Summar	Ψ.						Ple	× ID : ID :	ZPETPLX:
¥	Select an option and	d then press EN1	ER		ve	Sysple	xes								_101×
Columns	1. B Report Cla	sses Data for Sy	usplex								Rows	1	to	1 of	1
♦Sysplex Name	2. C Enterprise 3. D Service De 4. E Enterprise	CPC Overview finition Data Global Enqueues	1		Gr	oup	LPAR Group Capacity Limi	it	Group LPAR MSU Limit	∆Average ⊽Group MS	Unused Us				
_ ZPETPLX	6. P Enterprise	Sysplex Overvie	in and a state of the state of				Unavailabl	le	Unavailable		0				
v	8. S LPAR Overv	iew for Sysplex			e C	ICSple	xes								_101×
Columns	10. V Service Cla	ers for Sysplex asses for Sysple	×								Rows	1	to	3 of	3
∆CICSplex ⊽Name	12. Z zOS System 12. H Historical	Resources Summary For CP(	<del>la Gerving G</del> y	aplex		∆Worst ⊽Perfo	ormance Index	Wo Cl	rst Service ass Name	∆Enqueue ⊽Waits	∆Current ⊽Buffer Wait	9	∆Curr VStri	ent ng Wait	s ∆I/O ⊽Rate
- OMEGPLE - TESTPLE - WUIPLEX	x 53 2: 4	3978/m 20 0/m	06.9% No 0.0% No	n/a n/a			0.00% 24.66% 0.00%	n/s STI n/s	a RANS a	0 0 0		0 0 0			0 0 0
5				All Active	CIC	STGR	egions							No Da	ta 🔲 🛙 🛛
I select o	ption "Z" to navigat	te to the 4-Ho	ur Rolling	phere MQ Q	ueue	Hanas	er Status								
Average	MSU Statistics wor	rkspace.		+	+	114					Rows	1	to	5 of	5
∆QMgr ⊽Name	Host   Name	QMgr Status	Channel Initiator	Command Server											
- CS04 - CS03 - CS02 - OM02 - CS01	24 23 22 21 21 21	Running Running Running Running Running	Running Running Running Running Running	Waiting Waiting Waiting Waiting Waiting											



 To display CPU utilization for all address spaces during a 5-minute 4-Hour Rolling Average time period I use the "P" navigation character to navigate to the Interval CPU Utilization By Address Space workspace for the 13:00 to 14:00 time-frame.

Command 1::>       Options Herow       Options Herow       Options Herow         *       Image fill capacity Limit Despited       Image fill cap		<u> </u>	iew <u>I</u> ools	<u>N</u> avigate <u>H</u>	elp 07/24/3	2014 16:24:3	3			
Image: Select a option and then press Entrem       Image: Select a	Command ==> KM5MSUO				4-Hour Roll	ling Avera		Optio	ons Menu	x ID : <u>ZPETPLX2</u> ID : <u>Z2</u>
4       Hour Mille       -       2.       P. Interval CPU Utilization By Address Space	M						elect an op	otion	and then press ENIER	
Image         LPAR Group           LPAR Group         Norrege Unused Group Hills         LPAR Group (aporting Lable         Group Hills         Group Hills         Group Hills         Group Hills         Group Hills         Image Hills <t< td=""><td>4 Hour HSUs % LPAR HSU Ca LPAR Capacity LPAR Capacity</td><td>pacity. Limit. Limit Basis</td><td></td><td></td><td></td><td> 8 1  Entit</td><td>2. P Inte</td><td>Deta erval</td><td>ils and LPAR Clusters CPU Utilization By Address Space</td><td> Unavaila  Unavaila</td></t<>	4 Hour HSUs % LPAR HSU Ca LPAR Capacity LPAR Capacity	pacity. Limit. Limit Basis				8 1 Entit	2. P Inte	Deta erval	ils and LPAR Clusters CPU Utilization By Address Space	Unavaila Unavaila
LPAR         Group         Coverage Unused         LPAR Group         Coupsily Limit         May soluble           Unavailable         Unavailabl	3					LPAR Grow	up			
Unavailable	LPAR Group Name	Average Unused Group MSUs	LPAR Grou Capacity	ip Gro Limit MSU	up LPAR Limit					
S         S Hinute Intervals           Columns 2 to 0 of 0         Uncapped         X LPAR Uncapped	Unavailable	Unavailable	Unavailab	le Una	vailable					
Columns 2 to 3 of 8         View         I         Rows         I to         3d of         4z           0 Time         View	$\leq$					5 Minute Inte	ervals			
• Time Period         X Time Uncapped         X Line Burlow         Capped Capped         K LPAR Capped         K LPAR Capped         K LPAR Capped         K LPAR Kapped         Kapped Kapped         Kapped         Kapped	Columns 2 to	8 of 8				+ + 1	1		Rows1	to <u>34</u> of <u>47</u>
16:15-16:17       100.00       1094.56       97.99       0.00       0.	¢Time Period	% Time Uncapped	Uncapped MSUs/Hour	% LPAR Uncapped	% Time Capped	Capped MSUs/Hour	% LPAR Capped	Un MS	roup	
	$ \begin{array}{c} 16: 15 - 16: 17\\ - 16: 00 - 16: 05\\ - 16: 00 - 16: 05\\ - 15: 55 - 15: 55\\ - 15: 45 - 15: 55\\ - 15: 40 - 15: 55\\ - 15: 35 - 15: 40\\ - 15: 35 - 15: 30\\ - 15: 35 - 15: 30\\ - 15: 25 - 15: 30\\ - 15: 25 - 15: 30\\ - 15: 25 - 15: 10\\ - 15: 0 - 15: 55\\ - 15: 10 - 15: 10\\ - 15: 0 - 15: 10\\ - 15: 0 - 15: 10\\ - 14: 55 - 15: 10\\ - 14: 55 - 15: 14: 55\\ - 14: 20 - 14: 35\\ - 14: 20 - 14: 35\\ - 14: 20 - 14: 35\\ - 14: 10 - 14: 35\\ - 14: 10 - 14: 35\\ - 14: 10 - 14: 35\\ - 14: 10 - 14: 35\\ - 14: 10 - 14: 35\\ - 14: 10 - 14: 35\\ - 14: 10 - 14: 35\\ - 14: 10 - 14: 35\\ - 14: 10 - 14: 35\\ - 14: 10 - 14: 35\\ - 14: 10 - 14: 35\\ - 14: 35 - 14: 00\\ - 14: 35 - 14: 00\\ - 14: 35 - 14: 35\\ - 13: 30 - 13: 50\\ - 13: 40 - 13: 40\\ - 13: 30 - 13: 30\\ - 13: 30\\ - 13: 30 - 13: 30\\ -$	$\begin{array}{c} 100.00\\$	$\begin{array}{c} 1 \ 0 \ 9 \ 4 \ , \ 5 \ 6 \\ 1 \ 0 \ 2 \ 6 \ , \ 2 \ 1 \\ 1 \ 0 \ 0 \ 6 \ , \ 1 \ 6 \\ 1 \ 0 \ 9 \ 4 \ , \ 2 \ 1 \\ 1 \ 0 \ 0 \ 6 \ , \ 1 \ 6 \\ 1 \ 0 \ 9 \ 4 \ , \ 3 \ 5 \\ 1 \ 0 \ 9 \ 5 \ , \ 6 \ 8 \\ 1 \ 0 \ 9 \ 3 \ 5 \ , \ 6 \ 8 \\ 1 \ 0 \ 9 \ 7 \ , \ 8 \ 6 \ 1 \ 0 \ 9 \ 7 \ 6 \ 1 \ 0 \ 9 \ 7 \ 6 \ 1 \ 0 \ 9 \ 7 \ 6 \ 1 \ 0 \ 9 \ 7 \ 6 \ 1 \ 0 \ 9 \ 7 \ 6 \ 1 \ 0 \ 9 \ 7 \ 6 \ 1 \ 0 \ 9 \ 7 \ 6 \ 1 \ 0 \ 9 \ 7 \ 6 \ 1 \ 0 \ 9 \ 7 \ 6 \ 1 \ 0 \ 9 \ 7 \ 7 \ 6 \ 1 \ 0 \ 9 \ 7 \ 6 \ 1 \ 0 \ 9 \ 7 \ 7 \ 7 \ 6 \ 1 \ 0 \ 9 \ 7 \ 7 \ 7 \ 7 \ 6 \ 1 \ 0 \ 9 \ 7 \ 7 \ 7 \ 7 \ 7 \ 6 \ 1 \ 0 \ 7 \ 7 \ 7 \ 7 \ 7 \ 7 \ 7 \ 7 \ 7$	97.99 91.87 90.08 97.96 97.96 97.96 97.97.97 97.97.97 97.328 98.664 98.664 99.548 99.185 99.185 99.185 97.29 97.29 97.29 97.29 97.29 97.29 97.29 97.29 97.29 97.29 97.29 97.29 97.29 97.29 98.664 99.185 99.185 97.29	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	select the son rows and ation By Act	5 minute in d navigate	terva boot boot boot boot boot boot boot boo	al Time period ne Interval CPU vorkspace	
						ritar adag t	2010 24 2014			



In all periods during the time-frame I see address space FLASHSCM consuming over 500% standard CP. This started task is used for stress testing purpose during designated off-peak hours. I inform the owner so that the task will not be started during peak-period in future.

Command ==>		Interv	al CPU Utilization Bu Ad	dress Space		Auto Up Plex ID SMF ID	date : <u>Off</u> : <u>M5530LGH</u> : SYS
v	A	ctual Reportin	g Timeframe For Requeste	d Period 13:30-13:35			
Report Interval Start Time.			13:30:00 Rep	ort Interval End Time			13:35:00
2			CPU Utilization				l□I×
Columns <u>2</u> to <u>9</u> of <u>18</u>					Rows	1 to44	of <u>96</u>
¢Job Service Class Name I	Service Class Period	∆CPU VPercent	GCP Percent Including Enclave Home SRB Time	IFA Percent Including Enclave Home SRB Time	zIIP Percent Including Enclave Home SRB Time	IFA on CP Percent	+zIIP on C Percent
FLASHSCH DISCRBAT CICS3A2A CI2V60 MQ02S12S STC12V30 CS02WSTR STC12V40 CONNRPT DISCRSTC DBX2DBH1 STC12V50 OBX2DIST DOF CICS6A2A CI2V60 DBX0HLM7 STC12V50 TCPIP SYSSTC CS02BRK STC12V30 C2PACHON DISCRSTC CCTALOG SYSTEM CCFAS SYSTEM CCCSCT2A CI2V60 DBX2WST STC12V50 DBX2WST CCCSCT2A CI2V60 DBX2WST CCSST2A CI2V60 DBX2WST CCSST2A CI2V60 DBX2WST CCSST2A CI2V60 DBX2WST CCSST2A CI2V50 CSSTEM WSWS2 DISCOWS MQ02S12 STC12V30 RASP SYSTEM GRS SYSTEM GRS SYSTEM GRS SYSTEM GRS SYSTEM CCTAPR22 DISCOWS WST5S12 STC12V50 CYTAPR22 DISCCSTC WST5S12 STC12V50 CTPNS6671 STC12V50 CTPNS6671 STC12V50 CYTAPR22 DISCRSTC SSAGT0B STC SSAGT0B STC CSD1622T STC DBST0H52 STC CCSSTC MST0100 STC CSD1622T STC DBST0H52 STC CCCDTMDLECE YOUR SESSION 33	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	525.6           167.7           124.3           20.2           19.6           13.2           10.0           9.2           6.2           4.8           4.0           3.9           3.8           2.5           2.5           2.5           2.5           2.5           2.5           2.5           1.5           1.5           1.2           1.4           0.4           0.4           0.4           0.4           0.4           0.4           0.4           0.4           0.4           0.4           0.4           0.4           0.4           0.4	525.6 167.7 119.6 21.3 20.2 8.2 14.9 13.2 10.0 9.2 4.5 4.8 4.0 3.9 3.8 3.3 2.8 2.5 2.2 2.2 2.0 2.0 2.0 1.5 0.3 1.3 0.1 1.5 0.3 1.3 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4				



