JES2 Product Update and Latest Status

Updated August 7th

Monday 4:30 PM – Session 09718

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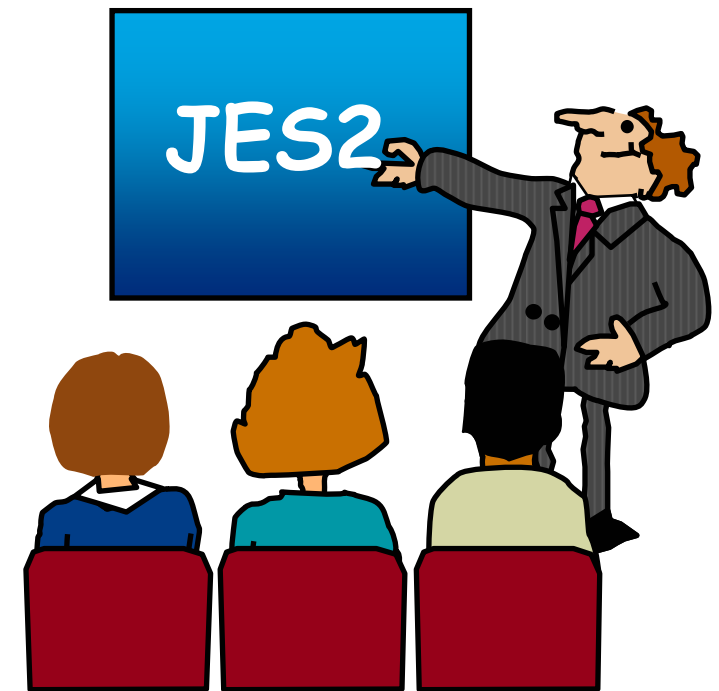
Agenda . . .

- **JES2**
  - ► Current JES2 Releases
  - ► Migration & Implementation Tips
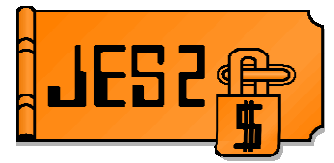 - ► Recent Service

- **References**
  - ► Documentation & Web Sites

- ► Other Presentation
  - ► **9717: z/OS 1.13 JES2 New Functions, Features, and Migration Actions**
  - ► Tuesday, August 9: 1:30 PM

Current JES2 Releases

FMIDs, Birthdays & Obituaries

JES2 Rel.#	FMID	First Available	No Longer Available	End of Service
z/OS 1.4	HJE7707	9/02	9/04	3/07
z/OS 1.5	HJE7708	3/04	9/04	9/07
z/OS 1.6	**HJE7708**	9/04	10/05	9/07
z/OS 1.7	HJE7720	9/05	10/06	9/08
z/OS 1.8	HJE7730	9/06	10/07	9/09
z/OS 1.9	HJE7740	9/07	10/08	9/10
z/OS 1.10	HJE7750	9/08	10/09	*9/11**
z/OS 1.11	HJE7760	9/09	9/10	*9/12**
z/OS 1.12	HJE7770	9/10	*9/11**	
z/OS 1.13	HJE7780	9/11		

See http://www.ibm.com/systems/z/os/zos/support/zos_eos_dates.html

* = projected...

JES2/MVS Compatibility

JES2 Release:

z/OS Release	JES2 z/OS R.7 HJE7720	JES2 z/OS R.8 HJE7730	JES2 z/OS R.9 HJE7740	JES2 z/OS R.10 HJE7750	JES2 z/OS R.11 HJE7760	JES2 z/OS R.12 HJE7770	JES2 z/OS R.13 HJE7780
z/OS R7	X						
z/OS R8	X	X					
z/OS R9	X	X	X				
z/OS R10		X	X	X			
z/OS R11			X	X	X		
z/OS R12				X	X	X	
z/OS R13					X	X	X

IBM recommends the same level of z/OS & JES2 thoughout your plex.

►JES levels supported by a given z/OS release are same as the JES levels that can coexist in a MAS, See "*z/OS V1R11.0 Planning for Installation*" Ch. 4 (GA22-7504)
  at http://publibz.boulder.ibm.com/cgi-bin/bookmgr_OS390/BOOKS/E0Z2B1A1/4.5.1

JES2/MVS Compatibility

Statement of Direction

- **z/OS 1.13 will be the last z/OS release that supports running a down level JES.**

- **As of z/OS 1.13+1, IBM only supports running the 1.13+1 JES on the 1.13+1 MVS**
  - ► z/OS 1.13 will not be **supported** running on a z/OS 1.13+1 z/OS

- **This does NOT affect what members can co-exist in a MAS**
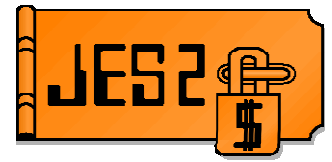 - ► Just the mixing and matching of JES and MVS levels.

Survey Questions

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

JES2 Rel.#	SHARE 117 8/2011	SHARE 116 2/2011	SHARE 115 8/2010	SHARE 114 3/2010	SHARE 113 8/2009	SHARE 112 3/2009	SHARE 111 8/2008	SHARE 110 2/2008	SHARE 109 8/2007	SHARE 108 3/2007	SHARE 107 8/2006	SHARE 105 8/2005	SHARE 104 3/2005	SHARE 103 8/2004
OS/390R10												1 (1)	5	4
z/OS R2												1	2	2
z/OS R4		1						1	4(4)	4(4)	6(4)	22(17)	28(22	17
z/OS R5			1						6(6)	5(5)	14(10)	13	8	4
z/OS R7					2	1	2	12	19	10	6	-		
z/OS R8		1			3	4	14	13	18	6				
z/OS R9	1	5	5	19	31	14	16	5						
z/OS R10	3	8	9	12	20	5								
z/OS R11	20(9)	26(7)	12(5)	9(2)	3(0)									
z/OS R12	14(7)	13												

z/OS 1.12 Overview

- **Support for JES2 data sets in EAS storage**
  - ► New CYL_MANAGED=ALLOW|FAIL keyword
- **Support for 31 bit UCB addresses**
  - ► No longer capture SPOOL UCBs in 24 bit CSA
- **Better notify support with multiple TSO logons**
- **Printer information via SSI**

z/OS 1.12 JES2 EAV support

- **Problem Statement / Need Addressed:**
  - ► With z/OS V1R12, DFSMS is adding basic and large format sequential data sets to the list of Extended Address Space (EAS) eligible data sets.
  - ► Customers will want exploit this capability for JES2 data sets.
- **Solution:**
  - ► JES2 has been designed to allow SPOOL and checkpoint data sets to be anywhere on an Extended Address Volume (EAV).
- **Benefit:**
  - ► The JES2 support allows customers to further exploit the increased z/OS addressable disk storage provided by EAVs.

