

JES2 Project Opening

JES2 & SDSF Latest Status



Session# 2652

SHARE 102 Technical Conference - Winter 2004 - Long Beach

John Hutchinson - hutchjm@us.ibm.com

IBM Washington Systems Center, Gaithersburg, Maryland

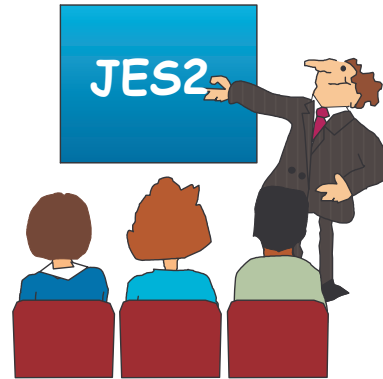
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Agenda . . .



- JES2
 - ▶ JES2, SDSF, & Printing Sessions at SHARE 102
 - ▶ Current JES2 Releases
 - ▶ Migration & Implementation Tips
 - ▶ Recent Service
- SDSF
 - ▶ Recent Releases of SDSF
 - ▶ Service
- References
 - ▶ Documentation & Web Sites



JES2 & SDSF sessions . . .

(Most sessions are in Conv. Cntr. / Room 103C)



Monday:

- 2652 3:00 PM JES2 Project Opening and Latest Status
- 2662 4:30 PM JES2 Reconfiguration Dialog

Tuesday:

- 2661 8:00 AM Introduction to JES2 for New Systems Programmers
- 2668 4:30 PM Ten down & 4 to Go: Migrating JES2 to z/OS 1.4 User Experience
- 2666 6:00 PM Report Post Processing and Delivery with JES2Mail and JES2FTP
- 2679 7:15 PM JES2 Project Dinner (Hyatt Regency / Meet in the Hyatt Lobby)

Wednesday:

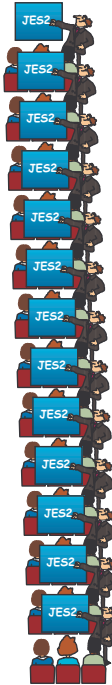
- 2657 8:00 AM The z/OS 1.4 JES2 Health Monitor
- 2667 9:30 AM New Enhancements to IBM Output Manager
- 2655 4:30 PM JES2 z/OS 1.5 Product Update

Thursday:

- 2665 8:00 AM Ten Problems with WLM Initiators - And the Solution!
- 2664 9:30 AM Exploiting New JES2 Interfaces
- 2672 3:00 PM SDSF Security Changes in z/OS 1.5
- 2659 4:30 PM JES2 Q&A
- 2651 5:30 PM JES2 Project Planning for New York City
- 2680 10:00 PM JES2: Esprit de Corps (Conv. Cntr. / Grand Ballroom)

Friday:

- 2671 8:00 AM SDSF For New Users



Printing sessions . . .

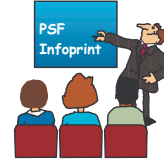


Monday:

2701 1:30 PM PSF Version 3 Release 4 - A New World of Fonts for AFP

Tuesday:

2702 9:30 AM VPS and DRS Printing Update
2704 11:00 AM What's New in Infoprint Server for z/OS 1.5
2705 1:30 PM IP PrintWay Extended Mode

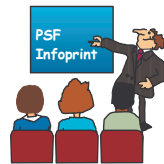


Wednesday:

2703 3:00 PM Controlling Your VPS and DRS Printing and Viewing Environment

Thursday:

2706 11:00 AM Infoprint Central
2707 1:30 PM InfoPrint Server Potpourri



(All sessions are in Conv. Cntr. / Room 103C)

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	1Q04	9/05
z/OS R. 5	<i>HJE7708</i>	<i>3/04</i>	<i>9/04</i>	<i>3/07</i>

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
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

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

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

Autonomic Computing - JES2 OnDemand



★ Self-Configuring

- ▶ Dynamic Proclibs (zR2)
- ▶ Checkpoint MODE reconfiguration (zR2)
- ▶ Dynamic NJE definitions (zR2)

★ Self-Healing

- ▶ PCE cleanup & recovery (zR2)
- ▶ Proclib Open/Close to access new Extents (zR2)
- ▶ Multi-level Security (zR5)

★ Self-Optimizing

- ▶ WLM Initiator balancing (zR4)
- ▶ \$GET/\$POST efficiencies for idle printers (zR1)
- ▶ Health Monitor (zR4)

★ Self-Protecting

- ▶ ZAPJOB service (zR2)
- ▶ Long-running job spin-off support (zR2)
- ▶ Checkpoint protection against invalid updates (zR4)



