Systems

OS/VS2 Independent Component : JES3 Release Guide

VS2 Release 3

IBM

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OS/VS2 Independent Component:
JES3 Release Guide
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This Technical Newsletter, a part of release 3 of OS/VS2, provides
replacement pages for your publication. These replacement pages remain
in effect for subsequent VS2 releases unless specifically altered.
Pages to be removed and/or inserted are listed below.

Cover,2	15,16
7,8	16.1-16.2
9,10	17,18
11,12	81,82
13,14	82.1-82.2

A change to the text is indicated by a vertical line to the left of the
change.

Summary of Amendments

The following topics are technically updated:
   Distribution Tape
   SMP Requirements
   Activating JES3 Standalone Dumps

Note: Please file this cover letter at the back of the manual to provide
a record of changes.

This publication provides information on how to incorporate JES3 into an OS/VS2 Release 3 system. It also contains information that temporarily supplements other OS/VS2 publications.

This publication is divided into the following chapters:

- Distribution Tape, which describes the JES3 independent component release (ICR) distribution tape.

- Installation Procedure, which describes how to install JES3 in OS/VS2 Release 3.

- Storage Estimates, which provides the information needed to estimate the amount of storage required for JES3.

- System Management Facilities Information, which describes the records written by JES3 to the SMF data set and describes the space required for JES3 SMF records.

- Checkpoint/Restart Information, which describes the checkpoint/- restart support for JES3.

- Codes, which lists and explains completion codes issued by JES3 and provides routing and descriptor codes information associated with JES3 messages.

- Dynamic Support System Information, which describes what must be done to allow DSS to operate in a JES3 system.

- ASP to JES3 Migration Aid, which contains all information related to functions, operation, messages and logic of this special aid provided with JES3 and ASP version 3.1.7 and above.

- JES3 Programming Notes and Restrictions, which contains necessary information that may not be included in other publications.

- Ordering, Distribution, and Publications Support, which provides the user with ordering and distribution procedures for the JES3 ICR, the basic and optional material lists, as well as the publications support for the JES3 ICR.

Required Publications

The following publications contain specific JES3 information:

- Operator's Library: OS/VS2 Reference (JES3), GC38-0226

- Operator's Library: OS/VS2 Remote Terminals (JES3), GC38-0228

- OS/VS2 System Programming Library: JES3 Debugging Guide, GC28-0703

- OS/VS2 System Programming Library: Initialization and Tuning Guide, GC28-0681

- OS/VS2 Introduction to JES3, GC28-0607

- OS/VS2 System Programming Library: JES3 Macro Instructions, GC38-0608

- OS/VS2 System Programming Library: Job Management, GC28-0627

- OS/VS2 JCL, GC28-0692

- OS/VS Message Library: JES3 Messages, GC38-1012

Related Publications

The following publications are referred to in the text:

- OS/VS Checkpoint/Restart, GC26-3784

- OS/VS Dynamic Support System, GC28-0640

- OS/VS Message Library: Routing and Descriptor Codes, GC38-1004

- OS/VS2 System Programming Library: Storage Estimates, GC28-0604

- OS/VS Message Library: VS2 System Codes, GC38-1008

- OS/VS2 System Generation Manual, GC26-3792

- OS/VS System Management Facilties (SMF), GC35-0004

- OS/VS System Modification Program (SMP), GC28-0673

- OS/VS2 Scheduler and Supervisor Logic, SY28-0624,-0625,-0626

The distribution tape for the independent component release of JES3 is
an unlabeled 9-track tape, written at either 1600 or 6250 BPI depending
on which was ordered. The basic and optional distribution tapes consist
of two files each, as follows:

BASIC

- File 1, which contains the installation macros, CR9926 and IRASM.
  For a description on how to code the CR9926 macro, see "Installation
  Macro Instruction". For this file, specify LRECL=80 and
  BLKSIZE=800. These macro instructions are required to create the job
  stream for processing file 2.

- File 2, which contains an unloaded partitioned data set with all the
  object modules required for JES3.

OPTIONAL

- File 1, which contains JES3 source (symbolics) modules in IEBUPDTE
  format as follows:

  ./ ADD NAME=IATxxxx

  For this file specify LRECL=80 and BLKSIZE=8000.

- File 2, which contains JES3 macros (in IEBUPDTE format) as follows:

  ./ ADD NAME=macro-name

  For this file specify LRECL=80 and BLKSIZE=8000.

INSTALLATION PROCEDURE

This chapter describes the preparation and procedure required to install JES3 in a VS2, Release 3 system. The System Modification Program (SMP) is used to install this independent component release. For information on SMP, see OS/VS System Modification Program (SMP), GC28-0673.

Due to changes in the system generation macros, the SMP.RESTORE function cannot be used during the installation of JES3. It is strongly recommended that you retain a back-up copy of your system and distribution libraries. You can use the IEHDASDR utility program to make a copy of your system and distribution libraries.

The time required to run the entire installation procedure is approximately 4 hours on the Model 158.

SYSTEM AND DISTRIBUTION LIBRARY REQUIREMENTS

Before JES3 can be installed in your system, you must verify that there is enough room in your system and distribution libraries to accommodate JES3 modules. Figure 1 shows the estimated additional space and directory blocks required in each library to be updated. (The space and directory blocks given are in addition to the VS2, Release 3 amounts.) It also shows the physical record size (BLKSIZE) and record format (RECFM) for each library updated. The installation procedure assumes that all data sets are online.

Library Name	Additional Space Used (in tracks)			Additional Directory Blocks Used	Physical Record Size			Record Format
	2314	3330	3340		2314	3330	3340	
SYS1.AGENLIB	5	4	5	2	1680	1680	1680	FB
SYS1.AOSBA	15	9	14	75	6144	6144	6144	U
SYS1.APROCLIB	1	1	1	1	7280	12960	8320	FB
SYS1.JES3LIB	15	9	14	75	7294	13030	8360	U
SYS1.PARMLIB	1	1	1	1	80	80	80	F
SYS1.PROCLIB	1	1	1	1	7280	12960	8320	FB
SYS1.LPALIB	10	6	9	30	7294	13030	8368	U

Figure 1. JES3 Estimated Space Requirements in System and Distribution Libraries

<u>SMP REQUIREMENTS</u>

SMP CATALOGED PROCEDURE

Before you can use SMP to install JES3, you must supply a procedure or
modify your own procedures to indicate to the SMP program where the
required SMP data sets are located, where the system and distribution
libraries to be updated are located, and where the scratch data sets are
located. The name of this procedure is required in the RECEIVE
parameters of the installation macro instruction. This procedure should
be cataloged in SYS1.PROCLIB. Separate procedures may be used for the
RECEIVE, APPLY, and ACCEPT SMP functions.

An example of the JCL and job stream to update SYS1.PROCLIB is as
follows:

```
//JES3SMP   JOB     . . .
//          EXEC    PGM=IEBUPDTE,PARM=NEW
//SYSPRINT DD      SYSOUT=A
//SYSUT2   DD      DSN=SYS1.PROCLIB,DISP=SHR,VOL=SER=SG2001,UNIT=3330
//SYSIN    DD      DATA
./         ADD     LIST=ALL,NAME=SMPREC
//SMPREC   PROC
//SMPSTEP  EXEC    PGM=HMASMP,PARM='DATE=U'
//SMPPTS   DD      DSN=MVSMPPTS,DISP=OLD
//SMPOUT   DD      SYSOUT=A
//SMPLOG   DD      DSN=MVSMPLOG,DISP=MOD
//SMPCDS   DD      DSN=MVSMPCDS,DISP=OLD
//NUCLEUS  DD      DSN=SYS1.NUCLEUS,DISP=OLD
//SVCLIB   DD      DSN=SYS1.SVCLIB,DISP=OLD
//LINKLIB  DD      DSN=SYS1.LINKLIB,DISP=OLD
//SMPMAC1  DD      DSN=SYS1.AOSBA,DISP=OLD,UNIT=2314,VOL=SER=DLIB02
//SMPMAC2  DD      DSN=SYS1.AGENLIB,DISP=OLD,UNIT=2314,VOL=SER=DLIB02
//SMPMAC3  DD      DSN=SYS1.APROCLIB,DISP=OLD,UNIT=2314,VOL=SER=DLIB01
//SYSLIB   DD      DSN=SYS1.AOSBA,DISP=OLD,UNIT=2314,VOL=SER=DLIB02
./         ADD     NAME=SMPACC
//SMPACC   PROC
//ACCEPT   EXEC    PGM=HMASMP
//SMPOUT   DD      SYSOUT=A
//SYSPRINT DD      SYSOUT=A
//SMPLOG   DD      DSN=MVSMPLOG,DISP=(MOD,KEEP),UNIT=2314,VOL=SER=SMPDSK
//SMPCDS   DD      DSN=MVSMPCDS,DISP=(OLD,KEEP),UNIT=2314,VOL=SER=SMPDSK
//SMPPTS   DD      DSN=MVSMPPTS,DISP=(OLD,KEEP),UNIT=2314,VOL=SER=SMPDSK
//SMPACDS  DD      DSN=MSMPACDS,DISP=(OLD,KEEP),UNIT=2314,VOL=SER=SMPDSK
//SYSUT1   DD      DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(2,1))
//SYSUT2   DD      DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(2,1))
//SYSUT3   DD      DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(2,1))
//SMPMAC1  DD      DSN=SYS1.AOSBA,DISP=OLD,UNIT=2314,VOL=SER=DLIB02
//SMPMAC2  DD      DSN=SYS1.AGENLIB,DISP=OLD,UNIT=2314,VOL=SER=DLIB02
//SMPMAC3  DD      DSN=SYS1.APROCLIB,DISP=OLD,UNIT=2314,VOL=SER=DLIB01
//SMPCNTL  DD      DDNAME=SYSIN
//AOSBA    DD      DSN=SYS1.AOSBA,UNIT=2314,VOL=SER=DLIB02,DISP=(OLD,KEEP)
//AGENLIB  DD      DSN=SYS1.AGENLIB,UNIT=2314,VOL=SER=DLIB02,
// DISP=(OLD,KEEP)
//APROCLIB DD      DSN=SYS1.APROCLIB,UNIT=2314,VOL=SER=DLIB01,
// DISP=(OLD,KEEP)
./         ENDUP
```

PROC SMPREC ASSUMES SMP DATA SETS ARE CATALOGED.

PROC SMPACC REFERENCES SMP DATA SETS VIA VOL AND UNIT.

The SMP data sets and system libraries are located on a 3330 direct-access device with a volume serial number of SG2001. The distribution libraries are located on 3330 direct-access devices with a volume serial number of DLI501 and DLI502. All of these data sets must be online when installing JES3.

SMP DATA SETS

Allocate null SMPACDS, SMPCDS, SMPPTS, and SMPLOG data sets ensuring
different names than those on your active SMP. Allow at least 15
cylinders for the SMPPTS data set in order to RECEIVE the JES3 system.
Make sure that only the new SMP data sets are used to install JES3. The
JES3 SMPACDS can be copied to the system SMPCDS after the stage II
system generation of JES3 has been applied to the current SMP data
sets. This is to update the SMPCDS to reflect the application of the
JES3 ICR.

When running the SMP job stream to install JES3, you must have the
SMPACDS, SMPCDS, SMPLOG, and SMPPTS data sets online. In addition, both
a NULL CDS and a NULL PTS is required. The estimated additional space
used by the SMP data sets are as follows:

SMP Data Set	Additional Space Used (in tracks)					Physical Record Size	Record Format
	2305-1	2305-2	2314	3330	3340		
SMPACDS	3	2	2	1	2	80	F
SMPCDS	9	5	8	4	8	80	F
SMPLOG	21	14	26	13	23	260	U
SMPPTS	9	5	8	4	8	80	FB

An example of the job stream needed to update the PEMAX field is as follows:

```
//USERJOB1   JOB      . . .
//STEP       EXEC     PGM=HMASMP
//SYSPRINT   DD       SYSOUT=A
//SMPOUT     DD       SYSOUT=A
//SMPLOG     DD       DISP=MOD,DSN=SMPLOG
//SMPCDS     DD       DISP=OLD,DSN=SMPCDS
//SYSUT1     DD       DISP=NEW,SPACE=(CYL,(1,1)),UNIT=SYSDA
//SMPCNTL    DD       *
           UCLIN.
           REP SYS SREL(Z030) NUCID(8) PEMAX(600).
           ENDUCL.
/*
```

The minimum value allowed for the PEMAX field in the SMPCDS data set is 350.

INSTALLATION MACRO INSTRUCTION

The installation macro instruction is in the first file of the
distribution tape and is used to create the job stream to install JES3.
The format of the installation macro instruction is:

Operation   Operand

```
CR9926     [ ACCEPT=procname ]
           [ ,APPLY=procname ]
           [ ,COMPACC=(ddname[ ,... ]) ]
           [ ,COMPAPP=(ddname[ ,... ]) ]
           [ ,CRTAPE={ 9/1600 | 9/6250 }]
           [ ,CRUNIT={ unit | 2400 }]
           ,PROCESS=(RECEIVE[ ,APPLY ][ ,ACCEPT ][ ,SCRATCH ]| ALL)
           [ ,FORCE={ NO | YES }]
```

```
[,PRNTCLS=A]
[,PNCHCLS=B]
[,RECEIVE=procname]
,REL=JESME
,WK1UNIT=unit,WK1VOL=volume
[,WK2UNIT=unit,WK2VOL=volume]
```

Note: Underscore indicates default.

where:

CR9926
   is the name of the installation macro instruction.

ACCEPT=procname
   specifies the procedure name for the SMP ACCEPT function. This
   parameter must be specified if PROCESS=ACCEPT or ALL. For
   information on the required cataloged procedure, see "SMP Cataloged
   Procedure."

APPLY=procname
   specifies the procedure name for the SMP APPLY function. This
   parameter must be specified if PROCESS=APPLY or ALL. For information
   on the required cataloged procedure, see "SMP Cataloged Procedure."

COMPACC=(ddname[,...])
   allows you to specify which distribution libraries you would like
   compressed before they are modified. The distribution libraries that
   cannot be specified in this parameter are SYS1.AGENLIB, SYS1.AHELP,
   SYS1.AMACLIB, and SYS1.ASAMPLIB. The ddname is the ddname required
   by SMP which is the lowest level index name in the target library.
   For example, use AOSBA for SYS1.AOSBA.

COMPAPP=(ddname[,...])
   allows you to specify which system libraries you would like
   compressed before they are modified. The system libraries that
   cannot be specified in this parameter are SYS1.HELP, SYS1.MACLIB, and
   SYS1.SAMPLIB. You should not compress SYS1.LINKLIB if you are
   modifying the current system. The ddname is the ddname required by
   SMP which is the lowest level index name in the target library. For
   example, use NUCLEUS for SYS1.NUCLEUS.

CRTAPE={9/1600|9/6250} is an optional parameter that specifies the
   number of tracks and the density of the distribution tape.

CRUNIT={unit|2400}
   is an optional parameter that specifies the type of tape unit on
   which the distribution tape is to be mounted. If CRUNIT is not
   coded, 2400 is the default.

PROCESS=(RECEIVE[,APPLY][,ACCEPT][,SCRATCH]|ALL)
   This parameter defines the functions to be performed in the created
   SMP job stream.

      RECEIVE - checks prerequisites and does all necessary updates for
                later SMP functions. This must be the first function
                performed before any other SMP function is executed. If
                this subparameter is specified, then RECEIVE=procname must
                also be specified.

      APPLY   - specifies putting modifications into the system libraries
                of the most recent level of the system. If this
                subparameter is specified, then APPLY=procname must also be
                specified.

ACCEPT   - specifies putting modifications into the distribution
           libraries. If this subparameter is specified, then
           ACCEPT=procname must also be specified.

SCRATCH - specifies that the data sets (on the direct-access device
           work volume) copied from file 2 of the distribution tape
           may be deleted after processing.

ALL   - specifies all of the above. If this subparameter is
           specified, then RECEIVE=procname, APPLY=procname, and
           ACCEPT=procname must also be specified.

FORCE={NO|YES}
    NO   - specifies that if prerequisites are not met such as the
           correct release number, the modification is not made to the
           system or distribution library.

    YES - specifies that if prerequisites are not met, the modification
           is still made to the distribution library.

PRNTCLS=A
    specifies the class associated with the output device to which you
    want your output data set written.

PNCHCLS=B
    specifies the class associated with the output device to which you
    want your output data set punched.

RECEIVE=procname
    specifies the procedure name for the SMP RECEIVE function. This
    parameter must be specified if PROCESS=RECEIVE or ALL is specified.
    For information on the required cataloged procedure, see "SMP
    Cataloged Procedure."

REL=JESM3
    specifies the independent component being added to your system.

WK1UNIT=unit,WK1VOL=volume
    are required parameters that identify a direct-access device and
    volume to be used for work space. The unit may be a device name, the
    actual device address, or a generic name; volume is the volume serial
    number. Ten cylinders are allocated on this volume.

WK2UNIT=unit,WK2VOL=volume
    are optional parameters that identify a second direct-access device
    and volume to be used for work space. The unit may be a device name,
    the actual device address, or a generic name. If these parameters
    are not specified, values for WK2UNIT and WK2VOL will be the same as
    for WK1UNIT and WK1VOL. You may expect better performance when work
    space is divided between volumes.

CODING THE INSTALLATION MACRO INSTRUCTION

Figure 2 shows the job control language and installation macro
instruction. This is required to create the SMP job stream to install
JES3.

The COPYMACS step in USERJOB1 causes file 1 from the distribution tape
(which contains the installation macro instructions) to be copied to
SYSUT2.

The ASMPARMS step in USERJOB1 causes the definition of the installation

macro instruction to be expanded by the assembler. The figure shows the
JCL required to punch the SMP job stream on cards; the output could
also, however, be directed to tape or direct-access volume.

```
//ICRLOAD  JOB  ,A,MSGLEVEL=(1,1),REGION=512K
//COPYMACS  EXEC PGM=IEBUPDTE,PARM=NEW
//SYSPRINT DD  DUMMY
//SYSUT2 DD  UNIT=SYSDA,DSN=&&CRIN,DISP=(NEW,PASS),
//    SPACE=(CYL,(2,1,5)),DCB=(LRECL=80,RECFM=FB,BLKSIZE=1680)
//SYSIN  DD  UNIT=580,DISP=(OLD,KEEP),VOLUME=SER=CRTAPE,LABEL=(1,NL),
//    DCB=(LRECL=80,RECFM=FB,BLKSIZE=800,DEN=2)
//ASMPARMS  EXEC ASMFC,PARM.ASM='DECK,NOLOAD,LINECNT=52'
//ASM.SYSLIB DD DISP=(OLD,DELETE),DSN=&&CRIN
//ASM.SYSPUNCH DD  UNIT=580,DISP=(NEW,KEEP),VOL=SER=ICTAPE,
//    LABEL=(,NL),DCB=(LRECL=80,RECFM=F,BLKSIZE=80,DEN=3)
//ASM.SYSIN  DD DATA
          REPRO
//LOADICR  JOB  ,A,REGION=512K,MSGLEVEL=(1,1)
    CR9926 CRTAPE=9/800,CRUNIT=580,PROCESS=(RECEIVE,ACCEPT,SCRATCH),   *
              RECEIVE=SMPREC,ACCEPT=SMPACC,PRNTCLS=A,                  *
              FORCE=YES,                                              *
              PNCHCLS=B,WK1UNIT=2314,WK1VOL=ASPUT6,WK2UNIT=2314,       *
              WK2VOL=ASPUT6,REL=JESME
          END
/*
```

Figure 2. Sample JCL and Installation Macro Instruction

The ASM.SYSIN DD statement identifies the remainder of the statements as
input. The REPRO instruction causes the statement that follows,
USERJOB2, to be reproduced in the created SMP job stream.