Note: Other data sets (INIT decks, SPOOL Offload, etc) work without any changes.

z/OS 1.12 EAS eligible summary

- EAS Eligible: **A data set on an EAV that is eligible to have extents in the EAS (cylinder managed space) and described by extended attribute DSCBs (format 8/9)**
  - ► In z/OS V1R12, basic and large format sequential data sets are EAS eligible.
    - – SMS-managed or non-SMS managed.
    - – Data set can reside in track-managed or cylinder-managed space.
    - – Allocated extents can start in track-managed space and end in cylinder-managed space.
- EATTR: **Data set attribute keyword to define if extended attribute DSCBs are allowed thus controlling EAS eligibility.**

z/OS 1.12 JES2 exploitation

- **With z/OS 1.12, you can:**
  - ► Define basic and large format sequential data sets anywhere on an EAV and use them for JES2 SPOOL and checkpoint data set extents.
- **Value:**
  - ► Both SPOOL and checkpoint datasets may be located anywhere on EAV.
  - ► Provides the ability to have SPOOL data sets larger than 65,520 cylinders (982,800 tracks). Spool data sets can be 6% larger and more importantly builds foundation for larger spool data sets in future releases.

z/OS 1.12 Enable EAS (Cylinder Managed) Allocation

- **$TSPOOLDEF,CYL_MANAGED=ALLOWED|FAIL**
  - ► This new parameter enables SPOOL and checkpoint data set allocation anywhere on a EAV volume. This capability pertains to both disposition new ($SSPOOL(),SPACE=) and disposition old. The default is FAIL.
  - ► Pre-conditions for CYL_MANAGED=ALLOWED are:
    - All MAS members must be JES2 z/OS V1R12 or later.
    - LARGEDS must not be set to fail.
  - ► Pre-conditions for CYL_MANAGED=FAIL are:
    - Current SPOOL and checkpoint data sets must not reside in cylinder managed space.
    - No pending start SPOOL commands.

  - ► **Once CYL_MANAGED=ALLOWED -- then no members prior to JES2 V1R12 will be allowed to join the MAS.**
    - Setting CYL_MANAGED back to FAIL will not affect this restriction. CYL_MANAGED=ALLOWED enables later exploitation of MQTRs.

z/OS 1.12 Stop Capturing UCBs for SPOOL

- **Need Addressed:**
  - ► JES2 captures SPOOL UCBs to common storage
  - ► Field problems where UCBs are unexpectedly uncaptured
    - – Forces IPL to recover system
- **Solution:**
  - ► Stop using captured UCBs for SPOOL by exploiting new uncaptured UCB support
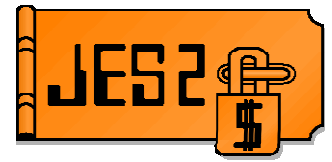
z/OS 1.12 MQTR updates

- **Continued migration from 4 byte MTTRs to 6 byte MQTRs**
  - ► Variable length PDDB support
    - – Preparation for future changes
    - – z/OS 1.12, all PDDBs same length
    - – But assembly time length PDBLENG deleted
      - ▪ Use existing run time length PDBSIZE
  - ► SPOOL CBs changed from MTTR to MQTR
    - – Based on CYL_MANAGED=ALLOWED
    - – Always MQTRs in memory
      - ▪ Translate on read/write to SPOOL
    - – CHK, JCT, NHSB, and OCT affected
      - ▪ Old MTTR fields renamed with _Z11 suffix

z/OS 1.12 Multiple TSO Logon Updates

- **TSO has improved support for logging on same userid on multiple members of the MAS/SYSPLEX**
  - ► Limited to one logon per image
- **JES2 has improved notification processing**
  - ► Will prefer sending messages to member where job was submitted
  - ► If notify userid not logged on, old method is used
  - ► Works for job level notify messages
    - – No automatic support OUTPUT NOTIFY=
      - ▪ Notify SSI does support target member name/number

z/OS 1.12 SSI Updates

- **New printer device information SSI added**
  - ► Returns information for local and RJE printers
    - – Similar to $D PRT/$D Rx.PRx commands
  - ► MAS view of the data
    - – From z/OS 1.11 members and up
    - – Data gatherer APAR on z/OS 1.11
  - ► SSI 83, SSOB extension is IAZSSJD
- **Initiator information (SSI 82) MAS wide**
  - ► Information from z/OS 1.12 members only
- **Enhanced SYSOUT ENF notifications**
  - ► Can requests ENFs as a result of a SAPI request

JES2 1.12 Migration/Coexistence

- **From JES2 z/OS 1.7, 1.8, 1.9**
  - ► Can all member warm start z/OS 1.12
  - ► No coexistence support
  - ► Fall back implications
    - – Some new data structures created by z/OS 1.11 JES2 may result in problems in z/OS 1.8 and prior