#### NTH For CPCs -LPARs – Historical Details For A CPC (KM5CPCDH)<sup>SHARE</sup>

	Eile	Edit <u>V</u> iew	Tools	<u>N</u> avigate	Help 07,	/10/2014	14:08:00							D 1 1	
Command ==> KM5CPCDH					Hi	storical	Details Fo	r A CPC						Plex ID CPC	: <u>ZPETPLX2</u> : 094E15
					Inte	eval Stat	istics for	CPC 89	4E15						
Columns 1 4	to 8 of	8				+							Roue	1 to 1 o	f 1
Physical *	Phue	ical X	Phuei	Physical X Pl		Physical X Physic		*	Effective MSU		Capacitu	0.44	untmant		
Standard CP	ZAAP		ZIIP		IFL		ICF		Capacity		Indicator	Rea	son		
96	96.4 No zAAPs Online 10				0	6.5		100.0		5001	100		None		
Standard CP Pool															
Columns _2 to 10 of 22 Rows to 1 to 1											1 <u>1</u>				
♦LPAR Name	Defined Capacity	Defined MSU Actual MSUs Capacity Consumed		Effective CP Percen	fective Logical Total Lo Percent CP Perce		ogical E ent C	al Effective Physical CP Percent		Tota CP P	Total Physical CP Percent		cal CP ead Percent	Average Logical CPs	+Current Weight
- CT2	None		5 1214		0.8		0.9		0.1		0.1		0.0	7.0	50
_ JEO	None		245		40.8		42.0		4.8		4,9		0.1	7.0	105
_ J80	None		1437		95.6		95.8		28.7		28.7		0.1	18.0	355
VMLX01	None		4		1.0		1.3		0.1		0.1		0.0	4.0	50
_ Z1 _ Z3	None		799		86.8		87.1		15.9		16.0		0.1	11.0	310
- PHYSICAL	1										1.9		1.3		
2	ZIIP Pool														
Columns <u>2</u> t	to <u>10</u> of 1	6				۰	-	1			_		Rows	1 to <u>8</u> o	f <u> </u>
Columns <u>2</u> OLPAR Name	to <u>10</u> of <u>1</u> Effectiv CP Perce	<u>6</u> e Logical nt	Total L CP Perc	ogical (	Effective F CP Percent	⊢ Physical	- Total Ph CP Perce	i Nysical Int	Physical Overhead	CP Percen	Average t Logical	CPs	Rows Current Weight	<u>i to8</u> o Initial Weight	f <u>8</u> +Minimum Weight
Columns _2 t OLPAR Name _ JA0 JE0	to <u>10</u> of <u>1</u> Effectiv CP Perce	6 e Logical nt 71.9 9.0	Total L CP Perc	71.9	Effective f CP Percent	Physical	Total Ph CP Perce	ysical nt 24.0	Physical ( Overhead )	CP Percen 0.	t Average Logical	CPs	Rows Current Weight 200	<u>i</u> to <u>8</u> d Initial Weight	of <u>8</u> +Minimum Weight
Columns _2 d CLPAR Name JA0 JE0 JH0	to <u>10</u> of <u>1</u> Effectiv CP Perce	6 e Logical nt 71.9 9.0 5.8 71.9	Total L CP Perc	ogical 1 ent 9,3 5,9 71.9	Effective F CP Percent	+ Physical 24.0 1.3 24.0	→ 1 Total Ph CP Perce	24.0 2.1 1.3 24.0	Physical Overhead	CP Percen 0. 0. 0.	t Average Logical	CPs 3.0 2.0 2.0 3.0	Rows Current Weight 200 100 200	<u>i</u> to <u>8</u> o Initial Weight	of <u>8</u> +Minimum Weight
Columns _2 1 •LPAR Name - JA0 - JE0 - JH0 - J80 - TPN - Z1	to <u>10</u> of <u>1</u> Effectiv CP Perce	6 e Logical nt 71.9 9.0 5.8 71.9 2.2 71.9	Total L CP Perc	09ical ent 71.9 9.3 5.9 71.9 2.2 71.9	Effective f CP Percent	Physical 24.0 2.0 1.3 24.0 0.2 23.9	⊣ 1 Total Ph CP Perce	24.0 2.1 1.3 24.0 0.2 24	Physical ( Overhead )	CP Percen 0. 0. 0. 0.	Average Logical	CP s 3.0 2.0 3.0 1.0	Rows Current Weight 200 100 200 100 200	<u>i</u> to <u>8</u> o Initial Weight	+Minimum Weight
Columns _2 ( *LPAR Name _ JA0 _ JE0 _ JH0 _ JH0 _ TPN _ Z1 _ Z3 _ PHYSICAL	to <u>10</u> of <u>1</u> Effectiv CP Perce	5 e Logical nt 71.9 9.0 5.8 71.9 2.2 71.8 71.7	Total L CP Perc	ogical         1           71.9         9.3           5.9         71.9           71.9         71.9           71.9         71.9           71.9         71.9           71.9         71.9           71.9         71.9	Effective f GP Percent	+ Physical 24.0 2.0 1.3 24.0 0.2 23.9 23.9	Total Ph CP Perce	1 ysical nt 24.0 2.1 1.3 24.0 0.2 24 0.2 24 0.2 1 24 0 1 24 0 1 24 0 0 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 4 0 0 2 1 1 2 4 0 2 1 2 4 0 2 2 4 0 2 1 2 4 0 2 1 2 1 1 2 1 1 2 1 2 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1	Physical Overhead	CP Percen 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.	t Average Logical	CP = 0 2.0 2.0 1.0 1.0 naviga	Rows Current Weight 200 100 200 100 200 100 200 100	I to <u>8</u> Initial Weight	Hinimum Weight
Columns _2 4 *LPAR Name _ JA0 _ JE0 _ JH0 _ JH0 _ TPN _ Z1 _ Z3 _ PHYSICAL	to <u>10</u> of <u>1</u> Effectiv CP Perce	5 e Logical nt 71.9 9.0 5.8 71.9 2.2 71.8 71.7	Total L CP Perc	ogical ent 71.9 9.3 5.9 71.9 2.2 71.9 71.8	Effective f CP Percent	Physical 24.0 2.0 1.3 24.0 0.2 23.9 23.9	Total Ph CP Perce	24.0 2.1 1.3 24.0 0.2 24 23 0 4	Physical Overhead (MCPCDH and KM5C	CP Percen 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.	t Average Logical	CPs 3.0 2.0 3.0 1.0 naviga	Rows Current Weight 200 100 200 100 200 100 200 100 200 100 200 100 200 100 200 100 200 100 200 100 200 100 200 100 200 100 200 100 1	I to® o Initial Weight he KM5CPC s. KM5CPC	+Minimum Weight
Columns _2 4 *LPAR Name JA0 JE0 JH0 JH0 TPN Z1 Z3 PHYSICAL	to <u>10</u> of <u>1</u> Effectiv CP Perce	5 e Logical nt 71.9 9.0 5.8 71.9 2.2 71.8 71.7	Total L CP Perc	ogical ( ent ( 9.3 5.9 71.9 71.9 71.9 71.9 71.8	Effective ( GP Percent	Physical 24.0 2.0 1.3 24.0 0.2 23.9 23.9 23.9	Total Ph CP Perce	24.0 2.1 1.3 24.0 0.2 24 23 6 8 6 8 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Physical Overhead of MCPCDH and KM5C km52 km52 km52 km52 km52 km52 km52 km52	H is th PC2H PC2H	t Average Logical	CPs	Rows Current Weight 200 100 100 200 100 200 100 100 200 100 1	I to <u></u> Initial Weight he KM5CPC s. KM5CPC	+Minimum Weight
Columns _2 4 ∧LPAR Name JA0 JE0 JH0 TPN Z1 Z3 PHYSICAL ✓ Columns _2 4 ∧LPAR	to <u>10</u> of <u>1</u> Effectiv CP Perce	5 e Logical nt 71.9 9.0 5.8 71.9 2.2 71.8 71.7 2.1 2.1 2.2 71.8 71.7	Total L CP Perc	ogical ( ent ( 9,3 5,9 71,9 2,2 71,9 71,8 71,8	Effective f GP Percent	Physical 24.0 2.0 1.3 24.0 0.2 23.9 23.9 23.9 Physical	Total Ph CP Perce	24.0 2.1 1.3 24.0 0.2 24 23 4 24 24 24 24 24 24 24 24 24 24 24 24 2	CMCPCDH Ind KM5C Splays ea	H is th PC2H ach o e sta	t Average Logical	CPs 3.0 2.0 3.0 1.0 haviga v work _PAR de M	Rows Current Weight 200 100 100 100 100 100 100 100	I to <u>to</u> Initial Weight he KM5CPC s. KM5CPC by processor y and cappir	+Hinimum Weight CH DH Ng, p
Columns _2 ( Columns _2 ( Name JA0 JE0 JH0 JB0 TPN Z1 Z3 PHYSICAL Columns _2 ( Columns _2 ( Columns _2 ( Name	to <u>10</u> of <u>1</u> CP Perce to <u>10</u> of <u>1</u> Effectiv CP Perce	5 e Logical 71.9 9.0 5.8 71.9 2.2 71.8 71.7 1 1 e Logical nt	Total L CP Perc Total L CP Perc	ogical ( 9.3 5.9 71.9 2.2 71.9 71.8 71.8	Effective f GP Percent Effective f GP Percent	Physical 24.0 2.0 1.3 24.0 0.2 23.9 23.9 23.9	Total Ph CP Perce	24.0 2.1 1.3 24.0 24 23 0 24 23 0 24 24 0 24 23 0 24 0 24	MCPCDH ind KM5C isplays ea oool. Thes	H is th PC2H ach o e stand log	t Average Logical	aviga work PAR de Massor u	Rows Current Weight 200 100 100 200 100 200 100 200 100 200 100 200 100 200 100 200 100 200 100 1	L to ( of the constraint	Hinimum Weight C1H DH Ng, Pt
Columns _2 1 ◇LPAR Name - JA0 - JE0 - JH0 - JB0 - TPN - Z1 - Z3 - PHYSICAL V Columns _2 1 ◇LPAR Name - VHLX01 - VHLX03	to <u>10</u> of <u>1</u> CP Perce	5 e Logical nt 71.9 9.0 5.8 71.9 2.2 71.8 71.7 1 e Logical nt 3.1 0.0	Total L CP Perc Total L CP Perc	ogical ( ent ( 71.9 9.3 5.9 71.9 2.2 71.9 71.8 ogical ( ent ( 3.4 0.0	Effective F GP Percent Effective F GP Percent	Physical 24.0 2.0 1.3 24.0 0.2 23.9 23.9 23.9 Physical Physical 3.1 0.0	Total Ph CP Perce	24.0 2.1 1.3 24.0 0.2 24 24 0 0.2 24 24 0 0 24 24 0 0 24 24 0 0 0 2 24 0 0 0 2 1 1 9 2 4 0 0 2 1 1 1 9 2 4 0 0 2 1 1 1 9 2 4 0 0 2 1 1 1 9 2 4 0 0 2 1 1 1 9 2 4 0 0 2 1 1 1 9 2 4 0 0 2 1 1 1 9 2 4 0 0 2 1 1 1 9 2 4 0 0 2 1 1 1 9 2 4 0 0 2 1 1 1 9 2 4 0 0 2 1 1 1 9 2 4 0 0 2 1 1 1 9 2 4 0 0 0 2 1 1 1 1 9 2 4 0 0 0 2 1 1 1 1 9 2 4 0 0 2 1 1 1 1 1 9 2 4 0 0 2 2 4 0 0 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	AMCPCDH and KM5C lisplays ea bool. Thes bysical ar liperdispa	H is the PC2H PC2H ach o e stand nd log ttch in	t Average Logical	CP: 3.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2	Rows Current Weight 200 100 100 100 100 100 100 100	he KM5CPC s. KM5CPC by processor y and cappir IRD weights age.	+Hinimum Weight C1H DH Ng, S, Pt
Columns _2 4 ∧LPAR Name JA0 JE0 JH0 JH0 Z1 Z23 PHYSICAL ✓ Columns _2 4 ∧LPAR Name VMLX01 VMLX01 VMLX01 VMLX01 PHYSICAL	to <u>10</u> of <u>1</u> Effectiv CP Perce	5 e Logical nt 71.9 9.0 5.8 71.9 2.2 71.8 71.7 2.1 2.2 71.8 71.7 2.2 71.8 71.7 2.2 71.8 71.7 2.2 71.8 71.9 2.2 71.9 2.2 71.9 2.2 71.9 9.0 5.8 71.9 2.2 71.9 71.9 2.2 71.9 71.7 7 2.2 71.9 71.9 7.7 7 7.7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Total L CP Perc	ogical 9 9.3 5.9 71.9 2.2 71.9 71.8 0.0 2.0	Effective ( GP Percent CP Percent GP Percent	Physical 24.0 2.0 1.3 24.0 0.2 23.9 23.9 23.9 23.9 23.9 23.1 0.0 1.9	Total Ph CP Perce	24.0 2.1 1.3 24.0 0.2 24 0 0.2 24 0 0 24 0 0 24 0 0 0 24 0 0 0 24 0 0 0 0	Physical Overhead (MCPCDH and KM5C lisplays ea bool. Thes physical ar liperdispa	H is th PC2H ach o e stan nd log tch ir	t Average Logical	CPs aviga v work PAR de Missor u confi	Rows Gurrent Weight 200 100 100 100 100 100 100 100	I to <u>E</u> Initial Weight he KM5CPC by processor y and cappir IRD weights age.	Hinimum Weight CH DH Ng, Pt
Columns _2 4	to <u>10</u> of <u>1</u> CP Perce	5 e Logical nt 71.9 9.0 5.8 71.9 2.2 71.8 71.7 1 e Logical nt 3.1 0.0 1.9	Total L CP Perc	ogical ( ent ( 71.9 ) 9.3 ) 5.9 ) 71.9 ) 2.2 ) 71.9 ) 71.8 ) ogical ( ent ( 3.4 ) 0.0 ) 2.0 )	Effective f GP Percent Effective f GP Percent	Physical 24.0 2.0 1.3 24.0 0.2 23.9 23.9 23.9 23.9 Physical Physical 3.1 0.0 1.9 2:50 ⊢	Total Ph CP Perce	24.0 2.1 1.3 24.0 0.2 24 23 0 0 24 24 23 0 0 0 24 24 23 0 0 0 2 1 0 0 2 1 1 2 1 1 3 2 4 0 0 0 2 1 1 1 3 2 4 0 0 2.1 1 1 3 2 4 0 0 2.1 1 1 3 2 4 0 0 2.1 1 1 3 2 4 0 0 2.1 1 1 3 2 4 0 0 2 2 4 0 0 2 2 4 0 0 2 2 4 0 0 2 2 4 0 0 2 2 4 0 0 0 2 2 4 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 1 1 1 1 1 1 1 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 2 4 0 0 0 2 0 0 0 2 2 4 0 0 0 0	Physical Overhead (MCPCDH and KM5C lisplays ea bool. Thes physical ar liperdispa	H is th PC2H ach o e stand nd log ttch in	t Average Logical	CP: 3.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2	Rows Current Weight 200 100 100 100 200 100 200 100 200 100 200 100 200 100 200 100 1	I to <u>Initial</u> Meight he KM5CPC s. KM5CPC by processor y and cappir IRD weights age. No	+ Minimum Weight C1H DH X ng, P t S, No



#### NTH For CPCs and LPARs – Historical Details For A CPC #2 (KM5CPCDH)





#### NTH For CPCs - LPARs – Hist Details For A CPC #3 (KM5CPCDH)




#### NTH For CPCs - LPARs – Hist Details For An LPAR (KM5LPRDH) \*\*\*\*\*

<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>T</u> ools <u>N</u> avigate	e <u>H</u> elp 07/10/2014	14:17:20		Dianlau	
Command ==> KM5LPRDH	Historical I	Details Fo	r An LPAR	Plex ID LPAR	: <u>ZPETPLX2</u> : <u>J80</u>
	LPAR J80 On CPC (	994E15 - S	tandard CP Pool		
Defined MSU Capacity Effective Logical CP Percent Effective Physical CP Percent. Physical CP Overhead Percent. Current Weight. High Share LPs. LP %Share Of Physical. PHK Configured Storage MB. nitial Capping Option		None 95.6 28.7 0.1 355 0 12 53.3 204800 No Jnavaila	Actual MSUs Consumed. Total Logical CP Percent. Total Physical CP Percent. Average Logical CPs. Initial Weight. Maximum Weight. Medium Share LPs. Low Share LPs. LPHK Cluster Name. Capping Option.		1437 95.8 28.7 18.0 350 0 2 4 7TOPLAJO No
~	LPAR J80 On (	CPC 094E15	- zIIP Pool		
Effective Logical CP Percent Effective Physical CP Percent Physical CP Overhead Percent Current Weight Minimum Weight. High Share LPs LP %Share Of Physical Initial Capping Option		71.9 24.0 0.0 200 1 63.6 No	Total Logical CP Percent. Total Physical CP Percent. Average Logical CPs. Initial Weight. Maximum Weight. Medium Share LPs. Low Share LPs.	· · · · · · · · · · · · · · · · · · ·	71.9 24.0 3.0 1 1

The majority of the statistics are well-known from the realtime workspaces but Initial Capping Option, Capping Option and Absolute Capacity Limit may require explanation. Initial Capping Option refers to the Hardware Capping specified through the HMC. Capping Option refers to either a Hardware Cap being set or an Absolute Capacity Limit in units of 1/100ths of a physical CP being set.

KMLPRDH is the default navigation from any LPAR row in KM5CPCDH. The workspace presents the same statistics as the row information in KM5CPCDH for each processor pool type configured to the LPAR.



## NEAR TERM HISTORY for WLM SERVICE CLASSES AND ADDRESS SPACES







: 01

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26

∆Actua

VNetwo

Auto Update

SHF ID :

Plex ID : ZPETPLX2

26 of

∆Workload

TS0

STC

STC

SIC

STC

BATCH

CICS

STC

SIC

WAS

BATCH

### Near Term History For WLM Service Classes and Address Spaces Service Classes for Sysplex (KM5WSCO)

File Edit View Iools Navigate Help 07/12/2014 11:24:27 Command ==> KM5WSC0 **Options Menu** ses for Sysplex Select an option and then press ENTER mmary Columns 1. A Address Spaces for Service Class Rows 1 to 2. B Subsystem Workflow Analysis ∆Goal ∆Goal **∆Transaction AService** 3. C Systems for Service Class 4. D Workflow Analysis for Service Class Δ VType VClass VRate 6. H Historical Summary For Service Class Avg Resp ( 2.0 s AvgResp 48.5 TS0 STCI 1V9 Velocitu(+I/0) > 90 Velocio 0.0 STCI2V7 Velocitu(+I/0) > 70 Velocio 0.0 BATI1V90 1 || Highest 0.90 .90 Velocity(+I/0) > 90 Velocio 0.0 STCI1V40 1 | Highest 0.80 Velocitu(+I/0) > 40 Velocio 0.0 Velocio STCI2V50 1 | High 0.76 locitu(+I/0) > 500.0 1 | High 0.66 tu(+1/0) > 50 Velocio 0.0 BATI2V50 CI2V60 1 High 0.65 0.71 /0) > 60 Velocio 0.0 STCI2V30 Velocio 1 | High 0.63 1.00 30 0.0 Velocio STCI 1V30 1 High 0.60 0.75 0.0 1 | Highest WI180201 0.50 0.50 PctResp 122.4 0 50 B-1B-II390%P7 1 🛛 Medium 0.50 112902P5 1 High 0.50 A new H navigation option on the Service Classes for Sysplex CI1902P5 1 🛛 Highest 0.50 workspace navigates to the most recent 2 hours (by default) of CI390201 0.50 1 🛛 Medium CI350210 1 Medium 0.50

statistics for a selected service class period (workspace KM5WSCOH) 0.38 | Velocity(+1/0) > 5 Velocio 3221.7 SIC 0.00 Velocity(+I/0) > 60 Velocio STC 0.0 Discretionary Discret 25.9 STC 0.00 Velocitu(+I/0) > 40 Velocio SIC 0.00 0.0 Discretionary 0.00 Discret 0.0 STC Discretionary Discret BATCH 0.5 0.00 0.00 Sys Goal SysGoal 0.0 SYSTEM Sys Goal 0.00 SysGoal 0.0 SYSTEM Velocity(+I/0) > 50 Velocio STC 0.00 0.0

Complete your session evaluations online at www.SHARE.org/Pittsburgh-Eval

0.44

0.27

0.00

0.00

0.00

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0.00

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STCI2V40

STCI2V60

DISCOMVS

STCI3V40

DISCRSTC

DISCRBAT

SYSTEM

SYSSIC

STCI3V50

DDF

1 🛛 High

1 | High

1 Medium

1 🛛 Medium

Lowest

Unavailable

Unavailable

1 🛿 Unavailable

1 Unavailable

1 Unavailable

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### Near Term History For WLM Service Classes and Address Spaces

Historical Summary For A Service Class Period (KM5WSCOH)

