

JES2 Project Opening

JES2 & SDSF Latest Status



Session# 2652

SHARE 104 Technical Conference - Winter 2005 - Anaheim

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Welcome Reception Tonight . . .

- **7:00pm – 10:00pm,
Pacific Ballroom C/D, Hilton Anaheim Hotel**
 - ▶ **Immediately following the Opening Reception in the
Technology Exchange Expo (5:30pm – 7:00pm, Hall
A, Anaheim Convention Center)**
- **SHARE President, Robert Rosen, will address all
attendees with a welcome message and present
awards, including Best Session Awards and the
2005 Award for Excellence in Technology**



SHARE Technology Exchange Expo

Location: Hall A, Anaheim Convention Center

Monday: 4:00 – 7:30pm
5:30 – 7:00pm
(Reception)

Tuesday: 4:00 – 7:30pm
5:30 – 7:00pm
(Reception)

Wednesday: 10:30am – 1:30pm
12:30 – 1:00pm
(Dessert Break)
1:00 – 1:30pm
(Passport Give Away)

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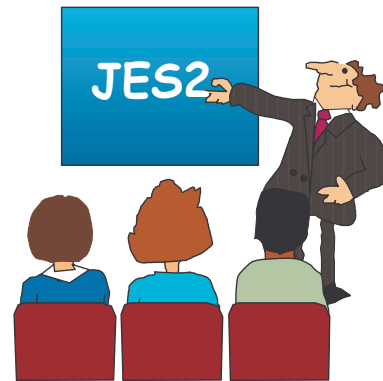
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Agenda . . .



- JES2
 - ▶ Highlighted sessions at SHARE
 - ▶ Current JES2 Releases
 - ▶ Using zAAPs for Batch Work
 - ▶ Migration & Implementation Tips
 - ▶ Recent Service
- SDSF
 - ▶ Recent Releases of SDSF
 - ▶ Tips @ DA Panel & zAAPs
- References
 - ▶ Documentation & Web Sites



JES2 & SDSF sessions . . .

- Most sessions are in C21/Room 206B (S-102)



Monday:

- 01:30pm 2652 JES2 Project Opening and Latest Status
- 03:00pm 2655 Planning for Future JES2 Releases

Tuesday:

- 04:30pm 2665 JES2 Exit Review
- 06:00pm 2663 JES2 Level 2 Bit Bucket
- 07:15pm 2679 JES2 Project Dinner [Meet in Hilton Lobby]

Wednesday:

- 08:00am 2661 Introduction to JES2 for New Systems Programmers
- 01:30pm 2671 SDSF Futures & Recent Tips
- 03:00pm 2664 JES2 Diagnostic Techniques
- 04:30pm 2667 JES2 Short Subjects (Init Deck & Poly-JES)
- 06:00pm 2959 JES2 Q&A

Thursday:

- 05:45pm 2651 JES2 Project Planning for Boston
- 10:00pm 2680 JES2 Esprit de Corps



Current JES2 Releases



FMIDs, Birthdays & Obituaries

JES2 Rel.#	FMID	First Available	No Longer Available	End of Service
OS/390 R.10	HJE7703	9/00	3/02	9/04
z/OS R. 1	HJE7703	3/01	10/01	3/04
z/OS R. 2/3	HJE7705	10/01	9/02	10/04
z/OS R. 4	HJE7707	9/02	3/04	3/07
z/OS R. 5/6	HJE7708	3/04	9/05	3/07

See www.ibm.com/services/sl/products/java.html (requires JVM 1.3)

See 'JES2 Migration Notebook' &

'Migration from OS/390 V2R10 to z/OS V1R4'

www.ibm.com/servers/eserver/zseries/zos/installation/zos_migration.html

JES2/MVS Compatibility



OS/390 z/OS Release	JES2 Release:				
	Rel.10 & z/OS R.1 HJE7703	z/OS R.2 HJE7705	z/OS R.4 HJE7707	z/OS R.5 HJE7708	z/OS R.7 ???
R.10	X				
z/OS R1	X				
z/OS R2	X	X			
z/OS R3	X	X			
z/OS R4	X	X	X		
z/OS R5	X	X	X	X	
z/OS R6	X	X	X	X	
→ z/OS R7		X	X	X	X

JES levels supported by a given z/OS release will be the same as the JES levels that can coexist in a MAS.