- **From JES2 z/OS 1.10, or z/OS 1.11**
  - ► APAR **OA28532** needed on z/OS 1.10 or z/OS 1.11 member to coexist in MAS with z/OS 1.12
    - – PTFs
      - ▪ **HJE7750 - UA52850**
      - ▪ **HJE7760 - UA52851**
    - – Also recommended for fall back
  - ► APARs **OA31703** and **OA32712** are required to correct functional problems with the new/updated z/OS 1.12 SSI interfaces

z/OS 1.13 Overview

- **Batch Modernization**
  - ► Instream data in PROCs (cataloged and instream)
  - ► Controlling job return code
  - ► Spin and SPIN data set
  - ► Requeue job by command on a step boundary
- **SPOOL Enhancements**
  - ► Extend SPOOL data set
  - ► Greater flexibility on names and volumes
  - ► SPOOL Migration
- **Enhanced SSIs**
  - ► Completion of device SSI

z/OS 1.13 Instream Data in PROCs

- **Instream data in PROCs and INCLUDEs**
  - ► Simplifies writing JCL PROCs
    - No need for separate control data set
  - ► Support DD * and DD DATA in full in PROCs and INCLUDEs
    - Works with instream PROCs
    - No automatic generation of SYSIN DD * like JCL
  - ► Works for all users of PROC (batch and started tasks)
    - Job must run under JES2 (no MSTR subsystem)
  - ► Must convert on a z/OS 1.13 member
    - Can run on any level member

z/OS 1.13 Instream Data in PROCs

- **Instream data in PROC example**

```
//HELLO    PROC
//STEP1    EXEC ASMHCLG
//C.SYSIN DD *
TEST       CSECT ,
           STM   14,12,12(13)
           BALR  12,0
           USING *,12
           ST    13,SAVAREA+4
           LA    13,SAVAREA
           SPACE 1
           WTO   'Hello world!'
           SPACE 1
           L     13,SAVAREA+4
           LM    14,12,12(13)
           SR    15,15
           BR    14
           SPACE 1
SAVAREA    DC    18F'0'
           END
//L.TEST  DD DUMMY
//L.SYSXX DD *
//        PEND
```

z/OS 1.13 Job Return Code

- **New job card operand to control job RC**
  - JOBRC= MAXRC | LASTRC | (STEP,*name.name*)
    - MAXRC is existing processing (default)
    - LASTRC is return code of last step
    - (STEP,*name.name*) is return code of identified step
      - If step not executed, defaults to MAXRC
- **Affects return code seen in**
  - Extended status (eg SDSF)
  - ENF 70
  - HASP165 message
  - $DJ,CC= command
- **JOBCLASS JOBRC= MAXRC|LASTRC to affect processing for all jobs in the job class**
- **Two additional error case return codes defined**
  - CONVERTER ERROR – Conversion processing ABENDed processing the job
  - SYSTEM FAILURE – System crashed while job was running and job could not be restarted.

z/OS 1.13 Spin Any SPIN

- **Added function to spin any spin data set**
  - ► Similar to what was done for JESLOG
  - ► Applies to any data set allocated as SPIN
    - – No application code/JCL change needed
  - ► Spin based on size, time, operator command
- **Update to SPIN= DD operand**
  - ► SPIN=(UNALLOC,*option*)
    - – '*hh:mm*' - Spin at specific time
    - – '+*hh:mm*' - Spin every hh:mm interval
    - – *nnn*, *nnn*K, *nnn*M - Spin every nnn lines
    - – NOCMND - Cannot be spun by command
    - – CMNDONLY - Can be spun via operator command (default if no interval)
- **$TJ*n*,SPIN,DDNAME=*name* command added**

z/OS 1.13 Requeue Job

- **Remove job on step boundary**
  - ► New STEP operand on $EJ command
    - – Causes job to exit execution at end of current step
    - – Optional HOLD operand makes job held
    - – Job is requeued for execution
  - ► Job must be journaling (JOURNAL=YES on JOBCLASS)
  - ► Uses existing continue restart function of z/OS
    - – Previously used to restart jobs after an IPL
  - ► Full syntax $EJxxx,STEP [,HOLD]
    - – Full cross member support

z/OS 1.13 Extend SPOOL

- **Command to extend SPOOL to adjacent free space**
  - ► $TSPOOL(*xxxxxx*),SPACE=
    - – SPACE= same as $S SPOOL
- **SPACE is total size after expand is complete (NOT increment)**
- **Total size limited to architecture**
  - ► JES2 limit is based on LARGEDS on SPOOLDEF
    - – Allowed/Always limit is 1M tracks
    - – Fail limit is 64K
  - ► DSCB format limits expansion into EAS storage
    - – Should migrate to CYL_MANAGED=ALLOWED
    - – Allocate SPOOL using DD EATTR = OPT to build format 8/9 DSCB

z/OS 1.13 SPOOL DSN/VOLSER

- **Data set name for SPOOL can now be specified on $S SPOOL**
  - ► SPOOLDEF DSNMASK limits values
    - – Can have generics
  - ► Default is only SPOOLDEF DSNAME value allowed
  - ► Must be in z11 $ACTIVATE mode
- **SPOOL volume prefix can now have generics**
  - ► SPOOLDEF VOLUME= still 5 characters
  - ► If no generics, then prefix
  - ► If generics, then volume must match pattern
- **New SPOOL initialization statement**
  - ► Used on COLD start to locate SPOOL volumes
  - ► If present, only SPOOLs with initialization statements used
  - ► If SPOOL volume has generics, then SCAN is not done
  - ► UCB scan for SPOOL volumes only done if no SPOOL init stmts and no generics in VOLUME=
- **Should not use until all members migrated to z/OS 1.13**

z/OS 1.13 SPOOL Migration

- **$M SPOOL command to move data off volume**
  - ► Faster than $P SPOOL (Minutes not days)
  - ► Currently disabled – watch OA36158 for availability (4Q)
- **Command works with active address spaces using volume**
  - ► Less activity is better/faster but no need to IPL to stop active jobs
- **Goal of SPOOL migration is to stop using SPOOL data set**
  - ► It is NOT to eliminate the internal representation of the volume
  - ► Old data set can be deleted and SPOOL volume taken offline
- **After a successful SPOOL migration**
  - ► $DSPOOL still shows volume
  - ► $DJQ,SPOOL= still displays volume
  - ► New status is MAPPED