USERJOB2 executes the SMP job stream created in the ASMPARMS step in
USERJOB1. All the data sets to be updated and the required SMP data
sets should be online during this job. The job stream causes:

• File 2 to be copied from the distribution tape to a work volume.

• The RECEIVE function of SMP to be executed. This function checks
  prerequisites and does all necessary updates for later SMP
  functions. This occurs because PROCESS=RECEIVE is specified in the
  CR9926 macro.

• The FORCE function of SMP to be executed. This forces the
  appropriate modification to be made to the distribution libraries.

• The data sets on the work volume containing file 2 from the
  distribution tape to be deleted. This occurs because PROCESS=SCRATCH
  is specified in the CR9926 macro.

• The COMPAPP and COMPACC function of SMP to be executed. This
  compresses the indicated libraries.

• The generated job stream must be edited before it is run to install
  the JES3 ICR. The workmod data set must have the SPACE parameter
  filled in.

The following sample job stream was generated by the CR9926 macro. JCL
was added to scratch and allocate new null SMP data sets, and to update
the null CDS to accept the ICR. The //EXEC SMPREC and //EXEC SMPACC
cards also created by the CR9926 macro have been removed and the
procedure JCL inserted for purposes of illustration. The added JCL
statements are enclosed in boxes. Not all SMP control statements
generated are illustrated. If the installer wishes to use the

Procedures created by executing the example on page 9, the //EXEC cards
should not be removed and the procedure JCL should not be placed
inline.

```
//LOADICR   JOB     ,A,REGION=512K,MSGLEVEL=(1,1)
//          EXEC    PGM=IEHPROGM
//SYSPRINT DD       SYSOUT=A
//ONE       DD      UNIT=2314,VOL=SER=SMPDSK,DISP=OLD
//TWO       DD      UNIT=2314,VOL=SER=DLIB02,DISP=OLD
//SYSIN     DD      *
//*  THE FOLLOWING JCL WAS ADDED TO SCRATCH OLD DATA SETS AND
//*  ALLOCATE NEW NULL SMP DATA SETS AND DLIB (AOSBA)
  SCRATCH DSNAME=MVSMPCDS,VOL=2314=SMPDSK,PURGE
  SCRATCH DSNAME=MSMPACDS,VOL=2314=SMPDSK,PURGE
  SCRATCH DSNAME=MVSMPPTS,VOL=2314=SMPDSK,PURGE
  SCRATCH DSNAME=MVSMPLOG,VOL=2314=SMPDSK,PURGE
  SCRATCH DSNAME=SYS1.AOSBA,VOL=2314=DLIB02,PURGE
/*
//          EXEC    PGM=IEFBR14
//A         DD      DSN=SYS1.AOSBA,UNIT=2314,VOL=SER=DLIB02,DISP=(NEW,KEEP),
// SPACE=(CYL,(20,5,500))
//B         DD      DSN=MVSMPPTS,UNIT=2314,VOL=SER=SMPDSK,DISP=(NEW,KEEP),
// SPACE=(CYL,(20,5,1000))
//C         DD      DSN=MVSMPCDS,UNIT=2314,VOL=SER=SMPDSK,DISP=(NEW,KEEP),
// SPACE=(CYL,(20,5,1000))
//CC        DD      DSN=MSMPACDS,UNIT=2314,VOL=SER=SMPDSK,DISP=(NEW,KEEP),
// SPACE=(CYL,(20,5,1000))
//D         DD      DSN=MVSMPLOG,UNIT=2314,VOL=SER=SMPDSK,DISP=(NEW,KEEP),
// SPACE=(CYL,(20,5))
/*
//*  FOLLOWING JCL IS GENERATED BY INSTALL MACRO.
//MOVE      EXEC    PGM=IEBCOPY
//*
//*****  LOAD THE PACKAGING DATASET(S) TO A DASD WORK VOLUME
//*
//SYSUDUMP DD       SYSOUT=A
//SYSPRINT DD       SYSOUT=A
//SYSUT3    DD      UNIT=2314,VOL=SER=ASPUT6,
// SPACE=(TRK,(5,2))
//SYSUT4    DD      UNIT=2314,VOL=SER=ASPUT6,
// SPACE=(TRK,(5,2))
//PAK1      DD      UNIT=2314,VOL=SER=ASPUT6,DISP=(,KEEP),DSN=PAK1,
// SPACE=(CYL,(30,1,300))
//*  THE SPACE ALLOCATION FOR PAK1 MUST BE MADE IT IS NOT
//*  GENERATED BY THE INSTALL MACRO.
//TP1       DD      UNIT=580,VOL=SER=CRTAPE,DISP=(OLD,PASS),LABEL=(2,NL),
// DCB=DEN=2
//SYSIN     DD      *
  COPY INDD=TP1,OUTDD=PAK1
/*
//*  FOLLOWING SMP JCL WAS ADDED TO UPDATE THE NULL CDS TO
//*  RECEIVE THE ICR.
//S1        EXEC    PGM=HMASMP
//SMPOUT    DD      SYSOUT=A
//SMPLOG    DD      DSN=MVSMPLOG,DISP=MOD
//SMPCDS    DD      DSN=MVSMPCDS,DISP=OLD
//SMPPTS    DD      DSN=MVSMPPTS,DISP=OLD
//SMPCNTL   DD      DDNAME=SYSIN
//SYSUT1    DD      DISP=(,DELETE),UNIT=SYSDA,SPACE=(CYL,(10,10))
//SYSIN     DD      *
  UCLIN .
  ADD SYS SREL (Z030) NUCID (8) .
  ENDUCL .
/*
//P1        EXEC    PGM=HMASMP
```

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```
//SMPOUT     DD        SYSOUT=A
//SMPLOG     DD        DSN=MVSMPLOG,DISP=MOD
//SMPCDS     DD        DSN=MVSMPCDS,DISP=OLD
//SMPPTS     DD        DSN=MVSMPPTS,DISP=OLD
//SMPCNTL    DD        DDNAME=SYSIN
//SYSUT1     DD        DISP=(,DELETE),UNIT=SYSDA,SPACE=(CYL,(10,10))
//SYSIN      DD        *
    UCLIN .
    REP SYS PEMAX(500) .
    ENDUCL .
/*
//* FOLLOWING INLINE JCL ADDED TO RECEIVE THE ICR.
//*    IT IS USED IN PLACE OF //EXEC SMPREC PROC.
//SMPSTEP    EXEC      PGM=HMASMP,PARM='DATE=U'
//SMPPTS     DD        DSN=MVSMPPTS,DISP=OLD
//SMPOUT     DD        SYSOUT=A
//SMPLOG     DD        DSN=MVSMPLOG,DISP=MOD
//SMPCDS     DD        DSN=MVSMPCDS,DISP=OLD
//NUCLEUS    DD        DSN=SYS1.NUCLEUS,DISP=OLD
//SVCLIB     DD        DSN=SYS1.SVCLIB,DISP=OLD
//LINKLIB    DD        DSN=SYS1.LINKLIB,DISP=OLD
//SMPMAC1    DD        DSN=SYS1.AOSBA,DISP=OLD,UNIT=2314,VOL=SER=DLIB02
//SMPMAC2    DD        DSN=SYS1.AGENLIB,DISP=OLD,UNIT=2314,VOL=SER=DLIB02
//SMPMAC3    DD        DSN=SYS1.APROCLIB,DISP=OLD,UNIT=2314,VOL=SER=DLIB01
//SYSLIB     DD        DSN=SYS1.AOSBA,DISP=OLD,UNIT=2314,VOL=SER=DLIB02
//           DD        DSN=SYS1.AGENLIB,DISP=OLD,UNIT=2314,VOL=SER=DLIB02
//           DD        DSN=SYS1.APROCLIB,DISP=OLD,UNIT=2314,VOL=SER=DLIB01
//SMPCNTL    DD        DDNAME=SYSIN
//SYSUT1     DD        UNIT=SYSDA,SPACE=(1700,(600,100))
//SYSUT2     DD        UNIT=SYSDA,SPACE=(1700,(600,100))
//SYSUT3     DD        UNIT=SYSDA,SPACE=(1700,(600,100))
//SYSPRINT   DD        SYSOUT=A
//* FOLLOWING JCL AND SMP CONTROL STATEMENTS GENERATED BY THE
//*    INSTALL MACRO.
//PAK1       DD        UNIT=2314,VOL=SER=ASPUT6,DISP=SHR,DSN=PAK1
//SYSIN      DD        *
 RECEIVE  SELECT (UZ99926).
/*
//SMPPTFIN   DD        *
++ PTF (UZ99926) .
++ VER (Z030)
    /*JES3 PTF VS 2-3*/.
++   MOD (IATABMN) DISTLIB (AOSBA) LKLIB (PAK1).
++   MOD (IATABNA) DISTLIB (AOSBA) LKLIB (PAK1).
++   MOD (IATWSN) DISTLIB (AOSBA) LKLIB (PAK1).

                       .
++   MOD (IATWTN) DISTLIB (AOSBA) LKLIB (PAK1)
  TALIAS(IATWI11) .
++   MOD (IATWXN) DISTLIB (AOSBA) LKLIB (PAK1).
++   MOD (IATWYN) DISTLIB (AOSBA) LKLIB (PAK1).
++   MAC (SGIAT6PA) DISTLIB (AGENLIB) TXLIB (PAK1).
++   MAC (SGIAT5PR) DISTLIB (AGENLIB) TXLIB (PAK1).
++   MAC (SGIAT5JL) DISTLIB (AGENLIB) TXLIB (PAK1).
++   MAC (SGIAT4JL) DISTLIB (AGENLIB) TXLIB (PAK1).
++   MAC (SGIAT5SI) DISTLIB (AGENLIB) TXLIB (PAK1).
++   MAC (JESC) DISTLIB (APROCLIB) TXLIB (PAK1).
/*
//* FOLLOWING INLINE JCL ADDED TO ACCEPT THE JES3 ICR AND FORCE IT
//*    TO THE APPROPRIATE DLIBS. IT IS USED IN PLACE OF //EXEC SMPACC PROC.
//ACCEPT     EXEC      PGM=HMASMP
//SMPOUT     DD        SYSOUT=A
//SYSPRINT   DD        SYSOUT=A
//SMPLOG     DD        DSN=MVSMPLOG,DISP=(MOD,KEEP),UNIT=2314,VOL=SER=SMPDSK
//SMPCDS     DD        DSN=MVSMPCDS,DISP=(OLD,KEEP),UNIT=2314,VOL=SER=SMPDSK
```

```
//SMPPTS    DD      DSN=MVSMPPTS,DISP=(OLD,KEEP),UNIT=2314,VOL=SER=SMPDSK
//SMPACDS   DD      DSN=MSMPACDS,DISP=(OLD,KEEP),UNIT=2314,VOL=SER=SMPDSK
//SYSUT1    DD      DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(2,1))
//SYSUT2    DD      DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(2,1))
//SYSUT3    DD      DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(2,1))
//SMPMAC1   DD      DSN=SYS1.AOSBA,DISP=OLD,UNIT=2314,VOL=SER=DLIB02
//SMPMAC2   DD      DSN=SYS1.AGENLIB,DISP=OLD,UNIT=2314,VOL=SER=DLIB02
//SMPMAC3   DD      DSN=SYS1.APROCLIB,DISP=OLD,UNIT=2314,VOL=SER=DLIB01
//SMPCNTL   DD      DDNAME=SYSIN
//AOSBA     DD      DSN=SYS1.AOSBA,UNIT=2314,VOL=SER=DLIB02,DISP=(OLD,KEEP)
//AGENLIB   DD      DSN=SYS1.AGENLIB,UNIT=2314,VOL=SER=DLIB02,
// DISP=(OLD,KEEP)
//APROCLIB  DD      DSN=SYS1.APROCLIB,UNIT=2314,VOL=SER=DLIB01,
// DISP=(OLD,KEEP)
```

```
//* FOLLOWING JCL AND SMP CONTROL STATEMENTS GENERATED BY THE
//* ICR INSTALL MACRO.
//PAK1      DD      UNIT=2314,VOL=SER=ASPUT6,DISP=SHR,DSN=PAK1
//SYSIN     DD      *
ACCEPT SELECT (UZ99926) FORCE .
//* THE FORCE KEYWORD IS NOT INSERTED BY THE INSTALL MACRO.
//* IT MUST BE ENTERED BEFORE THE ICR IS INSTALLED.
/*
//CLEANUP EXEC PGM=IEFBR14,COND=EVEN
//*
//***** DELETE THE PACKAGING DATASET(S)
//*
//SYSUDUMP DD       SYSOUT=A
//CLEAN1    DD      DSN=PAK1,
// DISP=(OLD,DELETE),UNIT=2314,VOL=SER=ASPUT6
/*
```

For any SMP errors, see OS/VS System Modification Program (SMP). For any system errors, see OS/VS Message Library: VS2 System Messages and OS/VS Message Library: Routing and Descriptor Codes.

SYSTEM GENERATION

This section describes the procedure for performing a JES3 generation and a remote terminal processor program (RMT) generation in an OS/VS2 Release 3 system.

The process of generating JES3 is referred to as JES3 generation. The process of generating the remote terminal processor programs to operate in a JES3 system is referred to as RMT generation. Before you do a JES3 or RMT generation, you should be familiar with the Release 3 edition of the OS/VS2 System Generation Manual, GC26-3792.

PTF REQUIREMENTS

OS/VS2 Release 3 PTF number UZ00809 contains JES3 system generation support. It must be applied as a prerequisite to a JES3 generation.

DISTRIBUTION LIBRARY

Distribution data set SYS1.AOSBA (created during installation of ICR via SMP) must be cataloged in the generating system.

SYSTEM GENERATION MACRO INSTRUCTIONS

A new macro instruction, JES, has been defined and must be used for JES3 generation. In addition, a few new parameters and options have been added to existing system generation macro instructions. The JES macro instruction will be described in detail, whereas only the applicable parameters and options of the existing macro instructions will be described.

JES Macro Instruction

The JES macro instruction is used to specify the configuration for
JES3. The JES macro supplies information to generate a basic JES3
initialization deck which is added as the JES3INxx member of
SYS1.PARMLIB, where xx is equal to the PARMID parameter. In addition
the JES macro causes JCL to be created which, during Stage II will be
used to copy the JES3 member from SYS1.APROCLIB to SYS1.PROCLIB and copy
and/or linkedit the appropriate object modules into SYS1.LPALIB and
SYS1.JES3LIB.

The following keyword parameters are used for the JES macro instruction:

```
[ LOCLJES={NO|YES}]
[ PROCID={JES3|procedure-name}]
[ PARMID={00|parmlib-member-default}]
[ RDR=({00C|rdr-device-address},...)]
[ PRT=(({00E|prt-device-address},{1403|prt-device-type},
      {PN|print-train}),(...))]
[ PUN=({00D|punch-device-address},...)]
[ CNS=(({01F|console-device=address},{3215|console-type}),(...))]
 D3330=(device-address,...,(device-address,n),...)
[ D2314=(device=address,...,(device-address,n),...)]
[ T3400=(device-address,...,(device-address,n),...)]
[ T2400=(device-address,...,(device-address,n),...)]
```

Note: Underscore indicates default.

The keyword definitions follow:

LOCLJES - defines whether or not the system being generated will be used
   only as a JES3 local processor.

   If LOCLJES=NO is specified, a JES3 initialization deck is added to
   SYS1.PARMLIB (see the PARMID keyword below for member names), the
   JES3 object program is copied from the JES3 distribution library to
   the SYS1.JES3LIB data set (this data set must be cataloged), and the
   JES3 procedure is copied from the JES3 distribution library to
   SYS1.PROCLIB (see the PROCID keyword below for the member name).

   If LOCLJES=YES is specified, only the JES3 procedure is copied from
   the JES3 distribution library. However SYS1.JES3LIB must be
   cataloged prior to executing JES3.

PROCID - defines the name of the JES3 procedure in SYS1.PROCLIB. This
   name must correspond with the name defined as PRIJOB on the SCHEDULR
   system generation macro instruction.

PARMID - defines the suffix to the SYS1.PARMLIB member name into which
   the JES3 initialization deck will be added. PARMID can be
   alphanumeric but must consist of 2 characters.

RDR,PRT,PUN,CNS - defines the unit record devices for JES3. JES3 device
   names are assigned to each device, for example, RDR=(00C,01C) would
   cause the name RD00C to be assigned to 00C, and RD01C to 01C.
   Note: RDR and PUN must be 2540 type devices.

D3330,D2314,T3400,T2400 - defines the direct access storage devices and
   tape devices to be managed by JES3. A string of device addresses can
   be defined by (address,n) where n is the number of sequential
   addresses to be assigned, for example D3330=((130,8),(230,8)) defines
   3330 DASD devices at addresses 130-137 and 230-237. The D3330
   keyword is required for JES3.

CONSOLE Macro Instruction

Each JES3 console should be generated as a device on each processor
(where physically possible) for dynamic system interchange (DSI). In
addition, each JES3 console with input capability should be generated as
a multiple console support (MCS) secondary console on each processor.
Where this is not possible, dummy secondary consoles should be defined.
MCS secondary consoles are specified in the CONSOLE macro during system
generation. Dummy secondary consoles are generated by specifying
TYPE=JES on the CONSOLE macro. When a dummy console is defined using
TYPE=JES the only other CONSOLE parameter which is accepted for that
dummy console is VALCMD=.

Generating a device creates a unit control block (UCB). Generating a
secondary console creates a unit control module (UCM) entry. JES3
requires a UCB for each console on the global processor in order to
physically issue I/O. If a JES3 console operator wishes to communicate
with MVS on a given processor, then a UCM entry must exist on that
processor for that console. For example, a UCM entry must exist on the
processor named SY2 for console 040, if the operator at that JES3
console wanted to issue the following command: *T SY2 D A. The command
would then be processed and the response sent back (across the
channel-to-channel (CTC) adapter, if necessary) to the console at 040.

The UNIT parameter of the CONSOLE initialization card specifies an
address on each processor for each console. If there is a UCM on the
processor for that address, then the console can communicate with that
processor. It makes no difference what the UCM looks like; it may have
been created for graphic console, but is being used by a JES3 2740. The
UCM is only used for routing of messages.

If it is not physically possible to generate real secondary consoles on
a given processor due to configuration restraints, then dummy UCM
entries should be generated. Enough UCM entries should be generated on
each processor to handle the maximum number of JES3 consoles on any
given system. If JES3 consoles are added to the configuration after the
JES3 generation has been completed, they may be used as JES consoles
without doing a new JES3 generation by simply adding a console card to
the JES3 initialization deck. These consoles will not, however, be able
to communicate with MVS, unless extra dummy UCM entries had previously
been generated.

Two JES3 consoles, one with a real UCM and the other with a dummy UCM,
will have identical capabilities communicating with JES and MVS. The
difference is that the former may be used as a MCS console, at times,
while the latter may not.

On the global processor, a console and its corresponding UCM may not be
used by MCS and JES3 simultaneously. The console must be offline to MCS
before JES3 is initialized for JES3 to allocate the device. The only
exception is for terminals similar to the 1052 (such as the 1052, 3210,
and 3215), which may be shared. In this case, however, care must be
taken to insure that MCS and JES3 do not both issue the same message to
the same console.

On a local processor, the UCM may be shared with an active MCS console
on that processor and a JES3 console on the global processor without any
problem. Any write-to-operator (WTO) message issued on the local for
the UCM in question will be sent both to the active MCS console on the
local and the JES3 console on the global.

DATASET Macro Instruction

Some or all of the system data sets can be defined either during system generation, by using the DATASET macro, or before system generation, by using JCL and/or the access method services. This section contains information about the JES3LIB system data set and about defining it using the DATASET macro.

The DATASET macros that you code with a SPACE parameter are used during system generation to allocate and define the system data sets. During Stage I, the macros are assembled and expanded into the job control language and commands required to execute the access method services. During Stage II, the expansion is used to allocate the specified space on system volumes and catalog the system data sets in the master catalog. The first system data set that is created (if specified in a DATASET macro) is the master catalog. Then, space is allocated to the remaining system data sets and they are cataloged. Also, if you specified an index in the GENERATE macro other than SYS1, all of the system data sets are renamed during Stage II from the index you specified to SYS1.

The following is an example on how to define the JES3LIB system data set using the DATASET macro.