→ Support for compatibility mode (R4) will be withdrawn. z/OS V1.7 JES2 will no longer support compatibility with pre-z/OS V1.2 systems.

See "**z/OS and z/OS.e Planning for Installation Guide**" GA22-7504 at http://www.ibm.com/servers/eserver/zseries/zos/bkserv/find_books.html

- Chapters 4 & 5

z/OS R5 JES2 - HJE7708



★ **Multilevel Security**

- ▶ Optional (by System)
- ▶ SECLABELs affect job selection process
- ▶ SECLABELs carried in JES2 control blocks
- ▶ Extracted for SDSF use



★ **Miscellaneous Enhancements**

- ▶ ENF 58 enhanced to show lines , etc. printed for InfoPrint
- ▶ 1 byte console ID eliminated
- ▶ SSI 54 (whoami) shows ComChar (\$ or ...)
- ▶ \$HASP607 (JES2 termination delays) enhanced
- ▶ \$DSERV macro to access checkpoint data from non-JES2 MT
- ▶ VER/REP for JES2 data spaces
- ▶ \$TRACE IPCS and multi-system Dump enhancements

★ **Migration and Coexistence** - Normal rules apply:

- ▶ APAR OW55708 required on down-level systems

z/OS R7 JES2 - the next JES2...



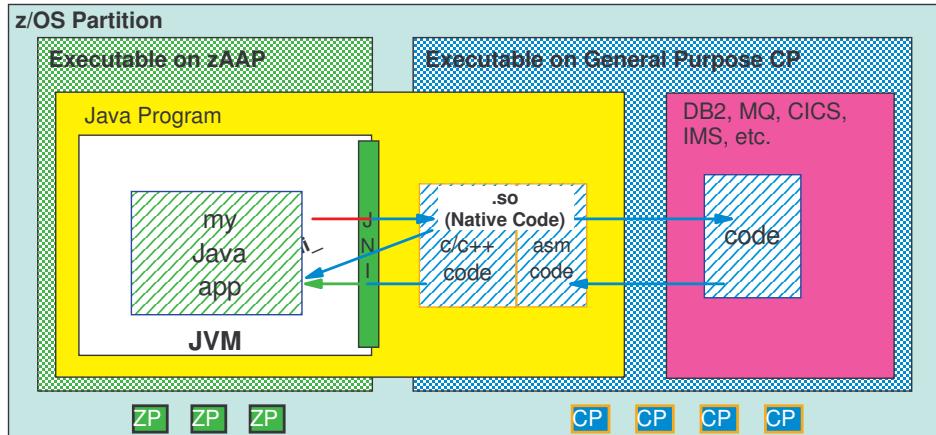
- z/OS R. 7 JES2 enhancements (previewed)
 - ▶ **JES2 checkpoint problem recovery:**
 - JES2 is planned to be enhanced to detect and correct certain additional kinds of checkpoint control block corruption when JES2 is restarted. This can help prevent cold starts.
 - ▶ **Withdrawn:** Support for release 4 mode
 - JES2 Compatibility Mode (\$ACTIVATE and \$DEACTIVATE)

- See Chip's talk on the "next" release
 - ▶ NJE over TCP/IP
 - ▶ Reader/NJE exit changes
 - ▶ Table pair enhancements
 - ▶ \$SCAN from non-main task environments
 - ▶ SSI for JES2 monitor information
 - ▶ SAPI and extended status enhancements
 - ▶ Large (>64K track) SPOOL Data Sets
 - ▶ Other goodies (requirements!!!!)

Using zAAPs for JES2 Batch Programs



- **Convert your COBOL (or other) Batch pgms to java**
 - ▶ Batch programs being developed by your new programming staff.
- **Run them in BPXBATCH, or better yet, with JZOS**
 - ▶ JZOS - "Java™ for z/OS®" is a set of free tools designed to make Java easier to use on the mainframe.
 - ▶ Available free at <http://www.jzos.com/>



