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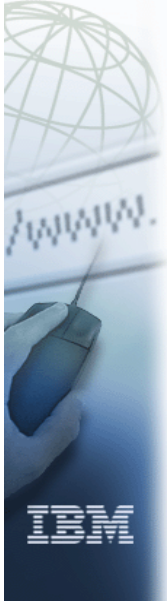**IBM**

JES2 Enhancements
Version 1 Release 7
SDSF for V1R7
JES3 V1R7

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Trademarks

eNetwork	DFSMS/MVS	IMS	RACF
geoManager	DFSMSdfp	IMS/ESA	RMF
AD/Cycle	DFSMSdss	IP PrintWay	RS/6000
ADSTAR	DFSMShsm	IPDS	S/390
AFP	DFSMSrmm	Language Environment	S/390 Parallel Enterprise Server
APL2	DFSORT	Multiprise	SecureWay
APPN	Enterprise System 3090	MQSeries	StorWatch
BookManger	Enterprise System 4381	MVS/ESA	Sysplex Timer
BookMaster	Enterprise System 9000	Network Station	System/390
C/370	ES/3090	NetSpool	SystemView
CallPath	ES/4381	OfficeVision/MVS	SOM
CICS	ES/9000	Open Class	SOMobjects
CICS/ESA	ESA/390	OpenEdition	SP
CICS/MVS	ESCON	OS/2	VisualAge
CICSPlex	First Failure Support Technology	OS/390	VisualGen
COBOL/370	FLowMark	Parallel Sysplex	VisualLift
DataPropagator	FFST	Print Services Facility	VTAM
DisplayWrite	GDDM	PrintWay	WebSphere
DB2	ImagePlus	ProductPac	3090
DB2 Universal Database	Intelligent Miner	PR/SM	3890/XP
DFSMS/MVS	IBM	QMFr	z/OS
			z/OS.e

Domino (Lotus Development Corporation)   **Tivoli (Tivoli Systems Inc.)**   **UNIX (X/Open Company Limited)**
DFS (Transarc Corporation)   **Tivoli Management Framework**   **Windows (Microsoft Corporation)**
Java (Sun Microsystems, Inc.)   **(Tivoli Systems Inc.)**   **Windows NT (Microsoft Corporation)**
Lotus (Lotus Development Corporation)   **Tivoli Manger (Tivoli Systems Inc.)**

JES2 Version 1 Release 7 Topics

- ❏ NJE over TCP/IP
  - ➤ SDSF support of TCP/IP NJE/RJE
  - ➤ Exit impacts
  - ➤ Enhanced functions
- ❏ Checkpoint recovery Part 2
- ❏ Resource display
- ❏ >64K track SPOOL data sets
- ❏ JES2 spool and SAPI enhancements
- ❏ Data set level fields for extended status SSI

JES2 V1R7 Enhancements

- ❏ NJE over TCP/IP
- ❏ Large (>64K track) SPOOL Data Sets
- ❏ Reader/NJE exit changes
- ❏ Long SYSIN support (32K LRECL)
- ❏ Table pair enhancements
- ❏ $SCAN from non-main task environments
- ❏ SSI for JES2 monitor information
- ❏ SAPI and extended status enhancements
- ❏ Checkpoint recovery (DAS corruption)

JES2 V1R7

❑ Hardware

➤ JES2 makes liberal use of the new 64 bit op codes and registers

➤ JES2 IPCS support has avoided these new functions

❑ Software

➤ The z/OS V1R7 release of DFSMS/MVS is required for large data set support

➤ The z/OS V1R7 release of TCP/IP is needed for the NJE/TCP support

➤ If SDSF is being used, the z/OS V1R7 level is needed

➤ Tivoli TWSz requires a PTF for z/OS V1R7 support (number unavailable at this time)

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JES2 Support of Large Spool Volumes

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JES2 Spool Large Data Sets

❏ Current JES2 spool limited to 64K tracks

➤ Newer DASD can have many more tracks

➤ Customers want to dedicate entire volume to spool

➤ PAV ensures that large SPOOLs perform well

❏ Solution:

➤ Support added to allow SPOOL data sets to be up to 1M tracks

❏ Benefit:

➤ Can dedicate large volumes entirely to spool

Note: RELADDR=NEVER|ASNEEDED|ALWAYS (deleted in V1R7)

Spool Address Changes

❏ Spool addressing uses 4 byte MTTR

➤ M is spool extent number

➤ TT is track address (up to 64K)

➤ R is record number

– Spool address still 4 bytes in most places

– 4 bits from R given to TT

➤ MTTtr gives 20 bits for track address or 1M tracks

– Limited to R values of 15 or less

➤ Buffer sizes of 2944 or greater on a 3390

– Some data areas use 6 byte MQTR (MTTTTR) and 5 byte MQTs

– Spool read SSI makes changes transparent to applications

SPOOLDEF Initialization Changes
LARGEDS Parameter

- ❏ LARGEDS=NEVER
  - ➤ All volumes must be less than 64K tracks
  - ➤ Compatible with older releases of JES2
  - ➤ MTTtrs and MQTs never used
- ❏ LARGEDS=ASNEEDED
  - ➤ IOT, TGAEs and other data areas converted to MQTs
  - ➤ Large volumes can be started
  - ➤ MTTtrs used for large volumes only
  - ➤ Older releases can NEVER be warm started again
- ❏ LARGEDS=ALWAYS
  - ➤ Same as ASNEEDED but MTTtrs are used for all new volumes - use for testing

Spool LARGEDS Changes

- ❏ Initialization changes honored on Cold starts
  - ➤ Warm starts use previous values defined
- ❏ Setting LARGEDS=ASNEEDED or LARGEDS=ALWAYS is similar to a mini-activate
  - ➤ Checkpoint expanded for larger data areas
- ❏ Once set to ASNEEDED or ALWAYS, cannot warm start down level release even if $T'ed back to NEVER
  - ➤ Down level JES2 cannot handle spool data area changes
  - ➤ Must offload and cold start to allow down levels to join MAS

REMEMBER, once LARGEDS=ASNEEDED is set, pre-z/OS V1R7 JES2s cannot be warm started even if set to LARGEDS=NEVER

Spool Command Changes

❑ **$DSPOOL command shows if MTTtrs being used**

➤ SBOX02 not using new support

➤ SBOXFC is using MTTRs (notice TRKRANGE)

```
$DSPOOL(SBOX02),UNITDATA
$HASP893 VOLUME(SBOX02)
$HASP893 VOLUME(SBOX02)  UNITDATA=(EXTENT=02,
$HASP893                 TRKRANGE=(00A5,1814),RECMAX=12,
$HASP893                 TRKPERCYL=15)

$DSPOOL(SBOXFC),UNITDATA
$HASP893 VOLUME(SBOXFC)
$HASP893 VOLUME(SBOXFC)  UNITDATA=(EXTENT=00,
$HASP893                 TRKRANGE=(00000001,000244F5),
$HASP893                 BASETRAK=0000001D,RECMAX=12,
$HASP893                 TRKPERCYL=15)
```

Spool Command Changes

❑ **$DSPOOLDEF command verifies enabled for LARGEDS**

```
$DSPOOLDEF
$HASP844 SPOOLDEF  BUFSIZE=3992,
$HASP844           DSNAME=SYS1.JES2.SC63.HASPACE,
$HASP844           FENCE=(ACTIVE=NO,VOLUMES=1),
$HASP844           GCRATE=NORMAL,LASTSVAL=(2003.046,
$HASP844           15:44:39),LARGEDS=FAIL,SPOOLNUM=32,
$HASP844           TGSIZE=30,TGSPACE=(MAX=81440,
$HASP844           DEFINED=52045,ACTIVE=52045,
$HASP844           PERCENT=46.1177,FREE=28043,WARN=80),
$HASP844           TRKCELL=6,VOLUME=SBOX0
$DSPOOLDEF
$HASP844 SPOOLDEF  BUFSIZE=3992,DSNAME=SYS1.JESCPACE,
$HASP844           FENCE=(ACTIVE=NO,VOLUMES=1),
$HASP844           GCRATE=NORMAL,LASTSVAL=(2005.124,
$HASP844           21:33:03),LARGEDS=ALLOWED,
$HASP844           SPOOLNUM=32,TGSIZE=30,
$HASP844           TGSPACE=(MAX=81440,DEFINED=49575,
$HASP844           ACTIVE=49575,PERCENT=0.0161,
$HASP844           FREE=49567,WARN=80),TRKCELL=6,
$HASP844           VOLUME=SBOXF
```