z/OS 1.13 SPOOL Migration

- **Two forms of SPOOL migration, MOVE and MERGE**
  - ► Move takes all data on an existing volume and moves it to a new one
    - – Source must be INACTIVE ($Z SPOOL done)
      - ▪ No active jobs on the volume
    - – Target cannot be currently an active SPOOL volume
    - – Can specify space to create data set on target
    - – At the end of move, old (source) volume does not exist
    - – Target after a move is active
  - ► Merge takes all data on one volume and merges it onto free space on another volume
    - – Most flexible migration option
    - – Source can be in any state with active jobs/address spaces
      - ▪ Less activity is good
    - – Results is a mapped volume that goes away when all jobs using it are deleted
      - ▪ Similar to $P SPOOL but device is no longer in use

z/OS 1.13 SPOOL Migration

- **MERGE Migration :**
  - ► Copies an existing *Source Volume* to free space on a *Target Volume* :

Pre-merge configuration — Merged configuration

SPOOL1 (Free space, SPOOL1 used space), SPOOL2 (Free space, SPOOL2 used space), Merged SPOOL2 (Free space, SPOOL1 used space, SPOOL2 used space)
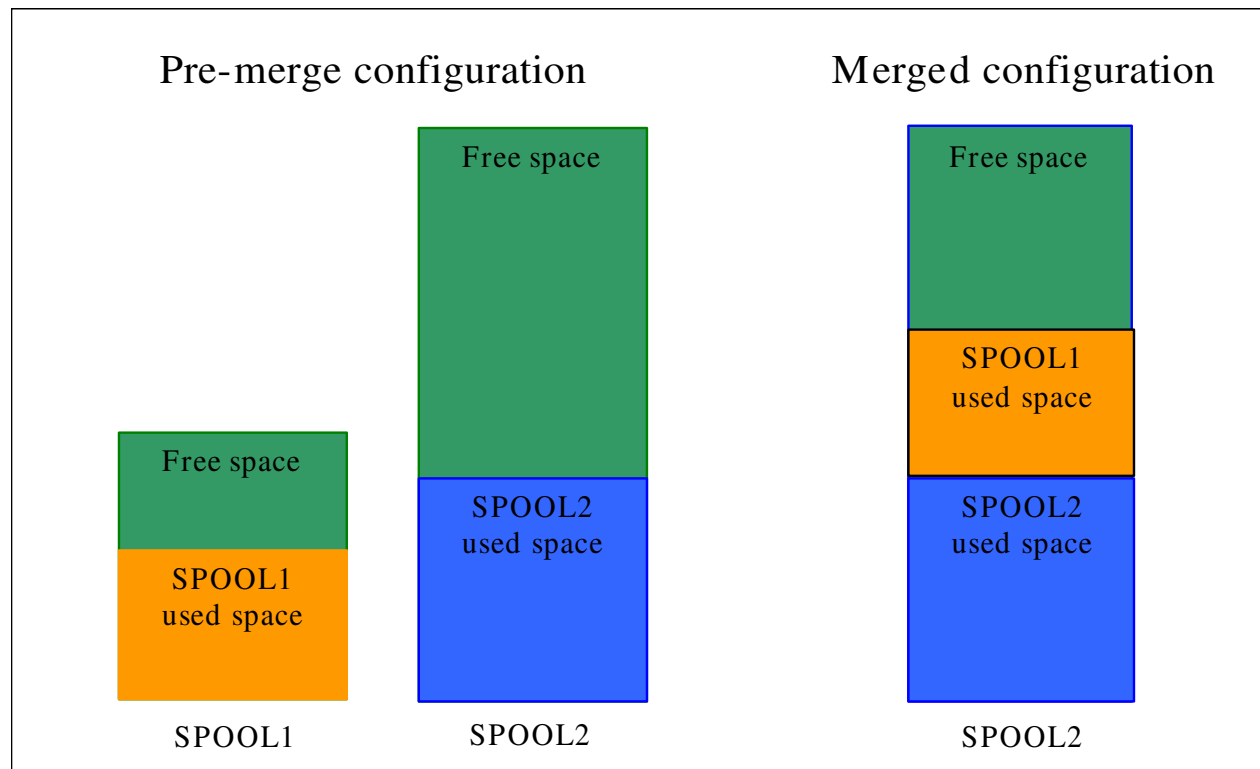
- **Upon completion, the *Source Volume* becomes a *Mapped Volume.***
  - ► Remains *MAPPED* until all jobs and SYSOUT that have space on the *Source Volume* are purged. It then goes away (no longer exists).

z/OS 1.13 SSI Enhancements

- **SSI 82 – JES Property SSI**

- **Node information SSI – sub-function of JES properties SSI (SSI 82)**
  - ► Enhanced to provide information from all active members of JES2 MAS
  - ► Available from MAS members starting from z/OS 1.11
    - – Requires APAR OA35942 (760 – UA90569, 770 – UA90570)

- **New function is exploited by SDSF**

- **For more information, see publication MVS Using the Subsystem Interface**

z/OS 1.13 SSI Enhancements

- **SSI 83 – Device information SSI**
  - ► Enhanced to support all types of devices managed by JES2 (readers, punches, transmitters, receivers, lines, offload etc.)
  - ► Provides extensive filtering capabilities – e.g. by device state, device name, a variety of device attributes
  - ► Provides information about all devices managed by all active members of JES2 MAS
  - ► Device information is available from JES2 MAS members starting from z/OS 1.11 (requires coexistence APAR on z/OS 1.11 and 1.12)
- **New function is exploited by SDSF**
- **For more information, see publication MVS Using the Subsystem Interface**
- **Related Presentation:**
  - ► 9762: Using the New JES2/JES3 SSIs in z/OS 1.13
  - ► Friday, August 12: 9:30 AM