Using JZOS for Java Batch Programs



- **Advantages of JZOS over BPXBATCH:**
 - ▶ **Write directly to System.out (stdout) & System.err (stderr) without separate step to cleanup & copy temporary HFS files.**
 - Route output directly to JES SYSOUT datasets, or MVS datasets by specifying STDOUT and STDERR DD statements.
 - View SYSOUT via SDSF while the job is running.
 - ▶ **Write messages to the MVS system console**
 - ▶ **Environment variables can be easily tailored / parameterized.**
 - ▶ **Condition codes can be set by using the Java "System.exit()" method, and passed to subsequent steps.**
 - ▶ **The Java JVM is invoked directly under the batch address space, not under a separate OMVS address space.**
 - SMF 30 records cut as for other batch jobs.
 - Since the JZOS batch launcher only requires a single step, it can be used to run Java in an MVS started task.
- **See Session 8368 "Java: z/OS Topics - Batch Integration...", Thur. 1:30**

Sample JZOS Job



```
//JAVAJVM EXEC PGM=JZOSVMI3,REGION=0M,
//  PARM='/ com.ibm.ws390.sm.smfview.Interpreter /tmp/D50126R1SMF.txt'
//STEPLIB DD DSN=MCCOX.JZOS.LOADLIB,DISP=SHR
//STDENV DD *
# This shell script configures any environment variables for the Java JVM.
# Variables must be exported to be seen by the launcher.
. /etc/profile
export JZOS_HOME=/u/mccox/jzos/jzos
export JAVA_HOME=/shared/java2IFA/J1.3
export PATH="$PATH":"${JAVA_HOME}"/bin:
LIBPATH="$LIBPATH":"${JAVA_HOME}"/bin:"${JAVA_HOME}"/bin/classic:"${JZOS_HOME}"
export LIBPATH="$LIBPATH":
# Customize your CLASSPATH here
CLASSPATH=/u/hutch/smfV5/WSCSMFperfV502.jar
# Add JZOS required jars to end of CLASSPATH
for i in "${JZOS_HOME}"/*.jar; do
    CLASSPATH="$CLASSPATH":"$i"
done
export CLASSPATH="$CLASSPATH":
# Configure JVM options
IJO="-Xms16m -Xmx128m -Xifa:project1"
# Uncomment the following if you want to run with Ascii file encoding..
# IJO="$IJO -Dfile.encoding=ISO8859-1"
export IBM_JAVA_OPTIONS="$IJO "
export JAVA_DUMP_HEAP=false
export JAVA_PROPAGATE=NO
export IBM_JAVA_ZOS_TDUMP=NO
/*
//SYSPRINT DD SYSOUT=*          < System stdout
//SYSOUT DD SYSOUT=*           < System stderr
```

Sample JZOS Job Output



- ▶ **SMF 120 Reduction program available on Techdocs PRS752**
 - Reads from off-loaded SMF data (VBS) using JRIO; writes to HFS & SYSOUT.
- ▶ **zAAP Projection Tool for Java 2 Technology Edition, SDK 1.3.1 shows more than 50% of the CPU time can be run on zAAPs - *Your mileage will vary.***

```

*****
08.33.14 JOB21603  Jobname  Procstep  Stepname  CPU Time      EXCPs      RC
08.33.14 JOB21603  HUTCH2   JAVA     JAVAJVM   00:07:36     182,854    00
08.33.14 JOB21603  $HASP395 HUTCH2   ENDED      ( = 456 sec.)
----- JES2 JOB STATISTICS -----
      27 JAN 2005 JOB EXECUTION DATE
           60 CARDS READ
      10,787,870 SYSOUT PRINT RECORDS
           0 SYSOUT PUNCH RECORDS
           507,699 SYSOUT SPOOL KBYTES
*** IFA Projection Statistics *****
JZOSVM13(N): Copyright (C) 2004 Dovetailed Technologies LLC. All rights reserved.
IFA Projection data for system id=<SYSA.50398056> Starting at: -
Current address space CPU: 0.028576 sec.
JZOSVM13(N): Java Virtual Machine created
JZOSVM13(N): Invoking com.ibm.ws390.sm.smfview.Interpreter.main()
JZOSVM13(N): com.ibm.ws390.sm.smfview.Interpreter.main() completed.
JVM terminated with exit(0).

<SYSA.50398056>      TOTAL at: 08:33:14 Switches To/From IFA: 109728859
Java IFA: 260.780870 sec. Java Standard CPU 193.252190 sec.
Total address space CPU: 456.603051 sec. ( = 57% JAVA IFA eligible)
***** BOTTOM OF DATA *****