Migration Steps to LARGEDS Support

- ❏ On a test system, test applications that access spool by setting LARGEDS=ALWAYS and starting a spool volume
- ❏ Migrate to z/OS V1R7 JES2 on all MAS members
- ❏ Wait for z/OS V1R7 JES2 to stabilize (fall back not needed)
- ❏ $T SPOOLDEF to LARGEDS=ALLOWED
- ❏ Stabilize with the new format of data areas
- ❏ Start a large spool volume
  - ➢ Consider using spool affinity to limit jobs using new spool
- ❏ Once stabilized, drain old spool volumes and migrate to new larger spool data sets
  - ➢ Clear spool affinities if used for testing earlier

LARGEDS Migration Support

- ❏ Support deleted for SPOOLDEF RELADDR=
  - ➢ All volumes started by z/OS V1R7 will use relative track addressing
  - ➢ Volumes using absolute track addressing still supported
    - − No plans to drop support for absolute track addressing
- ❏ For large SPOOL volume support, once LARGEDS support is active, warm starting a pre-z/OS 1.7 JES2s will fail with

```
$HASP720 WARM START DENIED - LARGE SPOOL DATA SET FORMAT HAS BEEN
ACTIVATED IN THE MAS.  THIS RELEASE DOES NOT SUPPORT LARGE SPOOL DATA
SET FORMAT.
```

LARGEDS Considerations

❏ Once LARGEDS is set to ALLOWED or ALWAYS, pre-z/OS V1R7 JES2 members can not join the MAS until a COLD start is performed

➢ IBM recommends not setting LARGEDS to ALLOWED or ALWAYS until all MAS members have stabilized on a z/OS V1R7 level of JES2 or later

❏ Even if LARGEDS is set to ALLOWED or ALWAYS, spool volumes with more than 15 records per track (for example, when using buffer sizes less than 2943 on a 3390) cannot use the new format for spool record addresses

➢ They do not support data sets larger than 65535 tracks

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Checkpoint Recovery

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Checkpoint Recovery

❏ Checkpoint data may be corrupted, results in an outage

➤ Checkpointed control block representing a spool volume ($DAS) may be corrupted (overlays)

❏ JES2 V1R7 changes

➤ Each $DAS and appropriate chains is verified and rebuilt, if necessary, on any warm or hot start

➤ If a rebuild was necessary, the operator is notified via the $HASP896 message

➤ When formatting the $DAS or $RECY (new control block that shadows selected $DAS fields) in IPCS, $DAS vs. $RECY field analysis is done


Checkpoint Recovery

❏ Attempting to use the same spool volume configuration in more than one MAS in a sysplex can cause a multi-system outage

❏ JES2 V1R7 changes

➤ A sysplex level ENQ is obtained when starting a spool volume to ensure only one MAS allocates this spool volume in the sysplex

➤ If another MAS already owns the ENQ, the operator is notified via the $HASP443 message

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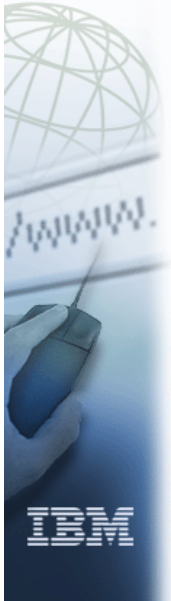
JES2 Resource Display Health Monitor

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JES2 V1R7 Health Monitor

❑ The JES2 health monitor only displays data on the console

  ➢ No practical way to study the data

  ➢ Bad human factors

❑ JES2 V1R7 changes

  ➢ Provide monitor data via an SSI to applications

  ➢ Applications can format data as they want to

  ➢ GUIs can be used to better show what is happening

Health Monitor Enhancements

❏ New function on the JOB information SSI (SSI 71)