z/OS 1.13 SSI Enhancements

- **JES subsystem data set allocation support for XTIOT**
  - ► Option on DYNALLOC request
    - – S99TIOEX bit for authorized callers
    - – S99DXACU bit supports all callers (unauthorized)
  - ► Moves allocations control blocks from 24 to 31 bit storage
- **Relieves pressure on 24 bit storage**
- **Increases number of concurrent allocations**
  - ► Reduces pressure on 24 bit TIOT
- **Implications include not being able to find DD in TIOT**
  - ► Could break applications looking into TIOT
  - ► Very unlikely
- **Controlled by parmlib option**
  - ► NON_VSAM_XTIOT=<u>NO</u>|YES in DEVSUP*xx*
- **Good ideas for use include**
  - ► SPOOL data set browse, SPIN data set allocation

z/OS 1.13 Migration/Coexistance

- **From JES2 z/OS 1.9 or 1.10**
  - ► Can all member warm to z/OS 1.13
  - ► No coexistence support
  - ► Fall back implications
    - – Some new data structures created by z/OS 1.13 JES2 may result in problems in z/OS 1.10 and prior
    - – Prior to z/OS 1.10 may not be able to use SPOOL volumes with non-standard data set names

- **From JES2 z/OS 1.11 or z/OS 1.12**
  - ► COMPAT APAR OA31806 is needed on a z/OS 1.11, or z/OS 1.12 member to coexist in a MAS with z/OS 1.13
    - – HJE7760 UA59434
    - – HJE7770 UA59435
  - ► APAR also highly recommended for fall back as well
    - – Some new data structures created by z/OS 1.13 JES2 may result in problems if OA31806 is not installed.

JES2 Service Information

HiPer APARs (Hi Impact, or Pervasive)

```
yy/mm/dd  APAR     COMMENTS
11/07/21  OA37018  Specifying JESLOG=(SPIN,criterion) can result in creating unnecessary spin data sets (z/OS 1.13)
11/06/30  OA36873  JOE (Job Output Element) chain corrupted resulting in CPU loop
11/05/04  OA36328  $TO commands to change DEST= can take a long time
11/04/28  OA36168  After OA32333, age filters may incorrectly affect output that appears 110+ years old
11/04/20  OA35483  ABEND0F7 RCD4 in HASCPOOL due to TRE cell pool exhaustion
11/03/22  OA35871  After OA34412, $SA1 in HASPSASR in z2 checkpoint mode
11/03/04  OA35081  SYSLOG task hung waiting for PBUFs after a hot start of JES2
11/01/26  OA35313  Security APAR (JESPOOL)
11/01/24  OA35010  VFREEPRG DISTERR due to NJE buffer mismanagement
11/01/12  OA35165  JOE name of 00000001 in SDSF JDS display
11/01/07  OA34987  High CPU with many idle NJE lines
10/11/17  OA34796  Jobs don't run after WLM service definition change
10/11/11  OA34611  Security APAR (SECLABELs)
10/11/04  OA34128  JOE queue error after failed $O command without "PROTECTED"
10/11/01  OA34727  msgHASP095 K23 occurs when checkpoint reconfiguration is attempted with HJE7708
10/10/22  OA34412  Job output altered on $TO command even when not matching filter
10/10/14  OA33718  $K24 ABEND with CKPT RECONFIG while members initializing
10/10/13  OA34164  TSO user hang on HJE7770 when browsing SYSLOG for a down level member
10/09/28  OA34293  Repeated DAS rebuild message $HASP896 on warm start
10/09/23  OA34019  Looping browsing an old (pre-z/OS 1.9) created SYSOUT data set
10/09/09  OA32551  Errors using SPOOL browse in a mixed level MAS
10/09/09  OA33359  WLM JOB not starting even with available INITs
10/08/13  OA32799  ABEND068 RC108 HASPCKVR checkpoint versions subtask terminates
10/08/13  OA32292  SPOOLs used mask not updated properly at hot start
10/08/06  OA33074  NETVIEW ASID hung waiting on $SJBLOCK in HASCJBTR
10/08/06  OA33032  SDSF prefix command does not show transaction output
```

SDSF Performance APARs

Problem ➤ **Performance problems with extended status SSI**

➤ Could affect any user of SSI 80

Fixes ➤

- **OA37204 – PE fix for OA34347 (SDSF owner filter not matching - z/OS 1.11 and up) - OPEN**
- **OA34347 – Improve SYSOUT class and owner filtering**
- **OA34521 – PE fix for OA33063 (0C4 with multi-tasking user of extended status)**
- **OA33725 – PE fix for OA33063 (Extended status requests under initiator causes ABEND)**
- **OA33063 – High CPU for terse and verbose requests and with large numbers of DESTIDs/NODEs**
- **OA31565/OA31571 – High CPU due to linkage stack and extra queue scan**
- **OA28856/OA28918 – Problems when filters are active**
- **OA27885 – PE fix for OA24615**
- **OA26013 – Job position value**
- **OA24615 – Excessive CPU returning WLM queue Position**
- **OA25498 – Poor performance returning information for a large number of jobs/SYSOUT**

Security APARs
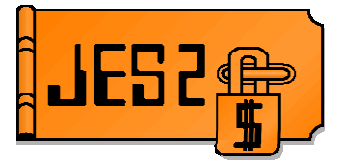
- **OA34611 and OA35313**

  - ► Obscure problems in special environments

  - ► No relationship between 2 problems
    - SECLABEL issue
    - JESSPOOL issue

  - ► Put them on

Other Performance APARs

- **OA36328 – $TO commands to change DEST= can take a long time due to unnecessary subtask processing**

- **OA34987 – Problems with many idle NJE SYSOUT or job transmitters (z/OS 1.11, 1.12)**

- **OA33407 – Excessive $#POSTing for SYSOUT processors (SAPI), POST even if dest does not match (z/OS 1.11, 1.12)**

OA35483 - TRE CPOOL Cell Leak

Problem → **SRB mode JES2 requests fail to free a $TRE cell pool element**

- **Slow leak occurs over time**
- **Happens for SYSLOG in master address space**
- **SYSLOG will not restart**