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
- ▶ See 2655 "JES2 Product Update" Wed. 4:30

TSO duplicate logons

JES2/z4
JES2



- ▶ **JES2 doesn't check TSO logons for duplicate IDs in the same sysplex...**
 - ▶ Same UserID can logon to multiple systems in the MAS
 - ▶ Not prevented by JES2, and "not supported" by z/OS.
- ▶ **Caveats:**
 1. TSO User Notifications are "random". (They go to the first TSO user logged on in the sysplex.)
 2. If TSO logon ENQ is 'SYSTEMS' scope in the GRS RNL, then TSO will reject second logon with "already logged on".
 3. Use JES2 exits 2, 20 or 44 to reject.
 4. ISPF data set names must be unique. Qualify them with the system name with ISPF Exit 16 and Logon Profile EXEC.
 5. Be careful not to edit or update the same data set from duplicate TSO UserIDs on different systems, because there is no SYSTEMS level ENQ to guarantee serialization.
 6. Extended MCS consoles with the same TSO ID are shared.

- WLM needed additional information to better determine where to start/stop initiators. This information is provided by the z4 level of JES2. For more details on how this works, refer to the WLM presentations and documentation.
- A problem has long existed with page mode (binary) data streams that are printed on FSS printer. If the installation selected blank truncation for the SYSOUT class, x'40' at the end of each record are removed so save space on SPOOL. The problem is that for binary data, the x'40' may not represent a blank. For external writers and SAPI devices, JES2 adds the blanks back in before passing the records across the interface. However, since FSS reads are locate mode, there is no way to insert the blanks back into the record. Also, the original record length was never passed to the FSS. That is what was corrected. The original record length is now passed to the FSS printer. It is up to the FSS printer to add any truncated blanks back into the record when it is printed. An updated FSS application may be needed to take advantage of this support.



\$D PERFDATA service aid commands

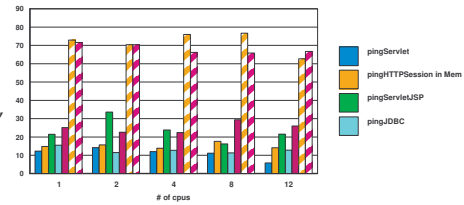
(undocumented - intended for service personnel - subject to change)

- **\$D PERFDATA(INITSTAT)** - JES2 initialization routines
- **\$D PERFDATA(QSUSE)** - Checkpoint delays
- **\$D PERFDATA(PCESTAT)** - 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/atmsastr.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) - El. 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

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

JES2 Migration Actions: Chapter 13



- **Before Installing JES2 z/OS V1R4:**
 - ▶ Activate JES2 checkpoint level R4
 - ▶ Command syntax migration aid removal (HASX05C default exit)
 - ▶ APPLCOPY no longer supported
- **Before you first IPL z/OS V1R4:**
 - ▶ Default SMP/E target library name changes (no longer VxRxMx qualified)
 - ▶ Message based automation - review changed messages
 - ▶ Counting null records & record length passed by way of the FSI
 - ▶ TSO GR, TSO SEND commands and logons
 - ▶ JES2 Health Monitor command updates, profiles, & alert updates
 - ▶ System trace contents
 - ▶ Exit 9, 14, 49, 22, & 44 changes
 - ▶ Field, field name & control block changes \$XMPOST, \$#BUSY, IAZIDX, \$PSO, \$SDB
- **After the first IPL of z/OS V1R4**
 - ▶ Activate to z2 mode
 - ▶ Support for a maximum of 999,999 job numbers
 - ▶ Large volume support
 - ▶ Tivoli Operations Planning and Control (OPC now TWS) V2
- See 2668 "10 down and 4 to go" Tues. 4:30

JES2 Service Information

- **HiPer APARs (Hi Impact, or Pervasive)**
 - ▶ See PSP buckets for an up-to-date list
 - ZOSV1Rx / JES2
 - ▶ <https://techsupport.services.ibm.com/server/390.psp390>
(requires IBM Registration userid)

- **Other service of interest:**
 - ▶ **New Function**
 - ▶ **Performance Improvements**

OW55708 - Compatibility with z/OS Rel. 5



Problem ► MsgHASP710 if attempting to initialize zR5 with earlier levels of JES2 in a MAS

Fix ► JES2 releases prior to z/OS Rel. 5 must be able to recognize JES2 Release 5
► OS/390 R10, z/OS R2, R4 (F307)