```



\$D PERFDATA service aid commands

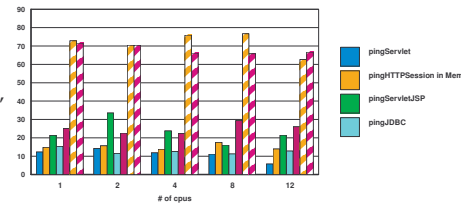
(undocumented - intended for service personnel - subject to change)

- **\$D PERFDATA(INITSTAT)** - JES2 initialization routines
- **\$D PERFDATA(QSUSE)** - Checkpoint delays
- **\$D PERFDATA(PESTAT)** - PCE detailed statistics
- **\$D PERFDATA(CPUSTAT)** - Summary of PCE stats
- **\$D PERFDATA(SAMPDATA)** - WLM init sampling data
- **\$D PERFDATA(EVENT)** - JES2 internal errors & delays
- **\$D PERFDATA(CKPTSTAT)** - JES2 Checkpoint Performance (z/OS R.2)
- **\$D PERFDATA(SUBTSTAT)** - JES2 Subtask Performance (APAR OW55693)



```

$HASP660 $DPERFDATA (SUBTSTAT)
$HASP660 SUBTASK STATISTICS - INTERVAL=884:10:55.376013,
$HASP660 ROUTINE=$RACROUT, COUNT=105, AVG_QUEUE_TIME=0.000218,
$HASP660 AVG_RUN_TIME=0.000217, AVG_CPU_TIME=0.000199,
$HASP660 ROUTINE=FULLPATH, COUNT=16, AVG_QUEUE_TIME=0.000045,
$HASP660 AVG_RUN_TIME=0.212998, AVG_CPU_TIME=0.203200,
$HASP660 ROUTINE=JOBVALM, COUNT=330, AVG_QUEUE_TIME=0.000021,
$HASP660 AVG_RUN_TIME=0.001362, AVG_CPU_TIME=0.000263,
$HASP660 ROUTINE=PSAFSCAN, COUNT=392, AVG_QUEUE_TIME=0.000033,
$HASP660 AVG_RUN_TIME=0.000080, AVG_CPU_TIME=0.000078,
$HASP660 ROUTINE=RPDBSEC, COUNT=330, AVG_QUEUE_TIME=0.000008,
$HASP660 AVG_RUN_TIME=0.000106, AVG_CPU_TIME=0.000102,
$HASP660 ROUTINE=XINITST, COUNT=16, AVG_QUEUE_TIME=0.000151,
$HASP660 AVG_RUN_TIME=0.002650, AVG_CPU_TIME=0.001659
    
```



<http://www.ibm.com/support/techdocs/atmastr.nsf/PubAllNum/W9744B>



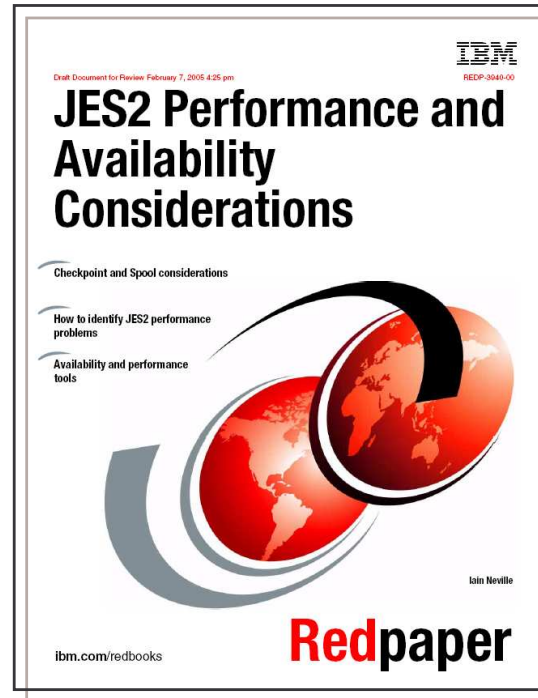
\$D PERFDATA Usage Examples

- **JES2 initialization takes too long:**
 - \$D PERFDATA(INITSTAT) - See elapsed time for each routine
- **Checkpoint delays:**
 - \$D PERFDATA(CKPTSTAT) - Elap'd time for R1, R2, PW, IW, FW
 - \$D PERFDATA(QSUSE) - Callers of \$QSUSE & avg. delays
- **JES2 CPU Utilization too high:**
 - \$D PERFDATA(CPUSTAT) - Summary of PCE stats
 - \$D PERFDATA(PCESTAT) - PCE detailed statistics
 - \$D PERFDATA(SUBTSTAT) - Subtask statistics
- **WLM managed initiators not behaving:**
 - \$D PERFDATA(SAMPDATA) - WLM init sampling data
- **Misc. errors:**
 - \$D PERFDATA(EVENT) - JES2 internal errors & delays