```
JES3LIB DATASET JES3LIB,VOL=(SG2001,2314),SPACE=(CYL,(15,2,75))
```

The following describes the SYS1.JES3LIB data set.

SYS1.JES3LIB is a partitioned data set that contains all JES3 modules except the subsystem interface modules that reside in SYS1.LPALIB. It is required if running JES3.

This system data set must be on a direct-access volume, which can be the system residence volume, and must be cataloged. Secondary space can be allocated. If this system data set is used, a DATASET macro must be specified for it, even if it has been pre-defined. If it has been pre-defined, omit the SPACE parameter in the DATASET macro. By omitting the SPACE parameter, space will not be allocated.

It is recommended that the following DCB subparameters be specified:

```
RECFM=U,BLKSIZE=14136 for 2305 model 1,
               14660 for 2305 model 2,
                7294 for 2314/2319,
               13030 for 3330/3333, or
                8368 for 3340
```

The Access Method Services or JCL can be used for cataloging.

IODEVICE Macro Instruction

In a JES3 loosely-coupled multiprocessing configuration (for example, a global processor connected to local or ASP main processors through the CTC adapter), the UNIT=CTC option must be specified for all CTC devices.

SCHEDULR Macro Instruction

JES3 is identified as the primary job entry subsystem by specifying
PRISUB=JES3 on the SCHEDULR macro instruction, and is generated by
specifying the JES macro instruction.

UNITNAME Macro Instruction

The interface between MVS allocation and the main device scheduler
function of JES3 (MDS) depends on MVS being able to distinguish class 3
devices from class 1 and 2. Class 1 devices are those on which volume
mounting is controlled by MDS. These devices will have the UCBJES3 bit
on in their UCB's. Class 2 and 3 devices will not have the UCBJES3 bit
on. The Class 2 devices are described in JES3 initialization DEVICE
cards (as are Class 1) and represent devices on which permanently
resident volumes are mounted. Since no volume mounting is required MDS
provides data set integrity by managed access to nontemporary data sets
on these volumes. Class 3 devices are those unknown to JES3. The MVS
allocation routines require that the class 3 devices be contained within
their own MVS subgeneric groups (that is, class 3 devices cannot be in a
subgeneric group which contains class 1 or class 2 devices). For
completeness a brief desription of subgeneric groups follows:

Subgeneric Groups

JES3 devices can be grouped by using generic and esoteric names.

Generic names are defined in the following manner:

- The IODEVICE system generation macro instruction describes the
  characteristics of an I/O device and its system requirements. The •
  UNIT parameter specifies the generic device type (for example,
  3330).

- The UNITNAME system generation macro instruction is used to assign
  a name to a collection of I/C devices. The NAME parameter
  specifies the esoteric name to be assigned to the group of devices
  (for example, SYSDA). The UNIT parameter specifies the addresses
  of the devices that will be recognized by the assigned name. In
  order for a device to be referred to by other than its generic
  name, the device must be specified in the UNITNAME macro
  instruction.

Generic device types are divided into subgeneric groups as illustrated
in Figure 3. The existence of subgeneric groups allows MVS allocation to
serialize on a subset of units within a generic. For example, using the
figure below, when 3330A is requested, allocation needs to reserve only
device group #4, rather than all 3330 devices. As a result, more than
one allocation can process the same generic group as long as the
allocations require different subgeneric groups within that generic.

The guidelines by which the system determines subgeneric groups are:

- If a user-assigned name (for example, SYSDA) includes different
  generic device types, the units in each generic belong to different
  subgeneric groups.

- If a user-assigned name (for example 3330A) includes only a subset of the units in a generic, that subset is a distinct subgeneric group.

- The intersection of any subgroups is a distinct subgeneric group.

For a more detailed discussion of MVS allocation and device groups refer to Common Allocation Control in OS/VS2 Scheduler and Supervisor Logic, SY28-0625.

Generic Device Type	2400	2314			3330	
Group Names defined in UNITNAME Sysgen cards		SYSDA			SYSDA 3330A	3330B
Unit Address	181 182	131	132	133 134	151 152	153 154
Subgeneric Groups	#1	#2	#3	#2	#4	#5

Figure 3. Subgeneric Groups

When an esoteric or generic name is to be managed by JES3, one or more of the subgeneric groups that comprise that name must be defined to JES3 via initialization DEVICE cards. The only restriction is that if one unit of a subgeneric group is defined to JES3, then all the units in that subgeneric must be defined. This will prevent a subgeneric group from containing both class 3 devices and class 1 (or class 2) devices. Not all of the subgeneric groups of a given name have to be defined to JES3, and therefore, an esoteric or generic name can contain class 1, 2 and 3 devices where a subgeneric group cannot. If the number of class 1 and 2 devices is subject to change (that is, on a shift basis) or future expansion is anticipated, additional names should be generated for each desired combination.

SAMPLE JES3 PROCESSING TO RUN GLOBAL ONLY

The following is a sample JES3 procedure.

```
//IEFPROC   EXEC PGM=IATINTK
//STEPLIB   DD DSN=SYS1.JES3LIB,DISP=OLD
//SPOOL1    DD DSN=SYS1.JESPACE,DISP=OLD
//CHKPNT    DD DSN=SYS1.JES3CKPT,DISP=OLD
//JES3OUT   DD UNIT=004,UCS=P11,FCB=8
//JES3SNAP  DD UNIT=AFF=JES3OUT
//SYSABEND  DD UNIT=AFF=JES3OUT
//JESABEND  DD UNIT=AFF=JES3OUT
//IEFDATA   DD DUMMY
//IEFRDER   DD DUMMY
//IEFPDST   DD DSN=SYS1.xxxx,DISP=SHR
//JES3IN    DD DSN=SYS1.PARMLIB(JES3INC0),DISP=SHR
```

where: xxxx is an allocated and unused data set (not PROCLIB)

RMT GENERATION

The procedure to generate OS/VS2 JES2 RMT programs or workstations in an
active JES3 system follows:

1. Make sure that the SYS1.AOSH1, SYS1.AOSH2 and SYS1.AMACLIB data sets
   are cataloged in the generating system.

2. Prepare the options deck for the workstation to be generated.

3. Issue the JES3 command: *X INTRDR

4. Issue the command: S JES2GEN,MODULE=JES3JOB

   System Response: 00 $HASP900 ENTER JES2GEN OPTION CHANGES, CARDS,
                     UPDATE OR END.

   Enter: R 0,&BSCCPU=YES

   System Response: 00 &BSCCPU SET TO YES

   Enter: R 0,SELECT=HRTPOPTS

   System Response: 00 SELECT SET TO HRTPOPTS

   Enter: R 0,END

   System Response: 00 $HASP900 ENTER JES2GEN OPTION CHANGES, CARDS,
                     UPDATE OR END.

   Enter: R 0,&MLBFSIZ=value

       This parameter is used to specify the size of the line
       transmission buffer that the workstation will use to send data to
       and receive data from JES3. The buffer size chosen must be the
       same as that specified on the RJPTERM card defining this terminal
       to JES3.

   System Response: 00 &MLBFSIZ SET TO value

   Enter: R 0,SELECT=HRTPxxxx

xxxx is either of B360, LOAD, SYS3 or 1130, depending on the type
of workstation to be generated.

System Response: 00 SELECT SET T) HRTPxxxx

Enter: R 0,END

System Response: 00 $HASP950 PLACE RMTGEN OPTIONS IN UNIT yyy AND
                REPLY GO CR CANCEL

yyy is the unit address of the card reader. You should make sure
that the specified card reader is not being used for any other
function (a JES3 card reader, for example). You should clear any
cards remaining in the card reader, load the card reader with the
RMT parameters, and

Enter: R 0,GO

If no RMT generations are being performed,

Enter: R 0,CANCEL

Note that the options deck can only specify generation of that type
of workstation program that you selected earlier. You may generate
several workstations of that type provided they all use the same line
buffer size. If you need to generate workstations of several types
and buffer sizes rerun step 4 as many times as necessary.

5. Save the assembly listings and the card decks produced.

6. After all remote generations are completed,

Enter: *C INTRDR

Sample of a JES2GEN procedure used in a BMT generation:

```
//JES2GEN    PROC   CLASS=A,MODULE=JES2JCB
//GENER      EXEC   PGM=IEBGENER
//SYSPRINT   DD     SYSOUT=A
//SYSUT1     DD     DSN=SYS1.PROCLIB(&MODULE),DISP=SHR
//SYSUT2     DD     SYSOUT=(&CLASS,INTRDR),DCB=BLKSIZE=80
//SYSIN      DD     DUMMY
```

Sample JES3JOB SYS1.PROCLIB member:

```
//JES3JOB    JOB    'GENERATE OS/VS2 JES2 REMOTE WORKSTATIONS',
//                  MSGLEVEL=(1,1),CLASS=A
//HASPOPT    EXEC   PGM=JESIIGEN,REGION=128K
//STEPLIB    DD     DSN=SYS1.AOSH1,DISP=SHR
//GENIN      DD     UNIT=2540,DCB=BLKSIZE=80
//HASPPTF    DD     DSN=SYS1.AOSH2(HASPPTF),DISP=SHR
//SYSIN      DD     DSN=SYS1.AOSH2(HASPSRC),DISP=SHR
//HASPSRC    DD     DSN=&&C(SACTIVE),DISP=(,PASS),UNIT=SYSDA,
//                  SPACE=(CYL,(12,,2)),DCB=SYS1.MACLIB
//PTFPRINT   DD     SYSOUT=A
//SYSPRINT   DD     SYSOUT=A
//SYSUDUMP   DD     SYSOUT=A
//HASPGEN    EXEC   PGM=JESIIGEN,REGION=128K
//STEPLIB    DD     DSN=SYS1.AOSH1,DISP=SHR
//GENIN      DD     UNIT=2540,DCB=BLKSIZE=80
//HASPPTF    DD     DSN=SYS1.AOSH2(HASPPTF),DISP=SHR
//SYSIN      DD     DSN=SYS1.AOSH2(HASPSRC),DISP=SHR
//HASPSRC    DD     DSN=&&C(SACTIVE),DISP=(OLD,PASS)
//PTFPRINT   DD     SYSOUT=A
//SYSPRINT   DD     SYSOUT=A
//SYSUDUMP   DD     SYSOUT=A
//RMTGEN     EXEC   PGM=EXRMTGEN,REGION=256K,COND=((0,LT,HASPGEN),EVEN)
//STEPLIB    DD     DSN=SYS1.AOSH1,DISP=SHR
//GENPDS     DD     DSN=&&C(HRTPCPTS),DISP=(OLD,DELETE)
//SYSIN      DD     UNIT=SYSDA,SPACE=(3200,(200,50),,,ROUND),
//                  DCB=(RECFM=FBS,LRECL=80,BLKSIZE=3200)
//SYSLIB     DD     DSN=SYS1.AMACLIB,DISP=SHR
//SYSUT1     DD     DSN=&&SYSUT1,UNIT=SYSDA,SPACE=(1700,(600,300))
//SYSUT2     DD     DSN=&&SYSUT2,UNIT=SYSDA,SPACE=(1700,(600,300))
//SYSUT3     DD     DSN=&&SYSUT3,UNIT=SYSDA,SPACE=(1700,(600,300))
//SYSPRINT   DD     SYSOUT=A
//SYSPUNCH   DD     SYSOUT=B
//SYSGO      DD     UNIT=SYSDA,SPACE=(400,(100,50),,,ROUND),
//                  DCB=(RECFM=FBS,LRECL=80,BLKSIZE=400)
//CARDIN     DD     UNIT=2540,DCB=BLKSIZE=80
```

This chapter supplies the information needed to estimate the OS/VS2 Release 3 storage requirements for the JES3 system. It also provides information about the auxiliary space necessary to contain the JES3 system.

Figure 4, Storage Estimates by Module, provides a table of all JES3 modules, their location, their estimated size, and related comments. Figure 5, Storage Obtained Using AGETMAIN, provides a table of JES3 GETMAIN usage and associated algorithms needed to estimate actual storage use. The JES3 storage estimates figures for OS/VS2 use the following headings:

Name - the JES3 module or data area name.

Loc - the storage location of the module or data area. The following abbreviations are used to identify the location:

    PLPA   pageable link pack area
    JES3   JES3 subpools 0, 251, 252

    Otherwise, the storage subpool number is given.

Size - the storage size in decimal. If not specified, the size is determined dynamically based on the functions specified in the "JES3 Initialization/SYSGEN algorith: or other considerations" field.

    Note: In Figure 5, a basic siz: value is provided in order to incorporate the GETMAIN information into the JES3 storage estimate summary. The size value is subject to large variations based on the indicated algorithms.

Fix - Y indicates the module is page fixed; N indicates it is not.

```
r--------T-------T-------T---T-------------------------------------------------------------------1
|       |      |      |   |JES3 System Generation, Initialization,                             |
|Module |Size  |Loc   |Fix|or Other Variable Considerations                                    |
+-------+------+------+---+-------------------------------------------------------------------+
|IATABMN|05656|JES3| N |If JES3 ABENBS, or *X DC with ABEND                                |
|IATABNA|00800|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABNB|03568|JES3| N |If JES3 ABENDS, or *X LC with ABEND                               |
|IATABNC|01080|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABND|01448|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABNE|02008|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABNF|01368|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABNG|01256|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABNH|01000|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABNI|00456|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABNJ|00944|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABNK|01120|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABNL|01520|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABNM|03064|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABNN|02952|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABNX|03896|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABNY|03456|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABNZ|01616|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABN0|03072|JES3| N |                                                                  |
|IATABN1|01720|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABN2|01432|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABN3|02008|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABN4|02504|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABN5|00752|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABN6|02080|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABN7|01680|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABN8|01912|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABN9|02336|JES3| N |If JES3 ABENDS, or *X DC with ABEND                               |
|IATABPR|01752|JES3| N |                                                                  |
|IATADJP|07360|JES3| N |If *X JESAID                                                      |
|IATCNCN|01736|JES3| N |                                                                  |
|IATCNDQ|00840|JES3| N |                                                                  |
|IATCNIC|00816|JES3| N |                                                                  |
|IATCNIN|05200|JES3| N |                                                                  |
|IATCNMR|03184|JES3| N |                                                                  |
|IATCNRM|01256|JES3| N |                                                                  |
|IATCNSL|03688|JES3| N |                                                                  |
|IATCNSV|03064|JES3| N |                                                                  |
|IATCNTR|00576|JES3| N |                                                                  |
|IATCN03|00584|JES3| N |Loaded if 1403/1443/3211 defined                                  |
|IATCN40|02008|JES3| N |Loaded if 2740 defined                                            |
|IATCN52|00752|JES3| N |Loaded if 1052/3210/3215 defined                                  |
|IATCN53|00592|JES3| N |Loaded if 1053 defined                                            |
|IATCN60|00960|JES3| N |Loaded if 2260 defined                                            |
|IATCN66|01408|JES3| N |Loaded if 3066/5450 defined                                       |
|IATCN77|02264|JES3| N |Loaded if 3277 defined                                            |
|IATCN84|00720|JES3| N |Loaded if 3284/3286/3288 defined                                  |
|IATCN95|01760|JES3| N |Loaded if 2250/3060 defined                                       |
|IATDCDT|00648|JES3| N |                                                                  |
|IATDCNC|02776|JES3| N |                                                                  |
|IATDCND|00664|JES3| N |                                                                  |
|IATDCNO|00816|JES3| N |If DJ called in DJC mode                                          |
|IATDCPC|00240|JES3| N |                                                                  |
|IATDCUP|03160|JES3| N |                                                                  |
|IATDJDT|02816|JES3| N |If *X DJ                                                          |
|IATDJIN|08064|JES3| N |If DJ called in "IN" mode                                         |
L--------+------+------+---+-------------------------------------------------------------------J
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Figure 4.   Storage Estimates by Module (Part 1 of 6)

Module	Size	Loc	Fix	JES3 System Generation, Initialization, or Other Variable Considerations
IATDJOE	02912	JES3	N	If *X DJ
IATDJO1	05824	JES3	N	If DJ called in "OUT" mode
IATDLIN	00808	JES3	N	While initializing deadline queue
IATDLND	00992	JES3	N	If deadline scheduling is in use
IATDLTM	01488	JES3	N	If deadline job changes status
IATDLWK	00280	JES3	N	If deadline scheduling is in use
IATDMDK	03648	PLPA	N	
IATDMDM	01912	PLPA	N	
IATDMDS	00928	PLPA	Y	
IATDMDT	04880	JES3	N	
IATDMEB	05040	PLPA	N	
IATDMER	05272	JES3	N	If spool I/O error has occurred
IATDMFR	01880	PLPA	N	
IATDMGE	01728	JES3	N	
IATDMJA	01800	JES3	N	
IATDMNC	06048	JES3	N	
IATDMTK	03616	JES3	N	
IATDSI1	00480	JES3	N	If *X DSI
IATFSIO	03616	JES3	N	If *X FSIO
IATFSLG	05592	JES3	N	If JES3 ABENDS
IATFSRC	00520	JES3	N	If JES3 ABENDS
IATFSTS	01016	JES3	N	If *X FSTS
IATGRAN	03520	JES3	N	
IATGRDR	03488	JES3	N	
IATGRCD	02520	JES3	N	If *X DSP
IATGRCP	01416	JES3	N	
IATGRCT	03296	JES3	N	
IATGRED	00872	JES3	N	If *F E,DUMP=--
IATGRGM	00280	JES3	N	
IATGRGS	01896	JES3	N	
IATGRGU	02512	JES3	N	
IATGRG1	01680	JES3	N	
IATGRHI	00184	JES3	N	
IATGRJA	03352	JES3	N	
IATGRJC	05072	JES3	N	
IATGRJN	00808	JES3	N	
IATGRJR	01464	JES3	N	
IATGRJS	07096	JES3	N	
IATGRLD	03856	JES3	N	
IATGRLG	00320	JES3	N	
IATGROF	00824	JES3	N	
IATGRPR	01976	JES3	N	
IATGRPT	06904	JES3	N	
IATGRSQ	04096	231	N	
IATGRSV	00472	JES3	N	
IATGRTX	01024	231	N	
IATGRVT	02184	JES3	N	
IATGRWD	01064	JES3	N	
IATGRWJ	07448	JES3	N	
IATGRWP	01664	JES3	N	If MVS TSO output or external writer request
IATGRWQ	02456	JES3	N	If MVS TSO STAT-CNCL-VALIDATE request
IATGSC1	00392	JES3	N	
IATIIAM	01080	JES3	N	
IATIICA	00920	JES3	N	
IATIICC	01608	JES3	N	