	_ <u>F</u> ile	<u>E</u> dit	View Io	ools <u>N</u> aviga	te	<u>H</u> elp 07/13	/2014 11:31	: 14					Dien		MISTORY
Command ==> KM5WSCOH						Historical Su	mmary For f	) Sei	rvice Class Per	iod			Plex SMF	ID : ID :	ZPETPLX
-					Ser	vice Class TS	0 Period 1	(Goi	al = Avg Resp (	(2.0 s)					
Columns 1 to	5 of	5					+ +	t	÷			Rows	1 to	1 of	1
Goal Importance	Duratio	'n	Service Descrip	e Class Stion			Workload Name	Rei Gre	source oup						
High	Unavail	able	TSO wor	rkload			TSO								
Ý							Historical	. Su	mmary						L I I ×
Columns 3 to	8 of	8					← →	1	1			Rows	_1 to	<u>39</u> of	432
♦Recording Date/Time		Perfo Inde:	ormance x	Actual		Avg. Resp. Time	Avg. Wait Time	:	Avg. Exec. Time	Trans. Rate	Service Class SUs/Second				
$\begin{array}{c} 14/07/13 11\\ 14/07/13 11\\ 14/07/13 11\\ 14/07/13 11\\ 14/07/13 11\\ 14/07/13 11\\ 14/07/13 11\\ 14/07/13 11\\ 14/07/13 10\\ 14/07/13 10\\ 14/07/13 10\\ 14/07/13 10\\ 14/07/13 10\\ 14/07/13 10\\ 14/07/13 10\\ 14/07/13 10\\ 14/07/13 10\\ 14/07/13 10\\ 14/07/13 10\\ 14/07/13 0\\ 14/0$	$\begin{array}{c} :30:00\\ :25:00\\ :20:00\\ :15:00\\ :00:00\\ :55:00\\ :55:00\\ :55:00\\ :45:00\\ :20:00\\ :25:00\\ :20:00\\ :25:00\\ :15:00\\ :05:00\\ :55:00\\ :15:00\\ :55:00\\ :45:00\\ :55:00\\ :20:00\\ :55:00\\ :20:00\\ :55:00\\ :20:00\\ :55:00\\ :20:00\\ :55:00\\ :20:00\\ :55:00\\ :20:00\\ :55:00\\ :15:00\\ :05:00\\ :00:00\\ :55:00\\ :15:00\\ :00:00\\ :55:00\\ :15:00\\ :00:00\\ :55:00\\ :15:00\\ :00:00\\ :55:00\\ :00:00\\ :55:00\\ :15:00\\ :00:00\\ :55:00\\ :00:00\\ :55:00\\ :00:00\\ :55:00\\ :00:00\\ :55:00\\ :00:00\\ :55:00\\ :00:00\\ :55:00\\ :00:00\\ :55:00\\ :00:00\\ :55:00\\ :00:00\\ :55:00\\ :00:00\\ :55:00\\ :00:00\\ :55:00\\ :00:00\\ :55:00\\ :00:00\\ :25:00\\ :00:00\\ :25:00\\ :00:00\\ :25:00\\ :00:00\\ :25:00\\ :20:00\\$		1.89 1.85 1.67 1.78 1.67 1.84 1.72 1.84 1.72 1.81 1.69 1.77 1.69 1.71 1.81 1.72 1.81 1.72 1.85 1.77 1.69 1.81 1.78 1.85 1.77 1.67 1.69 1.83 1.78 1.85 1.77 1.67 1.67 1.83 1.79 1.83 1.79 1.83 1.79 1.83 1.77 1.64 1.79 1.83 1.77 1.64 1.79 1.83 1.77 1.64 1.79 1.83 1.77 1.64 1.79 1.83 1.79 1.83 1.77 1.64 1.79 1.83 1.79 1.83 1.79 1.83 1.79 1.83 1.79 1.83 1.79 1.83 1.79 1.83 1.79 1.83 1.79 1.83 1.79 1.83 1.79 1.83 1.79 1.64 1.79 1.64 1.79 1.64 1.70 1.64 1.70 1.64 1.70 1.83 1.70 1.64 1.70 1.72		000000000000000000000000000000000000000	3,781 3,698 3,347 3,554 3,554 3,554 3,548 3,619 3,445 3,548 3,614 3,548 3,614 3,378 3,571 3,428 3,428 3,428 3,428 3,428 3,428 3,428 3,428 3,571 3,571 3,571 3,571 3,571 3,571 3,571 3,568 3,445 3,571 3,568 3,571 3,568 3,447 3,589 3,568 3,593 3,568 3,448 3,593 3,568 3,593 3,568 3,593 3,568 3,593 3,568 3,448 3,593 3,668 3,448 3,289 3,564 3,447			3.781 3.698 3.347 3.554 3.347 3.486 3.649 3.445 3.614 3.614 3.614 3.571 3.548 3.614 3.614 3.571 3.571 3.571 3.571 3.551 3.785 3.533 3.344 3.379 3.630 3.582 3.554 3.552 3.552 3.552 3.552 3.552 3.554 3.552 3.552 3.554 3.5562 3.5562 3.5562 3.5562 3.5562 3.5562 3.5562 3.5562 3.5562 3.5562 3.5562 3.5562 3.5562 3.5562 3.5562 3.5562 3.5564 3.3385 3.3385 3.344 3.3365 3.3385 3.3447 3.3447 3.564	46.040 45.950 48.700 49.270 48.050 47.910 47.670 47.660 46.110 49.410 49.250 48.400 46.940 48.250 48.200 48.300 48.300 46.940 48.300 46.940 48.300 46.940 48.300 48.300 48.300 49.050 47.170 46.400 48.300 48.300 49.050 47.110 46.400 48.300 46.010 45.800 48.780	66906.940 61208.370 59869.650 64062.560 67584.250 60542.820 63307.360 63746.980 69751.810 60411.730 64733.700 69263.500 65020.480 60026.450 70631.190 65534.930 57659.200 70651.190 62800.640 67213.250 58874.240 65534.240 65534.240 65534.240 65534.240 65534.240 65534.240 65534.240 65534.240 65534.240 65534.240 65534.240 65534.240 65534.240 65534.240 70651.190 65534.240 65534.240 70651.190 65534.240 65534.240 70651.190 65534.240 65534.240 70651.190 65534.240 70651.190 65534.240 65534.240 70651.190 65534.240 70651.190 65534.240 70651.100 65534.240 70650.810 65535.100 65555.000 65555.000 65555.000 65555.000 65555.000 65555.000 65555.000 65555.000 65555.000 65555.000 65555.000 65555.000 65555.000 65555.0000 65555.0000 65555.0000 65555.0000 655555.00000 6555	e class pe response d service	eriod peri e time unit cons	forma	ince ion.
							11 July 23	1:31	to 13 July 11:	31				R	HISTORY
Complete y	our sess	ion e	valuatio	ons online a	it w	ww.SHARE.c	org/Pittsbu	rgh	n-Eval						



### Near Term History For WLM Service Classes and Address Spaces Historical Details For A Service Class Period (KM5WSCDH)

	<u> </u>	Edit	View Ioo	ls <u>N</u> av	igate <u>H</u> elp	07/1	3/2014	11:33:32								
Command ==> KM5WSCDH					Histor	ical [	Details	For A Service (	Class	Period				Ple> Svc0	ilay ID lass	: ZPETPLX2 : ISO
~					Service (	lass 1	ISO Peri	od 1 (Goal = Av	/g Res	p < 2,0 s	)					
Columns 1 to	o 7 of	7					+	- t i i					Rows	1 to	1	of 1
Performance Index	Actual		Avg. Resp Time	). A	vg. Wait ime	Avg. Time	Exec.	Trans. Rate	Serv SUs/	ice Class Second						
1.69		θ	3.3	378	0.000		3.378	49.410		69263.500						
Y						5	Service	Class Period CF	טי							
Columns <u>1</u> t	o _9 of 1	3					+						Rows	1 to	1	of 1
CPU Percent	GCP Per Enclave	cent I Home	ncluding SRB Time	IFA P Encla	ercent Inclu ve Home SRB	ding Time	zIIP P Enclay	ercent Includir e Home SRB Time	ng I P	FA on CP ercent	zIIP on CP Percent	TCB Perc	ent	SRB Percent	Jo Ti	ь CPU me
136.9			50.1			0.0		86.	9	0.0	22.9		136.8	0.0		408.58
$\sim$					Se	rvice	Class P	eriod Address S	Space	CPU						
Columns <u>3</u> t	o <u>10</u> of <u>1</u>	6					+						Rows	1 to	30	of <u>107</u>
¢Job Name	ASID S	MF ID	∆CPU VPercer	nt	GCP Percer Enclave Ho	nt Incl me SRE	luding 3 Time	IFA Percent In Enclave Home S	ncludi SRB Ti	ng zIIP me Encla	Percent Includ ive Home SRB Ti	ing I me P	FA on CP ercent	zIIP on C Percent	P	+TCB Percent
- U020007 - U020009 - U020008 - U020010 - U050017 - U050027 - U050007 - U050007 - U050004 - U050004 - U050004 - U040016 - U040016 - U040020 - U040020 - U040020 - U040020 - U040020 - U040020 - U040005 - U070030 - U040027 - U040027	AS         3 to 10 of 16           ORG         O 200C         Z1         O 200C         Z1         COUP         GCP Percent Including Enclave Home SRB Time           0007         0200C         Z1         Z0.4         7.5           0008         0026 I         Z1         Z0.4         7.5           0008         0026 I         Z1         Z6.1         7.5           0008         0026 I         Z1         Z6.0         7.8           0010         02F9 I         Z1         24.9         7.4           0017         02DC I         Z1         0.5         0.5           0003         0284 I         Z1         0.4         0.4           0017         02B0 I         Z1         0.4         0.4           00017         02B9 I         Z1         0.4         0.4           0012         02B9 I         Z1         0.4         0.4           0016         0281 I         Z1         0.2         0.2           0024         0298 I         Z1         0.2         0.2           0030         02C6 I         Z1         0.2         0.2           00300         02C6 I         Z1         0.2 <t< th=""><th></th><th>KM run rep</th><th>5WSCD ning in th</th><th>H displays CF le service cla riod, 10:30-10</th><th>B.9 B.7 7.5 3.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0</th><th>tistics fo iod durin this exa</th><th>r all address ing the select ample.</th><th></th><th>26.4 26.1 26.0 24.8 17.8 0.6 0.5 0.4 0.4 0.4 0.3 0.2 0.2 0.2 0.2 2</th></t<>								KM run rep	5WSCD ning in th	H displays CF le service cla riod, 10:30-10	B.9 B.7 7.5 3.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	tistics fo iod durin this exa	r all address ing the select ample.		26.4 26.1 26.0 24.8 17.8 0.6 0.5 0.4 0.4 0.4 0.3 0.2 0.2 0.2 0.2 2
070002 040004 040021 040007 040003	02       02AF []       Z1       0.2         04       02BA []       Z1       0.2         04       02BA []       Z1       0.2         021       02C1 []       Z1       0.2         007       0292 []       Z1       0.2         003       0291 []       Z1       0.2								0 0 0 0 0	.0 .0 .0		D.0 D.0 D.0 D.0 D.0 D.0	0. 0. 0. 0. 0.		.0 .0 .0 .0	0.2 0.2 0.2 0.2 0.2
						10:	:30 +	Display 10:35	→ 10	:40						HISTORY



### Near Term History For WLM Service Classes and Address Spaces

#### Historical Details For An Address Space(KM5ASP3H)

File Edit View Tools Navigate Help 07/14/2014 15:07:15 Displau : HISTORY Command ==> Plex ID : ZPETPLX2 Historical Details For An Address Space KM5ASP3H SMF ID : Z1 CPU Used By U020008 0x0026 \_ 🔲 X Service Class.... TS0 CPU Percent..... IFA Percent Including Enclave Home SRB Time..... GCP Percent Including Enclave Home SRB Time..... 5.6 0.0 zIIP Percent Including Enclaye Home SRB Time..... 21.6 IFA on CP Percent..... 0.0 zIIP on CP Percent..... 2.8 TCB Percent..... 27.1 SR8 Percent..... 0.0 Job CPU Time..... 81.44 Job Additional SRB Service Percent..... 0.0 Job Preemptable Home SRB Service Percent..... 0.0 27.1 Time On CP Percent..... CPU Percent Excluding Home SRB Time..... 5.6 \_ \_ × Real Storage Used By U020008 0x0026 Total Frames..... 7638 Active Frames..... 6812 Page-In Rate..... Active Frames Working Set..... 0 8853 Active Frames Fixed..... 185 Active Frames DIV..... Idle Frames..... 826 Auxiliary Storage Slots..... Shared Prone Total View Shared Page-In Rate..... 0 Placing cursor on highlighted Memory Objects Allocated Shared Pages Total Valid..... Hemory Objects Allocated..... display line and pressing Enter will navigate to Historical System Memory Objects And Large Pages workspace Common Storage Used By U020008 KM5STG1H for the system the address space is active on. Amount CSA In Use..... 136 Percentage CSA In Use..... Amount SOA In Use..... 96 Percentage SQA In Use..... 2580 Percentage ECSA In Use..... Amount ECSA In Use..... Amount ESQA In Use..... 529 Percentage ESQA In Use..... 371520 Elapsed Time..... KM5ASP3H displays CPU and Storage statistics for an Hemory Objects/Large Pages Used By address space including standard and specialty processor CPU consumption, real-storage, common storage and large Avg MemObjs Allocated..... 4 Âva age/memory object statistics. 0 Avg HemObjs HV Shared..... Avg 1MB Fixed Frames..... Unavaila Avg MemObjs Backed By 1MB Frames..... 0 Avg 1MB Pages Backed In Central..... Average Storage..... 4194304 Avg Storage HV Common..... 0 Avg Storage HV Shared..... 0 High Water Hark HV Common..... 0 Memory Limit..... 2048



### Near Term History For WLM Service Classes and Address Spaces Historical System Memory Objects And Large Pages(KM5STG1H)

File Edit View Tools Navigate Help 07/18/2014 13:47:40		
Command ==> KM5STG1H Historical System Memory Obje	Displ Plex cts And Large Pages SMF I	ay : <mark>HISTORY</mark> ID : <u>ZPETPLX2</u> ) : <u>Z3</u>
Memory Objects Used (	On System Z3	
Avg MemObjs HV Common	Avg MemObjs HV Shared HV Shared Percent In Use. HV Common Percent In Use. Avg HV Shared Auxiliary Slots. Avg Fixed MemObjs Available For IMB Frames. Avg Fixed Common MemObjs Inactive 1MB Frames. Percent 1MB Pages Used By MemObjs Avg Fixed 1MB Pages Built By 4K Pages. Avg Common 1MB Pages Orphaned Avg Pageable 1MB Frames Available To MemObjs. Avg 1MB LFAREA Frames Used For 1MB Pages. Avg 1MB Pages Demoted/Converted Requests.	. 21 . 0.5 . 48.0 . 7 . 0 . 8.6 . 0 . 0 . 0 . Unavaila . Unavaila . Unavaila

KM5STG1H displays 12 memory object statistics and 13 1 MB large page statistics. These include 64-bit page counts and percent usage in Common and Shared areas, 1 megabyte frames converted to 4K frames, percent 1 megabyte frames used, pageable 1 megabyte frame statistics.

\_07:40 + Display 07:45 + 07:50

HISTORY

Near Term History For WLM Service Classes and Address Spaces



#### Interval CPU Utilization By Address Space (KM5ASP1H)



-

#### Near Term History For WLM Service Classes and Address Spaces Interval CPU Utilization By Address Space (KM5ASP1H)

<u>File Edit View Iools Navigate Help 07/18/2014 14:25:35</u> Auto Update : <u>01</u>												
Command ==> KM5ASP1H*			Intervi	al CPU Utilization	By Addr	ess Space		Plex ID SMF ID	: M5530LGH : SYS			
¥		A	ctual Reporting	) Timeframe For Req	uested	Period 11:50-11:55						
Report Inte	rval Start Time.			11:50:00	Repor	t Interval End Time			11:55:00			
$\sim$				CPU Utilizat	ion							
Columns <u>2</u>	to <u>9</u> of <u>18</u>				Ļ		Rows	1 to44	of <u>99</u>			
¢Job Name	Service Class	Service Class Period	∆CPU ⊽Percent	GCP Percent Enclave Home S.	-	IFA Percent Including Soclave Home SRB Time	zIIP Percent Including Enclave Home SRB Time	IFA on CP Percent	+zIIP on C Percent			
- EMEHUXA - H5D0LI01 - M5D0LI02 - D8S02520 - BKEALI02 - BKEALI01 - WIM	BATCH STC STC STC BATCH BATCH SYSTEM	2 2 2 2 2 2 2	72.3 14.6 14.5 3.0 1.4 1.4		72. 14.6 14.5 3.0 1.4	0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0			
_ OHPHDS _ OHT2DSSG _ \$GLASYSG _ SBHUBLL _ RMFGAT _ OHD2PTEH	STC STC STCPROD STC STC STC	2 2 1 2 1 2	0.9 0.9 0.9 0.6 0.6		se dis	cond sub-panel actu splays the time range	ally represent. The su of the row navigated	b-panel hea from in KM5	der 5MSUO			
- C5D1622L - OMT1BCDG - M5D0TLGX - M5D0TLGX - M530DTOH - LAT0DSSG - OMT1BCSG - S8AGT0B	STC STC STC SYSSIC SYSSIC STC STC STC	2 2 2 1 2 2 2 2 2 2	0.5 0.5 0.4 0.4 0.4 0.4		0.5 0.5 0.5 0.4 0.4 0.4 0.4	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0			
- I5D0TOM0 - C5D1622H - H5S2L2TH - H5S1TOM - OHPHTOM - C5B0TOM1 - I5D0BTOM1 - H5D0JYG - H5D0JYG	I STC I STC I STC I STC I STC I STC I STC I STC	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.4 0.4 0.4 0.4 0.4 0.4 0.4		0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	$ \begin{array}{c} 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0$			
C5016221 C580T0M0 BC01BT0M DBST0M52 C5D1622S CVT2T0MG 1500JHT0 S8HUB1 ONT1GWSG	1 STC 1 STC 1 STC 1 STC 1 STC 1 STC 1 STC 1 STC 1 STC	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0,4 0,4 0,4 0,4 0,4 0,4 0,4 0,3 0,3	The statisti in descend to determin	cs for ing CF e the	the time interval sho PU Percent sequenc address space(s) that tion and pushing the	w the processor utiliza e. This navigation is us at may be creating a "s	ations seful spike"	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0			
_ H5D0RHTG _ TCPIPG _ VTAN25 _ H5D0HAHB _ S4S0DS61 _ XCFAS _ I5D0BHB0	STC SYSSTC SYSSTC STC STC SYSTEM STC	2 1 2 2 1 2	0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3	towards its	limits.			0.0 0.0 0.0 0.0 0.0 0.0	$\begin{array}{c} 0 & . \\ 0 & . \\ 0 & . \\ 0 & . \\ 0 & . \\ 0 & . \\ 0 & . \\ 0 & . \\ 0 & . \\ 0 & . \\ 0 & . \\ 0 & . \\ \end{array}$			
				Friday Ju	ly 18 2	014			66			





## **Problem Solving – CPU delays on LPAR ?**

кмбызсхн				Histo	orical Sysplex	Delay Details		
$\sim$				Address	Space Delays	On Sysplex ZPE	TPLX2	
Columns <u>3</u>	to <u>11</u> o	f <u>18</u>			←    →	↑ ↓		
∆Job ⊽Name	¢ASID	Service Class	∆SMF ID ⊽	∆Velocity ⊽Percentage	∆Total Delay ⊽Percentage	∆Total Using ⊽Percentage	⊽Total CPU _Wait Perce	ntage
<pre>- FLASHSCM - U0270041 - U0270031 - U0270021 - U0270051 - U0270051 - TWOCITY - ISSBJBP2 - ZFSV15B2 - ZFSV15B2 - ZFSV15B3 - SSBJBP1</pre>	0048 028A 00F9 026D 0125 02A8 0336 0043 0046 0044 0040 0040	DISCRBAT DISCOMVS DISCOMVS DISCOMVS DISCOMVS DISCOMVS DISCRBAT DISCRBAT DISCRBAT	Z2 Z3 Z3 Z3 Z3 Z3 Z1 Z2 Z2 Z2	50 14 13 16 12 14 6 22 9 28 55 2	99 84 83 82 82 82 74 46 42 41 38 34	Sort Wait	CPU	99 84 83 82 82 82 74 46 42 41 38
_ ZFSV1521 _ U0250035 _ LDAPTST0 _ LDAPTST0 _ LDAPTST0	0042 0024 0390 02DE 0234	DISC Clas	S	47 67 22 30	374 333 30 29 287	30 66 11 8 12		34 33 30 29 28
	0043 0338 0298 036E 016A 0042 0386	DISCRE DISCRS DISCRS DISCOMVS STCI2V40 DISCRBAT DISCOMVS	Z1 Z3 Z1 Z1 Z1 Z3 Z1 Z3 Z1	28 22 12 17 75 57 40	27 27 26 24 28 23 19	11 8 4 5 74 30 13		27 27 26 23 23 19
CICS3A1A LDAPTST0 LDAPTST0 LDAPTST0 CSQ2MSTR U0820014	01A6 02F2 038D 022E 0286 031F	CI2V60 DISCOMVS DISCOMVS DISCOMVS STCI2V40 DISCOMVS	21 21 21 21 22 21 22 21	78 16 8 31 76 48	18 18 18 17 23 16	63 3 2 8 64 15		18 18 17 16 16