■ New JES2 Redbook coming soon:



1. Introduction
2. JES2 CPU utilization
3. JES2 Checkpoint considerations
4. JES2 Spool considerations
5. WLM managed initiators
6. Scalability
7. JES2 command processing
8. JES2 performance degradation - identifying a problem
9. Performance tools



JES2 Service Information

- **HiPer APARs (Hi Impact, or Pervasive)**

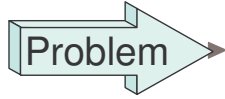
- ▶ See PSP buckets for an up-to-date list - ZOSV1Rx / JES2

DATE	APAR	PTF	VOLID	COMMENTS
05/02/22	OA10668	UA16698	1000	HIPER Batch JOB hangs in JobTerm
05/02/17	OA10208	UA16564	1000	HIPER LOGICAL RECORD SPOOLED
05/01/31	OA08716	UA16195	0501	HIPER Abend0c4 in routine
05/01/27	OA08812	UA16198	0501	HIPER DCTRSTRT Flag Remains on
05/01/27	OA09152	UA16214	0501	HIPER OUTPUT card data lost
05/01/27	OA09329	UA16217	0501	HIPER DISASTROUS ERROR at Symbol . . .
05/01/27	OA10407	UA16199	0501	HIPER Non-Spin OUTPUT not selected
04/12/29	OA08984	UA15904	0412	HIPER A \$\$S command can prevent
04/12/23	OA08476	UA15682	0412	HIPER \$#POST issued from
04/12/23	OA09327	UA15767	0412	HIPER FSS PRINTERS GOING
04/12/23	OA09576	UA15685	0412	HIPER ABEND878-10 DURING JES2
04/12/20	OA08087	UA12575	0409	HIPER ERROR RECOVERY PROCEDURE
04/12/17	OA05981	UA15628	0412	HIPER CSA EXHAUSTED DUE TO LARGE
04/12/02	OA09383	UA15385	0411	HIPER AFTER OA04212, ABENDOC4 OR
04/09/17	OA08308	UA13573	0409	HIPER \$OJOBQ ISSUED WITH INVALID
04/09/17	OA08805	UA13611	0409	HIPER AFTER OA03748, \$Q24, \$Q12,
04/09/13	OA04349	UA06580	0311	HIPER ABEND\$SA1 FOLLOWED BY
04/09/02	OA07712	UA13244	0408	HIPER AFTER A JOB ABENDS AND

<https://techsupport.services.ibm.com/server/390.psp390>

(requires IBM Registration userid)

OA10407 - OUTPUT Groups not Selected



OUTGRP's not being selected by output devices when a job ends.

- ▶ Only non-spin output - some output groups may be processed while others are not.
- ▶ Affects NJE, RJE, etc.

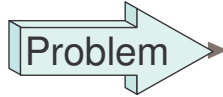
- ▶ Bypass: \$S or a \$TO of the outgrp will resolve the problem.



HASPJOS fixed to branch to include \$#POST for the job.

- ▶ z/OS R5 (F501) HiPER

OA10668 - Job hung in termination



After OA08716, if a job fails during job initiation due to error in interpretation, the next job selected by the same initiator hangs in job termination.



Field SJBHJE00 is re-initialized at proper logic point.

- ▶ z/OS R2, R4 & R5 (1000 - DLL) HiPer

OA06186 - Health Monitor Fixes



Problem → JES2 "Loops" reported because TCB not dispatched by MVS. (PSW not moving.)

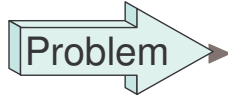
Fix → New alert for "MVS NOT DISPATCHING JES2 MAIN TASK" (\$HASP9212)

- ▶ Recognize "LONG PCE DISPATCH" situations in PURGE and \$DILBERT processing
- ▶ z/OS R4 & R5 (F405)
- ▶ See also OA08143 - 0C4 in HASPCOMM (F407) **HiPer**

Plus → Subscripts added to \$JDDetails and \$JDHistory

- ▶ HOURS= keyword added to \$JDHistory to reduce the amount of output.