Avoid! → **Larger SYSLOGs (less spinning) leak a bit faster**

Fix → **JES2 z/OS 1.10, 1.11, 1.12 - F105**

OA36142 – Offload Job Reload Problems
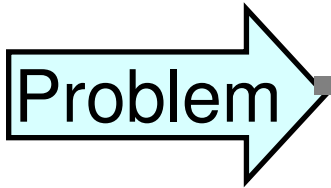
Problem ➤ **SYSLOAD job receiver can improperly handle jobs being reloaded**

- ▪ **Job with JCL error may reload but not be accessible**
- ▪ **Other odd things may happen**

Avoid! ➤ ▪ **Selective reloads of pre-execution jobs**
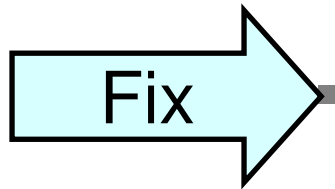
Fix ➤ ▪ **JES2 z/OS 1.10, 1.11, 1.12, 1.13 - F107**

OA37104 – Loop in Converter

Problem
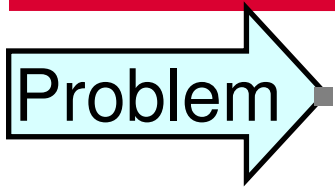
- If converter encounters I/O errors writing the JCT

    or

- If there is a JCT overlay that damages JCT eycatcher

    then

- Converter error recovery can loop trying to write the JCT to a new place on SPOOL until all SPOOL space has been tried (and SPOOL is at 100%)

- z/OS 1.12 aggravated problem (CYL_MANAGE=FAIL)

Change
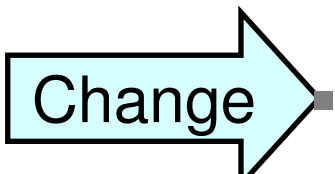
- Corrected I/O error recovery and retry logic

Fix
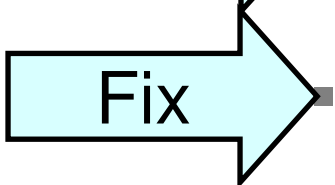
- JES2 z/OS 1.10, 1.11, 1.12 - Open

OA36873 - Missing JOE CKPTs

Problem ▶
- **CPU loop processing free JOEs in a MAS**
  - ▪ **Missing $CKPT of JOE chain fields**
  - ▪ **Running in z11 checkpoint mode**
  - ▪ **Related to unusual re-queuing of SYSOUT**
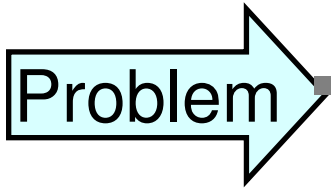
Avoid! ▶
- ▪ **Z11 CKPT mode without fix**

Fix ▶
- ▪ **JES2 z/OS 1.11, 1.12 – F???**

OA37233 - Memory Leak in Initiator Address Space

Problem ➤ **Slow memory leak of SP230 key 1 31 bit storage**

- ➤ ~750 bytes per job

- **Occurs in batch address spaces**
- **Can slow down batch job**

  - ➤ extra CPU spent in GETMAIN, local lock contention, etc

Avoid! ■ **Occasionally recycle initiators**
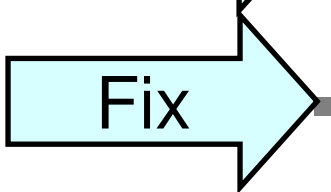
Fix ■ **JES2 z/OS 1.12, 1.13 - OPEN**

OA35770 - NJE Multi-line Messages Truncated
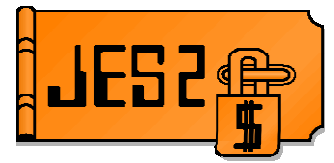
Problem ▸ **Multi-line messages from TCP/IP NJE node truncated**

- ► Requires NJE over TCP/IP and SNA or BSC
- ► Connection can be to different nodes

▪ **Messages from TCP/IP ignored while processing SNA/BSC messages**

▪ **TCP/IP message will time out**

Change ▸ **Message processing logic was corrected**

Fix ▸ **JES2 z/OS 1.10, 1.11, 1.12, 1.13 - F106**

OA35661 - Old SPOOL Won't Go Away
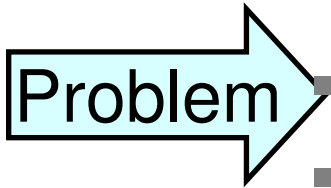
Problem ► **SPOOL volume inactive since z/OS 1.8**

- **Attempts to start or drain volume fail**
  - ► Allocation failure due to missing data set name

Avoid! ► **Having INACTIVE SPOOLs for extended periods of time (especially over multiple release migrations)**
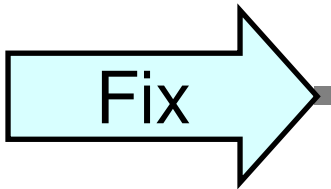
Fix ► **JES2 z/OS 1.11, 1.12 – F105**

OA36674 - Duplicate Job Errors
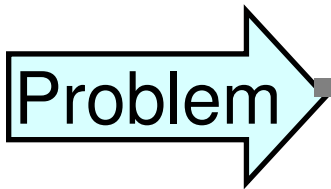
Problem ▸ **Lots of duplicate job error with z/OS 1.12 member active**

- **Extra CPU overhead processing duplicate jobs**
- **Long dead pre-z/OS 1.8 member still active (was $PJES2,TERMed years ago but never reset)**
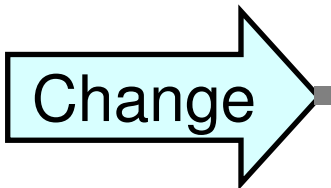
Change ▸ **Automatically reset ancient members even if AUTOEMEM is not set**
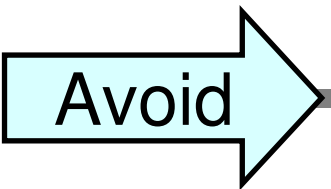
Avoid ▸ **Ensure old/dead members are reset (use AUTOEMEM)**
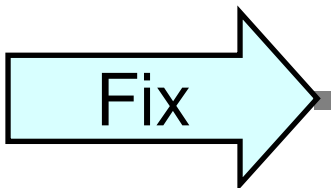
Fix ▸ **JES2 z/OS 1.10, 1.11, 1.12, 1.13 – OPEN**