### Historical Sysplex Delay Details (KM5WSCXH)

	<u> </u>	e <u>E</u> dit <u>V</u> iew ]	ools <u>N</u> avig	ate <u>H</u> elp 07.	/17/2014 12:09	:37			Dian	
Command ==> _ KM5WSCXH				Hist	orical Sysplex	Delay Details			Plex SMF	ID : <u>ZPETPLX</u> ID :
2				Address	Space Delays	On Sysplex ZPE	TPLX2			
Columns <u>3</u>	to 11 o	f <u>18</u>				1			Rows1 to	48 of772
∆Job ⊽Name	♦ASID	Service Class	∆SMF ID ⊽	∆Velocity ⊽Percentage	∆Total Delay VPercentage	∆Total Using VPercentage	∆Total CPU ⊽Wait Percentage	∆Total Enqueue ⊽Wait Percentage	∆Total Device ⊽Wait Percentage	∆Total Storag ⊽Wait Percent
LHART DFHSM HWSZ1 HWSZ1 HWSZ1 CSQ1MSTR ZSV15B2 ZFSV15B2 ZFSV15B2 ZFSV15B2 ZFSV15B1 CSQ2MSTR ZFSV15B1 ZFSV15B1 ZFSV15B1 ZFSV15B1 ZFSV15B1 ZFSV15B3 U0200055 U0200035 XCFAS U0200035 XCFAS U0200018 CONNRP1 CICS2A1A U0200018 CONNRP1 CICS2A1A U0200018 CONNRP1 CICS2A1A U0200018 CONNRP1 CICS2A1A U0200018 CONNRP1 CICS2A1A U0200018 CONNRP1 CICS2A1A CONNRP1 DBX1D1ST WSV200 U0200035 CCPAS CONSTR U0200035 CICS21A CSQ1CHIN U0200035 CICS21A CSQ1CHIN U0200035 ZFV1523 DBX20BH1 CICS3A2A U0200031 ZFV1523 ZFV1523 DBX20BH1 CICS3A2A U020001 CICS3A2A U020001 CICS3A2A U020001	026F 0204 003E 0040 02C1 003C 0176 0046 0046 0046 0046 0046 0046 0046 00	TSO SYSSIC DISCRBAT DISCRBAT DISCRBAT DISCRBAT DISCRBAT STCI2V40 DISCRBAT DISCRBAT DISCRBAT DISCRBAT DISCRBAT SYSSIC DISCRBAT DISCRBAT DISCRBAT DISCRBAT DISCRBAT DISCRBAT DISCRBAT DISCRBAT DISCOMVS DISCOMVS DISCOMVS DISCOMVS DISCOMVS DISCRSIC DISCRSIC DISCRSIC DISCRSIC DISCRSIC DISCRSIC DISCRBAT DISCRSIC DISCRSIC DISCRSIC DISCRSIC DISCOMVS	Z1         Z2         Z2         Z1         Z3         Z1         Z1	0 47 0 0 51 31 69 13 22 37 47 72 87 2 47 72 87 2 47 72 87 2 47 72 87 2 47 72 87 2 47 72 87 2 47 72 57 2 51 37 47 72 57 2 80 80 81 80 81 80 81 80 81 80 81 80 81 80 81 80 81 80 80 81 80 81 80 81 80 80 81 80 80 81 80 80 80 80 80 80 80 80 80 80 80 80 80	100 100 85 84 83 78 46 46 40 31 315 23 19 18 18 16 15 14 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	96 96 97 96 97 97 97 18 10 100 75 13 67 75 13 67 75 13 67 75 13 75 13 75 13 75 13 75 13 75 13 75 13 75 13 75 13 75 13 75 13 75 12 26 20 20 22 26 20 20 20 22 26 20 20 20 20 20 20 20 20 20 20 20 20 20	displays executions the Sysplex in of esummary delays executions that statistics in each control of the summary delays executions the summary delays executi	on and delay sta descending Tota y category colum ach of the catego essing the ENTE	tes for all addres al Delay Percenta ns support zoor ories by placing R key.	ss age ming the
				1	2:00 + Displ	ay 12:05 → N	othing Later			HISTORY

#### Historical Service Class Delay Details (KM5WSCBH)

_		Eil	e <u>E</u>	dit Vi	ew Io	ols <u>N</u> av	igate	<u>Н</u> еlp	97/17/2	014 12:	31:44							Die	1.00	HISTORY
Command =: KM5WSCBH	->							Histo	rical S	Service (	Class (	Delay Detail	5					— Plex Svcl	c ID : Class	ZPETPLX
×									Ser	vice Cl	ass DI	SCRBAT								
Columns	1 1	to 8 o	f B	3						+ +	t t	1				Rows	1	to	1 01	1
Period	Per Inc	rforman dex	ce	Actual		Avg. R Time	esp.	A∨g. W. Time	ait	Avg. E Time	xec.	Trans. Rate		Service Class SUs/Second						
1	Una	availab	le	Unavai	lable		5.817		9.601		5.223	0.51	0	497052.000						
~								Se	rvice (	Class Ad	dress \$	Space Delays			The 1 <sup>st</sup> subpa	inel c	lisplay	/ <mark>s WL</mark> l	М	18
Columns	_3	to <u>11</u> o	f 17	2						+ +	1	1			service class	peric	od stat	istics,	one r	ow 🔽
∆Job ⊽Name		♦ASID	l∆s⊧ ⊽	1F ID	∆Velo VPerc	city entage	∆Tota) VPerce	l Delay entage	∆Tota) VPerce	Using Intage	∆Tota VWait	l CPU Percentage	∆t ⊽w	otal Enqueue Jait Percentag	for each peric	d in t	the se	rvice (	<mark>class.</mark>	ubs *ce
- HWSZ2 - HWSZ3 - HWSZ1 - FLASHJ - ZFSV11 - ZFSV	SCH 5525 5525 5523 5524 5523 5524 5523 5524 5523 5524 5523 5524 5523 5524 5523 5524 5523 5524 5523 5523	003E 0040 0042 002C1 003C 0046 0041 003A 0045 003A 0045 003B 0048 0038 0038	0 Z2 0 Z3 0 Z1 0 Z2 0 Z1 0 Z2 0 Z3 0 Z3 0 Z4 0 Z3 0 Z3 0 Z3 0 Z3 0 Z3 0 Z3 0 Z3 0 Z3			0 0 512 122 123 122 125 122 125 122 125 122 125 122 125 122 125 122 125 122 125 125		86 85 80 6471 25777 1149 2211		0 0 85 32 6 11 14 13 37 26 63 37 1 0 1 1		0 0 80 67 31 25 17 16 14 9 2 2 1 1		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		000000000000000000000000000000000000000				

KM5WSCBH displays execution and delay states for all address spaces for a specific service class in the Sysplex in descending Total Delay Percentage sequence. The summary delay category columns support zooming to more detailed statistics in each of the categories by placing the cursor in a row/column and pressing the ENTER key.

12:10 + Display 12:15 + 12:20

Complete your session evaluations online at www.SHARE.org/Pittsburgh-Eval

< MISTORY

#### Historical Service Class Delay System Details (KM5WSCCH)

		Eile	e Er	dit ⊻iew	Too	ols <u>N</u> avigat	te j	<u>H</u> elp 07/1	17/20	014 12:45:21								LELOUN
Command =: KM5WSCCH	• -						н	listorical S	Serv	ice Class Dela	y System Deta	ils				Pla Sva	ex ID : Z Class : [	PETPLX2 ISCRBAT
2									Ser	vice Class DIS	CRBAT			The 1st o				
Columns	1 1	to 8 of	f 8							←   →   †	1			The Iss	Subpanel display:	3 VV LIV		1
Period	Per	formand dex		Actual		Avg. Resp. Time		Avg. Wait Time		Avg. Exec. Time	Trans. Rate	Ser SUs	vice Cl /Second	for each	period in the set	stics, c rvice cl	ine row	
1	1         Unavailable         5.541         0.613         4.956         0.503         473021.000																	
$\leq$							Se	rvice Class	a Adr	dress Space De	lays On System	a Z2						
Columns	3 1	to 11 of	1 16							•   •   •	+				Rows	1 to _	<u>6</u> of _	6
∆Job ⊽Name		♦ASID	∆Ve1  VPe	locity rcentage		tal Delay ercentage	∆⊺o1 VPe	tal Using rcentage	∆To1 VWa	tal CPU it Percentage	∆Total Enque VWait Percent	ie tage	∆Total ⊽Wait F	Device Percentage	∆Total Storage ⊽Wait Percentage	∆Total ⊽Wait P	Subsystem Percentage	+Tot Wai
FLASHS HWSZ2 ZFSV15 ZFSV15 PDSET5 ISSBJ	582 522 512 812 822	02C1 003E 0046 004A 003A 004B		51 0 11 24 33 33	F	90 86 53 39 3 1		93 0 6 12 1 0		90 53 39 3		0 0 0 0 0		0 0 0 0 0 0	0 0 0 0 0		0 0 6 6	

KM5WSCCH displays execution and delay states for all address spaces for a specific service class on a specific system in the Sysplex in descending Total Delay Percentage sequence. The summary delay category columns support zooming to more detailed statistics in each of the categories by placing the cursor in a row/column and pressing the ENTER key.

12:25 + Display 12:30 + 12:35

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# S H A R E

## **NTH For Address Space Execution and Delay States**

### Historical System Delay Details (KM5WSCZH)

_	<u> Eil</u>	e <u>E</u> dit <u>V</u> iew <u>I</u>	ools <u>N</u> avigate	Help 07/17	/2014 12:52:19				Display :	HISTORY
Command ==> _ KM5WSCZH				Histor	ical System De	lay Details			Plex ID : SMF ID :	ZPETPLX Z2
2				Address	Space Delays	On System Z2				
Columns <u>3</u>	to <u>11</u> o	f <u>17</u>			► → 1 ↑	Ļ		Rows	<u>1</u> to <u>48</u> of	213
∆Job ⊽Name	♦ASID	Service Class	∆Velocity VPercentage	∆Total Delay VPercentage	∆Total Using ⊽Percentage	∆Total CPU VWait Percentage	∆Total Enqueue ⊽Wait Percentage	∆Total Device ⊽Wait Percentage	∆Total Storage ⊽Wait Percentage	∆Total ⊽Wait
FLASHSCH           DBX2DIST           ZFSV1582           ZFSV1582           ZFSV1582           ZFSV1582           ZFSV1582           CSQLBSTR           CONNRPT           DFHSM           WSWS2           CICS3A2A           C2PACHON           DBX2DBMI           CYTAPRZ2           BUYSZ20           XCFAS           PDSE1ST2           U0230013           CICS2A2A           TCPIP           U0230026           CSQ2BRK           U0230015           CICS212A           U0230015           CICS212A           U0230084           U0230085           CICS612A           U0230088           U0230088           U02300818           U02300818           U0230041           U0230041           U0230041           U0230044           U0230045           DBX2MSTR           U0230046           U0230046           U0230046           U0230046           U0230059           U0230059 </td <td>02C1 003E 0284 0046 00470 0270 0204 011C 0204 019A 0056 0056 00262 0196 026C 0126 025D 0196 0225 025D 0196 0255 02FB 0255 02FB 0255 02FB 0255 02F5 0255 0255 0255 0255 0255 0255</td> <td>DISCRBAT DISCRBAT DDF DDF STCI2V40 DISCRBAT DISC</td> <td>51 0 7 111 24 72 41 89 38 39 38 39 39 39 38 39 39 39 38 30 19 9 84 33 44 67 83 72 73 50 50 50 50 50 50 50 50 50 50 50 50 50</td> <td>90 86 753 399 23 120 985 43332 22222222 22222222 111111111111111</td> <td>93 93 96 62 128 169 17 10 86 17 10 86 10 17 10 86 10 17 10 86 10 17 10 86 11 10 17 10 16 17 10 10 17 10 10 17 10 10 17 10 10 10 17 10 10 10 10 10 10 10 10 10 10</td> <td>4 7 53 39 22 23 22 23 22 23 22 23 22 22</td> <td>ays execution an ic a specific syst ntage sequence. coming to more ng the cursor in</td> <td>d delay states for the summary de detailed statistics a row/column an</td> <td>or all address ex in descending elay category s in each of the id pressing the</td> <td></td>	02C1 003E 0284 0046 00470 0270 0204 011C 0204 019A 0056 0056 00262 0196 026C 0126 025D 0196 0225 025D 0196 0255 02FB 0255 02FB 0255 02FB 0255 02F5 0255 0255 0255 0255 0255 0255	DISCRBAT DISCRBAT DDF DDF STCI2V40 DISCRBAT DISC	51 0 7 111 24 72 41 89 38 39 38 39 39 39 38 39 39 39 38 30 19 9 84 33 44 67 83 72 73 50 50 50 50 50 50 50 50 50 50 50 50 50	90 86 753 399 23 120 985 43332 22222222 22222222 111111111111111	93 93 96 62 128 169 17 10 86 17 10 86 10 17 10 86 10 17 10 86 10 17 10 86 11 10 17 10 16 17 10 10 17 10 10 17 10 10 17 10 10 10 17 10 10 10 10 10 10 10 10 10 10	4 7 53 39 22 23 22 23 22 23 22 23 22 22	ays execution an ic a specific syst ntage sequence. coming to more ng the cursor in	d delay states for the summary de detailed statistics a row/column an	or all address ex in descending elay category s in each of the id pressing the	
				12:2	5 + Display	12:30 → 12:35			10	HISTORY

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#### Historical Address Space Delay Details (KM5ASP4H)

_	<u> </u>	
Command ==>		isplay : <mark>HISTORY</mark> lex ID : <u>ZPETPLX2</u>
KM5ASP4H	Historical Address Space Delay Details St	1F ID : <u>Z2</u>
~	Address Space FLASHSCH 0x02C1 Summary Execution/Delay States	
Service Class Total Delay P Total CPU Wai Total Enqueue Total Storage Total JES Wai Total XCF Wai Idle Wait Per	s	51 93 0 0 0 0 0 0 0 0 7
~	Addreps Space FLASHSCH 0x02C1 CPU Execution/Delay States	
GCP Wait Perc zAAP Wait Per zIIP Wait Per zAAP On CP Us	centage.       90       GCP Using Percentage.         rcentage.       0       zAAP Using Percentage.         rcentage.       0       zIIP Using Percentage.         sing Percentage.       0       zIIP On CP Using Percentage.	93 Unavaila Unavaila 0
GCP ist Impac GCP 2nd Impac GCP 3nd Impac ZAAP 1st Impa ZAAP 2nd Impa ZAAP 3nd Impa ZIIP 1st Impa ZIIP 2nd Impa ZIIP 3nd Impa	ctor Job Name.       FLASHSCH   GCP 1st Impactor Percentage.         ctor Job Name.       Highlighted (white fields) in summary sub-panel support cursor         actor Job Name.       being placed under them and ENTER key pressed to zoom navigate         actor Job Name.       to detailed workspace related to summary category         actor Job Name.       fighlighted (white fields)         actor Job Name.       to detailed workspace related to summary category         actor Job Name.       fighlighted (white fields)	90 73 72 72 0 Unavaila 0 Unavaila 0 Unavaila 0 Unavaila 0 Unavaila
~	Address Space FLASHSCH 0x02C1 Device Execution/Delay States	<b>_  _</b>  ×
ist Device Vo 2nd Device Vo 3rd Device Vo 4th Device Vo Total Device	olume Serial	Unavaila Unavaila Unavaila Unavaila
~	Address Space FLASHSCH 0x02C1 Storage Execution/Delay States	
Common Paging VIO Paging Wa Out And Ready Hiperspace Pa	g Wait Percentage	0 0 0 0 0 0 0 0
~	Address Space FLASHSCM 0x02C1 Operator Execution/Delay States	
	of Unerator Reply Wait Percentage	0
Operator Moun Operator Quie	esce Wait Percentage	•
Operator Houn Operator Quie	KM5ASP4H displays all supported detailed execution and delay states for an address space. The workspace is divided into summary, CPU, device, storage and operator execution/delay sub- panels.	4 HISTORY

#### Historical Address Space CPU Delay Details (KM5DLY1H)

			Eile	<u>E</u> dit	View	Toole	<u>N</u> avigate	Help	07/18/201	4 11:06:01	0	isplau	HISTORY
Comman KM5DLY	nd == Y1H	·						Histo	orical Addre	ss Space C	PU Delay Details St	lex ID MF ID	: ZPETPLX2 : Z2
$\simeq$							Addre	ss Spa	ce FLASHSCH	0×02C1 CP	U Execution/Delay States		
GCP ZAAF ZIIF ZAAF Serv	Wait P Wai P Wai P On vice	Perce t Perc t Perc CP Usi Class.	ntage entage entage ng Per	centag	e					90 0 0 0 DISCRBAT	GCP Using Percentage. zAAP Using Percentage. zIIP Using Percentage. zIIP On CP Using Percentage.		98 Unavaila Unavaila O
GCP GCP ZAAP ZAAP ZAAP ZIII ZIII ZIII	1st 2nd 3rd P 1st P 2nd P 3rd P 3rd P 3rd	Impact Impact Impact Impac Impac Impac Impac Impac	or Jot or Jot tor Jot tor Jo tor Jo tor Jo tor Jo tor Jo	Name. Name. Name. Name. Name. Name Name Name Name Name						FLASHSCH CONNRPT *ENCLAVE	GCP ist Impactor Percentage.         GCP 2nd Impactor Percentage.         GCP 3rd Impactor Percentage.         zAAP 1st Impactor Percentage.         zAAP 3rd Impactor Percentage.         zIIP 1st Impactor Percentage.         zIIP 2nd Impactor Percentage.         zIIP 3rd Impactor Percentage.		90 31 17 Unavaila Unavaila Unavaila Unavaila Unavaila

In this example we see job FLASHSCM being impacted 90% of the time by itself (self-contention), 31% of the time by job CONNRPT and 17% of the time by enclave work. Note that these top three impact percentages add up to 138% while the GCP Wait Percentage is 90%. This is a characteristic of multi-tasking jobs being impacted in multiple TCBs/SRBs simultaneously and RMF sampling each of them. The GCP Wait Percentage reflects the percentage of time at least 1 TCB/SRB was in CPU contention. The identical considerations apply to the zIIP and zAAP statistics.