Figure 4.   Storage Estimates by Module (Part 2 of 6)

Module	Size	Loc	Fix	JES3 System Generation, Initialization, or Other Variable Considerations
IATIICM	02528	JES3	N	
IATIICT	00544	JES3	N	One per CI/RI subtask
IATIICX	01248	JES3	N	One per CI/RI subtask
IATIIDR	11088	JES3	N	One for each job active in CI/RI
IATIIDT	01472	JES3	N	One for each job active in CI/RI
IATIIDY	02880	JES3	N	
IATIIEN	01456	JES3	N	
IATIIFD	00224	JES3	N	
IATIIII	01880	PLPA	N	
IATIIPR	06952	JES3	N	
IATIIPO	06008	JES3	N	
IATIIP1	04408	JES3	N	
IATIIP2	01232	JES3	N	
IATIIP3	01784	JES3	N	
IATIIRC	01136	JES3	N	
IATIIRM	02656	JES3	N	
IATIIRX	03544	JES3	N	One per CI/RI subtask
IATIISB	04288	JES3	N	One for RI, one for CI
IATIISV	01456	JES3	N	
IATIJDA	01216	JES3	N	If *X IJP
IATIJDR	01432	JES3	N	If *X IJP
IATIJEN	02520	JES3	N	If *X IJP
IATIJIN	00872	JES3	N	If *X IJP
IATIJST	00616	JES3	N	If *X IJP
IATIMDL	00040	JES3	N	
IATINAL	03776	JES3	N	JES3 initialization
IATINAT	02360	JES3	N	JES3 initialization
IATINCD	07936	JES3	N	JES3 initialization
IATINCK	03520	JES3	N	JES3 initialization
IATINCW	00816	JES3	N	JES3 initialization
IATINC1	02304	JES3	N	JES3 initialization
IATINC2	05168	JES3	N	JES3 initialization
IATINDT	02260	JES3	N	JES3 initialization
IATINGL	07688	JES3	N	JES3 initialization
IATINGN	05280	JES3	N	JES3 initialization
IATINIC	04008	JES3	N	JES3 initialization
IATINII	06936	JES3	N	JES3 initialization
IATINIO	05544	JES3	N	JES3 initialization
IATINIT	00792	JES3	N	
IATINJB	02720	JES3	N	JES3 initialization
IATINMD	06560	JES3	N	JES3 initialization
IATINM1	07672	JES3	N	JES3 initialization
IATINM2	07656	JES3	N	JES3 initialization
IATINM3	03728	JES3	N	JES3 initialization
IATINM4	02040	JES3	N	JES3 initialization
IATINPK	00868	JES3	N	JES3 initialization
IATINQU	00984	JES3	N	JES3 initialization
IATINRN	04424	JES3	N	JES3 initialization
IATINRT	06592	JES3	N	JES3 initialization
IATINR1	01760	JES3	N	JES3 initialization
IATINR2	01536	JES3	N	JES3 initialization
IATINSV	01272	JES3	N	JES3 initialization
IATINTK	01832	JES3	N	
IATIQAC	02680	JES3	N	If *I A or *I C or *I Q or *I R
IATIQBK	00936	JES3	N	If *I B,--

Figure 4.   Storage Estimates by Module (Part 3 of 6)

Module	Size	Loc	Fix	JES3 System Generation, Initialization, or Other Variable Considerations
IATIQCN	02736	JES3	N	Loaded for *I O ... command
IATIQDC	01216	JES3	N	Loaded for *I N ... command
IATIQDL	00760	JES3	N	If *I L,--
IATIQDS	02864	JES3	N	
IATIQDV	03040	JES3	N	
IATIQDX	00960	JES3	N	Loaded when inquiry processed
IATIQGM	02920	JES3	N	If *I G,----
IATIQMR	00912	JES3	N	
IATIQOS	06192	JES3	N	
IATIQQU	01640	JES3	N	
IATIQRJ	02304	JES3	N	
IATISCR	01224	JES3	N	If *X CR
IATISDL	02496	JES3	N	If //*MAIN DEADLINE=--
IATISDR	00880	JES3	N	If *X DR
IATISDS	00920	JES3	N	If //*DATASET
IATISDT	01320	JES3	N	
IATISDV	02968	JES3	N	
IATISEN	04824	JES3	N	
IATISFR	03104	JES3	N	If //*FORMAT
IATISIR	00776	JES3	N	If internal reader is active
IATISJE	03000	JES3	N	
IATISJL	01888	JES3	N	
IATISLG	03240	JES3	N	
IATISMN	05976	JES3	N	If //*MAIN
IATISNT	03424	JES3	N	If //*NET
IATISPR	02280	JES3	N	If //*PROCESS
IATISRD	04096	JES3	Y	If *X CR, TR, or DR
IATISRI	04488	JES3	N	If *X CR, TR, or DR
IATISRL	05486	JES3	N	If *X CR, TR, or DR
IATISRP	02192	JES3	N	If *X CR, TR, or DR
IATISTR	01352	JES3	N	IF *X TR
IATLVIN	01616	JES3	N	
IATLVLC	02200	000	N	
IATLVVR	03728	JES3	N	
IATMDAL	02576	JES3	N	
IATMDBK	01872	JES3	N	
IATMDDA	02688	JES3	N	
IATMDDR	03744	JES3	N	
IATMDFE	01408	JES3	N	
IATMDIQ	06280	JES3	N	
IATMDMO	02728	JES3	N	
IATMDRS	01880	JES3	N	
IATMDSB	09808	JES3	N	
IATMDSL	03816	JES3	N	
IATMDVE	02416	JES3	N	
IATMOCN	02184	JES3	N	Loaded for *F C ... command
IATMOCP	01536	JES3	N	If *F J=---,C or *F J=---,P=-
IATMODC	01920	JES3	N	Loaded for *F N ... command
IATMODL	01296	JES3	N	If *F L,--
IATMODV	03464	JES3	N	
IATMODX	00968	JES3	N	Loaded when MODIFY command processed
IATMOGM	03520	JES3	N	If *F G,----
IATMOHR	01272	JES3	N	If *F Q,H or *F Q,R
IATMOMR	00736	JES3	N	Loaded for *F M ... command
IATMOOS	06680	JES3	N	

Figure 4. Storage Estimates by Module (Part 4 of 6)

Module	Size	Loc	Fix	JES3 System Generation, Initialization, or Other Variable Considerations
IATMORJ	02496	JES3	N	
IATMOTB	01816	JES3	N	If *F E,--
IATMOVR	03544	JES3	N	Loaded for *; V (*VARY) command
IATMSCD	02048	JES3	N	
IATMSCK	00768	JES3	N	If *F G,---,(HK
IATMSDT	00112	JES3	N	
IATMSGC	01024	JES3	N	
IATMSIN	02152	JES3	N	
IATMSIO	04968	JES3	N	
IATMSIP	06920	JES3	N	
IATMSMC	01840	JES3	N	
IATMSMI	03576	JES3	N	
IATMSMN	04272	JES3	N	
IATMSMS	06936	JES3	N	
IATMSMV	06032	JES3	N	
IATMSO1	02056	JES3	N	
IATMSPS	06040	JES3	N	
IATMSR1	01128	JES3	N	
IATMSR2	01592	JES3	N	
IATMSR3	00944	JES3	N	
IATMSTM	01712	JES3	N	
IATMSVQ	03160	JES3	N	
IATMSVU	02200	JES3	N	
IATNJCM	06504	JES3	N	If *X NJP
IATNJDJ	03248	JES3	N	If *X NJP
IATNJDV	00568	JES3	N	If *X NJP
IATNJIC	03600	JES3	N	If *X NJP
IATNJIQ	01688	JES3	N	If *X NJP
IATNJOD	00496	JES3	N	If *X NJP
IATNJOP	01944	JES3	N	If *X NJP
IATNJPD	00304	JES3	N	If *X NJP
IATODMN	00320	JES3	N	If MVT TSO o.tput
IATODPN	00496	JES3	N	One per active punch writer
IATODPR	00496	JES3	N	One per active print writer
IATODSI	01032	JES3	N	One per active writer
IATOSDR	07736	JES3	N	
IATOSMN	01536	JES3	N	If MVT TSO output
IATOSMP	05112	JES3	N	If processing WRITER command
IATOSPN	02464	JES3	N	
IATOSPR	03320	JES3	N	If print writer is active
IATOSPS	02320	JES3	N	
IATOSWD	07440	JES3	N	If writer is active
IATOSWS	10520	JES3	N	
IATPURG	02096	JES3	N	If purging a job from system
IATRJDV	01392	JES3	N	If *X RJP
IATRJM1	03920	JES3	N	If *X RJP
IATRJM2	04712	JES3	N	If *X RJP
IATRJM3	03984	JES3	N	If *X RJP
IATRJM4	02304	JES3	N	If *X RJP
IATRJM5	02304	JES3	N	If *X RJP
IATRJSN	01224	JES3	N	If *X RJPSNPS
IATSIBS	00336	PLPA	N	
IATSICA	03000	PLPA	N	
IATSICP	00272	PLPA	N	
IATSICN	00560	PLPA	N	

Figure 4.   Storage Estimates by Module (Part 5 of 6)

Module	Size	Loc	Fix	JES3 System Generation, Initialization, or Other Variable Considerations
IATSICM	07296	PLPA	N	
IATSIDO	00272	PLPA	N	
IATSICR	00784	PLPA	N	
IATSIJS	08120	PLPA	N	
IATSIOP	00800	PLPA	N	
IATSIST	00720	PLPA	N	
IATSIVL	00440	PLPA	N	
IATSIWO	01568	PLPA	N	
IATSI34	00568	PLPA	N	
IATSSCM	06720	PLPA	N	
IATSSDI	01824	PLPA	Y	
IATSSDQ	00496	241	N	
IATSSJS	00720	JES3	N	
IATSSVT	00752	241	N	
IATUTCB	04360	JES3	N	CBPRINT utility
IATUTCC	04816	JES3	N	Loaded when DSP called
IATUTCN	02560	JES3	N	Loaded for console test request
IATUTCP	03256	JES3	N	Loaded when DSP called
IATUTCT	04384	JES3	N	Loaded when DSP called
IATUTC1	01776	JES3	N	
IATUTC2	00664	JES3	N	
IATUTDC	08384	JES3	N	If *X DC
IATUTDD	02792	JES3	N	Loaded when DSP called
IATUTDS	07272	JES3	N	
IATUTPD	00744	JES3	N	Loaded when DSP called
IATUTPE	00568	JES3	N	Loaded when DSP called
IATUTPI	03592	JES3	N	Loaded when DSP called
IATUTPO	05208	JES3	N	Loaded when DSP called
IATUTPR	00288	JES3	N	Loaded when DSP called
IATUTTC	04528	JES3	N	Loaded when DSP called
IATUTTD	07656	JES3	N	Loaded when DSP called
IATUTTL	03968	JES3	N	Loaded when DSP called
IATUTTI	04792	JES3	N	Loaded when DSP called
IATUX01	00040	JES3	N	One per CI subtask
IATUX02	00048	JES3	N	
IATUX03	00040	JES3	N	
IATUX04	00032	JES3	N	
IATUX05	00032	JES3	N	
IATUX06	00032	JES3	N	
IATUX07	00032	JES3	N	
IATUX08	00032	JES3	N	
IATUX09	00032	JES3	N	
IATUX10	00032	JES3	N	
IATUX11	00032	JES3	N	
IATUX15	00032	JES3	N	
IATUX16	00104	JES3	N	
IATUX17	00104	JES3	N	
IATUX18	01736	JES3	N	
IATUX19	00040	JES3	N	
IATUX20	01936	JES3	N	
IATUX21	02008	JES3	N	
IATUX22	00040	JES3	N	
IATUX23	02880	JES3	N	
IATUX24	00048	JES3	N	
IATUX25	00160	JES3	N	If verify of NSL tape required
IATUX26	00040	PLPA	N	

Figure 4.   Storage Estimates by Module (Part 6 of 6)

Module Issuing GETMAIN	Size	Loc	Fix	JES3 System Generation, Initialization, or Other Variable Considerations
IATUX27	00104	JES3	N	
IATUX28	00104	JES3	N	
IATUX29	00104	JES3	N	
IATUX30	00104	JES3	N	
IATWAN	00256	JES3	N	If AN print image translate is required
IATWGN	00256	JES3	N	If GN print image translate is required
IATWHN	00256	JES3	N	If HN print image translate is required
IATWPN	00256	JES3	N	If PN print image translate is required
IATWQN	00256	JES3	N	If QN print image translate is required
IATWQNC	00256	JES3	N	If QNC print image translate is required
IATWRN	00256	JES3	N	If RN print image translate is required
IATWSN	00256	JES3	N	If SN print image translate is required
IATWTN	00256	JES3	N	If TN print image translate is required
IATWXN	00256	JES3	N	If XN print image translate is required
IATWYN	00256	JES3	N	If YN print image translate is required
IATINM2	00512	JES3	N	48(no. DEVPOOLS)+12(no. dedicated devices)
IATINGN	00512	JES3	N	16+8*(no. of DEADLINE cards)
IATINGN	00512	JES3	N	8(no. of DEADLINE cards + 1)
IATINGN	00512	JES3	N	392*(no. of pre-alloc. FCT on RESCTLB)
IATGRAN	00512	JES3	N	16(active JES3NEWS data sets)
IATINGN	00512	JES3	N	4+12*(no. NJPTERM cards)+24*(no. of NJP lines)
IATMOOS	00512	JES3	N	24(active output alias names)
IATIIPR	00512	JES3	N	PASS/CATLG DSN reference
IATINGN	00512	JES3	N	184*(no. of pre-alloc. RQ on RESCTLBK)
IATINGN	01792	JES3	N	
IATINGN	00512	JES3	N	48(36 SYSOUT classes)
IATOSPS	00512	JES3	N	24(no. active SET PRINT requests)
IATUTCP	00512	JES3	N	24(no. active SET PRINT requests)
IATUTPO	00512	JES3	N	24(no. active SET PRINT requests)
IATUTTD	00512	JES3	N	24(no. active SET PRINT requests)
IATINGN	00512	JES3	N	8+(100*(no. of printers + no. of punches)) + 68*(no. of all other device cards)
IATINR2	00512	JES3	N	8+(46*(no. of RJPLINE cards + no. of RJPTERM cards))
IATINGN	00512	JES3	N	16*(no. of dedicated printer buffers) + (BUFSIZE)*(no. of dedicated printer buffers)
IATLVIN	05000	JES3	N	
IATLVIN	00512	JES3	N	Size of LOCATE response (max. 4K)
IATLVIN	00100	JES3	N	
IATMDSB	00512	JES3	N	4K*((8+(no. of allocated data sets * (11 + size of DSN)))/4K
IATMDSB	00512	JES3	N	4K*((10+(no. of known managed vol. * 24))/4K)
IATINII	00512	000	N	Determined by no. of PROC cards
IATISNT	00512	000	N	JES3 buffer size (one per each net with device fencing)
IATISNT	00512	000	N	66*(no. of job networks)
IATUTTD	00512	000	N	16(no. of files)
IATUTTD	00512	000	N	Blocksize+1 of input tape file(s)
IATINC2	00512	000	N	104+(100(no. of CONSOLE cards))
IATINC2	00512	000	N	160(no. buffers on CONSBUF parm)
IATINC2	00512	000	N	48(no. of CONSOLE cards)
IATINII	00512	000	N	Determined by no. of RESDSN cards
IATINII	00512	000	N	Determined by no. of HWSNAME cards
IATIICA	08192	000	N	Variable size; blocks of 4K each

Figure 5.   Storage Obtained Using AGETMAIN (Part 1 of 2)

Module Issuing GETMAIN	Size	Loc	Fix	JES3 System Generation, Initialization, or Other Variable Considerations
IATIII	01792	000	N	
IATINII	00512	000	N	Determined by RIPARM/CIPARM cards
IATINII	00512	000	N	Determined by no. of PRCC cards
IATINC2	00512	000	N	88(no. of JES3 devices)
IATSIST	00512	000	N	340+SSOB ext.(SIST,SICN,SIVL,SIOP)
IATRJE1	00512	000	N	60*(started RJP lines)
IATRJM3	00512	000	N	108*(no. of terminals) + 68(no. of terminal readers) + (100(no. of terminal printers + no. of terminal punches)
IATGRCT	00130	000	N	IATXSND
IATGRCT	00012	000	N	IATXRCV
IATGRCT	00016	000	N	ATIME
IATGRG1	00480	000	N	IATXGFX
IATGRG1	00408	000	N	IATXGRQ
IATGRSV	04096	000	N	As needed for ASAVE areas
IATABPR	04096	000	N	
IATSIJS	00720	230	N	One per JSEL,JTERM,JREQ,EOT,EOM,RQJBID
IATSIJS	00108	230	N	One per active INIT, LOGON, or MOUNT
IATSIJS	00512	230	N	108*2(total memories)
IATINC2	00512	231	N	8+(4(no. of CONSOLE cards))
IATINM3	12288	231	N	4K(3(total TRK+FMT cards))
IATINC2	00072	231	N	
IATINSV	40960	231	N	
IATINMD	00512	241	N	4+10(no. SETNAME cards)+10(no. names)
IATSIDM	00512	241	N	184(ALLOC DD)+(176+USRPG)*(OPEN UNAL)
IATDMGR	00512	241	N	72(total files with I/O error)
IATSIJS	00512	241	N	528*(total memories)
IATSIJS	00256	241	N	One per active INIT, LOGON, or MOUNT
IATINM2	02048	241	Y	2K(no. of MAINPROC cards)
IATSIDM	00512	241	N	56(total open unallocated spinoff data sets)
IATINMD	00512	241	N	28(no. mains per each device)
IATINM3	53248	241	N	50K or STXTNT on MAINPROC
IATINGN	00512	241	N	32(no. of DEVICE cards)+12
IATINM2	00512	241	Y	48*(3*(no. of MAINPROC cards-1))
IATDMGR	00064	241	N	If spool I/O error recovery is active
IATINM2	00512	241	Y	108*3(no. of MAINPROC cards-1)
IATINM3	00036	245	N	
IATINIO	00512	245	N	264+(24no. of SPOOL)+(48(no. TRK+FMT)
IATINIO	00512	245	N	216(2(total TRK+FMT cards))
IATINM3	00512	245	N	44(total protected buffers/2)
IATINM3	00512	245	N	44(total protected buffers/2)
IATINC2	00512	254	N	136(no. of JES3 devices)
IATRJB1	00512	254	N	80*(no. of started RJP lines)
IATLVVR	00250	254	N	

Figure 5.   Storage Obtained Using AGETMAIN (Part 2 of 2)

JES3 STORAGE ESTIMATE SUMMARY

```
Basic CSECT Requirement        452k
Dynamic CSECT Requirement      331k
PLPA CSECT Requirement          47k
Basic Subpool 000               43k
Basic Subpool 230                1k
Basic Subpool 231               52k
Basic Subpool 241               58k
Basic Subpool 245                2k
Basic Subpool 254                1k
```

JES3 AUXILIARY STORAGE REQUIREMENTS (REQUIRED)

The following describes the auxiliary space necessary to contain the JES3
system. SYS1.JESPACE is used as a spool volume to store all job input,
job output, JES3 control blocks, and system data such as the job journal.
SYS1.JES3CKPT is used for Checkpoint/Restart.

```
//SPOCL1    DD DSN=SYS1.JESPACE,DISP=OLD
                 (Dynamic as large as you want it, but must be contiguous)

//CHKPNT    DD DSN=SYS1.JES3CKPT,DISP=OLD
                 (Only one cylinder SYSDA required)
```

JES3 AUXILIARY STORAGE REQUIREMENTS (OPTIONAL)

The following describes the library concatenations required for MVT and or
SVS main processors. SYS1.JES3RI contains the Reader/Interpreter modules
which are shown below. SYS1.JES3LIB contains all of the JES3 code except
the subsystem interface modules that reside in SYS1.LPALIB and is
described in more detail in "DATASET Macro Instruction" and "System
Generation Macro Instructions".

```
//IATRILB   DD DSN=SYS1.JES3RI,DISP=SHR
                 (Load module library for RI modules)

//          DD DSN=SYS1.JES3LIB,DISP=OLD
```

IATRILB CONTENTS

The following table describes the two libraries that may be defined in the
JES3 procedure with the ddname of IATRILB. One of these libraries must be
defined if you will be running either MVT or SVS main processors, or
both. The SVS library must be used if any of the main processors are
running SVS. If these libraries are used, they must be authorized.