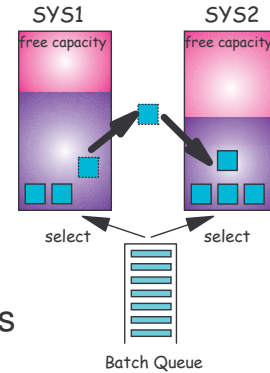
Note ► Service level J2SLVL increased (1)

OW56117 - WLM-Managed Initiators

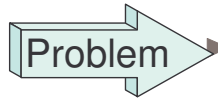


Enhanced Initiator Balancing w/ z/OS Rel. 4:

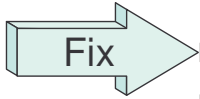
- ▶ Goal is to balance distribution of initiators more evenly over sysplex members
- ▶ More aggressive reduction of initiators on heavily loaded systems (< 5% CPU capacity)
- ▶ Start up to 5 initiators at once on systems with relaxed capacity.
- ▶ Balancing evaluation done every 10 seconds
- ▶ WLM keeps enough initiators available for jobs with system affinity
- ▶ See APAR OW56117 (F211) for corrections to the balancing algorithm.



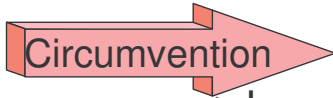
OA03779 - Checkpoint Damage



▶ \$ACTIVATE on JES2 z/OS R2 or R4, then \$T command changing checkpoint size on a different member without a hotstart updates KITKLNG incorrectly.



▶ HASPCKPT ensures that the JIX size is correct .
▶ z/OS R2, R4 (F307) **HiPer**



▶ Issue \$T commands on same member you \$ACTIVATED
▶ Hotstart all members after \$ACTIVATE

OA03216 - Catastrophic errors

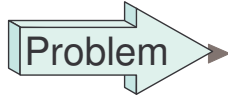


Problem → \$Q06, Qxx, Jxx catastrophic errors after JES2 zR4 system joins the MAS and Checkpoint MODE=DUAL.
▶ (Some checkpoint updates may be lost.)

Fix → HASPCKPT sets the correct CKPT MODE during initialization.
▶ z/OS R4 (F306) HiPer

Circumvention →
▶ Switch to CKPTDEF MODE=DUPLEX before zR4 JES2 system joins the MAS.
▶ (Also remember to update your JES2 init deck in the unlikely even you need to cold-start.)

OW55693 - Coupling Facility Ckpt Delays



Problem

- ▶ Excessive IXCQUERY requests and delays when MASDEF LOCKOUT - \$HASP263 occurs.
 - May cause a member to hold checkpoint several seconds or minutes.
- ▶ Validate with PERFDATA showing long waits in CKPT PCE in HASPNUC at 99676000.



Fix

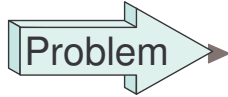
- ▶ Cache info & don't \$WAIT on IXCQUERY
- ▶ **\$D PERFDATA (SUBTSTAT)** added
- ▶ OS/390 R8 - z/OS R4 (F209) **HiPer**



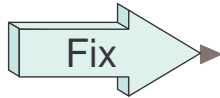
Circumvention

Tune Checkpoint performance, Use DASD, or Specify a higher values for MASDEF LOCKOUT= (default = 1000 = 10 seconds)

OA06186 - Health Monitor Fixes



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



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

- ▶ Recognize "LONG PCE DISPATCH" situations in PURGE and \$DILBERT processing
- ▶ (Open)



Subscripts added to \$JDDETAILS and \$JDHISTORY

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

JES2 Performance APARs



Since PUT/RSU F209:

- ▶ **OW56924**: JES2 loop after OW53863 if small SPOOLDEF TGSIZE value (F211)
- ▶ **OW56117**: WLM managed inits not rebalanced on constrained system. (F211)
- ▶ **OA01825**: MSGHASP263 w/job producing a large amount of spin datasets goes into unspun processing (F304)
- ▶ **OA02686**: High CPU w/PSO processing Held datasets (F306)
- ▶ **OA04556**: Hi CPU w/ **SEGMENT=** after OA03169 (**F309**)
- ▶ **OA05786**: \$Q12 or JES2 High CPU w/ PSO processing (**DLL**)
- ▶ **OA05864**: High CPU in JES2 maintask w/\$GETWORK (Open)
- ▶ **OA06186**: Health Monitor Loop Detection messages misleading (Open)

Survey Questions



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

JES2 Rel.#	Count this SHARE	Last SHARE 8/2003	SHARE 100 3/2003	SHARE 99 7/2002	SHARE 98 3/2002	SHARE 97 7/2001
OS/390 R.5/6			1 (1)	0	4 (2)	3
OS/390 R.7			0	0	3 (2)	1
OS/390 R.8/9		1 (1)	3 (3)	6	7 (4)	8
OS/390 R.10/z1		11 (11)	27	20 (9)	21 ()	9
z/OS R2		5 ()	14 (4)	9 (4)	5 (3)	n/a
z/OS R4		8 (1)	8 (1)	n/a	n/a	n/a
z/OS R5						