OA05981 - CSA Exhausted with high volume of messages



- CSA storage is filled up with high volume of branch-entry WTOs (e.g., ICH408I messages) that JES2 cannot keep up with.
- ▶ May result in S878 and need to re-IPL.



- WTO elements for BEWTOs queued in a new data space - *JES2*WTO (HIPER).
- ▶ JES2 zR4/5 (F4012)

JES2 Performance APARs



Since PUT/RSU F401:

- ▶ **OA05786**: \$Q12 or JES2 High CPU w/ PSO processing (**F402**)
- ▶ **OA05864**: High CPU in JES2 maintask w/\$GETWORK (**F403**)
- ▶ **OA06186**: Health Monitor Loop Detection messages misleading (**F403**)
- ▶ **OA06431**: Hi CPU when shutting down STC w/ lots of JOEs (**F405**)
- ▶ **OA06432**: Hi CPU when starting a draining spool volume (**FIN**)
- ▶ **OA09327**: FSS Printers going inactive (**F412**)
- ▶ **OA07705**: High CPU & IRB'S not running after OA03169 (**F407**)
- ▶ **OA05981**: CSA exhausted by WebSphere/RACF WTOs (**F412**)
- ▶ **OA10676**: Hi CPU when \$SSPL entered after \$PSPL (**closed**)

Survey Questions



What is your JES2 Release level (are you \$ACTIVATED) ?

JES2 Rel.#	this SHARE	SHARE 103 8/2004	SHARE 102 2/2004	SHARE 101 8/2003	SHARE 100 3/2003	SHARE 99 7/2002	SHARE 98 3/2002	SHARE 97 7/2001
OS/390 R.5					1 (1)	0	4 (2)	3
OS/390 R.7					0	0	3 (2)	1
OS/390 R.8			1	1 (1)	3 (3)	6	7 (4)	8
OS/390 R10		4	9(9)	11 (11)	27	20 (9)	21 ()	9
z/OS R2		2	5(4)	5()	14 (4)	9 (4)	5 (3)	n/a
z/OS R4		17	23(7)	8 (1)	8 (1)	n/a	n/a	n/a
z/OS R5		4						

SDSF Update

```
Display Filter View Print Options Help
-----
HQX7705 ----- SDSF PRIMARY OPTION MENU -----
COMMAND INPUT ==>                                SCROLL ==> CSR

DA   Active users          INIT  Initiators
I    Input queue          PR    Printers
O    Output queue         PUN   Punches
H    Held output queue    RDR   Readers
ST   Status of jobs      LINE  Lines
                                NODE  Nodes
LOG   System log         SO    Spool offload
SR    System requests    SP    Spool volumes
MAS   Members in the MAS
JC    Job classes        ULOG  User session log
SE    Scheduling environments
RES   WLM resources
ENC   Enclaves
PS    Processes

END   Exit SDSF
```


z/OS R5 SDSF Enhancements



- **Multilevel Security - "SECLABEL Dominance"**
 - ▶ Restrict rows on an SDSF display based on:
 - SDSF command to access a panel
 - "Seclabel Dominance" of "object"
 - Action Characters allowed
 - ▶ SECLABEL sources used for the objects on each panel:
 - DA: Address Space (JQE or SJB)
 - I, ST: Job (JQE)
 - O, H: Output (JOE)
 - JDS & OD: Dataset & output descriptor (PDDB)
 - Device: DCT or NIT
 - ENC & SR: SYSHIGH*
 - others: SYSNONE
 - ▶ Column added for SECLABEL to many panels
- **Misc:** "Y" = MVS "Stop" (P) command on DA panel

zAAP CPU Utilization on DA panel

- **SDSF DA panel does not differentiate between General Purpose CPs and zAAPs**

- ▶ Example:

- 4 GCPs are using 1%, and the zAAP is using 96%.
 - SDSF reports the CPU busy as 20%.
 - $(4 + 96)/5 = 20$

```
Display Filter View Print Options Help
```

```
-----
SDSF DA SYSB SYSB PAG 0 SIO 0 CPU 20/ 20 LINE 1-2
COMMAND INPUT ==> SCROLL ==> CSR
NP JOBNAME SrvClass DP C StepName Workload JobID CPU%
WALSH SYSSTC FE IKJACCNT SYSTEM TSU23659 0.04
WALSH3 OMVS F7 *OMVSEX OMVS_WKL STC23590 19.69
```

- **See RMF for CPU utilization by processor type.**

- ▶ RMF Monitor III System Information
 - ▶ RMF Workload Activity Reports

New Fields for zAAP CPU on DA panel

■ DA panel shows CPU utilization for GCPs and zAAPs

► Available with APAR PQ93310 for z/OS R6

GCP-Time Accumulated general processor (GCP) service time, in seconds

zAAP-Time Accumulated zAAP service time (seconds)

zACP-Time Accumulated GCP service time that was eligible for a zAAP

GCP-Use% % of total GCP time used in last interval (not normalized)

zAAP-Use% % of total zAAP time used in last interval (not normalized)

JOBNAME	CPU%	ECPU%	GCP-Time	zAAP-Time	zACP-Time	GCP-Use%	zAAP-Use%	Real
T3AGNTA	0.06	0.01	45.74	47.14	44.81	0.07	0.58	44T
T3DMGR	0.03	0.00	32.64	44.20	31.73	0.03	0.31	44T
T3DMGRS	0.03	0.01	14.89	25.57	14.60	0.02	0.31	107T
T3DMN	0.00	0.00	0.21	0.00	0.00	0.00	0.00	3433
T3MQCHIN	10.87	1.51	389.65	0.00	0.00	24.86	0.00	4068
T3MQMSTR	1.15	0.16	6.90	0.00	0.00	0.06	0.00	7789
T3SR08A	17.55	2.43	123.15	20.28	10.61	43.33	0.23	37T
T3SR08AS	13.66	65.64	61.34	74.70	47.83	17.32	97.02	338T

► See session 2671 "SDSF Futures & Tips" (Wed., 1:30) for more details.

SDSF in z/OS R7 . . .



■ Support for z/OS & Sysplex Health Checker:

- ▶ Provides easy access/viewing with a new CK panel:
 - Display checks, attributes, and status
 - Takes advantage of SDSF sort, filter, and arrange support.
 - Alter check attributes (e.g., status, interval, severity, category, & WTO descriptor)
 - Browse action to display check output messages.
 - Print output or send it to a data set.

```

SDSF HEALTH CHECKER DISPLAY (ALL)                                LINE 1-3 (3)
COMMAND INPUT ===>                                           SCROLL ===> CSR
NP   NAME                CheckOwner  Status                LastRC
-----
ALTERNATE_CONSOLE_GROUPS  IBMCONS  EXCEPTION             8
AMRF_AND_MPF_CONSISTENT   IBMCONS  EXCEPTION             8
CONSOLE_MASTER            IBMCONS  ENVERR                0
CONSOLE_MSCOPE_AND_ROUTCODES IBMCONS  ENVERR                16
  
```

- ▶ See session 2671 "SDSF Futures & Tips" (Wed., 1:30) for more details.

Appendix

- ▶ OS/390 & z/OS JES2 Releases
- ▶ z/OS JES2 Library
- ▶ Softcopy Books
- ▶ other JES-related Books
- ▶ JES2 Education
- ▶ z/OS Web Sites

OS/390 & z/OS JES2 Releases



OS/390 Release 1 - Spool Offload Enhancements

OS/390 Release 3 - SYSOUT API (SAPI)

OS/390 Release 4 - WLM Inits, SCHENV & Constraint Relief

OS/390 Release 5 - Open Print Server Support

OS/390 Release 7 - FiCon & New DASD Support

OS/390 Release 8 - CF Auto Rebuild for Checkpoint Structure

OS/390 Release 10 Spool Mgmt, Browse, ZAPJOB,...

z/OS Release 2 - >64K jobs, Spool, Proclib, etc. relief ...