08:35 ← Display 08:40 → 08:45

#### Historical Address Space Device Delay Details (KM5DLY2H)

	Eile Edit View Iools Navigate Help 07/18/2014 11:21:14 Di	isplay : HISTORY
Command ==> KM5DLY2H	Pi Historical Address Space Device Delay Details SM	lex ID : <u>ZPETPLX</u> MF ID : <u>Z1</u>
<b>2</b>	Address Space DFHSM 0x01DE Device Execution/Delay States	
Service Class. 1st Device Vol. 2nd Device Vol 3rd Device Vol 4th Device Vol	syssic       Syssic         ime Serial       WXY550         ime Serial       WXY571         ime Serial       WXY570         ime Serial       WXY571         ime Serial       WXY570         ime Serial       Percentage         ime Serial       Procentage         ime Serial       Procentage	100 6 6 6

In this example we see job DFHSM had to wait for I/O 6% of the reporting interval time against each of the 4 device VOLSERs WXY550, WXY571, WXY500 and P20013. The top 4 devices I/O delays sampled during the reporting interval are displayed in this workspace.

08:35 ← Display 08:40 → 08:45

#### Historical Address Space Storage Delay Details (KM5DLY3H)

Eile_Edit_View_Iools_Navigate_Help_07/18/2014 Command ==> KM5DLY3HHistorical Address S	13:28:07 pace Stor	age Delay Details SHF 1	ay : <mark>HISTORY</mark> ID : <u>ZPETPLX2</u> D : <u>Z3</u>
Address Space DB3ZDBH1 0x0	15F Store	age Execution/Delay States	
Service Class. S Private Paging Wait Percentage. Swap Paging Wait Percentage. XMEM Paging Wait Percentage. Other Paging Wait Percentage.	TCI2V50 0 0 0 0 0 0 0	Common Paging Wait Percentage VIO Paging Wait Percentage Out And Ready Wait Percentage Hiperspace Paging Wait Percentage	Unavaila Unavaila O Unavaila
Real Storage U	sed By DE	132D8M1 0x015F	
Total Frames. Page-In Rate. Active Frames Fixed. Idle Frames. Shared Page-In Rate. Shared Pages Total Valid. Hemory Objects Allocated.	79820 0 2844 0 0 0 0	Active Frames Active Frames Working Set. Active Frames DIV. Auxiliary Storage Slots. Shared Pages Total Views. Shared Pages Validation Rate i Heg Frames In Real.	·· 79820 ·· 79820 ·· 0 ·· 0 ·· 0 ·· 0 ·· 0
Common Storage	Vsed By C	083208H1 0x015F	
Amount CSA In Use. Amount SQA In Use. Amount ECSA In Use. Amount ESQA In Use. Elapsed Time.	4096 64 1038336 27752 293760	Percentage CSA In Use Percentage SQA In Use Percentage ECSA In Use Percentage ESQA In Use Percentage ESQA In Use	··· 0 ··· 0 ··· 0

The Historical Address Space Storage Delay Details workspace includes a subpanel displaying percentage delay in any of 8 categories and a subpanel each for real storage consumption and common storage consumption by an address space.

07:40 ← Display 07:45 → 07:50

#### Historical Address Space Operator Delay Details (KM5DLY4H)

_	<u>_ Eile Edit View Iools Navigate H</u> elp 07/18/2014 13:35:10	Display	
Command ==> KH5DLY4H	Historical Address Space Operator Delay Details	Plex ID SMF ID	ZPETPLX2
$\geq$	Address Space HWSZ3 0x0040 Operator Execution/Delay States		
Service Class Operator Repl	y Wait Percentage		0 0

The Historical Address Space Operator Delay Details workspace displays any of three operator delay categories.

07:40 ⊢ Display 07:45 → 07:50



## **Near-term history: DASD Delay**





## NTH for DASD Device – Navigation (WLM)





## NTH for DASD Device – Navigation (DASD & USS)





## **Embedded Data for CICS and MQ**

- Embedded Data workspaces for CICS:
  - -z/OS CPU Usage Details  $\rightarrow$  CICS Region Overview
  - CICS Region Overview  $\rightarrow$  z/OS CPU Usage Details
- Embedded Data Workspaces for MQ:
  - MQ Application Details  $\rightarrow$  z/OS CPU Usage Details
  - MQ GSQ CF Details  $\rightarrow$  z/OS CF Details
  - MQ Queue Mgr  $\rightarrow$  z/OS CPU Usage Details





- Operations Help Desk. Calls about z/OS systems issues come to me as a SME. My phone rings.
- SYMPTOMS one of our applications teams reports that response times in a CICS region, CICSDE03, on LPAR SP22 are lengthening considerably and most tasks as not completing as they should. The Help Desk has seen this sort of behavior before and it often means that a CICS task has gone rogue, consuming so much CPU that no other work is being done in the region.
- Working on this assumption, we engage an Enhanced 3270UI session to see the summary list of address spaces on SP22, looking to see if CICSDE03 is consuming more CPU than would usually be expected.





KM5ASPO Address Space Overview

	<u> </u>	∃dit <u>V</u> iew ]	Γοοι	s <u>N</u> aviga	ate <u>H</u> elp (	05/20/2014	11:18:58
<b>2 1  x</b>						Auto Updat	e : <u>Off</u>
Command ==> KM5ASPO	A	dress Space	Ove	rview		Plex ID : SMF ID ·	<u>LPAR400J</u> SP22
		ddress opace	000				
$\sim$		Address Spac	ce C	ounts			
Address Spa	ce Count	25	56	Total Er	nclave Count		32
Started Tas	k Count	24	43	Active E	Enclave Coun	t	8
TSO User Co	unt		6	Inactive	e Enclave Cou	unt	24
Batch Job C	oun t		U	APPC COL	un t		ſ
$\sim$	CI	PU Utilizatio	on S	ummary			
Columns <u>4</u>	to <u>6</u> of <u>3</u>	<u> </u>	1	↓ Rou	∍s <u>1</u> to	<u>     22</u> of	256
		ACDU		B	SDB		luding
DHddress Spa	Ce VHSID	ΔCPU VPercent		B	SKB Percent	LPU% EXC	Time
			I — —	- Cent			111112
_ CICSDE03	0122	99.6	Ī	99.6	Θ.Θ		99.6
_ омданив 🔪	0014	0.4	[	0.4	Θ.Θ		0.4
_ CATALOG	902A	0.4		0.4	Θ.Θ		0.4
_ RMFGAT		0.4		0.4	0.0		0.4
_ *MASIER*				0 0	0.0		0.0
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- RHSP TRACE	Select	CICSDE03	wnic	n is	0.0		0.0
					0.0		0.0
	obviously	a high CPU	COr	sumer	0.0		0.0
GRS					0.0		0.0
SMSPDSE	which has	s the reporte	d pr	oblem	Θ.Θ		Θ.Θ
_ SMSVSAM	Willon Hac				Θ.Θ		Θ.Θ
_ CONSOLE					Θ.Θ		Θ.Θ
WLM					Θ.Ο		Θ.Θ
_ ANTMAIN					Θ.Θ		Θ.Θ
_ ANTASOOO					Θ.Θ		0.0
_ DEVMAN	000E	0.0	l	0.0	0.0		0.0
	000F	0.0	1	0.0	0.0		0.0
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		0.0	<u> </u>	0.0	0.0		0.0
	0012	0.0		0.0	0.0		0.0

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KM5ASPS6 CPU Usage Details

	<u> </u>	<u>E</u> dit <u>V</u> ie	≥w <u>T</u> oo	ls <u>N</u> avigate	<u>H</u> elp	05/20/201	14 11:19:38
Command ==>						Plex ID	: LPAR400J
KM5ASPS6		CPU	J Usage			SMF ID	: <u>SP22</u>
~	Details I	nformatio	on for	CICSDE03 0×01	122		
Туре							STC
CPU Percent.							99.6
IFA Percent.							Θ.Θ
SRB Percent.							Θ.Θ
TCB Percent.							99.6
zIIP Percent	t						Θ.Θ
CPU Percent	Excluding	Home SRE	3 Time.				99.6
IFA on CP Pe	ercent						Θ.Θ
zIIP on CP F	Percent						Θ.Θ
IFA Percent	With Encl	ave Home	SRB Ti	ne			Ο.Ο
zIIP Percent	t With Enc	lave Home	≥ SRB T	ime			Θ.Θ
Job CPU Perc	cent						0.6
Job SRB Perc	cent						Θ.1
Job TCB Perc	ent						0.6
Job CPU Time	<u>.</u>						981.68
Job SRB Time	<u></u>			<u> </u>	<u>.</u> .		1.74
Job Preempt							0.00
Job Start D	Proce	Entor ka	av wha	n curear is ar	na		14/05/18
Job Start T	11000		Cy WIIC		Ia		09:15:51
Job Elapsed							2d 02h
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Job Additio							Θ.Θ
Job Preempta	able H	N-TV1	ice Per	cent			Ο.Ο
~	CICS	Region Su	ummary	for CICSDE03			
CICS Region	Name	CIO	CSDE03	CICS SYSID	чт		DE03
Transaction	Rate		⊙ / m	SOS			No
Maximum Task	s Percent		8%	Stq. Violat	tions la	st hour.	Θ
Region's Wor	rst Perf.	Index 179	99.88%	Any Current	t WS Fau	lts	No
Worst Region	Service	Class (	DTRANS	Any Current	t WS Tim	eouts	No
Current VSAM	1 String W	aits.	Θ	Enqueue Wai	its		0
Current VSAN	1 Buffer W	aits.	Θ	Queued Remo	ote Requ	ests	o
		Tue	esday Ma	ay 20 2014			MOREV №20
				-			· · · ·



# Embedded Data: CICS Rogue Task – Excessive CPU KCPM5ROZ Navigation Options for CICSDE03

<u> </u>	14 11:20:24
Command ==> KCPM5R0Z Navigation Options for CICSDE03 ID	ate : Off : LPAR400J : SP22
Select an action and then press ENTER	_ □ ×
Typet1. B CICS BottlenecksCPU Perce2. F CICS File/Data ResourcesIFA Perce3. R CICS ResourcesSRB Perce4. S CICS Region OverviewTCB Perce5. T CICS Task SummaryZIIP Per	STC 99.6 0.0 99.6 0.0 99.6
IFA or Scent. Select "T" for Task Summary	0.0 0.0 0.0 0.0 0.6 0.1 0.6
Job SRB Time. Job Preemptable Home SRB Service Time. Job Start Date. Job Start Time. Job Elapsed Time. Start Up Monitored. Job Additional SRB Service Time. Job Additional SRB Service Percent.	981.68 1.74 0.00 14/05/18 09:15:51 2d 02h No 0.00 0.0 0.0
CICS Region Summary for CICSDE03	
CICS Region NameCICSDE03CICS SYSIDNTTransaction Rate0/mSOSSOSMaximum Tasks Percent8%Stg. Violations last hour.Region's Worst Perf. Index 1799.88%Any Current WS FaultsWorst Region Service ClassOTRANSAny Current WS TimeoutsCurrent VSAM String Waits.0Queued Remote RequestsCurrent VSAM Buffer Waits.0Queued Remote Requests	
Tuesday Hay 20 2014	PIOREV 2014



KCPTASS CICS Task Summary

KCPTASS       CICS Task Summary       Region       : CICSDEG         M       Active Tasks       Matting       Region       : CICSDEG         Columns       2 to       7 of 19       Image: Cicstast Summary       Region       : CICSDEG         Columns       2 to       7 of 19       Image: Cicstast Summary       Region       : CICSDEG         Columns       2 to       7 of 19       Image: Cicstast Summary       Resource       Resource       ADurati         Columns       2 to       7 of 19       Image: Cicstast Summary       Name       Of 5       Summary         Image: Cicstast Summary       Active Tasks       Maint       Resource       Resource       ADurati         Other       3m 565       3m 58s       Storage       DSTSKDEF       06040083       0.0         Image: Cicstast Summary         Image: Cicstast Summary       Image: Cicstast Summary       Image: Cicstast Summary       Image: Cicstast Summary       Image: Cicstast Summary         Image: Cicstast Summary       Image: Cicstast Summary       Image: Cicstast Summary       Image: Cicstast Summary       Image: Cicstast Summary       Image: Cicstast Summary       Image: Cicstast Summa	KCPTASS       CICS Task Summary       Region       CICSDEd         Mait       Region       CICSDEd         Mait       Resource       Resource       Advance         Columns       2 to       7 of       19       1       Resource       Resource       Advance       Advance         Atransaction       ACCPU       Vin       AElapsed       Wait       Resource       Resource       Advance       Advance	KCPTASS       CICS Task Summary       Region       : CICSDEd         Active Tasks       Active Tasks       Active Tasks       Image: Comparison of the state of the sta	KCPTASS       CICS Task Summary       Region       CICSDEG         Mactive Tasks       Active Tasks       Active Tasks       Image: Colored stars         Columns       Z to       T of 19       Active Tasks       Image: Colored stars         Atransaction       ACPU       Allapsed       Wait       Resource       Resource       ADurati         VID       Other tasks       Storage       DSTSKDEF       Goodanaa3       0.0         LCPU       Storage       Office       Storage       DSTSKDEF       Obdata001       Anme         OSEC       0.000s       7m       45s       Terminal       ZUSERWAIT       SR2WORK       Im         OSEC       0.000s       7m       45s       TaskCntl       USERWAIT       SRVWORK       2d         OSERV       0.000s       2d       02h       Ose       2d       Ose       Deltate       Storage         High CPU on LCPU       Transaction ID       Transaction ID       Storage       Storage <th>Columns 2 to 7 of 19 Active Tasks Columns 2 to 7 of 19 Active Tasks Active Tasks Active Tasks Active Tasks Name 1 to 5 of 5 Active Tasks Active Tasks Active</th> <th>Command ==&gt;</th> <th><u> </u></th> <th>it ⊻iew <u>T</u>o</th> <th>ools <u>N</u>aviga</th> <th>ate <u>H</u>elp</th> <th>05/20/2014 Auto Update CICSplex :</th> <th>11:21:0 e : <u>Of</u> OMEGPLE</th>	Columns 2 to 7 of 19 Active Tasks Columns 2 to 7 of 19 Active Tasks Active Tasks Active Tasks Active Tasks Name 1 to 5 of 5 Active Tasks Active	Command ==>	<u> </u>	it ⊻iew <u>T</u> o	ools <u>N</u> aviga	ate <u>H</u> elp	05/20/2014 Auto Update CICSplex :	11:21:0 e : <u>Of</u> OMEGPLE
Active Tasks       Active Tasks         Columns       2 to       7 of 19       +       +       +       Rows       1 to       5 of       5         Atransaction       ACPU       AElapsed       Wait       Resource       Resource       Aburati         VID       OTIME       OTIME       AElapsed       Wait       Resource       Resource       Aburati         VID       OTIME       OTIME       AElapsed       Wait       Resource       Resource       Aburati         VID       OTIME       OTIME       Time       Type       Type       Name       Otid       Supervision         LCPU       Ome       Ome       Otid       Type       DSTSKDEF       O66040083       O.0         OSEC       O.0005       Tm 455       Terminal       ZCIOWAIT       DFHZARQ1       1h         OSERV       O.0005       Tm 455       TaskCntl       USERWAIT       SRVWORK       1m         O.0005       Ome       Odd       Octoor       TaskCntl       USERWAIT       SRVWORK       2d         High CPU on LCPU       TaskCntl       USERWAIT       SRVWORK       2d       Zd         High CPU on LCPU       TaskCntl       USERWAIT	Matter Tasks         Columns       2 to 7 of 19       Image       Rows       1 to       5 of       5         Active Tasks       Resource       Resource       Resource       Addurating         Image       Vait       Type       Resource       Resource       Addurating         Image       Vait       Type       Resource       Resource       Addurating       Addurating       Outrating         Image	Active Tasks      Columns 2 to 7 of 19     Active Tasks      Columns 2 to 7 of 19     Active Tasks      Active Task	Active Tasks   Columns 2 to	Active Tasks	KCPTASS	(	CICS Task Su	ummary		Region :	CICSDEO
Columns       2 to       7 of 19       +       +       Rows       1 to       5 of       5         ATransaction       ACCPU       AElapsed       Wait       Resource       Resource       ADurati         VID       VTime       VTime       Time       Type       Resource       Resource       ADurati         LCPU       Sm<565       3m 58s       Storage       DSTSKDEF       06040083       0.0         CEDA       0.000s       7m 45s       Terminal       ZCIOWAIT       DFHZARQ1       1h         OSEC       0.000s       7m 45s       TaskCntl       USERWAIT       SRVWORK       1m         OSEC       0.000s       2d 02h       TaskCntl       USERWAIT       SRVWORK       2d         High CPU on LCPU       TaskCntl       USERWAIT       SRVWORK       2d       2d	Columns 2 to 7 of 19       F       F       Rows 1 to 5 of 5         Atransaction ACPU       AElapsed VTime       Wait Type       Resource Resource Name       ADurati Vof Sus         LCPU       Om 56s       Sm 58s       Storage       DSTSKDEF       06040083       0.0         OSEC       0.000s       7m 45s       Terminal       ZCIOWAIT       DFHZAR01       1m         OSERV       0.000s       7m 45s       TaskCntl       USERWAIT       SRVWORK       1m         OSERV       0.000s       7m 45s       TaskCntl       USERWAIT       SRVWORK       2d         High CPU on LCPU       TaskCntl       USERWAIT       SRVWORK       2d       2d	Columns 2 to 7 of 19 + + + k Rows 1 to 5 of 5 ATransaction ACPU Time Orime Orime Type Resource Resource ADurati CEDA 0.000s 7m 45s CEDA 0.000s 7m 45s CEDA 0.000s 7m 45s CEDA 0.000s 7m 45s CEDA 0.000s 7m 45s TaskCntl USERWAIT SR2WORK 1m USERWAIT SR2WORK 2d High CPU on LCPU Transaction ID	Columns 2 to 7 of 19       Image: Columns 2 to 7 of 19       I	Columns 2 to 7 of 19 F 7 T 8 Rows 1 to 5 of 5 Atransaction ACPU 9TD 9Time 9Time 7Time 7T	~		Active Ta	asks			
ATransactionACPU TimeAElapsed TimeWait TypeResource TypeResource NameADurati Vof Sus-LCPU3m 56s 0.000s3m 58s 7m 45sStorage Terminal TaskCntlDSTSKDEF ZCIOWAIT USERWAIT USERWAIT SR2WORK06040083 DFHZAR01 1h SR2WORK0.0-0.000s 0.000s7m 45s 7m 45s 2d 02hTaskCntl TaskCntlUSERWAIT USERWAIT USERWAITSR2WORK SR2WORK1m 2dHigh CPU on LCPU Transaction IDTransaction IDTransaction IDIm SR2WORK1m SR2WORK	ATransactionACPU TimeAElapsed TimeWait TypeResource TypeResource NameADurati Vor SusLCPU3m 5653m 585 0.0005Storage Terminal TaskCntlDSTSKDEF ZCIOWAIT USERWAIT06040083 DFHZAR01 SR2WORK0.0OSEC0.0005 0.00057m 455 TaskCntlDSTSKDEF USERWAIT USERWAIT06040083 DFHZAR01 SR2WORK0.0High CPU on LCPU Transaction IDHigh CPU on LCPU Transaction ID2dVor Sus	ATransaction VIDACPU VTimeAElapsed VTimeWait TypeResource TypeResource NameADurati Vol SusLCPU CEDA OSEC	ATransaction     ACPU Time     AElapsed Time     Wait Type     Resource Type     Resource Name     ADurati Vof Sus       LCPU     3m 565 0.0005     3m 585 7m 455 0.0005     Storage Terminal TaskCntl     DSTSKDEF USERWAIT     060400803 DFHZAR01     0.0       0.0005     7m 455 7m 455 2d 02h     TaskCntl     USERWAIT     SR2W0RK     1m SR2W0RK       High CPU on LCPU Transaction ID     Transaction ID     ID     ID	ATransaction       ACPU VTime       AElapsed VTime       Wait Type       Resource Type       Resource Name       ADurati Vof Sus         LCPU       Im 56s 0.000s       Im 56s 7m 45s 7m 45s 0.000s       Im 56s Terminal 7m 45s 7m 45s 7m 45s       DSTSKDEF DETSKDEF Terminal USERWAIT       00004030 0FH2AR01 USERWAIT       0.0 0FH2AR01 SR2WORK       0.0 1h Im SR2WORK         OSRV       0.000s       Im 45s 7m 45s 2d 02h       TaskCntl       USERWAIT       SRVWORK       1m 2d         High CPU on LCPU Transaction ID       Transaction ID       Im       Im       Im       Im	Columns <u>2</u> to	<u>7</u> of <u>19</u>	← → 1	Ì ↓ Roi		5 <u>5</u> of	5
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High CPU on LCPU Transaction ID	High CPU on LCPU Transaction ID	High CPU on LCPU Transaction ID	High CPU on LCPU Transaction ID	High CPU on LCPU Transaction ID	LCPU CEDA CEDA OSEC OSRV CKAM	3m 565 0.0005 0.0005 0.0005 0.0005	3m 58s 7m 45s 7m 45s 7m 45s 7m 45s 2d 02h	Storage Terminal TaskCntl TaskCntl	DSTSKDEF ZCIOWAIT USERWAIT USERWAIT	06040083 DFHZARQ1 SR2WORK SRVWORK	0.0 1h 1m 1m 2d
					H	High CPL Transa	J on LCPL ction ID	J			