❏ 2 new functions added to IAZSSJI

➤ Get monitor information and return storage

❏ New data area (IAZMOND) for new function

❏ Returns all information available via monitor commands

➤ Resource usage statistics - Main task CPU statistics

➤ JES2 ERROR statistics - Main task WAIT statistics

➤ JES2 Alerts - JES2 Notices - JES2 Tracks

➤ Monitor status information

❏ Some additional data is returned

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JES2 spool and SAPI enhancements

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SAPI Interface Enhancements

❏ Problems requiring solutions:

- ➤ FTP needs a way to read JES spooled data without requiring SAF (RACF) UPDATE authority
- ➤ Additional job related data needs to be returned
- ➤ Additional data set disposition options

❏ z/OS V1R7 enhancements:

- ➤ The SAPI interface updated to allow the caller to specify to only read SPOOL files and never change or delete SPOOL files
- ➤ Job level ABEND codes, highest condition code returned
- ➤ Overriding of priority and ability to reset forms code to system standard

---

Internal Readers

❏ Support for RDINUM= on the INTRDR statement has been discontinued

❏ Internal readers are allocated as they are needed and there is no limit

User Exits - Application Considerations

- ❏ Some applications may attempt to read/write spool records
- ❏ Reading is supported using the spool READ SSI
  - ➤ Applications must treat 4-byte spool address as a token
  - ➤ Should not examine individual fields
- ❏ Direct writing to spool is not supported
- ❏ Applications that convert MTTR to BBCCHHR need to update to support new MTTtr spool address format
  - ➤ Conversion example can be found in routine $EXCP in HASPNUC
- ❏ Fields in the $DAS, $IOT, and $TGB (BLOB) are updated to 5 or 6 byte MQTs or MQTRs
  - ➤ Examine data areas for any changes

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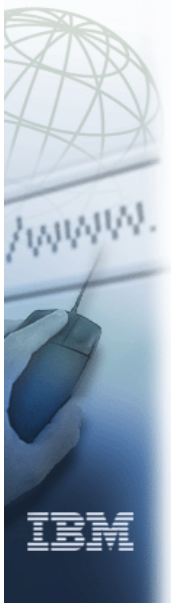
Spool Display and Support Facility (SDSF) z/OS V1R7

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SDSF Enhancements for z/OS V1R7

❑ CK panel to support Health Checker
  ➢ Monitor and manage checks from IBM Health Checker for z/OS
❑ RM panel to display JES2 resources
  ➢ Monitor and manage JES2 resources (JOEs, JQEs, etc.)
❑ Changes for JES2/s support of TCP/IP
  ➢ Small changes for SDSF: new columns on Lines and Nodes panels
❑ Changes in response to console restructure
  ➢ SDSF changes in response to consoles changes

RM Panel

❑ Provides usability advantages over JES2 commands
  ➢ Standard capability of SDSF tabular panels:
    – Action characters and overtypes
    – Filter, sort, arrange columns
❑ RM command displays the panel
  ➢ RM (ALL|number-of-intervals)
  ➢ RM with no parameters displays the current interval for each resource
    – ALL displays all intervals
    – Number-of-intervals specifies the number of intervals to be displayed, including the most recent
    – JES2 maintains up to 72 intervals