OA37147 – ABEND 02A Accessing SPOOL

Problem → **SPOOL volume incorrectly marked as unavailable during initialization**

- **Old members are being deleted or redefined**

Change → **Corrected member status processing during restart**

Avoid → **Ensure old/dead members are reset (use AUTOEMEM)**

Fix → **JES2 z/OS 1.10, 1.11, 1.12, 1.13 – OPEN**

OA35165 – JOENAME displays as 00000001
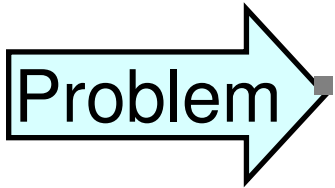
Problem ▸ **Extended status data set list returns a JOE name of 00000001**

- ► Only for data sets that do not have JOEs
- ► Shows up in SDSF JDS display off ST and DA panel
- ► Meaningless clutter
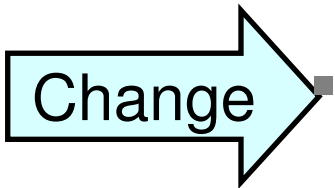
Change ▸ **Area set to blanks if no JOE name**
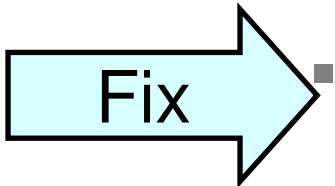
Fix ▸ **JES2 z/OS 1.10, 1.11, 1.12 – F101**

OA34796 – Jobs don't run after WLM service definition change

Problem

- **Jobs in a MODE=WLM job class do not run**
- **Incorrect processing if job assigned new service class**
  - ► Service class is changed but job not requeued
  - ► Not on WLM queue so cannot run in WLM init
  - ► Class is WLM so cannot run on JES2 init

Avoid

- **WLM service definition changes that alter job's service class**

Fix

- **JES2 z/OS 1.11, 1.12 – F012**

OA32551 – SPOOL Browse Problems

Problem ➤ **Problems processing instorage buffers**

- ➤ Browsed job submitted on z/OS 1.10 viewed on z/OS 1.11
- ➤ Problems with data sets that get ENDREQed
  - – Timing window

- **Can cause 24 bit private storage overlays (key 0)**

- **Has resulted in IPL when captured UCB overlaid**

Avoid ➤ **Running mixed level MAS for long periods**

Fix ➤ **JES2 z/OS 1.9, 1.10, 1.11, 1.12 – F009**

OA32799 – $ACTIVATE $K05 ABEND

Problem → **$ACTIVATING from z11 to z2 mode and then back to z11 mode can result in errors**

  ► DEBUG options cause $K05 ABEND

  ► W/O DEBUG, bad data, ABENDs or Loops in extended status SSIs

  ► ABEND on member that did not $ACTIVATE
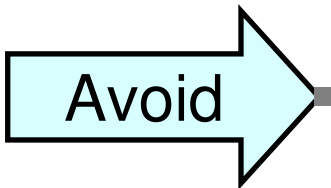
Avoid → **Issuing $ACTIVATEs from z11 to z2 to z11 in a MAS**
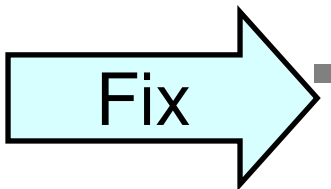
Fix → **JES2 z/OS 1.11– F008**

OA32292 – Jobs SPOOL Mask Incorrect After a Hot Start
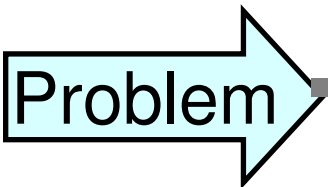
Problem ➤ **Various problems result in a jobs SPOOL usage mask missing entries on a hot start**

- ➤ Mask is important to ensuring no jobs using a SPOOL volume being drained or halted
- ➤ Could result in premature draining of a SPOOL volume
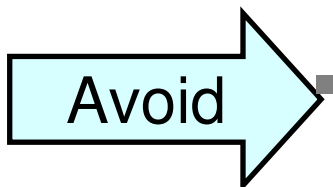
Avoid ➤ **Draining SPOOLs after a hot start**
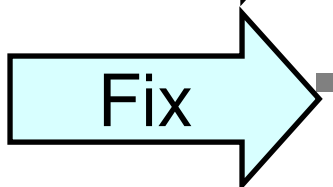
Fix ➤ **JES2 z/OS 1.9, 1.10 – F008**
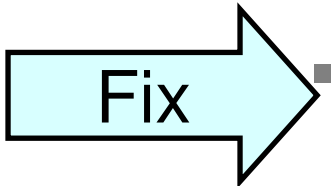
OA33407 – SAPI/Printer Performance Problem
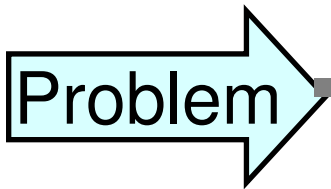
Problem → **High CPU when printers/SAPI select on user routecode**

- ► SAPI/Printer get posted to select work when nothing to select
- ► Device does a selection and then goes to sleep
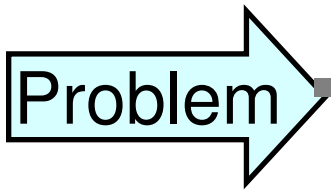- ► Happens when select on user destination (eg FRED)
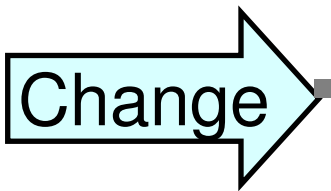
Avoid! → **Selecting on user destinations without fix**

Fix → **JES2 z/OS 1.11, 1.12 - F007**

OA32636 – Improved HASP050

Problem → **$HASP050 message issued when over threshold and percent usage changes**

- ► When at 100% usage, percentage does not change
- ► Message is missed when usage is very high and not changing

Change → **$HASP050 message issued every 30 second when 99% utilization or greater even if percent usage does not change**

Fix → **JES2 z/OS 1.9, 1.10, 1.11, 1.12 – F006**

OA23689 - Unable to Warmstart - no $BERTs
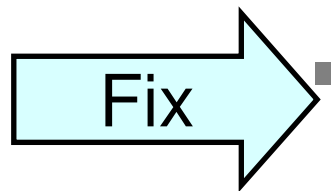
Problem → After JES2 runs out of $BERTs, JES2 restarts but ABENDs with $DP3.