▶ \$ACTIVATE=Z2 required for new functions

z/OS Release 4 - Health Monitor, Usability, RAS, ...

z/OS Release 5 - Multilevel Security

z/OS JES2 LIBRARY



- SA22-7535 JES2 Introduction *
- GA22-7538 JES2 Migration
- SA22-7532 JES2 Initialization & Tuning Guide
- SA22-7533 JES2 Initialization & Tuning Reference
- SA22-7537 JES2 Messages
- SA22-7526 JES2 Commands
- SA22-7527 JES2 Commands Summary
- SA22-7534 JES2 Installation Exits
- SA22-7536 JES2 Macros
- GA22-7531 JES2 Diagnosis
- GA22-7528 JES2 Data Areas, V.1 \$A - \$E *
- GA22-7529 JES2 Data Areas, V.2 \$F - \$O *
- GA22-7530 JES2 Data Areas, V.3 \$P - \$X *

★ SoftCopy only (CD-ROM)

z/OS Softcopy Books



- **z/OS Softcopy Collection CD-ROMs**
 - z/OS Rel. 1 CD-ROMs: SK3T-4269 (Unlicensed)
 - ◆ available on tape (optional, no-charge feature)
 - Software Products: SK3T-4270
 - z/OS & S/W Products - DVD: SK3T-4271
 - Licensed z/OS CD-ROM: LK3T-4307
- **Softcopy site:**
<http://www.ibm.com/servers/eserver/zseries/softcopy>
- **Online books at:**
<http://www.ibm.com/servers/eserver/zseries/zos/bkserv>
- **JES2 PDF files at:**
<http://www.ibm.com/servers/eserver/zseries/zos/bkserv/r1pdf/jes2.html>
- **See what's new at:**
<http://www.ibm.com/servers/eserver/zseries/softcopy/whatsnew.htm>

NJE Formats & Protocols



- **"Network Job Entry Formats & Protocols" SC23-0070** dropped from OS/390 & z/OS library (no "product owner"...)
 - ▶ Will be restored to the OS/390 OnLine Softcopy Bookshelf (& eventually to the z/OS Bookshelf.)

- **In the mean-time you can access it by...**
 1. Go to <http://www.ibm.com/servers/s390/os390/bkserv/>
 2. Click on OS/390 elements and features publications V2R10
 3. Click on OS/390 V2R10.0 elements and features bookshelf (Discs 1 and 2) - Search (Titles, names or doc numbers)
 4. Type in a search argument of 'network job entry' or 'protocols'.

Other JES2-Related Documents

- ▶ z/OS V1 R3 & R4 Implementation, SG24-6581
- ▶ z/OS V1 R2 Implementation, SG24-6235
- ▶ OS/390 V2 R10 Implementation, SG24-5976
- ▶ VSE to OS/390 Migration Notebook, SG24-2043

- Deleted (obsolete) - save your old copies
 - ▶ ~~MVS/ESA JES2 Exit Coding, GG24-4127~~
 - ▶ ~~SDSF/RACF 1.9.2 Conversion, GG24-4085~~
 - ▶ ~~NJE with JES2 and Other Systems, GG22-9339-1~~
 - ▶ ~~JES2 MAS in Sysplex Environment, GG66-3263~~

IBM JES2 Education



- **JES2 for OS/390 Facilities & Implementation (ES710) - 4.5 days**
 - ▶ JES2 Facilities & Initialization
 - ▶ SDSF & Operations
 - ▶ Security Issues
 - ▶ Controlling JES2 Processes
 - ▶ Spool & Checkpoint Configurations
 - ▶ NJE & RJE (& SNA) Concepts & Implementation
 - ▶ JES2 Exits and Problem Determination

- **JES2 for OS/390 Operations (ES280) 2.5 days**
 - ▶ Start, Stop, Control JES2 processes and devices
 - ▶ JES2 and Workload Manager, and Sysplex
 - ▶ NJE, RJE, SNA, and OS/390 Print Server

z/OS Web Sites



z/OS Product Support - find everything from here!

- ▶ <http://techsupport.services.ibm.com/server/support>

Planning for Installation

- ▶ <http://www.ibm.com/servers/eserver/zseries/zos/installation/>

Publications (view, print, order books)

- ▶ <http://www.ibm.com/servers/eserver/zseries/zos/bkserv/>

SDSF home page

- ▶ <http://www.ibm.com/servers/eserver/zseries/zos/sdsf/>

Advanced Tech. Support (Flashes, White Papers, etc.)

- ▶ <http://www.ibm.com/support/techdocs>

Redbooks

- ▶ <http://www.redbooks.ibm.com>