MVT READER/INTERPRETER MODULES

MODULE NAME	DECIMAL SIZE	ALIAS FOR	COMMENT
IEFHRFK2	-	IEFMVTHR	MVT ONLY
IEFMVTHM	4536		MVT ONLY
IEFMVTHR	1224		MVT ONLY
IEFMVTJA	6192		MVT ONLY
IEFVGM1-19	5016		
IEFVGM70-71	480		
IEFVGM78	248		
IEFVHA	34688		
IEFVHCB	-	IEFVHA	
IEFVHF	-	IEFVHA	
IEFVHM	-	IEFMVTHM	MVT ONLY
IEFVHN	1600		
IEFVHREP	-	IEFVHA	MVT ONLY
IEFVH1	5160		
IEFVINA	6040		
IEFVJA	-	IEFMVTJA	MVT ONLY
IEZDCODE	208		MVT ONLY

SVS READER/INTERPRETER MODULES

MODULE NAME	DECIMAL SIZE	ALIAS FOR	COMMENT
IEFVAMP	80		SVS ONLY
IEFVDMI	5120		SVS ONLY
IEFVGK	-	IEFVHA	SVS ONLY
IEFVGM1-19	5016		
IEFVGM70-71	480		
IEFVGM78	248		
IEFVHA	34688		
IEFVHCB	-	IEFVHA	
IEFVHF	-	IEFVHA	
IEFVHN	1600		
IEFVH1	5160		
IEFVINA	6040		

If running SVS main processor, the following
changes must be applied using the AMASPZAP service aid program:

```
NAME    IEFVHA      IEFVFA
VER     03F0        BFF7F14D,4780B41E
REP     03F0        4700F14D,47F0B41E


NAME    IEFVH1
VER     0194        4720B0FC
REP     0194        4700
```

SYSTEM MANAGEMENT FACILITIES INFORMATION

System Management Facilities (SMF) is a feature of OS/VS that provides
the means for gathering and recording information that can be used for
evaluating system usage. Information is collected by SMF data
collection routines and user-written exit routines.

The JES3 SMF records presented in this chapter is in addition to SMF
information found in OS/VS System Management Facilities (SMF),
GC35-0004.

Record type 6 is written for each data set processed by JES3 output
service. A record is written for each copy with a given form name. The
record length is 100 bytes. The format is shown in Figure 6.

Displacement Dec	Hex	Field Size	Data Format	Contents
0	0	1	binary	System indicator Bit Meaning When Set 6 VS2
1	1	1	binary	Record type
2	2	4	binary	Time, in hundredths of a second, record was moved to SMF buffer
6	6	4	packed	Date record was moved to SMF buffer, in the form 00YYDDDF, where F is the sign
10	A	4	EBCDIC	System identification
14	E	8	EBCDIC	Job name
22	16	4	binary	Time, in hundredths of a second, that the reader recognized the JCB card for this job.
26	1A	4	packed	Date that the reader recognized the JCB card for this job, in the form 00YYDDDF
30	1E	8	EBCDIC	User-identification field from common exit parameter area
38	26	1	EBCDIC	Output WTR Class (blank if non-SYSOUT)
39	27	4	binary	Output WTR start time
43	2B	4	packed	Output WTR start date
47	2F	4	binary	Number of records written by the writer, by form number and by class, includes repeats and restarts
51	33	1	binary	I/C status indicator Bit Meaning When Set 0-4 Reserved 5 Data input error 6 Reserved 7 Control block input error

Figure 6 (Part 1 of 2). Record Type 6

Displacement Dec	Hex	Field Size	Data Format	Contents
52	34	1	binary	Total number of data sets processed by Output WTR and included in this record. (Count for each time a data set is printed.) Does not include restarts.
53	35	4	EBCDIC	Form number
57	39	1	binary	Reserved
58	3A	2	binary	Subsystem generating ID Value Meaning 0 EXT-WTR 2 JES2 5 JES3
60	3C	2	binary	Length of this section, including this field
62	3E	2	binary	Data set control indicators Bit Meaning When Set 0 Reserved 1 Record represents spun off data sets 2 Operator terminated this data group 3 Operator interrupted this data group 4 Operator restarted this data group 5 Record represents continuation of interrupted data group 6 Operator overrode programmed printer carriage control 7 Punch output was interpreted 8-15 Reserved
64	40	4	EBCDIC	JES assigned job number
68	44	8	EBCDIC	JES logical output device name
76	4C	4	EBCDIC	FCB identifier
80	50	4	EBCDIC	UCS identifier
84	54	4	binary	Approximate page count. (Skip to carriage control channel one counted as a page.) For punch data sets, the number of cards punched.
88	58	2	binary	Data format error indicators Bit Meaning When Set 0-5 Reserved 6 Some first character control data bad, default used 8-15 Reserved
90	5A	2	binary	Output priority
92	5C	8	EBCDIC	Logical Output device group name

Figure 6 (Part 2 of 2). Record Type 6

Record type 25 is written for each job processed by the main device scheduler. A record is written for each static or dynamic allocation and for each group of private catalog allocation requests. The record length is 38 bytes, plus the length of the descriptor section. The format is shown in Figure 7.

Displacement Dec	Hex	Field Size	Data Format	Contents

0	0	1	binary	System indicator
				  Bit Meaning When Set
				   6 VS2

1	1	1	binary	Record type
2	2	4	binary	Time, in hundredths of a second, record was moved to SMF buffer
6	6	4	packed	Date record was moved to SMF buffer, in the form 00YYDDDF, where F is the sign
10	A	4	EBCDIC	System identification
14	E	8	EBCDIC	Job name
22	16	4	binary	Time, in hundredths of a second, that the reader recognized the JOB card for this job
26	1A	4	packed	Date that the reader recognized the JOB card for this job, in the form 00YYDDDF
30	1E	8	EBCDIC	User-identification field

Figure 7 (Part 1 of 2). Record Type 25

Descriptor Section

| Displacement | | Field | Data | |
Dec	Hex	Size	Format	Contents
0	0	2	binary	Function Flags
				Bit Meaning
				0 1 - dynamic allocation
				0 - static JCL allocation
				1 1 - catalog allocation
				0 - execution allocation
				2 1 - automatic allocation
				0 - manual allocation
				3-15 Reserved
2	2	4	binary	Number of tape volumes fetched
6	6	4	binary	Number of disk volumes fetched
10	A	4	binary	Time of day, in hundredths of a second, fetch processing started
14	E	4	packed	Date, in the form 00YYDDDF, where F is the sign, fetch processing started
18	12	4	binary	Time *S S command issued (zero if automatic allocation)
22	16	4	packed	Date *S S command issued (zero if automatic allocation)
26	1A	4	binary	Number of tape volumes mounted
30	1E	4	binary	Number of disk volumes mounted
34	22	4	binary	Time of first volume mount message (time of JES3 allocation if no mounts)
38	26	4	packed	Date of first volume mount message (time of JES3 allocation if no mounts)
42	2A	4	binary	Time of JES3 device verification
46	2E	4	packed	Date of JES3 device verification

Figure 7 (Part 2 of 2).   Record Type 25

Record type 26 is written at job purge after all SYSOUT for the job has
been processed. The length is 50 bytes, plus the length of the
descriptor, events, and actuals sections The minimum length is 232
bytes.

The job is identified by job log number, programmer's name, and JES job
number. Operating information includes the start and stop time for
processing of the job by the reader, execution and SYSOUT output phases,
JES logical input device name and output statistics. The format is
shown in Figure 8.

Displacement Dec	Hex	Field Size	Data Format	Contents
0	0	2	binary	Record length
2	2	2	binary	Segment discriptor
4	4	1	binary	System indicator
				Bit Meaning When Set
				6 VS2
5	5	1	binary	Record type
6	6	4	binary	Time, in hundredths of a second, record was moved to SMF buffer
10	10	4	packed	Date record was moved to SMF buffer, in the form 00YYDDDF, where F is the sign
14	A	4	EBCDIC	System identification
18	E	8	EBCDIC	Job name
26	16	4	binary	Time, in hundredths of a second, that the reader recognized the JCB card for this job
30	1A	4	packed	Date that the reader recognized the JCB card for this job, in the form 00YYDDDF
34	1E	8	EBCDIC	User-identification field
42	26	4	binary	Reserved
46	2A	2	binary	Subsystem identification
				Value Meaning
				2 JES2
				5 JES3
48	2C	2	binary	Section indicator
				Bit Meaning When Set
				0 Descriptor section present
				1 Events section present
				2 Actuals section present
				3-15 Reserved

Figure 8 (Part 1 of 3). Record Type 26

Descriptor Section

Displacement Dec	Hex	Field Size	Data Format	Contents
0		2	binary	Length of descriptor section, including this field
2		2	binary	Reserved
4		1	binary	Job information
				Bit Meaning When Set
				0 DJC job
				1 Deadlined job
				2 Job met deadline
				3 Process job
				4 Job left system via NJP
				5 Job entered system via NJP
				6 Job was dumped via DJ
				7 Job was entered via DJ
5		1	binary	Job information
				Bit Meaning When Set
				0 Priority from priority on JOB card
				1 SETUP job
				2 Job held via TYPRUN=HOLD
				3-4 Reserved
				5 Job entered via internal
				6 Job was rerun on main reader
				7 Job was canceled by the operator
6		4	EBCDIC	JES3 assigned job number
10		8		Job ID - NNNN is job number
				ID Meaning
				JCBONNNN Normal job
				STCONNNN Started task control
				TSUONNNN TSO user
18		20	EBCDIC	Programmer's name from JOB card
38		1	EBCDIC	MSGCLASS from JOB card
39		1	EBCDIC	Job class from JOB card
40		1	binary	Initial job priority
41		1	binary	Job selection priority
42		4	binary	Reserved
46		8	EBCDIC	Input device ddname User ID if TSO submit System name if NJP
54		8	binary	Reserved
62		4	binary	Estimated execution time
66		4	binary	Estimated output lines
70		4	binary	Estimated output cards
74		1	EBCDIC	Deadline schedule type
75		3	binary	Reserved
78		8	EBCDIC	Input device group name
86		8	EBCDIC	Procedure DD name
94		8	EBCDIC	System job sent to via NJP
102		8	EBCDIC	System job received from via NJP
110		8	EBCDIC	ID of dependent job net to which job belongs (//*NET)
118		4	binary	Deadline schedule time
122		4	binary	Deadline schedule date
126		8	EBCDIC	Job class name

Figure 8 (Part 2 of 3). Record Type 26

Events Section

Displacement Dec	Hex	Field Size	Data Format	Contents
0		2	binary	Length of events section, including this field
2		2	binary	Reserved
4		4	binary	Reader stop time
8		4	packed	Reader stop date
12		4	binary	Converter start time
16		4	packed	Converter start date
20		4	binary	Converter stop time
24		4	packed	Converter stop date
28		4	binary	Execution start time
32		4	packed	Execution start date
36		4	binary	Execution stop time
40		4	packed	Execution stop date
44		4	binary	Output processor start time
48		4	packed	Output processor start date
52		4	binary	Output processor stop time
56		4	packed	Output processor stop date

Actuals Section

Displacement Dec	Hex	Field Size	Data Format	Contents
0		2	binary	Length of actuals section, including this field
2		2	binary	Reserved
4		4	binary	Number of input cards for job (JCL and data)
8		4	binary	Output lines to spool
12		4	binary	Output cards to spool
16		4	EBCDIC	Input processor system ID
20		4	EBCDIC	JCL conversion processor system ID
24		4	EBCDIC	Execution processor system ID
28		4	EBCDIC	Output processor system ID
32		8	EBCDIC	Failed step name
40		8	EBCDIC	Failed proc name
48		4	binary	Condition Code

Figure 8 (Part 3 of 3). Record Type 26

RECORD TYPE 43 - SUBSYSTEM START

Record type 43 contains JES3 information at the time JES3 is started. The record is written during JES3 initialization. The record length is 38 bytes. The format is shown in Figure 9.

Displacement Dec	Hex	Field Size	Data Format	Contents
0	0	1	binary	System indicator **Bit** **Meaning When Set** 6 VS2
1	1	1	binary	Record type
2	2	4	binary	Time, in hundredths of a second, record was moved to SMF buffer
6	6	4	packed	Date record was moved to SMF buffer, in the form 00YYDDDF, where F is the sign
10	A	4	EBCDIC	System identification
14	E	2	binary	Subsystem identification X'0005' signifies JES3
16	10	2	binary	Reserved
18	12	2	binary	Reserved
20	14	2	binary	Reserved
22	16	1	binary	Start record flags **Bit** **Meaning When Set** 0 Cold start 1 Warm start 2 Hot start 3 Queue analysis required 4 Global system 5 Local system 6 Reserved 7 Dynamic System Interchange
23	17	1	binary	Reserved
24	18	1	binary	Reserved
25	19	1	EBCDIC	Initialization deck origin type
26	1A	8	EBCDIC	Initialization deck origin Type Origin contents N Member name (JCL default) M Member name (OP choice) U Unit address (OP choice)
34	22	4	EBCDIC	JES3 procedure name

Figure 9. Record Type 43

Record type 45 contains JES3 information at the time JES3 is stopped.
The record is written during JES3 termination. The record length is 26
bytes. The format is shown in Figure 10.

Displacement Dec	Hex	Field Size	Data Format	Contents
0	0	1	binary	System indicator
				Bit Meaning When Set
				6 VS2
1	1	1	binary	Record type
2	2	4	binary	Time, in hundredths of a second, record was moved to SMF buffer
6	6	4	packed	Date record was moved to SMF buffer, in the form 00YYDDDF, where F is the sign
10	A	4	EBCDIC	System identification
14	E	2	binary	Subsystem identification X'0005' signifies JES3
16	10	2	binary	Reserved
18	12	2	binary	Reserved
20	14	1		Stop record flags
				Bit Meaning When Set
				0 Subsystem ended due to abend
				1 DSI has been invoked
21	15	3	binary	Completion Code (SYS/USER)
24	18	1		Reserved
25	19	1		Initialization deck origin type

Figure 10.   Record Type 45

RECORD TYPE 47 - SIGNON/START LINE

Record type 47 (VS2 only) is written by JES3 RJP under two conditions: (1) when a RJP line is started, and (2) when a remote user signs on. The length is 22 bytes, plus the length of the identification and message sections.

This record contains the record type, time stamp (time and date), CPU identification, JES3 subsystem event, remote name, line name, password, and message text. The format is shown in Figure 11.

Displacement Dec Hex	Field Size	Data Format	Contents
0	0	1	binary	System indicator Bit Meaning When Set 6 VS2
1	1	1	binary	Record type
2	2	4	binary	Time, in hundredths of a second, record was moved to SMF buffer
6	6	4	packed	Date record was moved to SMF buffer, in the form 00YYDDDf, where F is the sign
10	A	4	EBCDIC	System identification
14	E	2	binary	Subsystem identification X'0005' signifies JES3
16	10	2	binary	Reserved
18	12	2	binary	Length of remainder of record, not including this field
20	14	2	binary	JES3 SIGNON/Start Line subsystem event - X'0001' signifies SIGNON X'0002' signifies Start Line

Identification Section

0		2	binary	Length of identification section, including this field
2		8	EBCDIC	Remote name
10		8	EBCDIC	Line name
18		8	EBCDIC	Password

Message Section (will not appear if this is the start of a line record)

0		2	binary	Length of SIGNON message section, including this field
2		36	EBCDIC	Message text. (If this is a SIGNON record, information from columns 35 through 70 of the SIGNON card image is placed in this field.)

Figure 11. Record Type 47

Record type 48 (VS2 only) is written by JES3 when a RJP line terminates or when a remote user signs off. The length is 79 bytes.

This record contains the record type, time stamp (time and date), CPU identification, JES3 subsystem event, remote name, line name, password, and summary of data and error activity. The format is shown in Figure 12.

Displacement Dec Hex	Field Size	Data Format	Contents
0	0	1	binary	System indicator
				Bit Meaning When Set
				6 VS2
1	1	1	binary	Record type
2	2	4	binary	Time, in hundredths of a second, record was moved to SMF buffer
6	6	4	packed	Date record was moved to SMF buffer, in the form 00YYDDDF, where F is the sign
10	A	4	EBCDIC	System identification
14	E	2	binary	Subsystem identification X'0005' signifies JES3
16	10	2	binary	Reserved
18	12	2	binary	Length of remainder of record, not including this field
20	14	2	binary	JES3 SIGNOFF/CANCEL Line subsystem event - X'0001' signifies SIGNOFF X'0002' signifies CANCEL Line
22	16	2	binary	Reserved
24	18	8	EBCDIC	Remote name
32	20	8	EBCDIC	Line name
40	28	8	EBCDIC	Password
48	30	4	binary	Number of EXCP's
52	34	4	binary	Number of Line errors
56	38	2	binary	Number of time outs to read text
58	3A	2	binary	NAKs received
60	3C	1	binary	Command rejects
61	3D	1	binary	Intervention required
62	3E	1	binary	Bus out checks
63	3F	1	binary	Equipment checks
64	40	1	binary	Data checks
65	41	1	binary	Data overruns
66	42	1	binary	Lost data
67	43	9	binary	Reserved
76	4C	3	EBCDIC	Line adapter address of UCB

Figure 12.   Record Type 48

Record type 49 is a duplicate of record type 47 except the password may
not be valid, and the event type may be one of four codes. This record
is written when an invalid SIGNON is attempted. The length is 22 bytes,
plus the length of the identification and message section.

This record contains the record type, time stamp (time and date), CPU
identification, JES3 subsystem event, remote name, line name, password
(invalid), and message text. The format is shown in Figure 13.