RM Command - Resource Monitor

```
  Display  Filter  View  Print  Options  Help
 ------------------------------------------------------------------------------
 SDSF RESOURCE MONITOR DISPLAY  SC65                    LINE 1-17 (17)
 COMMAND INPUT ===>                                    SCROLL ===> CSR
 PREFIX=AP*  DEST=(ALL)  OWNER=*  SYSNAME=
 ACTION=//-Block,=-Repeat,+-Extend,D-Display
 NP     RESOURCE SysId Status    Limit  InUse  InUse% Warn% IntAvg IntHigh IntLow
        BERT     SC65           20000     99   0.49    80     99     99      99
        BSCB     SC65               0      0   0.00     0      0      0   2B
        BUFX     SC65             200      0   0.00    80      0      0       0
        CKVR     SC65              17      0   0.00    80      0      0       0
        CMBS     SC65             208      0   0.00    80      0      0       0
        CMDS     SC65             200      0   0.00    80      0      0       0
        ICES     SC65               0      0   0.00    80      0      0       0
        JNUM     SC65           29001      9   0.03    80      9      9       9
        JOES     SC65            3000      2   0.06    80      2      2       2
        JQES     SC65           20000     10   0.05    80     10     10      10
        LBUF     SC65             120      0   0.00    80      0      0       0
        NHBS     SC65             100      0   0.00    80      0      0       0
        SMFB     SC65             102      0   0.00    80      0      0       0
        TBUF     SC65             106      0   0.00     0      0      0       0
        TGS      SC65           50080      9   0.01    80      9      9       9
        TTAB     SC65               3      0   0.00    80      0      0       0
        VTMB     SC65               0      0   0.00     0      0      0   2B
```

RM History - RM 10 on command line

```
  Display  Filter  View  Print  Options  Help
 ------------------------------------------------------------------------------
 SDSF RESOURCE MONITOR DISPLAY  SC65                    LINE 1-23 (170)
 COMMAND INPUT ===>                                    SCROLL ===> CSR
 PREFIX=AP*  DEST=(ALL)  OWNER=*  SYSNAME=
 ACTION=//-Block,=-Repeat,+-Extend,D-Display
 NP     RESOURCE SysId Status    Limit  InUse  InUse% Warn% IntAvg IntHigh IntLow
        BERT     SC65           20000     99   0.49    80     99     99      99
        BERT     SC65           20000     99   0.49    80     99     99      99
        BERT     SC65           20000     99   0.49    80     99     99      99
        BERT     SC65           20000     99   0.49    80     99     99      99
        BERT     SC65           20000     99   0.49    80     99    103      99
        BERT     SC65           20000     99   0.49    80     99     99      99
        BERT     SC65           20000     99   0.49    80     99     99      99
        BERT     SC65           20000     99   0.49    80     99     99      99
        BERT     SC65           20000     99   0.49    80     99     99      99
        BERT     SC65           20000     99   0.49    80     99     99      99
        BSCB     SC65               0      0   0.00     0      0      0   2B
        BSCB     SC65               0      0   0.00     0      0      0   2B
```

Display Resource Information

D action character on resource line

```
 Display  Filter  View  Print  Options  Help
 ------------------------------------------------------------------------------
 SDSF RESOURCE MONITOR DISPLAY  SC65                        COMMAND ISSUED
 COMMAND INPUT ===>                                          SCROLL ===> CSR
 RESPONSE=SC65
  @HASP852 CKPTSPACE
  @HASP852 CKPTSPACE  BERTNUM=20000,BERTFREE=19901,
  @HASP852            BERTWARN=80,CKPT1=(CAPACITY=8988,
  @HASP852            UNUSED=7697),CKPT2=(CAPACITY=8988,
  @HASP852            UNUSED=7697)
      BERT    SC65                20000    99  0.49   80    99     99    99
      BERT    SC65                20000    99  0.49   80    99    103    99
```

RM Panel Actions

❏ You can overtype these columns, for the current interval only:

➢ Limit   Limit for the resource

➢ Warn%   Warning threshold (percentage)

TCP/IP Networking Changes

Lines panel:

Title	Description
SocketN	Socket name
IPAddr	IP address
IPName	IP name
Port	TCP/IP port number
PortName	TCP/IP port name
Secure	Secure socket (SSL)
NSName	Network server name

Nodes panel:

Title	Description
NetSrv	Network server number

Console Restructure

(ALL)