# Embedded Data: CICS Rogue Task – Excessive CPU • FORCEPURGE the rogue task using excessive CPU

		Eile	Edit	⊻iew	Iools	Naviga	ate <u>H</u> elp	05/20/2014 Auto Update	11:22:12 • : Of
Comma KCPTA	KCPTACCE		Confi	rmatio	n Requi	ired			
~	Confirmat	ion is	requi	red fo	r comma	and:			×
Col	CEMT SET	TASK (0	0171)	FORCEP	URGE				
∆Tra VID	Press ENT	ER to	contin	ue, or	press	F3 to a	ancel.		i s
<u>L</u> CI   CEI   OSI   OSI   CK	PU U DA U EC U RV U AM U	3m 5 0.00 0.00 0.00 0.00	65 05 05 05	3m 58 7m 45 7m 45 7m 45 2d 02	s Sto s Ten s Tas s Tas h	orage minal skCntl skCntl	DSTSKDEF ZCIOWAIT USERWAIT USERWAIT	06040083 DFHZARQ1 SR2WORK SRVWORK	0.0 1h 1m 1m 2d

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• Take Action Result

	Eile	Edit ⊻iew	Iools <u>N</u> aviga	ate <u>H</u> elp	05/20/2014 Auto Updat	11:22:4 e : 0f
Comma KCPTA KCPT KCP KCF Col ATra VID	TAMSG 24001E: SET c	Take Ac ommand execu	tion Results tion error:	DEFERRED		
- LCPU - CEDA - OSEC - OSRV - CKAM	3m 56   0.000   0.000   0.000   0.000   0.000	s 3m 58s s 7m 45s s 7m 45s s 7m 45s s 7m 45s s 2d 02h	Storage Terminal TaskCntl TaskCntl	DSTSKDEF ZCIOWAIT USERWAIT USERWAIT	06040083 DFHZARQ1 SR2WORK SRVWORK	0,0 1h 1m 1m 2d





# Embedded Data: CICS Rogue Task – Excessive CPU • Back at Task Summary rogue task no longer running

_ Command ==> KCPTASS	<u> </u>	it <u>V</u> iew <u>T</u> o CICS Task Su	ools <u>N</u> aviga ummary	ate <u>H</u> elp	05/20/2014 Auto Update CICSplex : Region :	11:23:20 : <u>Off</u> <u>OMEGPLEX</u> <u>CICSDE03</u>
$\sim$		Active Ta	asks			
Columns <u>2</u> to	o <u>7</u> of <u>19</u>	← → 1	t 🖡 Rou	vs <u>1</u> to	o <u>4</u> of	4
∆Transaction VID	∆CPU VTime	∆Elapsed ⊽Time	Wait Type	Resource Type	Resource Name	∆Durati Vof Sus
_ CEDA _ OSEC _ OSRV _ CKAM	0.000s 0.000s 0.000s 0.000s	10m 01s 10m 01s 10m 01s 2d 02h	Terminal TaskCntl TaskCntl	ZCIOWAIT USERWAIT USERWAIT	DFHZARQ1 SR2WORK SRVWORK	1h 32.6 32.6 2d





in Pittsburgh 2014

# Embedded Data: CICS Rogue Task – Excessive CPU Back at KM5ASPS6 CPU Usage Details

Command ==>CM5ASPS6 CPU	Usage		Plex ID SMF ID	: <u>LPAR40</u> : <u>SP22</u>
✓ Details Information	for CI	CSDE03 0×01:	22	
Type				STC
CPU Percent				99.6
IFA Percent				Θ.Θ
SRB Percent				0.0
TCB Percent				99.6
ZIIP Percent	<u></u>			0.0
CPU Percent Excluding Home SRB	lime			99.6
IFA on UP Percent				0.0
IEO Dessent With Eastern Home S	DB Time			0.0
TIP Democrat With Enclove Home a	SED LIME			0.0
Job CBU Bassast	SKD LIM			0.0
Job SPR Pancant				0.6
Job TCB Percent				0.1
000 100 100 100 100 100 100 100 100 100				0.0
Job CPU Time				981.68
Job SRB Time				1.74
Job Preemptable Home SRB Servic	e Time.			0.00
Job Start Date				14/05/18
Job Start Time				09:15:51
Job Elapsed Time				2d 02h
Start Up Monitored				No
Job Additional SRB Service Time	** • • • • • • •			0.00
Job Additional SRB Service Perc	:ent			0.0
Job Preemptable Home SRB Servic	e Perce	nt		0.0
CICS Region Sum	mary fo	r CICSDE03		
CICS Region Name CICS	DE03	CICS SYSIDN	г	DE03
Transaction Rate	0/m	505		No
Maximum Tasks Percent	8%	Stg. Violat	ions last hour.	0
Region's Worst Perf. Index 1799	0.88%	Anų Current	WS Faults	No
Worst Region Service Class 01	RANS	Any Current	WS Timeouts	No
Current VSAM String Waits.	Θ	Enqueue Wai	ts	Θ
Current VSAM Buffer Waits.	Θ	Queued Remo	te Requests	0
Tues	dau Mau	20 2014		MODE!



Back at KM5ASPO Address Space Overview



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# Embed for KMQAPQZD – MQ Application Details for Queue

	<u> </u>	dit <u>V</u> iew	<u>T</u> ools <u>N</u> avig	ate <u>H</u> elp	0 <mark>5/20/2014</mark> Auto Update	21:04:34 : Off
Command ==> KMQAPQZD	z/OS App	lication De	tails for Qu	eue	HostName : QmgrName :	<u>SYS</u> 07G1
$\sim$	Que	ue P5.IN.Q1	Appl P50UP			
Columns <u>2</u> t	to <u>7</u> of <u>15</u>	←    →	↑ ↓ Rot	ws 1 to	1 of	1
♦Appl Tag	User ID	Handle Status	Asynch State	Open for Input	Open for Output	+Open Brows
_ P50UP	KMAGG	Active	None	Exclusive	No	Yes
✓ z/05	6 Address S	pace CPU De	tails for P5	0UP 0×004A		
Job Name ASID Type JESJOBID Step Name Proc Step IO per Secor CPU Percent. IFA Percent. SRB Percent. TCB Percent ZIIP Percent	nd	Z/O	S Address Sp	ace Embed	or C C	P50UP 004A Batch B08486 SQ4BCJ 0.0 98.7 0.0 98.7 0.0 98.7 0.0
IFA on CP Pe zIIP on CP F IFA Percent Job CPU Perc Job SRB Perc Job TCB Perc Job SRB Time Job SRB Time Job SRB Time Job Preempta Job Preempta	Percent Percent With Encla With Encla Cent Cen	ve Home SRB ave Home SR 	Time Time Time Time			$\begin{array}{c} 0.0\\ 0.0\\ 0.0\\ 34.2\\ 34.2\\ 316.11\\ 0.00\\ 316.11\\ 0.00\\ 316.00\\ \end{array}$
		Tuesda	y May 20 201	4	<	MOREV M


#### Embed for KMQQGCFD – MQ QSG CF Structure Details

<u>F</u> ile <u>E</u> dit <u>\</u>	/iew <u>T</u> ool	ls <u>N</u> avigate <u>H</u> elp	05/20/201	4 18:31:02
Command ==>	cility St	ructure Details	HostName QmgrName	:
✓ QSG Q7G2 Coupling Fac	cility St	ructure APPLICATION1		
Struct Status Recovery Supported Failure Date Failure Time % Stor Used % Entries Used Used Entries	Active No n/a n/a 1.0 0.3 33	CF Struct Type Struct Level Alter Date Alter Time Max Stor Max Entries		Appl 3 2/08/14 1:40:05 32768 9895
✓ z/0S CF Structure E	)etails fo	or Q7G2APPLICATION1		
CF N <u>a</u> me Structure Status Structure Type Asynchronous Requests per mi		z/OS CF Detail Emb	ped	CF01 tivePe List 0.0
Synchronous Requests per mir Maximum Users Total Users	nute			0.0 32 1
Storage Size Storage Size Percent CF Storage Size Element Count Duplex AutoAlter				8192 1.1 9895 Unavaila Unavaila

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# Embed for KMQQMSZD – MQ Queue Mgr Address Space Monitoring

command ==> (Huco Update : Uff (HocNMare : SP22 (MogNSZD Queue Manager Monitoring Information Queue Manager Monager Manager Monitoring Information Queue Manager Mana		<u> </u>	dit <u>V</u> iew	Tool	s <u>N</u> avigate	<u>H</u> elp	05/20/20:	14 19:45:03
Queue Manager Monitoring Information       Image: Monitoring Information         QMgr Subsys	Command ==> KMQQMSZD	Queue Mana	ager Addre	ss Spa	ace Q722CHIN		Auto Upda HostName QmgrName	ite : <u>0ff</u> : <u>SP22</u> : <u>Q722</u>
OMgr Subsys	$\sim$	Queue Mai	nager Moni	toring	g Informatio	n		
Z/OS Address Space CPU Details for 0722CHIN 0x0185       0185         Job Name.       0185         ASID.       0185         JESJOBID.       Z/OS Address Space CPU Detail         Proc Step.       0722CHIN         IO per Second.       000         Embed       000         OFPU Percent.       000         ICB Percent.       000         OFU Percent.       000         ICB Percent.       000         IFA Percent.       000         ICB Percent.       000         ICPU Percent.       000         IFA Percent.       000         ICPU Percent.       000         IFA Percent.       000	QMgr Subsys Status at Sa Timeout Cour Start Date. Start Time.	ample Internation	Q val. Act 14/05 15:54	722 ive 0 /19 :10	QMgr Type Interval Le MQSeries Re Alter Date. Alter Time.	ngth Se lease	conds	MVS 299.99 7.1.0 14/05/19 15:54:11
Job Name.Q722CHIN 0185ASID.0185JESJOBID.Z/OS Address Space CPU Detail EmbedQ722CHIN 0185Proc Step.2/OS Address Space CPU Detail EmbedQ722CHIN 0722CHIN 0722CHINPROCSTEP00IO per Second.00CPU Percent.00IFA Percent.0O CB Percent.0IP Percent0IP Percent0IP Percent0IP Percent0IP Percent0IP Percent Excluding Home SRB Time.0IFA Percent With Enclave Home SRB Time.0IFA Percent With Enclave Home SRB Time.0Job CPU Percent.0Job CPU Time.0Job SRB Percent.0Job CPU Time.0Job SRB Time.0Job SRB Time.0Job CPU Time.0Job SRB Time.0Job CPU Time.0Job Preemptable Home SRB Service Time.0Job Preemptable Home SRB Service Percent.00.000Job Additional SRB Service Time.00.000Tuesday May 20 20144	✓ z/0S	Address Spa	ace CPV De	tails	for Q722CHI	N 0×018	5	
IFA on CP Percent.0.0ZIIP on CP Percent.0.0IFA Percent With Enclave Home SRB Time.0.0ZIIP Percent With Enclave Home SRB Time.0.0Job CPU Percent.0.1Job SRB Percent.0.1Job CPU Time.5.02Job SRB Time.0.99Job TCB Time.0.0Job Preemptable Home SRB Service Time.0.0Job Additional SRB Service Time.0.0Cuesday May 20 2014	Job Name ASID Type JESJOBID Step Name Proc Step IO per Secon CPU Percent IFA Percent SRB Percent TCB Percent ZIIP Percent	nd t Excluding I	Z/OS A Home SRB T	Addres	ss Space CF Embed	PU Detai		Q722CHIN 0185 STC STC07313 Q722CHIN PROCSTEP 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.
	IFA on CP Pe zIIP on CP P IFA Percent Job CPU Perc Job SRB Perc Job TCB Perc Job CPU Time Job SRB Time Job TCB Time Job Preempta Job Preempta	ercent Percent With Enclar t With Enclar cent cent cent ent	ve Home SR ave Home S 	B Time RB Tim B Tim B Tim C C C C C C C C C C C C C C C C C C C	e			0.0 0.0 0.0 0.1 0.1 0.1 5.02 0.99 4.03 0.00 0.0 0.00
••			Tuesd	ay may	y 20 2014			MUREV



### Enhanced 3270 UI Embedded Data

## **MQ Page Set -> XE Storage**





#### MQ Page Set Statistics – Option "d"

	<u> </u>	Edit <u>V</u> iew	<u>T</u> 00	ls <u>N</u> aviga†	te <u>H</u> elp	05/20/2014 20	:18:24
Command ==> KMQPGSTD		Page Set St	atis	stics		Auto Update HostName : <u>SP</u> QmgrName : <u>Q7</u>	: <u>011</u> 22 22
✓ Latest Page Set Sample Summary							×
# of Page Unavailab Full Page Avg % In l	Sets le Page Sets Sets Jse	· · · · · · · · · · · · · · · · · · ·	5 0 0 . 1	High % Ir Avg Exter High Exte Avg Pages	n Use nts ents a Allocated		5.3 1.8 55 1.6
$\sim$		Page S	ets				_ I □ I ×
Columns 🔤	2 to <u>7</u> of <u>18</u>	3 ← →	1	↓ Rows	s <u>1</u> to	<u>5</u> of	5
∆Page Set VID	Status	∆% Pages ⊽In Use	A T Da	llocated ata Pages	Unused Pages	Persistent Pages	+Non Pag
00 01 02 03 더_ <u>0</u> 4	Available Available Available Available Available Available	16.3 1.7 0.1 0.0 0.0		1078 1078 1078 7558 198166	902 1059 1076 7551 198092	176 19 2 4 0	