Displacement Dec	Hex	Field Size	Data Format	Contents
0	0	1	binary	System indicator Bit Meaning When Set 6 VS2
1	1	1	binary	record type
2	2	4	binary	Time, in hundredths of a second, record was moved to SMF buffer
6	6	4	packed	Date record was moved to SMF buffer, in the form 00YYDDDF, where F is the sign
10	A	4	EBCDIC	System identification
14	E	2	binary	Subsystem identification X'0005' signifies JES3
16	10	2	binary	Reserved
18	12	2	binary	Length of remainder of record, not including this field
20	14	2	binary	JES3 SIGNON invalid subsystem event Value Meaning 1 Terminal not defined 2 Invalid password 3 Line already signed on 4 Terminal already signed on

Identification Section

0		2	binary	length of identification section, including this field
2		8	EBCDIC	SIGNON terminal name
10		8	EBCDIC	line name
18		8	EBCDIC	SIGNON password

Message Section

0		2	binary	Length of SIGNON message section, including this field
2		36	EBCDIC	Message text. (Information from column 35 through 70 of the SIGNON card image is placed in this field.)

Figure 13. Record Type 49

Checkpoint/Restart is a technique for recording information about a job at programmer-designated checkpoints so that, if necessary, the job can be restarted at one of these checkpoints or at the beginning of a job step.

The checkpoint/restart information for JES3 presented in this chapter is in addition to checkpoint/restart information found in OS/VS Checkpoint/Restart, GC26-3784. The topics covered in this chapter are:

• Restarting a Job

• Operator Restart Considerations

• Job Journal Data Set Usage

RESTARTING A JOB

When a job step abnormally terminates, you may have to resubmit the job for execution; this means delay and lost computer time. The operating system provides restart facilities to reduce the effects of abnormal termination.

There are three types of restarts:

• Step restart, from the beginning of a job step.

• Checkpoint restart, from a checkpoint within a job step. Checkpoints are established in a job step by coding the CHKPT macro instruction for each checkpoint desired. A checkpoint is taken when a user program issues the CHKPT macro instruction. This macro causes the contents of the program's virtual-storage area and certain system control information to be written as a series of records in a data set. These records can then be retrieved from the data set if the job terminates abnormally or produces erroneous output, and the job can be restarted. Restart can take place immediately (initiated by the operator at the console) or be deferred until the job is resubmitted. In either case, the time-consuming alternative of rerunning an entire job is eliminated.

The CHKPT macro is described in OS/VS Data Management Macro Instructions, GC26-3793. See also the DD CHKPT parameter in OS/VS2 JCL, GC28-0692. It specifies that checkpoints are to be taken at end of volume for the data set defined by the DD statement on which it is coded.

• System failure restart, by specifying the FAILURE=RESTART parameter on the JES3 //*MAIN statement. In the event the job cannot complete executing because of system failure and the job is not eligible for MVS automatic restart, JES3 will automatically reschedule the job from the beginning. Other options on the FAILURE parameter are CANCEL, HOLD, and PRINT. All of the values are described on the MAIN FAILURE parameter in the section, in OS/VS2 JCL, GC28-0692.

Whether using step restart or checkpoint restart, the restart facility can be automatic or deferred.

Automatic Restart: To use automatic restart, code the RD (restart definition) parameter on the JOB or EXEC statement. JES3 creates a job journal for any job specifying the RD parameter. (A job journal is established to hold restart information for each program in execution.) When a system failure occurs or a job step abnormally terminates and you have a job journal, the restart facility allows automatic restart when RD=R is coded on the JOB or EXEC statements. If checkpoints are taken, you can automatically restart at the last checkpoint regardless of whether or not the RD parameter is coded. When a job step abnormally terminates or a system failure occurs while the job is in execution and the installation has not implemented job journaling, these jobs are ineligible for automatic restart.

Deferred Restart: To use deferred restart, code the RESTART parameter on the JOB statement. This required parameter specifies a job step or a step of a cataloged procedure and can specify a checkpoint identifier if you are using deferred checkpoint restart. The effect of the parameter is simply to restart the job at the beginning of the specified step or checkpoint. The SYSCHK DD statement is required when a job is being submitted for deferred checkpoint restart and must be placed immediately after a JOBLIB DD statement.

Jobs Running on ASP Main Processors: The MAIN JOBSTEP parameter specifies the job step checkpoint option for jobs on ASP main processors only. The checkpoint option will not be taken if JOBSTEP=NOCHKPNT is coded or if nothing is coded; the checkpoint will be taken at the end of each job step if JOBSTEP=CHKPNT is coded. If a checkpoint is requested, it means that the user can see the output up through the last completely executed step if a system failure occurs and the job is not restarted. Otherwise, there is no job-produced output. The MAIN JOBSTEP parameter is ignored in MVS; the job step checkpoint feature is standard. The automatic and deferred restart facilities described above are not available to jobs running on ASP main processors.

Refer to OS/VS Checkpoint/Restart, GC26-3784, for a complete description of planning for and using the checkpoint restart facility.

OPERATOR RESTART CONSIDERATIONS

A job may be abnormally terminated as a result of a hardware, programming, or system error. Such an error may occur any time during execution and could cost the loss of valuable machine time. The checkpoint/restart feature of the system is provided to allow a restart of an abnormally ended job either at the beginning of a job step or at a checkpoint within this step. The programmer determines whether an automatic restart or a deferred restart is to be performed.

AUTOMATIC RESTART

If the programmer provides for an automatic restart and the job does abnormally end, you will receive message IEF225D asking if the indicated job should restart. The message may indicate the checkpoint id, thus allowing you to prevent repeated restarts at the same checkpoint or job step. When you are requested to authorize an automatic restart, you can reply YES, HOLD, or NO.

• Reply YES if the restart is to be performed at a specific checkpoint or job step for the first time. If a step restart is to occur and the

step to be restarted used a card input data set that was not part of
the SYSIN stream, you must return all cards read by the job step
before it ended abnormally to the appropriate hoppers. If a checkpoint
restart is to occur, follow the programmer's instructions for
replacing the input cards.

* Reply HOLD if you want to defer the restart; for example, to permit
  another job to be run first. You must enter the *MODIFY command with
  the release operand when you are ready to restart the job. Also, if
  desired, you may cancel the job. However, canceling the job may
  result in unrecoverable paging space or the failure of certain data
  sets to be deleted if virtual I/O is being used.

* Reply NO if no restart is to be performed. When you reply NO, and the
  programmer wants a restart to be performed, he must resubmit the job
  for a deferred restart.

When V=R is specified, the restart may be delayed by the system waiting
for the allocation of storage. If another job is using the required
storage, you will not receive a message - only a delay. Enter a DISPLAY
A command to see if a system task or other job is using the storage
required by a job with a V=R region. You may stop or cancel the
conflicting task or job. The system may ask you to mount data volumes
other than those required at the beginning of the job. The job's I/O
will be set up by JES3 for the first job step, not the step being
restarted. Canceling a job in a dependent network will prevent
successor jobs from executing if they are dependent upon successful
completing of the canceled job.

Note: Any operator commands in the input stream of the job step being
restarted will not be executed.

DEFERRED RESTART

If the programmer provides for a deferred restart and the job does
abnormally end, the job must be resubmitted to have this restart
performed. To restart the job, the programmer must provide a restart
deck for submission to the system through the system input reader. The
JCL statements to be included are described in detail in the publication
OS/VS2 JCL, GC28-0692.

The device configuration of the system at the time of restart need not
be the same as it was when the job was abnormally ended. However,
enough devices must be available to satisfy the needs of the job step
being restarted. The system under which a step restart is run need not
be the same as it was for the job's original execution. However, a
checkpoint restart should be run under the original system unless the
alternate system can meet the following restrictions:

* The release number is the same.
* The link pack area modules in use at the checkpoint must reside in the
  same storage locations.
* Jobs specifying V=R require an area of storage identical to the
  original area.

If the required storage is not available, the system will cancel the
restart and you will receive message IEF209I which states that virtual
storage is unavailable for the job.

If the required storage is not available, it is for one of the following
reasons:

- The link pack area expands into the required storage. This may occur
  if an initial program loading has been performed after the original
  execution of the job and prior to the restart. If this does occur,
  contact the system programmer for a respecification of the system
  parameters and repeat initial program loading using the new values.

- The system queue area expands into the required storage. When this
  occurs, contact the system programmer for a respecification parameter
  and repeat initial program loading using the new SQA value.

When a job restarts correctly, you will receive two messages: IHJ0061
and IHJ0081. If, for V=R jobs, these messages do not appear, enter a
DISPLAY A command to see if a system task or other job is using the
required storage. You can then stop or cancel the conflicting job.

The system may ask that you mount volumes other than those required at
the beginning of the job. The job's I/O will be initially setup by JES3
for the first job step, not the step being restarted. In addition, any
card input data sets that have been used by the failing job step must
again be made available to the system.

Restart of JES3 controlled jobs may be accompanied by messages IAT2006
and/or IAT2575. Refer to OS/VS Message Library: JES3 Messages,
GC38-1012 for response to the messages.

JOB JOURNAL DATA SET USAGE

The job journal is a sequential data set that resides on the spool
volume of JES3. Unique to VS2, its function is to contain a set of
selected job-related control blocks that are critical to automatic
restart processing. In OS/360 MFT systems, the information now in the
job journal was available for restart processing from the SYS1.SYSJOBQE
data set.

The job journal is necessary because VS2 maintains its scheduler control
blocks in the scheduler work area (SWA) in pageable storage, rather than
on a job queue on external storage. When a job or the system fails,
there is a resultant loss of the address space that contains the SWA and
its job control blocks. Because it preserves up-to-date copies of
certain critical control blocks, the job journal makes it possible to
reconstruct the SWA. SWA control blocks will be reconstructed to their
state just prior to the failing step for automatic step restart. For
automatic checkpoint restart they will be reconstructed as they appeared
at the most recent issued CHKPT. This capability is available for the
following kinds of restart:

- Automatic step restart

- Automatic checkpoint restart

- System restart (including completion of job or step termination)

Therefore, if a job does not have job journaling, automatic restarts
cannot be used.

Job journaling is provided to a job in JES3 in one of three ways:

- The job class of the job has requested journaling (JOURNAL=YES on the
  CLASS initialization statement).

- The job has a //*MAIN card with JOURNAL=YES overriding the job class
  table.

- The job's JCL has either RESTART= on the JOB statement or RD= on the JOB or EXEC statement.

After a system failure and JES3 restart of the failing main processor, those jobs in execution that had requested job journaling will be MVS system restarted (or warmstarted). If a job is eligible for MVS automatic restart, the operator will be sent message IEF225D asking if the job should restart. If the job is not eligible for restart, or the operator indicates that restart should not be attempted, any scratch or VIO data sets the job had allocated will be deleted and the job will be terminated. Therefore it may be desirable for certain classes of jobs which make a significant use of scratch and/or VIO data sets to request job journaling.

JES3 INTERNAL CHECKPOINT DATA SET

The JES3 checkpoint data set provides the capability for warmstarting or hotstarting the JES3 system with minimum or no loss of system information. In the restart process, validation of checkpointed information occurs with instances where one or more user-submitted jobs may be canceled as a result of invalid data. The typical situation will be no loss of system information.

The JES3 checkpoint facility is implemented by writing job-related control block information to the JES3 checkpoint data set at appropriate points in time during system processing. That is, as information changes in the system.

The JES3 checkpoint data set contains checkpointed information as defined by the IATYCKF macro. This macro defines the job control table (IATYJCT) head and tail pointer file description blocks (FDBs) for the sixteen JCT priority levels representing the JES3 job queue. From the JCT, the JES3 job related control blocks can be accessed in order to perform JES3 job processing. In addition to the JCT, file description blocks for special JES3 job processing facilities are checkpointed as follows:

- Main Device Scheduler Volume Unavailable Table -- this table contains volume serial numbers of volumes unavailable to MDS processing.

- Output Service -- checkpoint record containing three FDBs required to checkpoint the Output Service Driver module (that is, the IATYJDA, IATYJDS, and IATYOSE control blocks).

- Deadline Scheduling -- contains a checkpoint of the Deadline Scheduling Queue control blocks.

- JES3 NEWS -- checkpoint of the JES3NEWS data set.

- TSONEWS -- checkpoint of the TSONEWS data set.

- RJPNEWS -- checkpoint of the RJPNEWS data set.

- Generalized Main Scheduling -- used to checkpoint GMS Selection modes, Execution resources and various GMS parameters.

- Device Fencing -- checkpoint of the device fencing control blocks.

- Dependent Job Control -- checkpoint of the IATYNCK control blocks which contain the net control block FDBs.

- Main Device Schedule -- checkpoint of the online/offline status of

devices eligible for setup.

- System Parameters -- miscellaneous parameters checkpointed in the IATYCKP control block are:

  - Last job number assigned in the system

  - One-half the size of the Track Allocation Table

  - Number of queue extents

  - Single track allocation table

  - JCT priority hold flags

The JES3 checkpoint area is allocated to a unique data set and is managed via the EXCP macro instruction. A user of the checkpoint area causes a checkpoint to be taken by issuing the JESCKPNT macro.

The routing and descriptor codes, user completion codes, and system completion codes for JES3 are presented in the topics that follow. This section contains information that is in addition to that found in CS/VS Message Library: VS2 System Codes, GC38-1008.

ROUTING AND DESCRIPTOR CODES

Route codes and descriptor codes are specified in the ROUTCDE and DSEC parameters of the WTO/WTOR macro instruction. Information contained in this chapter is in addition to routing and descriptor code information found in CS/VS Message Library: Routing and Descriptor Codes, GC38-1004.

The following routing and descriptor codes, shown in Figure 14, are used by messages issued during JES3 initialization and termination.

Descriptor Code	Message ID	Routing Code
4	IAT3CC0	2,10
4	IAT3010	2
-	IAT3011	1
-	IAT3012	1
3	IAT3013	1
1	IAT3014	2,10
1	IAT3C15	2,10
4	IAT3016	10
3	IAT3C19	1
4	IAT3020	2,10
4	IAT3C21	2,10
4	IAT3022	2
4	IAT3023	2
3	IAT3025	2
3	IAT3C26	2,10
3	IAT3027	2
1	IAT3032	2,10
-	IAT3033	1
1	IAT3034	2,10
1	IAT3035	2,10
4	IAT3C40	2
3	IAT3041	2
3	IAT3042	2
-	IAT3043	1
-	IAT3044	1
3	IAT3045	1
-	IAT3046	1
3	IAT3048	2
3	IAT3049	2
4	IAT3060	2
4	IAT3C61	2,10
1	IAT3090	2

Figure 14. Routing and Descriptor Codes Used During Initialization

After JES3 initialization, routing and descriptor codes are implemented
by a JES3 subsystem interface routine that examines the ROUTCDE and DESC
parameters specified with WTO macro instructions.

Messages are directed by JES3 to the appropriate JES3 and/or MCS console
device. In the event no ROUTCDE is used JES3 assumes a route code of
2.

SYSTEM COMPLETION CODES

JES3 uses the following system completion codes:

1FB

EXPLANATION: (When caused by IATDMEB)

- The data set has been closed and the user is still attempting to
  perform I/O - IAT1601 pointed to by register 15.

- The IATYDSB and IATYSVT control blocks were not valid - IAT1602.

- Invalid function code passed - IAT1603.

- Error return from a start I/O operation in the user's address space -
  IAT1604 and IAT1605.

- IATYDAT address not within a correct address range - IAT1606.

- Could not allocate an unprotected buffer for a POINT operation -
  IAT1607.

- While attempting to set up a data management WAIT, a data management
  function was currently waiting - IAT1609.

- While attempting to set up a subsystem interface WAIT, a subsystem
  function was currently waiting - IAT1609.

- An invalid IATYDAT was found on the DAT Queue.

- An invalid unprotected buffer address was found - IAT1608.

SYSTEM ACTION: The step is terminated.

OPERATOR RESPONSE: None.

PROGRAMMER RESPONSE: Take problem to your systems programmer. Supply a
SYSABEND dump. Correct any invalid I/O operations within your program.

PROBLEM DETERMINATION: Rerun the job with a SYSABEND DD card if
necessary.

MODULE: IATDMEB

EXPLANATION: (When caused by IATSIIM)

- No JDSENTRY was found when an attempt was made to update it during
  unallocation - IAT6700.

- Error occurred in the disk MRCH allocator routine when trying to open
  the data set - IAT6702.

- A catastrophic error occurred on the global processor while attempting communication - IAT6703.

- A user memory buffer could not be allocated to a data set during OPEN - IAT6704.

- No core was available for global interface for external writer data set - IAT6706.

- Unable to find OSE at unallocation for external writer - IAT6707.

- Permanent I/O error encountered on an output data set - IAT6708.

- Bad data was sent to global via a SSISERV. Request could not be serviced - IAT6711.

SYSTEM_ACTION: The user memory is terminated.

OPERATOR_RESPONSE: None.

PROGRAMMER_RESPONSE: Take problem to your systems programmer. Supply a SYSABEND dump.

PROBLEM_DETERMINATION: Rerun the job with a SYSABEND DD card if necessary.

2FB

EXPLANATION: The JES3 address space has abnormally terminated. There are two environments in which this error may occur:

1. A critical error has occurred early in JES3 initialization or late in JES3 termination. The JES3 ESTAE has not yet been set and no JES3 formatted ABEND dump is available.

2. Once JES3 initialization has completed up to the point where the JES3 ESTAE exit (IATABMN is the exit routine) has successfully been established, this abend code is used by IATABMN (the Failsoft Monitor) to return to the ESTAE exit level for various reasons in order to be able to issue a SETRP macro instruction.

   One reason is to produce an OS/MVS dump, which will therefore always appear as a S2FB regardless of the original abend code. The original abend code is shown in the Failure Logout (IAT3713 messages to the operator) and in the JES3 formatted dump. The occurance of an S2FB dump by itself does not tell yet whether the failing JES3 function could recover or had to be terminated.

An OS/MVS dump with an abend code of S2FB means that IATABMN or a routine employed by IATABMN failed and thereby produced that abend code. JES3 was terminated as a result of that.

SYSTEM_ACTION:

1. Message IAT3702 is written to the operator and to the (JES3 initialization) specified dump data set. This message details certain critical debugging information that is needed in analyzing the problem. An abend dump of the type specified in the JES3 initialization deck is taken.

OPERATOR/PROGRAMMER_RESPONSE:

1. Refer to the explanation of the indicated IAT3nnn message for information on the cause of the error and necessary remedial action.

2. The abend dump that is produced should be reviewed/analyzed for the cause of the error. If a DUMPnnn is indicated, refer to the summary of the JES3 DUMP errors for further information.

PROBLEM DETERMINATION:

Table I, items 2, 5, 16. See OS/VS2 Message Library: JES3 Messages, GC38-1012.

Table III, items 4, 5, 6, 20. See OS/VS2 Message Library: JES3 Messages, GC38-1012.

MODULE:

1. As indicated for the IAT3nnn message.

2. IATNUC (csect IATABMN); service for all DSPs.

3FB

EXPLANATION:

• Could not obtain enough storage in SP=241 to build a DSB.

• Could not obtain enough storage in SP=241 to create a RAP.

SYSTEM ACTION: The user memory is terminated.

OPERATOR RESPONSE: None.

PROGRAMMER RESPONSE: Take the problem to a systems programmer.

PROBLEM DETERMINATION: Rerun the job with a SYSABEND DD card if necessary. Problem may not reoccur.

MODULE NAME: IATSIDM

4FB

EXPLANATION:

• Unable to obtain sufficient storage in SP=241 for SSISERV.

• Unable to obtain sufficient storage in SP=230 for user memory buffers.

• Error processing TCE for additional track groups.

SYSTEM ACTION: The user memory is terminated.