    (ACTIONS|A) – action messages
    (CEM) – critical eventual action messages
    (EM) – eventual action messages
    (IM) – immediate action messages
    (MOUNTS|M) – DASD and tape mount messages
    (REPLIES|R|RM) – reply messages

```
 Display  Filter  View  Print  Options  Help
--------------------------------------------------------------------------
SDSF SYSTEM REQUESTS  RM 2    IM 6    CEM 0    EM 0    LINE 1-8 (8)
COMMAND INPUT ===>                                    SCROLL ===> CSR
PREFIX=AP*  DEST=(ALL)  OWNER=*  SYSNAME=
ACTION=//-Block,=-Repeat,+-Extend,C-Remove,D-Display,R-Reply
NP      REPLYID    SysName  JobName  Message-Text
        29         SC63     IMS710G  *029 DFS996I *IMS READY*  IMSG
        524007     SC63     MERONIR  *WLMREG-- IWMSRSRG: Register sample server
        95014      SC65     JES3     *IAT7921 ISSUE START/CANCEL/RESTART DC REQ
        176014     SC65     IEESYSAS *IAZ0537I JES3NS NJETCP SERVER WAITING FOR
        168015     SC70     JESAS001 *IAZ0537I NETSRV1 NJETCP SERVER WAITING FO
        178014     SC65     JESBS001 *IAZ0537I NETSRV1 NJETCP SERVER WAITING FO
        58013      SC64     TWSC     *IEF099I JOB TWSC   WAITING FOR DATA SET
        521        SC64     AOFAPPL  *521 DSI802A SC64N   REPLY WITH VALID NCC
```

Migration Considerations
Before First IPL

- ❏ Update discrete profiles that protect ENC and PS panels (Required-IF, as of R7)
  - ➤ Required if the ENC and PS commands are protected with discrete profiles
  - ➤ If the commands are protected with generic profiles (for example, ISFCMD.ODSP.**), then no action is necessary
- ❏ The SAF resources that protect the ENC and PS commands have been changed to make them consistent with other like resources
  - ➤ A system value has been added as the last qualifier - with this change, in the SDSF class the resources are:
    - – ISFCMD.ODSP.ENCLAVE.system
   - – ISFCMD.ODSP.PROCESS.system

Migration Actions

- ❏ Define new profiles that include a value for the final qualifier, for example:

  - ➤ RDEFINE ISFCMD.ODSP.ENCLAVE.* ....

  - ➤ Copy the access lists from the original profiles to the new profiles with the RACF PERMIT command

  - ➤ If the RACF data set is not shared with any lower-level systems, you might want to delete the original profiles with the RACF RDELETE command

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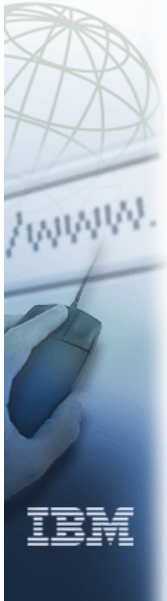
Migration Considerations to JES2 V1R7

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JES2 Releases

JES2 Rel.#	FMID	First Available	No Longer Available	End of Service
OS/390 R.8/9	HJE6608	9/99	9/00	3/2003
OS/390 R.10	HJE7703	9/00	3/02	9/2004
z/OS V1R1	HJE7703	3/01	10/01	3/2004
z/OS V1R2/3	HJE7705	10/01	9/02	10/2004
z/OS V1R4	HJE7707	9/02	3/04	03/2007
z/OS V1R5/6	HJE7708	3/03	9/05	03/2007
z/OS V1R7	HJE7720	9/05	9/08	10/2008

JES2 Checkpoint (migrations) $ACTIVATE Deletion with z/OS V1R7

❑ JES2 can operate in two modes:
  ➤ Full function mode (z2) which is the default, or
  ➤ Compatibility mode (R4)

❑ In z/OS V1R2, JES2 added features that required incompatible changes to data in the JES2 checkpoint. For migration, JES2 supported a compatibility mode of operations (called R4 mode) that allowed the new release to work with the old format checkpoint data

❑ z/OS V1R7 JES2, cannot coexist with z/OS V1R2 JES2
  ➤ Compatibility mode is no longer needed
  ➤ Deleted support for R4 mode
  ➤ Deleting support of the $ACTIVATE command and being able to process and R4 format checkpoint

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JES2 Migrations to JES2 V1R7

❑ From JES2 OS/390 R10 or earlier

  ➤ Migrate to more recent spool-compatible release first (z/OS V1R5) to avoid cold start