Tuesday May 20 2014



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# Page Set Dataset Details has Storage Space and Performance Data

<u>F</u> ile	<u>E</u> dit <u>V</u> iew	<u>I</u> ools <u>N</u> a	avigate <u>H</u> el		914 20:24:07		
Command ==> KMQPGSDD	Page Set Dat	aset Detail	s	HostName QmgrName	$= : \frac{SP22}{Q722}$		
✓ Page Se	t 04 Dataset	MQM.V710.0	0722.PSID04				
StatusAvailablVolumeMQM002Total Extents55Extents Since Restart0Allocated Data Pages198166Buffer Pool ID03Unused Pages198092Buffers In Use1437% Pages In Use0.0% Buffer Pool In Use7.1Persistent Pages0013Non-Persistent Pages74Queue Messages0							
Dataset Space Attributes							
Columns <u>2</u> to <u>6</u> of	23 ← →	<b>↑</b> ↓	Rows	1 to 1	of 1		
♦Volume I Tracks Allocated	Tracks Used	Tracks Used %	Number of Extents	+Dataset Type			
MQM002 16515	16515	100.0	55	VSAM			
<u>D</u>	ataset Perfo	rmance Summ	nary				
Columns <u>2</u> to <u>6</u> of	21 ← →	↑ ↓	Rows	1 to 1	of 1		
♦Volume   ∆Response    ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	IOSQ Time	∆Pend Time ⊽	e ∆Connect ⊽Time	Device ( Only Tir	Active me		
MQM002 0.9	0.1	<b>0</b> .1	0.	2	0.0		

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#### Scroll right see data (one row -volume -multiple)

	<u>F</u> ile	<u>E</u> dit	<u>V</u> iew	Tool	s <u>N</u> av:	igate	<u>H</u> elp	05/	/20/2014	20:24:57
Command == KMQPGSDD	=>P;	age Set	: Data	set D	etails			Hos Qmg	stName : grName :	<u>SP22</u> 0722
~	Page Set	04 Dat	taset	мом. V	710.Q72	22.PSI	D04			
Status Total Ex Allocate Unused P % Pages Persiste Non-Pers	ctents ed Data Pages Pages In Use ent Pages sistent Pages		Avail 198 198	abl 55 166 092 0.0 0.0 74	Voluma Extent Buffer 8 Buff Queues Queue	e ts Sin r Pool rs In fer Po s Assi Messa	ce Resta ID Use ol In Us gned ges	art  se.	· · · · · · · · · · · · · · · · · · ·	MQM002 0 1437 7.1 13 0
$\sim$	[	Dataset	t Spac	e Att	ributes	3				⊥□×
Columns	<u>6</u> to <u>10</u> of <u>2</u>	23 +	-    →	<b>↑</b>	↓ I	Rows	1 to	0	1 of	1
♦Volume	Dataset Type			Re Fo	cord rmat	Logi Reco	cal rd Lengi	th	Block Size	+VSAM K Displa
MQM002	VSAM			U				0	4096	Θ
~	Da	taset F	Perfor	mance	Summan	ry				
Columns	<u>7</u> to <u>10</u> of <u>2</u>	21 +	-    →	<b>↑</b>	<b>↓</b>	Rows	1 to	0	1 of	1
♦Volume	Interrupt Delay Time	∆Total ⊽Disco	onnect	Time	∆Rea¢ ⊽Dis¢	d connec	t Time	∆Wi ⊽D∶	rite isconnec <sup>.</sup>	t Time
MQM002	0.0			0.4			0.4			n/a

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#### Scrolling right one more time...

	<u>F</u> ile	<u>E</u> dit <u>V</u> ieu	w <u>T</u> oole	s <u>N</u> av	vigate	<u>H</u> elp	05	5/20/2014 20:27	7:12
Command = KMQPGSDD	=>	Page Set Da	taset De	etail	8		_ Ho Qn	ngrName : <u>SP22</u>	
~	Page Se	t 04 Datase	t MQM.V7	710.Q	722.PSI	D04			×
Status. Total E: Allocato Unused I % Pages Persisto Non-Pers	StatusAvailablVolumeMQM002Total Extents55Extents Since Restart0Allocated Data Pages198166Buffer Pool ID03Unused Pages198092Buffers In Use1437% Pages In Use0.0% Buffer Pool In Use7.1Persistent Pages0Queues Assigned13Non-Persistent Pages74Queue Messages0								
~	✓ Dataset Space AttributesX								
Columns	<u>18</u> to <u>21</u> of	<u>23</u> ← -	→   ↑	t	Rows	1	to	1 of	1
♦Volume	Volume Sequence	Extended A Space Elig:	ddress ible	Usir Mana	ng Cyli aged Sp	nder ace	Cre Dat	eation te	
MQM002	1	No		No			12/	07/09 00:00:00	Э
~	D	ataset Perf	ormance	Summa	ary				]   ×
Columns	<u>17</u> to <u>21</u> of	<u>21</u> ← -	<b>→</b> 1	Ť	Rows	1	to	1 of	1
♦Volume	Total I/O Count	Read I/O Count	Write Count	I/O	SC Di MSR O	rect bjecti	ve	SC Sequential MSR Objective	L ⊇
MQM002	385	385		0			99	99	9



<<

Tuesday May 20 2014



### OMEGAMON XE STORAGE NTH:

#### NTH is available for the following attribute groups

<u> </u>	ools <u>N</u> avigate <u>H</u> elp	07/30/2014	4 17:15:25	^
Command ==> KOBHISTB				
Hub Name: S353EH91:CMS Application:	: OMEGAMON XE for Stor	hage on z/08	S	
	Histori	ical tables		
Columns 2 to 4 of 4	+	→ ↑ ↓		Rows <u>1</u> to
◆Attribute Group	Collection   ← → Name	Interval	STATUS	
<ul> <li>S3 Cache Control Unit</li> <li>S3 Cache Devices</li> <li>S3 Channel Path</li> <li>S3 Volume Group Summary</li> <li>S3 DASD Volume Performance</li> <li>S3 DASD Volume Space</li> <li>S3 Dataset Attributes System Su</li> <li>S3 Logical Control Unit</li> <li>S3 RLS Lock Structure</li> <li>S3 RLS Buffer LSU Summary</li> <li>S3 RLS Performance Overview</li> <li>S3 RLS Lock Structure CF Detail</li> <li>S3 RLS Storage Class</li> </ul>	Cache_CU Cache_Dev Channel_Path Vol_Group_Sum DASD_Vol_Perf DASD_Vol_Space DA_Sum LCU RLS_Lock_Str RLS_Buffer_LSU RLS_Perf_Overview RLS_Lock_Str_CF RLS_Storage_Class	15 Mins 15 Mins	Active Active Active Active Active Active Active Active Active Active Active Active Active Active Active Active	



## OMEGAMON XE STORAGE NTH:

Eile Edit View Lools Navigate Help 07/30/2014 17:57:16

Command ==> KS3SSGP	SMS Storag	e Groups Perform	ance			Plex Sys 1	ID : <u>RSPLEX01</u> ID : <u>RS22</u>
	SMS Storage	Group Performanc	e Report				
Columns _2 to <u>_8</u> of <u>10</u>		←    →    ↑    ↓			Rows	1 to	<u>10</u> of <u>259</u>
¢Group Name	Storage Group Type	∆Storage ⊽Group Status	∆Total ⊽Volumes	∆High Respon ⊽Time	se High Busy %	Device MPL	Low Read Hit %
ABPG1 ARYSESG ARYSE05 ARYSE06 ARYSE07 ARYSE08 ARYSE09 ARYSE10 ARYSE11 ARYSE12	Pool   Pool   Pool   Pool   Pool   Pool   Pool   Copy Pool Backup   Copy Pool Backup	Enabled Enabled Enabled Enabled Enabled Enabled Enabled Enabled Enabled	2 8 16 8 16 8 24 24	8 0 2 1 12 0 0 0 0 0 0 0 0 0 0 0 0	.2 0.0 .2 0.0 .3 0.0 .1 4.4 .3 0.3 .3 0.0 .3 0.0 .3 0.0 .3 0.0	0 0 6 8 2 0 0 0 0 0	n∕a 70.3 73.1 99.7 98.1 73.6 72.0 98.6 59.6
	Highest Volu	me Response Time	Report				
Command ==> KS3SSGP	Hist	orical Summary				Disp Plex Sys I	ay : HISTORY ID : RSPLEX01 ID : RS22
Columns 3 to 8 of 11	Jetee				Rows	1 to	20 of 20
♦Recording Time	Storag   Group	e Stor Type Gro	rage up Status	Total Volumes	High Response Time	High Busy *	Device MPL
17:45:26 ARYSG08 17:30:36 ARYSG08 17:15:23 ARYSG08 17:10:23 ARYSG08 16:45:22 ARYSG08 16:30:22 ARYSG08 16:15:20 ARYSG08 16:01:27 ARYSG08 15:45:23 ARYSG08 15:45:22 ARYSG08 15:15:21 ARYSG08 15:10:23 ARYSG08 14:45:22 ARYSG08 14:30:41 ARYSG08 14:30:22 ARYSG08 14:30:22 ARYSG08 14:30:22 ARYSG08 14:30:22 ARYSG08 14:30:22 ARYSG08 13:45:22 ARYSG08 13:45:23 ARYSG08 13:30:22 ARYSG08 13:30:22 ARYSG08 13:30:22 ARYSG08 13:15:23 ARYSG08 13:00:26 ARYSG08	Pool Pool Pool Pool Pool Pool Pool Pool	Ena Ena Ena Ena Ena Ena Ena Ena Ena Ena	bled           bled	16 16 16 16 16 16 16 16 16 16 16 16 16 1	8.3 0.2 0.3 0.2 0.3 0.2 0.3 0.2 0.3 0.5 0.3 0.5 0.2 0.3 0.2 0.3 0.2 0.3 0.2 0.3 0.2 0.2 0.3 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2		000000000000000000000000000000000000000



Auto Update : Off



#### Other Enhancements:

#### Added two OMEGAMON Enhanced 3270UI workspaces

- o Channel Path Activity
- o Tape Drive
- SDA status workspace
- History Configuration from the TOM
- MSU collection TEP changes



#### DASD, CHANNEL & TAPE SUMMARY MENU



	<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>T</u> ools <u>N</u> avigate <u>H</u> elp	07/18/2014 16:35:49
		Auto Update : Off
Command ==>		CKPLEX
KM5LPR03	Options Menu	
	Select on outling and they are a ENTED	
Ť	Select an option and then press ENTER	_!⊔!^
Columns	V 1. A Operator Alerts	8
	2. B System CPU Utilization	
♦LPAR	3. C CPC Details and LPAR Clusters	In U
Name	4. D zAware Analysis	cent
	5. L Health Checker	
_ CANSP13	6. M 4-Hour Rolling Average MSU Statistics	<b>a</b> 46.6
_ CANSP11	7. N Enclave Information	10.4
_ CANSYSG	8. O Storage Resources	36.0
_ CANSYSL	9. P System Paging & Dataset Activity	19.0
_ CANSP22	10. R Enqueue, Reserve, and Lock Summary	17.2
_ CANSP23	11. S Address Space Overview	6.3
_ CANSP12	12. V DASD, Channel & Tape Summary	45.4
_ CANSP14	13. W WLM Service Class Resources	43.4
	14. Z z/OS UNIX System Services Overview	
	15. H Historical Summary For a CPC	

#### MENU PANEL – (KM5DCTMN)



	<u>F</u> ile <u>F</u>	<u>∃</u> dit <u>V</u> iew	<u>I</u> ools <u>I</u>	<u>N</u> avigate <u>I</u>	<u>H</u> elp	07/18/2014	4 16:55:57			
Command ==>						Auto Upda	te : Off JACKPLE>			
KM5LPR03	KM5DCTMN D	<pre>KM5DCTMN DASD Devices, Channel Path &amp; Tape Drives</pre>								
~	Select one	Select one of the following, then press ENTER								
Columns	_ 1. C Cha	_ 1. C Channel Path Activity								
♦LPAR	2. D Active DASD Devices 3. T Tape Drives									
Name							ercent			
_ CANSP13		5 [	7.5	0.3	з	0.1	46.6			
_ CANSP11		2	1.6	Θ.	0	0.0	10.4			
_ CANSYSG		14 🛛	16.6	6.	5	8.6	36.0			
_ CANSYSL		4 [	4.5	Θ.	1	Θ.Θ	19.0			
_ CANSP22		7 🛛	5.6	2.3	3	Θ.1	17.2			
_ CANSP23		2 🛛	1.6	Θ.	0	Θ.Θ	6.3			
_ CANSP12		4 [	3.2	Θ.	0	Θ.Θ	45.4			
_ CANSP14		5	З.8	Θ.	0	Θ.Ο	43.4			

#### MENU PANEL – (KM5DCTMN)



	<u>F</u> ile <u>E</u> dit <u>V</u>	′iew <u>T</u> ools <u>M</u>	<u>N</u> avigate <u>H</u> el	lp 07/18/201	16:55:57
Command ==> (M5LPR03	KM5DCTMN DASD Dev	vices, Channe	l Path & Tape	Auto Upda Prives	JACKPLE
×	Select one of the	following,	then press EN	NTER	_ [ ×
Columns	C 1. C Channel P	ath Activity			8
¢LPAR Name	3. T Tape Driv	es			SA In U ercent
<pre>_ CANSP13 _ CANSP11 _ CANSYSG _ CANSYSL _ CANSP22 _ CANSP23 _ CANSP12 _ CANSP12 _ CANSP14</pre>	5   2   14   4   7   2   4   5	7.5 1.6 16.6 4.5 5.6 1.6 3.2 3.8	0.3 0.0 6.5 0.1 2.3 0.0 0.0 0.0	0.1 0.0 8.6 0.0 0.1 0.0 0.0 0.0	46.6 10.4 36.0 19.0 17.2 6.3 45.4 43.4

#### CHANNEL PATH ACTIVITY – (KM5CHPAS)



	<u> </u>	t <u>V</u> iew <u>T</u> ools <u>N</u> avi	gate <u>H</u> e	elp 07,	18/2014 2	1:39:24
$\sum_{n=1}^{\infty}$				Au · 	to Update	: <u>Off</u> Ackpley
M5CHPAS	Char	nnel Path Activity		SMI	= ID :	
~		Summary				
Columns <u>2</u> to	<u>7</u> of <u>12</u>	← → ↑ ↓ R	ows	<u>1</u> to	<u>   29</u> of	104
∆RMF Interval ⊽Start	Sample Count	CPMF	Path ID	∆Туре ⊽	Shared	+Onli
21:30:00 21:30:00		Extended Extended	00 01	I QD I QD	Y Y	Y Y
21:30:00 21:30:00	0 0	Extended Extended	02 03	I QD I QD	Y Y	Y Y
21:30:00 21:30:00 21:30:00		Extended Extended Extended	04		Y	Y Y V
21:30:00 21:30:00 21:30:00		Extended Extended Extended	11 17		Y Y	· Y Y
21:30:00 21:30:00		Extended Extended	1E 1F		Y Y	Y Y
21:30:00 21:30:00 21:30:00		Extended Extended Extended	28 20 30		Y	Y Y Y
21:30:00 21:30:00 21:30:00	0 0	Extended Extended	31 32	OSD OSX	Ý Y	Y Y
21:30:00 21:30:00		Extended Extended	34 35		Y Y	Y Y
21:30:00 21:30:00 21:30:00		Extended Extended Extended	38 38		Y	Y
21:30:00 21:30:00		Extended Extended	39 3A		Y	Y Y
	O at w	Extended	38	USX	Y	Y

#### CHANNEL PATH ACTIVITY – (KM5CHPAS)



	<u> </u>	<u>E</u> dit <u>V</u> ie	ew <u>T</u> ools	<u>N</u> avigato	e <u>H</u> elp	07/19/2014 10:01:07
Command ==> KM5CHPAS		Channel F	Path Activ	vity		Plex ID : <u>JACKPLEX</u> SMF ID :
$\sim$		S	ummary			
Columns <u>4</u> to	<u>8</u> of	12 +	→ ↑ ,	Rows	1 t	o <u>29</u> of <u>104</u>
∆RMF Interval VStart	Path   ID	∆Туре ⊽	Shared	Online	∆LPAR ⊽Percent	
21:30:00 21:30:00 21:30:00 21:30:00 21:30:00 21:30:00 21:30:00 21:30:00 21:30:00 21:30:00 21:30:00 21:30:00 21:30:00 21:30:00 21:30:00 21:30:00	00 01 02 03 04 05 10 11 17 1E 1F 28 20 30	IQD IQD IQD IQD IQD IQD OSD OSD OSD OSD OSD OSD OSD OSD	$\gamma$	$\gamma$		
21:30:00 21:30:00 21:30:00 21:30:00 21:30:00 21:30:00 21:30:00	30 31 32 34 35 36 36 37	OSX OSD OSX OSD OSD OSD OSD		Y Y Y Y Y Y	0 0 0 0 0 0	. 0 . 0 . 0 . 0 . 0 . 0

#### CHANNEL PATH ACTIVITY – (KM5CHPAS)



	_ <u>F</u> ile <u>E</u> dit	<u>V</u> iew <u>T</u> oo	ls <u>N</u> avigate <u>H</u> elp	07/19/2014 10:03:38
Command ==> <m5chpas< th=""><th>Chan</th><th>nel Path Ac</th><th>tivity</th><th>Auto Update : <u>Off</u> Plex ID : <u>JACKPLEX</u> SMF ID :</th></m5chpas<>	Chan	nel Path Ac	tivity	Auto Update : <u>Off</u> Plex ID : <u>JACKPLEX</u> SMF ID :
~		Summary		
Columns <u>9</u> to	<u>12</u> of <u>12</u>	← → ↑	↓ Rows <u>1</u> to	0 <u>29</u> of <u>104</u>
∆RMF Interval ⊽Start	  ∆Complex  VPercent	DCM Enabled	Cluster Name	Configured
$\begin{array}{c} 21:30:00\\$		No No No No No No No No No No No No No N	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	