- ► Customer had to COLD Start after trying to WARM/HOT START...
- ► There must be a way for JES2 to come up so that $BERTs can be added to avoid Cold Start.

Avoid! → **Moral: Don't run out of $BERTs!**

- JES2 - all current releases . . .
  - ► (Fixed in future release)
- See also OA25562 (F808)
  - ► (Will highlight shortage messages.)
- **Again: Don't run out of $BERTs!**

OA32216 - Unable to Warmstart - no $BERTs

Problem MISC processor waiting for BERTs to update CAT and WSC counts

- ABEND $QG1 due to wait for BERTs in exit 49
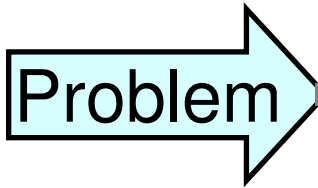- Unable to warm start in z/OS 1.9 and 1.10

Change BERT threshold added in OA23689 increased

- 2x max for JQA plus 2x max for CAT plus max for WSC
- 48 for z/OS 1.9 an 1.10, 50 for z/OS 1.11 and 1.12

Avoid! **Again: Don't run out of $BERTs!**

Fix **JES2 z/OS 1.9, 1.10, 1.11, 1.12 – F006**
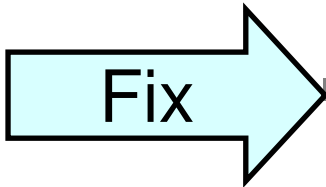
OA32333 – Problems when OUTTIME=UPDATE

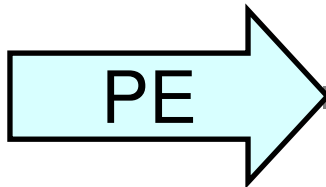**Problem** ▸ **SAPI tracking of "don't show" attribute for JOE incorrect if OUTDEF OUTTIME=UPDATE**

- ► JOEs re-presented to application inappropriately
- ► SAPI application may have unpredictable error
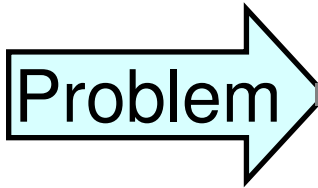
Avoid! ▸ **Using OUTDEF OUTTIME=UPDATE**

Fix ▸ **JES2 z/OS 1.11 and 1.12 – F006**

PE ▸ **Fixing APAR OA36168 – F105**

OA33032 – SDSF PREFIX Filtering with Transaction Output Incorrect
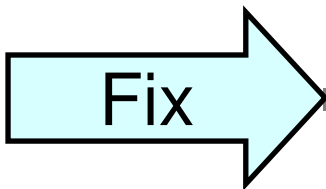
Problem ▸ **SDSF PREFIX filtering (O and H) not matching transaction output in z2 CKPT mode**

- ► Extended status not returning transaction jobs as requested
- ► Some performance problems may be noticed in z11 mode

Avoid! ▸ **Transaction filtering in SDSF in z2 mode**

Fix ▸ **JES2 z/OS 1.11 and 1.12 – F008**

# OA32089 – New Message for Automatic/Init Command

Problem → **Commands from Init Deck and automatic commands are not echoed to the console**

- ► If there is a syntax error, it is hard to determine the source
- ► Command responses without command echo in SYSLOG can be confusing

Change → **Issue HASP249 message to echo command**

- ► Indicates source is "initialization" or "auto command id=*xxx*"

Fix → **JES2 z/OS 1.9, 1.10, 1.11, 1.12 – F007**

OA31813 – Command Performance
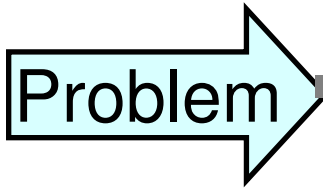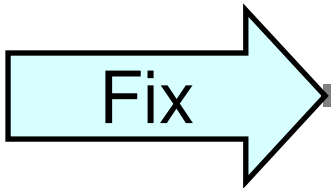
Problem → **Command performance with multiple filters**

- ► Filter optimization not working with more than one filter
- ► Problem introduced in z/OS 1.5
- ► More filters cause more problems
- ► Put filters most likely not to match first

Avoid! → **Using multiple filters against large job range**

- ► Split commands to have less jobs/JOEs per command

Fix → **JES2 z/OS 1.9, 1.10, 1.11 – F005**

Trial and tribulations of $HASP150

- **OA10772 – MSGHASP150 will only display 3 digits of the JOEID1 value**
  - ► `$HASP150 CICSPBR2 OUTGRP=48593.`**`123`**`.1 ON R6155.PR1  6 (6) RECORDS`
- **Real "fix" incorporated into z/OS 1.8**

  And then….
- **OA22397 – Wrong JOBID placed in $HASP150 message**
- **OA23776 – MSGHASP150 incorrectly sent to PSF JOBLOG**
- **OA26451 – HASP003 RC=(28),ERROR BUILDING MESSAGE HASP150P on JES mode 3800 printers.**
- **OA29284 – $HASP150 Message to remote RJE console contains bad text**
- **OA34006 - $HASP704 JOEID1 truncated**

QUESTIONS?