  ➤ $ACTIVATE,LEVEL=z2 on that release - no $ACTIVATE support in z/OS V1R7

❑ From JES2 z/OS V1R2

  ➤ $ACTIVATE,LEVEL=z2 required to avoid cold start

  ➤ No MAS coexistence (all member warm start)

JES2 Migrations to JES2 V1R7

❏ From JES2 z/OS V1R4 and V1R5

➢ $ACTIVATE,LEVEL=z2 required to coexist with z/OS V1R7

➢ APAR OA08145 needed on all members which includes toleration for:

– Long sysin records

– Local node name changes

– Persistent NJE connections

– $HASP549 message changes

➢ OA11953, OA12472 fix errors in OA08145

JES2 V1R7 Installation

❏ New JES2 distribution library

➢ Moved from SYS1.SHASLINK (PDS) to SYS1.SHASLNKE (PDSE)

– Allows HASJES20 to be a split load module

– Most JES2 modules are now loaded above 16M - A few modules had to stay below16M

❏ If you do your own assembly/linkedit of JES2

➢ JES2 modules should be assembled with the XOBJECT and LIST(133) parameters

➢ JES2 should be linkedited into a PDSE with the RMODE(SPLIT) option

JES2/MVS Compatability

❏ JES levels supported by a given z/OS release are the
   same as the JES levels that can coexist in a MAS
❏ JES2 no longer supports compatibility with pre-z/OS
   V1R2 systems

OS/390 z/OS Releases	Rel.10 & JES2 V1R1 HJE7703	JES2 V1R2 HJE7705	JES2 V1R4 HJE7707	JES2 V1R5 HJE7708	JES2 V1R7 HJE7720
R.10	X				
z/OS R1	X				
z/OS R2	X	X			
z/OS R3	X	X			
z/OS R4	X	X	X		
z/OS R5	X	X	X	X	
z/OS R6	X	X	X	X	
z/OS R7			X	X	X

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JES2 Exits Processing with z/OS V1R7 for Migration

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JES2 V1R7 Exit Processing Changes

❏ TCP/IP NJE processing is outside the JES2 main task

❏ INTRDR processing is also outside JES2 main task

❏ Main task exits no longer get control for TCP/NJE and INTRDR jobs

❏ New exits have been added corresponding to current exits

❏ Additional main task exits have been defined

➤ When jobs are added to the job queue

❏ Exits 36 and 37 are still called but from a different address space

❏ Exit 8 is called in some cases instead of exit 7

JES2 Exits Affected

❏ New exits have been added corresponding to these main task exits

➤ 2 – JCL job card

➤ 3 – Job card accounting field

➤ 4 – JCL and JES2 control (JECL) statement

➤ 20 – End of input

➤ 39 – NJE SYSOUT SAF rejection

➤ 46 – NJE header transmit exit

➤ 47 – NJE header receive exit

❏ Other exits affected:

➤ 7/8– Control block I/O

➤ 13 – TSO/E NETMAIL notify (deleted)

➤ 36/37 – Pre and post SAF exit

New Exit and Current Exit

New Exit	Similar exit	Environ	Function
50	20	USER	End of input
51	*	JES2	$QMOD - job phase change
52	2	USER	Input processing - JOB card
53	3	USER	Input processing - Accounting field
54	4	USER	Input processing- JCL/JECL
55	39	USER	NJE SAF rejection
56	46	USER	NJE header/trailer transmit
57	47	USER	NJE header/trailer receive

Exit Processing with JES2 V1R7

❏ Old style exits (2, 3, 4, 20, 39, 46, 47) still used for:
  ➤ Local card readers
  ➤ NJE readers
  ➤ SNA and BSC NJE transmitters and receivers
  ➤ Spool Offload transmitters and receivers

❏ New style exits (52, 53, 54, 50, 55, 56, 57) used for:
  ➤ Batch Internal readers
  ➤ STC and TSU internal readers
  ➤ TCP/IP NJE transmitters and receivers

❏ New exit 51 receives control for all phase changes:
  ➤ Job moves from $INPUT to $XEQ, etc.
  ➤ Job requeued for execution