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#### TAPE DRIVES



	<u>F</u> ile	<u>E</u> dit	⊻iew	<u>T</u> ools	<u>N</u> avigate	<u>H</u> el	p 07/19/2014	10:05:58
Command ==> KM5LPR03	KM5DCTMN	DASD D	evices	, Channe	el Path &	Tape	Drives	JACKPLEX
×	Select on	e of tl	he fol	lowing,	then pres	s EN	TER	_ [ ×
Columns		hannel Active	Path NASD D	Activity	ļ			8
¢LPAR Name	3. T T	ape Dr	ives					SA In U ercent
<pre>_ CANSP13 _ CANSP11 _ CANSYSG _ CANSYSL _ CANSP22 _ CANSP23 _ CANSP12 _ CANSP12 _ CANSP14</pre>		5   2   14   4   7   2   4   5		7.5 1.6 16.6 4.5 5.6 1.6 3.2 3.8		).3 ).0 ).5 ).1 ].3 ).0 ].0	0.1 0.0 8.6 0.0 0.1 0.0 0.0 0.0	46.6 10.4 36.0 19.0 17.2 6.3 45.4 43.4

#### TAPE DRIVES – (KM5TPDRS)



	<u> </u>	⊵ <u>E</u> dit	<u>V</u> iew <u>T</u> ools	<u>N</u> avigate	<u>H</u> elp 07/19	/2014 10:11:01
Command ==> KM5TPDRS			Tape Drives		Plex SMF I	ID : <u>JACKPLEX</u> D : <u>SP13</u>
~			Summary			
Columns 🔤	<u>2</u> to <u>6</u> of	f <u>8</u>	← → ↑	↓ Rows _	<u> </u>	<u>29</u> of <u>34</u>
∆Address V	  ∆Volume  ⊽	User	∆Status V		∆I/O Count ⊽	Permanent Errors
00000A00	]		FREE		271	0
00000A02			FREE		21603	•
00000A03	]		FREE		684	Θ
00000A04	]		FREE		1147	Θ
00000A05			FREE		544	Θ
00000A06			FREE		1796	Θ
00000A07			FREE		5594	Ο
00003A50			FREE		81	Ο
00003A51			FREE		93	Ο
00003A58			FREE		125	Θ
00003A59			FREE		65	Ο
00003A80			FREE		Θ	Θ
00003A81			FREE		Θ	Ο
00003A82			FREE		Θ	Θ
00003A83			FREE		Θ	Θ
00003A84			FREE		12379	Θ
00003A85			FREE		588	0
00003D60			FREE		Ο	Ο
00003D61			FREE		Ο	0
00003D62			FREE		Ο	0
00003D63			FREE		0	Ο
Complete your se 90	ession evaluations	online at www.	SHARE.org/Pittsburgh-E	val		

#### TAPE DRIVES – (KM5TPDRS)



	<u> </u>	Edit <u>V</u> iew ]	[ools <u>N</u> aviga	ate <u>H</u> elp	07/19/2014 10:20:07
Command ==>		Tape Dri	VAC		Plex ID : JACKPLEX
		таре вг.	•==		
~		Summar	гy		
Columns _	<u>5</u> to <u>8</u> of <u>8</u>	<u>3</u> ← →	<b>↑</b> ↓ Roι	√s <u>1</u> to	0 <u>29</u> of <u>34</u>
∆Address V	  ∆I/O Count  ⊽	Permanent Errors	Temporary Errors	Tape Moun Wait Time	t
00000A00 00000A01 00000A02 00000A03 00000A03 00000A05 00000A05 00000A05 00003A50 00003A51 00003A51 00003A59 00003A59 00003A80 00003A81 00003A81	271 159 21603 684 1147 544 1796 5594 81 93 125 65 0 0 0 0				
00003A83 00003A84 00003A85 00003D60 00003D61 00003D61 00003D62 00003D63 00003D63	0 12379 588 0 0 0 0 0 0				



#### Enhanced 3270UI Historical Data Collection Configuration

 Action Bar: View, H to invoke the Historical collection configuration dialogs

	_ <u>F</u> ile	<u>E</u> dit	View	Tools	s <u>N</u> avigate	Help	> 0	7/14/2	014 13	:38:34
Command ==> KOBSTART		Ent	H_ 1 2		ilters nresholds	- <b>i</b>		to Up ex ID s ID	date : :	: 0++
~		All	4	1. S Wo	orkspace Sou	urce			_	_ □ ×
Columns 2 t	0 6 0 f	9	5		story Conf	igueat	tion	1	of	1
<pre>\$Sysplex [ Name ]</pre>	∆Average ⊽CPU Per	cent		. R Hi . I Hi	istory Refre	esh span		LPAR city	+LPAR Name	Grou
_ LPAR400J		2						5.3	NZA	
×		All f	Active	CICSpl	lexes					
Columns 2 t	0 6 0 f	19	←   →	†	↓ Rows	1	l to	1	of	1
∆CICSplex [] ⊽Name []	∆Number ⊽Regions	of ∆ ⊽F	Transac Rate	tion	∆CPU ⊽Utilizatio	on F	Any SO Regio	DS S ns R	0S egion	

 ...to navigate to the KOBHISTL workspace and launch product specific historical collection configuration



#### Enhanced 3270UI - Self Describing Agent (SDA) Info



Complete your session evaluations online at www.SHARE.org/Pittsburgh-Eval

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# License Manager MSU WLM Cap



- History collection now available
- Row Count Attribute added
  - The Row Count allows queries or situations to select specific data rows for processing.

(example showing attribute group to select for history collection)

Create New Colle	ection Settings	X
Name		
Description		
Monitored Application	OMEGAMON XE on z/OS	-
Attribute Group	KM5 License Manager MSU WLM Cap	-
	<u>O</u> K Ca <u>n</u> cel	Help



# License Manager MSU WLM Cap



# (Query for License Manager MSU WLM Cap table selected for lower half of Channel Path Activity report)



# IBM System z Service Management critical for moving to Mobile, Big Data and Cloud



#### IBM continues to improve z/OS environment to support new technologies

- IBM SmartCloud Analytics Log Analysis z/OS Insight Packs 1.1.0.1
- IBM Service Management Suite for z/OS V1.2
- IBM Tivoli OMEGAMON Performance Management Suite for z/OS V5.3.0
- IBM Tivoli OMEGAMON XE on z/OS 5.3.0, IBM Tivoli OMEGAMON Dashboard Edition on z/OS 5.3.0, IBM Tivoli OMEGAMON XE for Messaging for z/OS 7.3.0, IBM Tivoli OMEGAMON XE for CICS on z/OS 5.3.0, IBM Tivoli OMEGAMON XE for Storage on z/OS 5.3.0
- IBM Tivoli System Automation for z/OS V3.5
- IBM Automation Control for z/OS V1.1.1
- IBM Tivoli NetView for z/OS V6.2.1
- IBM Tivoli NetView Monitoring for GDPS V6.2.1
- IBM Tivoli Workload Scheduler for z/OS V9.2

Learn More: http://www-01.ibm.com/software/os/systemz/itsm/

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developerWorks > RFE Community > Tivoli > Tivoli RFE Communit	y	
<ul> <li>Welcome Tivoli users! Here you have an opportunity to collaborate directly with the Tivoli product development teams and other product users.</li> <li>Search for RFEs (view, comment, vote, and watch)</li> <li>Submit RFEs</li> <li>Track your RFEs (My RFEs)</li> </ul>	Release plans (Pilot) Now you can track upcoming product release pl the release cycle, plus you can comment and ra- items along the way. (Sign in required) IBM open service delivery platform IBM SmartCloud Application Performance M IBM Tivoli Monitoring Tivoli Business Service Manager Tivoli Workload Automation	Spotlight         → Announcements         → Give us your feedback         Management         Brands         - All brands         - Information Management         - Rational         - Tivoli
Customize this page for your favorite product: Tivoli OMEGAMON XE for CICS on z/OS	[	WebSphere      Latest RFE submitted

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http://www.ibm.com/developerworks/rfe/?BRAND\_ID=90





#### Summary

- OMEGAMON XE on zOS v5.3 overview
- OMEGAMON XE for Storage on zOS v5.3 overview
- OMEGAMON XE on zOS v5.3 details
- OMEGAMON XE on zOS v5.3 problem solving
- Summary





#### Backup:





#### **Additional materials**

- NTH XE zOS DASD Scenario
- Parmgen First Time User (FTU)
- IBM System z Service Management





- I work in Operations support and on 07/18/14 at about 3pm I receive a call that a users batch jobs BKEALIO1 and BKEALIO2 in the CVT53PLX sysplex are being delayed.
- From the initial workspace, KOBSTART, I go to the menu for sysplex

3 Session C - [62 x 160]							
File Edit View Communication Actions Window	w Help						
🖻 🗈 🗗 🚛 🛼 🔛 💷 📾 🐚 🍉 💩	al 🔹 🧇 🤣						
Host: wlaa.tivlab.raleigh.ibm.cor Po	ort: 23	LU Name:		Disconne	ect		
	avigate <u>H</u> elp 07/18/2014 1	5:55:39				Auto Upd	te : 066
Command ==> KOBSTART Options Menu		se Summai	ry			Plex ID Sys ID	
<ul> <li>Select an option and then pres</li> </ul>	S ENTER	ve Syspl	exes				_ 0 ×
Columns1. B Report Classes Data f 2. C Enterprise CPC Overvi 3. D Service Definition Da	or Sysplex Lew ata	Group	LPAR Group	Group LPAR	AAverage Unused	1 to 2 0	of z
PX53CVT 6. P Enterprise Sysplex Ov	verview		Unavailable	Unavailable	Ogroup MSOS		
8. S LPAR Overview for Sys 9. T Top Consumers for Sys	plex plex		Unavaitable	- onavai tab te	0		
10. V Service Classes for S 11. X XCF Utilization 12. Z ZOS System Resources	ryspiex						
13. H Historical Summary Fo	r CPCs Serving Sysplex						
MA C	Fr	<mark>iday July</mark> 08∕015	18 2014				
Connected to remote server/host wlaa.tivlab.raleigh.	ibm.com using lu/pool TCPA0418 and	d port 23			\\BRIAN-PC	\Canon MP830 Series	Printer on U
lete your session evaluations onlin	ie at www.SHARE.org/	Pittsbu	rgh-Eval				

**Comp** 101



I select the "V" option to see service classes right now

3 Session C - [62 x 160]		These Party in wa	and and a	
Eile Edit View Communication Actions Windo	ow <u>H</u> elp			
	al al 🔹 🧇			
Host: Wlaa.tivlab.raleigh.ibm.cor	Port: 23 LU	Name:	Disconnect	
<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>T</u> ools	<u>N</u> avigate <u>H</u> elp 07/18/2014 15:0	08:05		
Command ==>	Service Class	e for Suspley		Auto Update : <u>Off</u> Plex ID : <u>CVT53PLX</u> SME ID :
	Sumr	hany		
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 Looking at Service Classes for Sysplex I see nothing suspicious for batch class but decide to look further at batch period 2 for Workflow Analysis, option "D"



Complete your session evaluations online at www.SHARE.org/Pittsburgh-Eval

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 Workflow Analysis shows that the service class is seeing I/O activity for device TDSL13

3 Session C - [62 x 160]			-	These Parameters		-		
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- Lets look at history for this device. Select "H" for history Complete your session evaluations online at www.SHARE.org/Pittsburgh-Eval
- 10



Activity rate and Active Percent are quite high over the last 2 hours.

What jobs are using device? Select "S" for jobs on any row.



Complete your session evaluations online at www.SHARE.org/Pittsburgh-Eval

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Indeed the batch jobs I was called about are delayed for the device. We also see that there are two started tasks contending for use of the device.

3	Session C	- [62 x 160]									-			
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#### When did this start?



 I use history time configuration (View -> History Timespan) to look at the last 12 hours

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 We scroll to the bottom of the range to see that activity for the device started at about 10:10am

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### Near Term History: DASD Scenario

So the two started tasks are using the device already.

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Lets move forward in time to see how things progress... (use the forward arrow at screen bottom)

Complete your session evaluations online at www.SHARE.org/Pittsburgh-Eval

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### Near Term History: DASD Scenario

Around 11am we see the batch jobs starting to use the device as well.

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Another interval forward shows

Complete your session evaluations online at www.SHARE.org/Pittsburgh-Eval



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### Near Term History: DASD Scenario

 Now we see that by 11:05 our two batch jobs are being significantly delayed for device use by the started tasks.

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 We can now tell our batch job user that his jobs are contending for I/O access with two started tasks. The owners of these jobs and tasks should perhaps run at different times or segregate their files so they are not on the same volume.



# Welcome JOBGEN/PARMGEN Integration Screen



### **PARMGEN Quick Configuration Mode**



for all users, whether you are a new <u>first-time-user (FTU)</u> in PARMGEN or

whether you are an experienced subject matter expert!

PARAMETER GENERATOR (PARMGEN) WORKFLOW Option ===>	- PRIMARY	OPTION	MENU
GBL_USER_JCL: TDITNT.COMMON.PARMGEN.JCL RTE_PLIB_HILEV: TDITN.FTU RTE_NAME: LPAR1			
Note: Perform steps 1 through 5 in sequence, repe Enter n (1-5) to perform tasks. Enter ns (1s-5s) for detailed job/task stat	ating step us.	os as ne	cessary.
Description	Job/Label	Status	Date
<ol> <li>Set up PARMGEN work environment for an RTE.</li> <li>Customize PARMGEN configuration profiles.</li> <li>Create the RTE members and jobs.</li> <li>Submit batch jobs to complete PARMGEN setup.</li> <li>Perform post configuration steps.</li> <li>R Reset RTE, Status and Date fields. (Optional)</li> </ol>	KCIJPCFG LPAR1 \$PARSE SUBMIT POSTCFG New RTE	Enter 3 Enter 4	for details for details
Press F1=Help for more information. Type U or UT	IL to acco	ess util	ity menu.
Quick Configuration Mode: REGARDLESS of "OUICKNEW" "OUIC	Just 4 s {clone","	tream Quickc	lined step DNVERT <sup>®</sup> mod

### Subscribe to PARMGEN FTU APAR OA45024 IF

## URL: http://www.ibm.com/support/docview.wss?uid=swg21417935

Enablement Support : ( Date Last Updated: 20140715)

114 Complete

#### A. Download the latest GA 💢 PARMGEN PTFs and let 's get started!

APAR#	FMID / PTF#	Interim Feature (IF) Release Date
OA43859	HKCI310/UA72225	*GA* February 28, 2014 (1Q14A) 🖄
OA44620 <b>№₩!</b>	HKCI310/UA73688 NEW!	*ETA GA TBD* (3Q14A) NEW!
OA45024 NEW!	HKCI310/UA73689 NEW!	*ETA GA TBD* (3Q14B) NEW!
Detelle :		

NEW! Section: What's New in 1Q14A?<sup>™</sup> \*GA\*<--- \*\*\* Required reading \*\*\*(<sup>™®®®®®®</sup> Date Last Updated: 20140301)

PARMGEN 1Q14A Whats New (HKCl310 PTF UA72225 APAR OA43859) Interim Feature D20140217.zip

mdeted Section: What Will Be in 3Q14A/3Q14B? <--- (mdeted Date Last Updated: 20140715)

PARMGEN 3Q14B Whats New (HKCl310 PTF UA73689 APAR OA45024) Interim Feature D20140715.zip

### Check out the SMC System z community blog





### Check out the System z blog on PARMGEN FTU



Good news for PARMGEN First-Time-Users (FTU) and PARMGEN SMEs deploy OMEGAMON management suites even faster using PARMGEN Quick Configuration mode!

Cecile\_Day | July 19 | Visits (838) 📃 2 - Like 🔨

#### What's New in PARMGEN?

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The new PARMGEN enhancements will be generally available with the recently announced IBM OMEGAMON Performance Management Suite for z/OS V5.3 and IBM Service Management Suite for z/OS V1.2 solutions.

Upcoming PARMGEN APAR OA45024 brings significant improvements to the PARMGEN Workflow

interface. The new PARMGEN APAR OA45024 delivers the following enhancements for all users, whether you

are a new first-time-user in PARMGEN or whether you are an experienced subject matter expert.

#### Here's a preview of what's new in PARMGEN:

- 1. 🔆 Follow through a simple, easy-to-navigate documentation that has an even more task-oriented organization in our new IBM® Knowledge Center. Value -> The new IBM Knowledge Center provides the flexibility for customers to dynamically create a collection of their favorite product deployment topics (Planning, Installing, Upgrading, Configuring, Scenarios and How-tos).
- Quickly build new runtime environments (RTEs) from several IBM-provided best-practice out-of-the-box models. Value -> The new \$MDL\* predefined RTE models save significant time in setting parameter values for the different product and LPAR RTE configurations.
- Quickly deploy SMP/E maintenance cross-LPAR RTEs via one job. Value -> The new PARMGEN "LOADALL" cross-RTE command provides the flexibility to deploy maintenance quicker across all your LPAR RTEs, or if you prefer, selectively deploy to a subset of your monitored environments, via a new composite KCIJ@LOD job.
- 4. 🔆 Quickly convert your existing ICAT RTEs to PARMGEN mode and upgrade the products faster, with streamlined PARMGEN deployment jobs.
- The new PARMGEN support also provides:
  - simple, tailored labels to make it easier to see which of the few 12 task-oriented, function-centric composite jobs are required for submission to complete the RTE set-up.
  - a set of handy and concise, tailored post configuration README files that are catered to your product



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provides insights into the System z solution, as well as technical details about specific IBM products.



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