OPERATOR RESPONSE: None.

PROGRAMMER RESPONSE: Take the problem to a systems programmer.

PROBLEM DETERMINATION: Rerun the job with a SYSABEND DD card if necessary. Problem may not reoccur.

5FB

EXPLANATION: The error occured during the execution of an MVS-JES3 allocation subsystem interface routine. R15 has a program loaded abend code to uniquely identify the cause of the abend. The codes are:

1 In common allocation the number of units to be allocated by JES3 does not equal the number requested by MVS.

2 Unable to successfully issue an ESTAE during deallocation processing.

3 Unable to obtain storage for a dynamic allocation buffer.

4 Unable to obtain storage for a change DDNAME buffer.

5 Unable to find the address space ID associated with the request in any of the memory headers.

6 JST point error occured during common allocation or deallocation.

For Code 1:   R3-units requested, R5-units passed.

For Codes 2,3,4,6:   R3 has the macro RTN code.

For Code 5:   R2-A(JSCB), R3-Address space ID.

SYSTEM_ACTION: The affected task is terminated.

PROGRAMMER_RESPONSE: None.

PROBLEM_DETERMINATION: Table I, Items 1, 3, 5A, 15, 16, 29.   See OS/VS Message Library: JES3 Messages, GC36-1012

6FB

EXPLANATION: Register 15 contains a reason code in the hi-order byte and a return code in the low-order byte.

Reason Code 0

Subsystem Interface Common Services has detected an error in its calling parameters or in the system status. Return codes are:

24 The caller of SSICS is not in a system protect key 0-7.
28 The main processor specified by SYSID in the SSISERV macro is not defined.
32 An invalid combination of fields SELECBF, SELEXIT, SELBUFF was found in the IATYSEL control block for a WAIT or REPLY TYPE SSISERV request.
36 An error was detected attempting to write a staging area.
40 The primary and all secondary staging area extents have been exhausted.

Reason Code 1

An error return was taken from JES3 macro IATXEGM or IATXEPM. See JES3 macros manual for explanation of return codes.

Return codes are:

8 GETMAIN/FREEMAIN failed

Reason Code 2

An error return was taken from MVS FREECELL macro. See MVS macros manual for detailed explanation of return codes.

Return codes are:

8 cell address is invalid
       12 no cell pool
       16 invalid cell pool id

Reason Code 3

An error return was taken from MVS BLDCPC(L macro. See MVS macros
manual for detailed explanation of return codes.

Return codes are:

        4 GETMAIN failed
        8 invalid cell pool id
       12 non-global subpool
       16 cell size greater than pool size

Reason Code 4

An error return was taken from MVS GETCELL macro. See MVS macros manual
for detailed explanation of return codes.

Return codes are:

        8 chain pointers destroyed
       12 no cell pool
       16 invalid cell pool id

SYSTEM_ACTION: A dump of CSA, SQA, and the MVS trace table is taken to
a SYS1.DUMP data set and the current memory is abended.

NOTE: If the current memory is JES3, an error return is taken to JES3.
The calling DSP is then abended with a DM014 abend code.

OPERATOR_RESPONSE: Restart system if JES3 has abended.

PROGRAMMER_RESPONSE: For Reason Code 0 refer to the SSISERV macrc for
an explanation of IATYSEL specifications.

PROBLEM_DETERMINATION:

   Table I, item 2. Table III, items 1, 4. See OS/VS Message Library:
   JES3 Messages, GC38-101𝑧

MODULE: IATSSCM

7FB

EXPLANATION: A catastrophic error occurred during the execution of the
MVS-JES3 dynamic device reconfiguration (DDR) subsystem interface
routines.

SYSTEM_ACTION: The swap is terminated.

OPERATOR_RESPONSE: If the swap was operator initiated, retry. If the
swap was system initiated, no action is required.

PROGRAMMER_RESPONSE: None.

PROBLEM_DETERMINATION: Table I, Items 5A, 16, 29.

8FB

EXPLANATION: An error has occurred in one of the Interpreter Service

non-JES3 support areas.

Register 15 contains the return code:

5 An error has occurred in the Initiator Queue Manager Interpreter
Interface (IATIIII). Register 9 points to a work area which will
have formatted messages in it (IAT4901,2,3).

6 An error has occurred in a USAM FCINT or WRITE operation out of an
interpreter subtask.

7 An invalid DSB error in USAM initialization processing out of an
interpreter subtask.

8 An error has occurred in USAM buffer initialization out of an
interpreter subtask.

15 An invalid return from the OS Reader/Interpreter has occurred. A
dump is taken to SYS1.DUMP and the current task is detached.

DYNAMIC SUPPORT SYSTEM (DSS) INFORMATION

DSS is a debugging tool that IBM Program System Representatives and
user-authorized personnel can use to identify and provide temporary
corrections to software errors in the operating system (OS/VS).
Information presented below is in addition to that found in OS/VS
Dynamic Support System, GC28-0640.

ASP main processors running MVT or VS2-1 should have the CTC monitor
inactivated when DSS is used on the global JES3 processor to prevent
being disconnected. The following command will prevent main task
monitoring of the CTC:

    *T main-proc-name,F MT,P=C

An ASP to JES3 migration aid, available with an appropriately updated
level of ASP Version 3.1 and above, allows access of an ASP support
processor to a global JES3 MVS processor. The migration aid allows
production testing of a JES3 system while the balance of the work is
handled by the ASP system. When a job terminates, output can be printed
by the JES3 global processor or returned to the ASP support processor.
The aid consists of two callable DSPs. One executes under ASP Version
3.1 on an existing ASP support processor (ASPAID) and the other executes
under JES3 on the global processor (JESAID). CTC support routines are
also provided. Each DSP will communicate with the opposite processor by
a common CTC device. The aid permits the operator on the ASP system to
select jobs to be routed to the JES3 system based on class, group, point
of origin, user specified parameter, or exit routine. The jobs are
routed to JES3 for input processing, execution, and output processing,
or may be routed for execution only, and returned to the ASP system for
output processing.

ASPAID enables job selection based on operator, installation or user
specifications, provides post JES3 processing options and supports the
ASP side of the CTC adapter connection with the JES3 system.

JESAID supports the JES3 side of the CTC adapter and provides reader and
writer services.

FUNCTIONAL OVERVIEW

JES3 PROCESSOR

Module IATADJP is scheduled for execution via an operator call to the
JESAID DSP (*X JESAID).

IATADJP interfaces with the JES3 operator to initialize, modify or
terminate JESAID functions, responds to reader and writer requests, and
services the CTC for data transfer and interrupt handling operations.

Reader Processing

All jobs submitted via the JESAID reader are assigned a job origin of
"ASPSYS." SYSOUT data generated by jobs whose origin is "ASPSYS" will
be queued by output service for the JESAID writer device type unless a
valid JES3 destination is specified by a //*FORMAT card or SYSOUT DD
specification or SYSOUT class card definition. SYSOUT data queued for a
valid JES3 destination is processed by the JES3 output service writers.
SYSOUT data queued for the JESAID device type is selected by the JESAID
writer and returned to the ASP system, via the CTC, for ASP PRINT,
PUNCH, ACDS, etc. processing.

Writer Processing

The JESAID writer is a "hot writer". It is posted by output service whenever SYSOUT output is queued for the JESAID device type. Data sets are selected using the IATXOSWS macro. Each data set selected is transmitted to the ASP system and written by ASP module AIDADAP into the JDS/MRF for the associated job.

The JESAID writer transmits a data set open message providing ASP module AIDADAP with the required information to locate or create a JDS entry and initialize a MRF with an ASP header record. A "write-tape-mark" control write initiated by JES3 module IATADJP signals "end-of-file" to ASP for the data set being transmitted.

Data sets unable to be successfully transmitted to ASP are requeued for JES3 processing based on the alternate destination selected by the operator.

ASP PROCESSOR

Module ASPAID is scheduled for execution via an operator call to the ASPAID DSP (*X ASPAID).

ASPAID interfaces with the ASP operator to initialize, modify or terminate ASPAID function, handles ASP- IDADAP communications, monitor the job flow to/from the JES system, and determine a job's post-JES processing requirements on the ASP system.

INITIALIZATION PROCESSING

JES3 Initialization

During JES3 initialization, each processor defined via a MAINPROC control card as SYSTEM=ASPAD will have a main service control block structure built as though an MVT/VS2.1 ASP main had been defined with the following exceptions:

- The associated CTC UCB will not be initialialized with the sense SRB/IOSB.

- The MPCDATA Csect will be chained only from the SVT. Any processor defined as "SYSTEM=ASPAD" will be known only to the JESAID CTC for data transfer and interrupt handling operations.

The JES3 initialization deck must contain the following to permit JESAID reader, writer and CTC processing:

- A DEVICE card defining the GROUP and DEVICE name to be associated with the JESAID reader and writer. The DTYPE must be AID and the DGROUP must be ASPSYS.

    Example:

    DEVICE   DTYPE=AID,JNAME=AIDRDR,DGROUP=ASPSYS,JUNIT=(NONE,SY1,,ON)

- A MAINPROC and DEVICE card defining the CTC adapter used to communicate with the ASP system. The "SYSTEM" parameter on the MAINPROC card must be "ASPAD". JES3 initialization will initialize the required control blocks and tables but the defined processor will only be known to the JESAID DSP.

  Example:

  ```
  DEVICE,DTYPE=SYSMAIN,JNAME=SYAID,JUNIT=(4B0,SY1,,OFF)
  MAINPROC,NAME=SYAID,SYSTEM=ASPAD,ADAPTER=4B0,
  CTCCUA=(1,2),MAINCTC=4B0
  ```

  The CTCCUA parameter is required but need not reference SYSGENed devices. The above example assumes that SY1 is defined as a global JES3 processor.

  During JES3 Initialization, "SYSTEM=ASPAD" processors are handled somewhat like "SYSTEM=ASP" processors. Therefore, JES3 module IATINJB expects an IPL text file to be included in the JES3 initialization deck. If no other "MVT/VS2.1" systems are defined to JES3, a dummy IPL text file is needed to satisfy the IATINJB requirement.

  Example: The following satisfies the dummy IPL text requirement.

  ```
  *
  * dummy ipl text for asp processor
  *
  ipl,end
  ```

ASP Initialization

The JES3 system must be defined to ASP as a real main processor via the appropriate MAINPROC and DEVICE cards in the ASP initialization deck. The defined system may be used as an ASP remote main (MVT or VS2.1) until such time as it is initialized as a JES3 processor. Otherwise it should be set offline at ASP initialization time. Only those devices required for use as a real ASP main need be defined to this processor.

The ASP MAIN, when initialized as a JES3 processor must be offline, with all functions terminated. This offline status will be maintained while ASPAID is active. MAINIO for specified main will be disabled until the ASPAID is terminated.

INPUT SERVICE PROCESSING

JES3 Processing

JES3 module IATISMN ignores all valid "JESOPT" parameters on //*MAIN cards but will flush all jobs with invalid syntax in a "JESOPT" parameter. ASP input service will not queue any jobs for transmission to JES3 if errors are found while processing a "JESOPT" parameter. Therefore, the presence of an error in a "JESOPT" parameter indicates a job origin other than the ASP system. Additionally, "JESOPT" syntax errors may impact the proper handling of subsequent //*MAIN card

parameters.

ASP Processing

ISMAIN scans the JESOPT parameter on the //*MAIN card for migration
scheduling options.

//*MAIN [JESOPT={n|(n,j,s,M)}]

    n - specifies the scheduling option if the job completes normally on
        the JES system.
    j - specifies the scheduling option if the job does not complete
        processing (that is, not thru main) on the JES system.
    s - specifies the scheduling option if the JES system fails and is
        subsequently COLD STARTED.
    M - if specified, requests that the job be migrated.

    The options for the n, j, and s parameters are:

    R - reschedule the job for the JES SE (valid only for the s parm)
    A - run on the ASP system (if specified for DJC, jobs will default to
        O)
    O - schedule only the output DSPs and PURGE
    C - schedule only for PURGE processing on the ASP system

Example: The following JESOPT parameter causes ASPJOB to be transmitted
to JES3 for processing and purged on ASP if completed on JES3 or run on
ASP if incomplete on JES3 or run n ASP if the JES3 system fails.

    //ASPJOB JOB ,AARDVARK
    //*MAIN JESOPT=(O,A,A,M)
    // EXEC PGM=XYZ

The following DSPs are defined as OUTPUT processors (that is, processors
to be scheduled when 'O' is specified): PRINT, PUNCH, and ACDS.
Additional DSPs may be defined as OUTPUT processors for post-JES3
processing by using the OUTPUT (OTPUT=yes) parameter in the DSPDC macro
for the selected DSP in RESPARAM.

ISJES, after the ASPAID DSP has been called, selects jobs to be sent to
the JES system based on the ORIGI , CLASS, or GROUP specified on the
ASPAID call or subsequent START, or when specified on the //*MAIN card
(for example, //*MAIN JESOPT=(,, M)).

The transmission of DJC jobs is dependent on the first job entered for a
given net. If the first job of a net is sent to JES3, all subsequent
jobs for the net are sent to the JES3 system. If the first job is not
sent to JES3, subsequent jobs for the net are not selected for
transmission. Nets sent to JES3 will only be allowed to process output
on the ASP system.

A user exit is provided to override the above selection criteria. This
is accomplished by setting/clearing the ISAIDFL ISJMGRT flag. If the
selection criteria in the exit causes partial DJC nets to be sent to the
JES3 system, the results are unpredictable.

Jobs submitted with an error in the JESOPT parameter on the //*MAIN card
are not sent to the JES3 system. Jobs specifically requesting migration
are held to allow the operator to run or cancel the job on the ASP
system if ASPAID has not been called. The status of a job selected for
transmission to JES3 cannot be altered via ASP "modify" once input
service processing for the job is complete.

JSS PROCESSING(ASP)

Jobs to be sent to JES3 are cheduled °or transmission in a manner akin
to main scheduling, if ASPAI is activited. A RESQUEUE (RQ) entry is
built for each job to be sen. to JES3 ind added to the RQ chain and
JESRQ subchain. When a RQ EF is retur ied for the transmitted job, JSS
marks the appropriate SE's complete fo: the job tased on the code
returned by the ASPAIL DSP for the job. The return ccde is based on the
post JES3 processing options selected.

OUTPUT SERVICE PROCESSING(JES3)

During OSE construction, JES3 module IATOSDR determines if the
destination requested for jobs whose job origin is ASPSYS is a valid
JES3 destination and queues all SYSOUT data sets with invalid JES3
destinations as though no destination had been specified. (SYSOUT data
sets are queued for a device within the same GROUP as the job's input
origin device.)

Therefore, SYSOUT data to be transmitted back to the ASP system can be
selected by a writer that processes SYSOUT data for an output device
within the "ASPSYS" GRCUP of devices.

PURGE PROCESSING(JES3)

JES3 module IATPURG issues an INTERCOM macro directed to the JESAID DSP
during the Purge processing of each job whose job origin is "ASPSYS".
The text of the message contains the terminating JES3 job number and a
flag byte defining the termination status of the job (such as JCL error,
AEEND, or operator cancel).

Upon receipt of this message, JES3 module IATADJP converts it to the
format expected by the ASPAID DSP and transmits it to ASP module AIDADAP
as a console message which is roited by AIDADAP to the ASPAID DSP.
ASPAID uses the message content to determine post JES3 processing
requirements within the ASP system.

Example:

JES3 job number 0102 as completed JES3 processing normally.

>   (message code=x'67', JES3 job number=0102, normal completion
>   code=x'00')

>   IATPURG Intercoms - S JESAID,0102x'C0'
>   IATADJP writes as a CTC console message - x'67'0102x'00'

>   If JES3 job number 0102 completed abnormally, the following is sent:

>   (message code=x'67, JES3 job number=0102, abnormal completion
>   code=x'01')

>   IATPURG Intercoms - *S JESAID,0102x'01'
>   IATADJP writes as a CTC console message - x'67'0102x'01'

INSTALLATION PLANNING

The migration aid provides a viable means of selectively processing ASP jobs in a JES3 environment while maintaining the integrity of the jobs in the ASP queue. Only those resources required by the selected JES3 processing options (such as consoles or unit record devices), and used during job execution (such as tapes or disks) need be committed to the JES3 processor.

Both ASP and JES3 function as independent systems. The migration aid does not attempt to present a single system image, control the use of shared resources or provide control card and JCL compatibilty between the two systems. Jobs selected for transmission to JES3 may also be processed through some or all of the ASP Scheduler Elements once JES3 processing is complete. Therefore, consideration should be given to provide compatible job oriented initialization options for both the ASP and JES3 systems if compatibility is desired. The following functions must be considered for compatibility between the ASP and JES3 systems for jobs that are processed using the migration aid.

OUTPUT SERVICE

SYSOUT Card Defintions:

The SYSOUT class defined to JES3 is propagated to the ASP JES when output is returned via the JESAID writer. To provide similar processing of SYSOUT output, under JES3 or ASP, the SYSOUT CLASS definitions should be the same.

Example:

The following is defined to both ASP and JES3, therefore SYSOUT data processing on either system is the same.

    SYSOUT,CLASS=A

The following cards define the same SYSOUT class but with different characteristics for each system. Therefore, output will not be processed in the same way.

    JES3 - SYSOUT,CLASS=C,TYPE=PUNCH
    ASP - SYSOUT,CLASS=C,TYPE=PRINT

DEVICE Names:

JES3 output service queues SYSOUT output for processing by the JESAID writer if the jobs origin is "ASPSYS" and no destination is specified or an invalid JES3 destination is specified or "DEST=ASPSYS" is specified. Therefore, only those support devices that physically exist on the JES3 system need be defined to JES3. The names associated with the JES3 support devices should be the same as in ASP to eliminate changes to ASP job decks or could be unique names defined only to JES3.

Examples:

The following job is submitted to JES3 via the migration aid. SYSPRINT
is returned to ASP for processing.

```
//ASPJOB JOB ,AARDVARK
// EXEC PGM=ACCCUNT
//SYSPRINT DD SYSOUT=A
```

The following job is submitted to JES3 via the migration aid.

```
//ASPJOB JOB ,AARDVARK
//*FORMAT PR,DDNAME=SYSPRINT,DEST=RM001
// EXEC PGM=ACCCUNT
//SYSPRINT DD SYSOUT=A
```

If RM001 is defined to ASP but not to JES3, SYSPRINT is returned to
ASP. If RM001 is defined to JES3, SYSPRINT is processed by JES3.

The following job is submitted to JES3 via the migration aid.

```
//ASPJOB JOB ,AARDVARK
//*FORMAT PR,DDNAME=SYSPRINT,DEST=RM001
//*FORMAT PR,DDNAME=SYSPRINT
// EXEC PGM=ACCOUNT
//SYSPRINT DD SYSOUT=A
```

If RM001 is defined to JES3, SYSPRINT is processed by JES3 and a copy is
also sent back to the ASP system. If RM001 is not defined to JES3, only
one copy of SYSPRINT is sent back to the ASP system.

MAIN SCHEDULING

Generalized main scheduling (GMS) job-oriented scheduling information
(that is, ClASS names) should be defined the same for ASP and JES3 to
eliminate ASP job deck changes. Processor names (such as SY1) valid to
ASP but not known to JES3 result in //*MAIN control card errors under
JES3 for jobs referencing the names. Therefore, //*MAIN cards may have
to be changed to reference a valid JES3 processor if the job is to be
processed under JES3. Generic names used in ASP job decks must be valid
to JES3 to eliminate ASP job deck changes.