JES2 Command Filters

Command Filter	$A	$C	$E	$H	$P	$T	$D
CLASS= (C=)	NEW!	NEW!	NEW!	NEW!	NEW!	*	*
PRIORITY= (P=)	NEW!			NEW!	NEW!	*	*
SYSAFF= (S=)	NEW!	NEW!	NEW!	NEW!	NEW!	*	*
HOLD= (H=)		NEW!			NEW!	*	*
SECLABEL=	NEW!	NEW!	NEW!	NEW!	NEW!	NEW!	*
SECLABEL_AFF=	NEW!	NEW!	NEW!	NEW!	NEW!	NEW!	*
SCHENV=	NEW!	NEW!	NEW!	NEW!	NEW!	*	*
SCHENV_AFF=	NEW!	NEW!	NEW!	NEW!	NEW!	NEW!	*
USERID=	NEW!	NEW!	NEW!	NEW!	NEW!	*	*
CARDS=	NEW!	NEW!		NEW!	NEW!	*	*
DELAY=		NEW!			NEW!	*	*
CC=		NEW!			NEW!	*	*
OFFS=	NEW!			NEW!	NEW!	*	*
BUSY=	NEW!	NEW!		NEW!	NEW!	NEW!	NEW!

JES2 Command Filters

Command Filter	$C O	$P O	$O	$T O	$D O
BURST=	NEW!	NEW!	NEW!	*	*
FCB=	NEW!	NEW!	NEW!	*	*
FLASH=	NEW!	NEW!	NEW!	*	*
FORMS=	NEW!	NEW!	NEW!	*	*
OUTDISP=	NEW!	NEW!		*	*
HOLDRC=	NEW!	NEW!		*	*
PRIORITY=	NEW!	NEW!	NEW!	*	*
PRMODE=	NEW!	NEW!	NEW!	*	*
UCS=	NEW!	NEW!	NEW!	*	*
WRITER=	NEW!	NEW!	NEW!	*	*
RECORDS=	NEW!	NEW!	*	*	*
CC=	NEW!	NEW!	NEW!	NEW!	NEW!
SECLABEL=	NEW!	NEW!	NEW!	*	*
USERID=	NEW!	NEW!	NEW!	*	*

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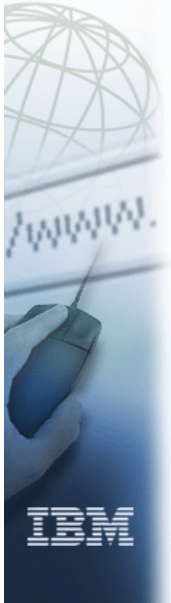
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JES3 V1R7 Enhancements

❏ 'Verbose' Extended Status support
  ➢ SAPI enhancements
❏ Large Volume Support
❏ Hyperswap support for GDPS
  ➢ Invocation of Hyperswap is automatic
  ➢ Provided down to HJS7705 via APAR OA08510
❏ Console restructure compliance
  ➢ All MGCR macros changed to MGCRE
❏ Minor new SAPI function (remove forms)
❏ Migration considerations

Large Volume Support

❑ 64k cylinders supported starting in OS/390 R10

❑ DFSMS limit of 64k tracks/data set limited a single spool extent until now

❑ z/OS V1R7 raising that to 16,777,216 tracks

  ➤ JES3 is well positioned to support this:

  ➤ With R from the M.R spool addressing defined as 4 bytes

  ➤ Offline format example JCL in I&T Guide updated

  ➤ Otherwise no differences in adding a spool

  ➤ No initialization keyword needed, unlike JES2

❑ Large data sets not shared with lower-level systems

  ➤ Open for spool data sets will fail there

JES3 Migration Considerations

❑ z/OS V1R7 JES3 can coexist with:

  ➤ JES3 V1R7

  ➤ z/OS V1R5 JES3 or functionally equivalent z/OS V1R6

  ➤ z/OS V1R4 JES3

  ➤ z/OS V1R7, V1R5 and V1R4 JES3 can run on z/OS V1R7 BCP

  ➤ Can be installed across the complex in any order with a rolling IPL/CLPA

❑ APAR OA10849 this is a JES3-BCP compile compatibility