JES2 Product Update and Latest Status

Updated August 7th

Monday 4:30 PM – Session 09718
SHARE 117 Technical Conference - Orlando, 2011
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JES2 Development, Rochester, Minnesota

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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

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* = projected...
# JES2/MVS Compatibility

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IBM recommends the same level of z/OS & JES2 throughout 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](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 $ACTIVATEEd$)?**

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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.
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.
$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
- 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
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.
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, nnnK, nnnM - Spin every nnn lines
      – NOCMND - Cannot be spun by command
      – CMNDONLY - Can be spun via operator command (default if no interval)

$TJn,SPIN,DDNAME=name command added
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 $EJxxx,STEP [,HOLD]
  - Full cross member support
- **Command to extend SPOOL to adjacent free space**
  - `$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
Data set name for SPOOL can now be specified on $S SPOOL

- SPOOLDEF DSNMASK limits values
  - Can have generics
- Default is only SPOOLDEF DSNNAME 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
$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
  - $DSPPOOL still shows volume
  - $DJQ,SPOOL= still displays volume
  - New status is MAPPED
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*:

**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**
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 TIOC

- Implications include not being able to find DD in TIOC
  - Could break applications looking into TIOC
  - Very unlikely

- Controlled by parmlib option
  - NON_VSAM_XTIOT=NO|YES in DEVSUPxx

- Good ideas for use include
  - SPOOL data set browse, SPIN data set allocation
**z/OS 1.13 Migration/Coexistence**

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

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<tr>
<td>11/04/28</td>
<td>OA36168</td>
<td>After OA32333, age filters may incorrectly affect output that appears 110+ years old</td>
</tr>
<tr>
<td>11/04/20</td>
<td>OA35483</td>
<td>ABENDOF7 RCD4 in HASCPool due to TRE cell pool exhaustion</td>
</tr>
<tr>
<td>11/03/22</td>
<td>OA35871</td>
<td>After OA34412, $SA1 in HASPSASR in z2 checkpoint mode</td>
</tr>
<tr>
<td>11/03/04</td>
<td>OA35081</td>
<td>SYSLOG task hung waiting for PBUFs after a hot start of JES2</td>
</tr>
<tr>
<td>11/01/26</td>
<td>OA35313</td>
<td>Security APAR (JESPOOL)</td>
</tr>
<tr>
<td>11/01/24</td>
<td>OA35010</td>
<td>VFREEPRG DISTERR due to NJE buffer mismanagement</td>
</tr>
<tr>
<td>11/01/12</td>
<td>OA35165</td>
<td>JOE name of 00000001 in SDSF JDS display</td>
</tr>
<tr>
<td>11/01/07</td>
<td>OA34987</td>
<td>High CPU with many idle NJE lines</td>
</tr>
<tr>
<td>10/11/17</td>
<td>OA34796</td>
<td>Jobs don't run after WLM service definition change</td>
</tr>
<tr>
<td>10/11/11</td>
<td>OA34611</td>
<td>Security APAR (SECLABELs)</td>
</tr>
<tr>
<td>10/11/04</td>
<td>OA34128</td>
<td>JOE queue error after failed $O command without &quot;PROTECTED&quot;</td>
</tr>
<tr>
<td>10/11/01</td>
<td>OA34727</td>
<td>msgHASP095 K23 occurs when checkpoint reconfiguration is attempted with HJE7708</td>
</tr>
<tr>
<td>10/10/22</td>
<td>OA34412</td>
<td>Job output altered on $TO command even when not matching filter</td>
</tr>
<tr>
<td>10/10/14</td>
<td>OA33718</td>
<td>$K24 ABEND with CKPT RECONFIG while members initializing</td>
</tr>
<tr>
<td>10/10/13</td>
<td>OA34164</td>
<td>TSO user hang on HJE7770 when browsing SYSLOG for a down level member</td>
</tr>
<tr>
<td>10/09/28</td>
<td>OA34293</td>
<td>Repeated DAS rebuild message $HASPB96 on warm start</td>
</tr>
<tr>
<td>10/09/23</td>
<td>OA34019</td>
<td>Looping browsing an old (pre-z/OS 1.9) created SYSOUT data set</td>
</tr>
<tr>
<td>10/09/09</td>
<td>OA32551</td>
<td>Errors using SPOOL browse in a mixed level MAS</td>
</tr>
<tr>
<td>10/09/09</td>
<td>OA33359</td>
<td>WLM JOB not starting even with available INITs</td>
</tr>
<tr>
<td>10/08/13</td>
<td>OA32799</td>
<td>ABEND068 RC108 HASPCKVR checkpoint versions subtask terminates</td>
</tr>
<tr>
<td>10/08/13</td>
<td>OA32292</td>
<td>SPOOLs used mask not updated properly at hot start</td>
</tr>
<tr>
<td>10/08/06</td>
<td>OA33074</td>
<td>NETVIEW ASID hung waiting on $SJBLOCK in HASCBTR</td>
</tr>
<tr>
<td>10/08/06</td>
<td>OA33032</td>
<td>SDSF prefix command does not show transaction output</td>
</tr>
</tbody>
</table>
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)
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

Larger SYSLOGs (less spinning) leak a bit faster

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 eyecatcher 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
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
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
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
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

Draining SPOOLs after a hot start

JES2 z/OS 1.9, 1.10 – F008
OA33407 – SAPI/Printer Performance 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
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
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
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
**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/JOE's 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?

QUESTIONS?