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  ULOG  User session log
JC   Job classes
SE   Scheduling environments
RES  WLM resources
ENC  Enclaves
PS   Processes

END   Exit SDSF
```

z/SDSF (z/OS Release 2 SDSF)



- ▶ **Systems management in a MAS** (Requires MQSeries)
 - ★ MAS-wide display of Lines, Nodes, Rdrs, Puns, SO
- ▶ **z/OS JES2 Support:**
 - ★ >64K Jobs & Long-running Jobs (Spin joblogs)
- ▶ **New Panels:**
 - ★ Spool Volumes
 - ★ WLM Enclaves
 - ★ Processes (UNIX System Services)
- ▶ **Other enhancements:**
 - ★ Logger multi-block exploitation (performance)
 - ★ DA panel shows additional RMF fields for 64-bit virtual
 - + MemLimit, CPUCrit, STORCrit, RptClass, TRANACT, TRANRES
 - ★ MAS panel shows Comchar, JESName, SLevel, Type/Time
 - ★ Generated commands don't need/use Exit 5

z/OS R4 SDSF Enhancements



- **JES2 Exploitations**
 - ▶ Spool I/O interface used for in-core buffers
 - ▶ JES2 Recovery States (Rebuild, EOM) shown
 - ▶ Additional JES2 zR4 fields displayed on most panels
- **System Command extensions**
 - ▶ Recall last 10 unique commands
 - ▶ Reply to WTOR pop-up displays message text
- **Minor usability enhancements**
 - ▶ Full-screen version of WTOR pop-up
 - allows for Insert in the command text
- **Migration / Coexistence PTFs**
 - ▶ Check PSP buckets or SDSF home page

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 (PDDDB)
 - Device: DCT or NIT
 - ENC & SR: SYSHIGH*
 - others: SYSNONE
 - ▶ Column added for SECLABEL to many panels
- **Misc. ("Y" = MVS "Stop" (P) on DA panel)**
 - ▶ See Session 2672 (Th. 3:00)

Recent SDSF HiPer APARs



- PQ56166 (R12 / F201)
 - ▶ S0C4 when scrolling SYSLOG
- PQ61532 (R12 - R14 / F206)
 - ▶ Default server name not filled into WORSRVNM then into RACF GROUP.ISFSPROG.<server_name>
- PQ62907 (R10 - R14 / F208)
 - ▶ Potential overlays using SDSF Trace Facility & large ISFPARMS
- PQ62988 (R14 / F207)
 - ▶ Occasional message "SUBS RETURN CODE 12" or "SPOOL DATA ERROR"
- PQ64234 (R12 / F208)
 - ▶ SPOOL errors ISF001I and "JCT NOT AVAILABLE" with high paging (not HiPer)

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

JES2 - z/OS R4



4

- **Usability enhancements**
 - INCLUDE statement
 - Default PARMLIB processing
 - //XMIT JCL support
 - WLM Initiator Balancing
 - Blank Truncation on FSS Printers
 - JES2 no longer checks for duplicate TSO logons in a sysplex
- **JES2 Health Monitor**
 - Examine/Diagnose JES2 from separate address space
- **Miscellaneous changes**
 - End of Memory (EOM) processing
 - Prevention of and Recovery from JES2 CKPT errors
 - HASP Access Method (HAM) I/O

The major themes for this release are reducing outages and performance.

- A health monitor has been created for JES2 to help installations deal with cases when JES2 is not responsive.
- To deal with the EOM timer added by MVS in z/OS 1.2, JES2 added a timer of its own that prevented us from being canceled. With this release, we remove the timer and all waits in the EOM SSI code.
- Processing in HAM (HASP access method used to read and write data sets to SPOOL) has been enhanced to improve performance and reliability
- Based on customer response, the INCLUDE statement that was added in z/OS 1.2 has been enhanced in this release to allow use of the default PARMLIB concatenation and to have a default JES2 initialization member.
- Initialization processing was enhanced to not update JES2 checkpoint data sets until warm start processing has completed.
- The //XMIT card is now supported to transmit jobs to other nodes via NJE. Previously, this was only supported by JES3
- We also updated the data passed to FSSes (original LRECL) and WLM (more sampling data)
- There is a compatibility APAR (as usual) for this release. It applies to R8, R10, and z2. R4 and z2 modes of operation are still supported.

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>