STANDARDS

Standard job oriented defaults such as FAILURE, FORMS, CARRIAGE, LINES,
or CARDS should be defined alike for both ASP and JES3 if compatibility
is desired.

OPERATOR COMMUNICATIONS

Proper initialization of the migration aid in the ASP and JES3 systems
is required to insure the integrity of the existing ASP system and
permit the CTC communications to be established in the proper sequence.
Deviations from the recommended initialization procedure may cause
unpredictable results.

The ASPAID DSP should always be initialized first if CTC data
communication is to be establishel with JES3.

Once the ASP CTC communication en'ironment has been established, the
JESAID DSP may be called in the J:S3 system.

Termination of the migration aid iay be initiated from either system via
a *CANCEL JESAID or *CANCEL ASPAI) operator command, but requires
operator intervention on both the ASP and JES3 systems to effect the
complete shutdown of the faciltiy *CANCEL JESAID, issued first,
terminates the JES3 portion of th: Migration Aid and quiesces the CTC
support within the ASP system. A subs:quent *CANCEL ASPAID effects the
shutdown of the migration aid facility within ASP and the rescheduling
of jobs queued for JES3. A *CANCEL ASPAID issued before a *CANCEL
JESAID terminates the ASP portion of the migration aid and causes all
JESAID functions to be quiesced in the JES3 system. A subsequent
*CANCEL JESAID is required to complete the shutdown cf the JESAID DSP in
the JES3 system.

JES3 COMMANDS

The JESAID reader queues jobs rec:ived from ASP for the JES3 internal
reader. Therefore, an internal reader must be active to permit jobs
transmitted from ASP to be entered int(the JES3 system. To start an
internal reader enter:

   *X INTRDR

Similarly, the JESAID writer queues rerouted output fcr an output
service writer but does not dynamically schedule the writer. Therefore,
a writer may have to be started t) process rerouted JESAID SYSOUT data.
To start a writer, enter:

   *X WTR,uuu ..uuu=device specified as the JESAID alternate
   destination.

*CALL
*X JESAID,[CTC=unit address]
         [,RDR={STOP|(START,reader name)}]
         [,WTR={HOLD|START|STOP|({START|STOP,
            alternate destination})}]

unit address - identifies the CTC adapter address used by JESAID to
   communicate with the ASP system. The unit must be defined to the
   global JES3 processor as SYSTEM=ASPAD in the JES3 initialization
   deck. No attempt is made to communicate with the ASP system until
   this parameter is provided. Therefore, the writer STOP option may be
   employed to reroute queued SYSOUT data independent of the ASP
   processor status. The "CTC" must be defined to JESAID only once and
   may be on the *CALL or a subsequent *START. Once defined, it remains
   the active CTC device until JESAID is canceled by the JES3 operator
   or is quiesced via an ASP operator cancel or JESAID failure.

START - activates the JESAID reader or writer function. Once started
   they remain active until a STOP or *CANCEL is issued.

STOP - deactivates the reader cr writer function. Jobs normally read by
   an active reader will remain queued in the ASP system. SYSOUT data
   sets queued for the JESAID writer will be redirected tc the alternate
   destination or deleted if no alternate destination is specified.

HOLD - signals the JESAID writer to terminate transmission of SYSOUT
data to ASP after the active data set is complete. All other output
will remain queued for the writer until a subsequent START or STOP is
issued.

alternate destination - a 1-8 character name that is used as the JES3
output destination for writer data sets that cannot be successfully
transmitted to ASP or whenever the writer is in a stopped state. The
default is no alternate destination which will result in the data
sets being deleted. Any valid JES3 device defined as "DTYPE=PRTxxxx"
may be used as an alternate destination. SYSOUT output rerouted to
the alternate destination is printed using installation standard
forms, carriage, train, etc..

reader name - the name assigned to the JESAID reader via the DEVICE card
in the JES3 initialization deck. The GROUP name associated with this
JNAME becomes the ORIGIN for all jobs read by the JESAID reader.

*START JESAID - (All parameters valid for the JESAID "CALL" are also
valid here.)

Additionally, a "*S JESAID,STATUS" results in the issuing of message
IAT1930 indicating the current status of all JESAID functions. The
"STATUS" request may be included on the same *START that contains
other JESAID parameters but should always be the last parameter
specified. Any parameters following the STATUS parameter are
ignored by JESAID.

Examples:
*S JESAID,RDR=STOP,STATUS ......Valid
*S JESAID,STATUS ......Valid
*S JESAID,STATUS,RDR=STOP ......RDR=STOP will be ignored

*RESTART JESAID - used to reinitialize the CTC and the active
reader-writer functions after an ASP or ASPAID restart if JESAID is
active. This command should only be used when requested by the
ASPAID DSP.

*CANCEL JESAID - causes the termination of all JESAID functions. A
cancel transmission will be sent to the ASP system to effect the
shutdown of the active CTC functions in the ASP system.

ASP COMMANDS

*CALL
*X ASPAID

   [,CTC=unit-address] [,NAME={sysname|JES}]
   [,CLASS={jcb-class|(job-class1,job-class2,...,job-classn)|
          /job-class|/(job-class1,job-class2,...,job-classn) }]
   [,GROUP={job-class-group|(job-class-group1,...,job-class-groupn)|
          /job-class-group|/(job-class-group1,...,job-class-groupn) }]
   [,{ORG|ORIGIN}={origin|(origin1,origin2,...,originn) }]
   [,{N|NORMAL}={A|O|C}] [,{J|JOBFAIL}={A|O|C}] [,{S|SYSFAIL}={R|A|O|C}]
   [,{D|DISPLAY}={CLASS|ORG|ORIGIN}]

*X ASPAID - used to initialize the ASPAID DSP and allow input service to
start the selection of jobs that are to be transmitted to JES3.

unit address - identifies the CTC address used by ASPAID to communicate

with the JES3 system.

sysname - a 1-8 character name used to identify the JES3 system for
communications purposes.

Job selection parameters:

CLASS - defines the class of jobs that are to be transmitted to the JES
system.

GROUP - defines the job-class-group-name that is to be used to determine
the class of jobs that are to be transmitted to the JES3 system.

ORIGIN - specifies jobs to be selected for transmission to JES3.

DISPLAY - displays the CLASS(es) or ORIGIN(s) currently being used for
job selection.

Post-JES processing parameters:

NORMAL - defines the action to be taken for a job that completes on the
JES system.

JOBFAIL - defines the action to be taken by ASPAID for a job when JES
returns a job-fail code for that job.

SYSFAIL - defines the action to be taken when ASPAID is notified of a
JES3 system failure or when ASPAID is terminated. (Reference
*RESTART and *CANCEL ASPAID)

The job selection and processing parameters may be overridden by the
JESOPT parameter on the job's //*MAIN card.

*START ASPAID - (All parameters valid for the ASPAID call are also valid
here. The CTC and NAME parameters will not cause any action to be
taken if previously specified.)

START is used to initiate the scheduling of jobs that have been
selected for transmission and, or subsequently, to modify the ASPAID
parameters. The scheduling of jobs is started on the start command
following the command in which the CTC is specified. Until this
sequence of commands is issued, jobs will only be queued for JES
processing. All modifications for selection and failure criteria
must be communicated in this manner. If the CTC parameter is
specified on a START command, a subsequent START command must be
issued to initiate scheduling.

*RESTART ASPAID - used to reinitialize the CTC communications with JES3.
All jobs that have been transmitted will be processed according to
their SYSFAIL option. This message should be issued when it is
desired to reinitialize the migration aid, normally after a JES3
system failure that necessitated a JES3 COLDSTART. The ASP operator
will be prompted to start/restart JESAID.

The issuance of a RESTART causes an ASPAID cancel transmission to be
sent to the JES3 system. If issued after a JES warmstart or during
normal operation it may cause jobs to be run twice on the JES3 system
(SYSFAIL=R) and/or output data sets for jobs to be incomplete on the
ASP system.

The single exception is if module AIDADAP fails and is quiesced by
ASP FAILSOFT. The issuance of an *RESTART ASPAID under these

circumstances will effect the reinstatment of module AIDADAP and the
restoration of the migration aid status, within ASP, prior to the
failure.

*CANCEL ASPAID - causes the termination of the ASPAID function. A
cancel transmission is sent to the JES3 system to alert JESAID that
the ASPAID functions are terminating. All jobs sent to JES3 are
processed according to their SYSFAIL option, except that jobs having
the R (reschedule JES) option have their JES SI marked complete and
are processed according to their JOBFAIL option.

MESSAGES

JES3 PROCESSOR

IAT1900   JESAID ACTIVE

EXPLANATION: The JESAID DSP is ready for operator input and is
proceeding with the processing of parameters on the "CALL".
OPERATOR_RESPONSE: None.

IAT1901   unit address IS AN INVALID JESAID PROCESSOR

EXPLANATION: A CTC address specified in a "CTC=xxx" operator request
was not defined during JES3 initialization as "SYSTEM=ASPAD" and cannot
be used as a JESAID "CTC" device.
OPERATOR_RESPONSE: Reenter request using valid CTC address.

IAT1902   unit address IS ALREADY ACTIVE

EXPLANATION: The CTC unit address indicated is currently initialized
for JESAID communication with the ASP system. JESAID supports a single
CTC interface to ASP and all subsequent *START CTC= requests are
rejected while a given interface is active.
OPERATOR_RESPONSE: None.

IAT1903   INVALID OPERATOR REQUEST   "text" ...REENTER

EXPLANATION: A parameter entered on a *CALL or *START is in error.
"Text" indicates the keyword associated with the error or the
non-keyword in error. All subsequent parameters specified are ignored.
OPERATOR_RESPONSE: Reenter request via *START or issue *CANCEL to
terminate.

IAT1904   "text" TRACE DISPLAY

EXPLANATION: An invalid CTC operation has been detected. The "text"
contains a trace of CTC operations.
OPERATOR_RESPONSE: Verify that the ASPAID function is active and the
CTC has been properly initialized in the ASP system. *CANCEL JESAID on
repeated occurences of this message.

IAT1905   TERMINATION IN PROGRESS

EXPLANATION: In response to the JES3 operator issuing a *CANCEL or
*RESTART or a CANCEL transmission from the ASPAID DSP, all JESAID
functions are being terminated.
OPERATOR RESPONSE: If due to an *CANCEL, by the JES3 operator, no
operator response is required. If due to an ASP operator *CANCEL or
*RESTART of the ASPAID DSP, all active functions will be quiesed and
JESAID will wait for a *START or *CANCEL from the JES3 operator.
Note: Any attempt to reestablish CTC communication with the ASP system
when the ASPAID DSP is not active will cause unpredictable results.
Therefore, unless ASPAID is active, *START JESAID requests should be
restricted to writer rerouting options and *RESTART should not be used.

IAT1906   JESAID TERMINATED

EXPLANATION: JESAID has terminated processing due to a JES3 operator
*CANCEL.
OPERATOR RESPONSE: None.

IAT1907   READER {ACTIVATED|DEACTIVED} ORIGIN=name

EXPLANATION: The status of the JESAID reader is as indicated in the
message.
OPERATOR RESPONSE: None.

IAT1908   {READER|WRITER} PROCESSING COMPLETE FOR JOB number/name

EXPLANATION: Reader - The transmission of a job from the ASP system is
complete and the job has been queued for the JES3 internal reader.
Writer - All data sets currently queued for the job indicated have been
transmitted to ASP or requeued for another JES3 output service writer or
deleted.
OPERATOR RESPONSE: None.

IAT1909   READER IS NOT ACTIVE

EXPLANATION: A "RDR=STOP" has been issued and the reader is not
active.
OPERATOR RESPONSE: None.

IAT1910   READER IS ALREADY ACTIVE

EXPLANATION: A "RDR=(START,name)" was issued and the reader is already
active.
OPERATOR RESPONSE: None.

IAT1911   RESTART REJECTED...CTC IS NOT ACTIVE

EXPLANATION: *RESTART can only be issued after the CTC has been
activated via an *START CTC=unit address. *RESTART should only be used
to reestablish CTC communications with ASP after an ASP system or ASPAID
restart if JESAID CTC communications are not queisced.
OPERATOR RESPONSE: If communication with the ASP system is desired,
issue an *START "CTC=unit address" for the JESAID DSP.

IAT1912   WRITER {ACTIVATED|DEACTIVATED| HELD|STOPPED} ALTDEST={name|NONE}

EXPLANATION: The status of the JESAID writer is as indicated in the
message. NONE indicates no alternate destination.

OPERATOR_RESPONSE: None.

IAT1913 name CANNOT BE USED AS A JESAID READER DEVICE

EXPLANATION: The device name specified in a RDR=(START,name) operator
request is offline or not defined as a JESAID reader device. The JESAID
reader device must be defined in the JES3 initialization deck as
"DTYPE=AID" and "DGROUP=ASPSYS".
OPERATOR_RESPONSE: Vary device online to JES, or specify valid JESAID
reader device name.

IAT1914 (READER|WRITER) WAITING FOR (WORK|CTC)

EXPLANATION: No jobs are currently queued for the indicated processing
or the CTC is not curently active.
OPERATOR_RESPONSE: If data transmission with the ASP system is desired,
and the message indicates "WAITING FOR CTC", issue *START for CTC=unit
address; else, no operator action is required.

IAT1915 WRITER IS NOT ACTIVE

EXPLANATION: An operator request to alter the current writer status was
issued and the JESAID writer was never started. The writer must be
started before it can be stopped or held.
OPERATOR_RESPONSE: Issue a *START "WTR=START" JESAID request and then
alter writer to desired status.

IAT1916 name IS AN INVALID ALTERNATE DESTINATION

EXPLANATION: The alternate destination specified in a writer start or
stop request is not a valid "PRT" device.
OPERATOR_RESPONSE: Reenter request using a valid alternate
destination.

IAT1917 WRITER ACTIVE FOR JOB number/nnn

EXPLANATION: The writer has found the data set(s) queued for the job
indicated and is proceeding to process them.
OPERATOR_RESPONSE: None.

IAT1918 (OPERATOR|ERROR) REROUTE JOB number/name

EXPLANATION: The indicated job has been requeued for another output
service writer or deleted based on the optional destination status
because the write. is "STOPPED". Else, an error has been detected
during writer processing for the job indicated. ALL data sets have been
requeued for another output service writer or deleted based on the
optional destination status.
OPERATOR_RESPONSE: None.
Note: Repeated errors may indicate (1) jobs were not submitted via the
the JESAID reader or (2) the jobs no longer exist in the ASP queue or
(3) the jobs status has been altered by the ASP operator and are no
longer active in the ASPAID SE.

IAT1919 CTC QUEISCE COMPLETE ON UNIT=name

EXPLANATION: CTC communications are terminated due to an ASPAID cancel
or a JES3 operator *CANCEL or *RESTART request.

OPERATOR_RESPCNSE: None.

IAT1920 NO RESPONSE RECEIVED CN UNIT=unit address

EXPLANATION: The CTC address specified is not responding to JESAID
initial CTC transmission.
OPERATOR_RESPONSE: Verify that the correct procedure was used to
initialize ASPAID and JESAID. *CANCEL JESAID on repeated occurences of
this message, reinitialize the CTC communications on the ASP processor
and recall JESAID.

IAT1921 WAITING FCR READER/WRITER/CTC OPTIONS

EXPLANATICN: No JESAID functions are currently active.
OPERATOR_RESPCNSE: Enter *START JESAID with desired operands or *CANCEL
to terminate JESAID.

IAT1922 CTC INITIALIZATION COMPLETE ON UNIT=unit address

EXPLANATION: CTC communications have been established with the ASP
system.
OPERATOR_RESPCNSE: None.

IAT1923 ASPSYS GROUP DEVICE UNAVAILABLE

EXPLANATICN: The writer did not find an online device defined as
"DTYPE=AID" and "DGROUP=ASPSYS".
OPERATOR_RESPONSE: Vary a device online with the appropriate
characteristics or if none are defined to JES3 notify your System
Programmer.

IAT1924 PERMANENT I/O ERROR UNIT=unit address

EXPLANATION: A permanant I/O error has occurred on the CTC device
indicated. Recovery will be attempted by restarting the current
function. If recovery fails, JESAID may be quiesed.
OPERATOR_RESPONSE: None.
Note: Repeated errors may indicate a hardware problem.

IAT1925 JOBS QUEUED FCR READER

EXPLANATION: Jobs are available in the ASP system for input to JES3 and
no JESAID reader has been started.
OPERATOR_RESPONSE: Start a JESAID reader if inputting of jobs is
desired.

IAT1926 JESAID QUIESCED BY ASPAID CANCEL

EXPLANATION: All active JESAID functions have been terminated due to
the cancelation of the ASPAID DSP in the ASP system.
OPERATOR_RESPONSE: Issue a *CANCEL to terminate or *START with desired
options after ASPAID is restarted in the ASP system.

IAT1927 JESAID QUIESCED BY JESAID FAILURE

EXPLANATION: A program failure caused all active JESAID functions to be
terminated.

OPERATOR_RESPONSE: Issue *CANCEL to terminate or *START with desired
options.

IAT1928 JOB job number PURGE WAITING FOR CTC

EXPLANATION: The job indicated has completed JES3 processing and the
job purge message is queued waiting for CTC initialization.
OPERATOR_RESPONSE: Issue an "*s JESAID,CTC=unit address" if
communications with the ASP system is desired. Else, no action is
required.
Note: Queued termination messages are purged if JESAID is canceled
before the CTC is initialized.

IAT1929 JESAID QUIESCED..INVALID ASP RESQUEUE

EXPLANATION: After a JES3 cold start, and during CTC initalization,
job(s) were found in the ASP RQ that had previously been transmitted to
the JES3 system. This indicates an improper migration aid
initialization procedure was used. All JESAID functions are quiesced
and message IAT1921 is issued.
OPERATOR_RESPONSE: (ref. message IAT1921)

IAT1930 CTC{A|D},unit name RDR{A|D},origin name
         WTR{A|D|H|S},alternate dest

EXPLANATION: The current status of the JESAID functions are as
indicated. A - Active, D - Inactive, H - Held, S - Stopped
OPERATOR_RESPONSE: None.

ASP PROCESSOR

IAT1951 'text' invalid 'explanation' [message ignored]

EXPLANATION: A parameter entered on a CALL or START is invalid.
OPERATOR_RESPONSE: Re-enter the correct parameter(s) via START or issue
CANCEL to terminate ASPAID. If 'message ignored' is appended to the
message all of the input has to be re-entered, otherwise only the
parameter in error has to be re-entered.

IAT1952 CTC unit-address (xxx) not defined as ASP real main.

EXPLANATION: The CTC unit-address in the CALL has not been defined as
an ASP main or, if so defined, has not been defined as a REAL main on a
MAINPROC initialization card.
OPERATOR_RESPONSE: Check the CTC address entered. If incorrect
re-enter the correct unit-address on a *S ASPAID command. If correct
contact the system programmer.
PROGRAMMER_RESPONSE: Select other CTC address for migration tool or
restart ASP with MAINPROC for real processor desired.

IAT1953 ASP MAIN (xxx) online

EXPLANATION: The main selected as a migration tool is online to ASP as
a real main.
OPERATOR_RESPONSE: Vary the MAIN offline to ASP and notify ASPAID via
the START command.

IAT1954 {JOBS|IJP|ACDS} active on ASP MAIN selected for migration.

EXPLANATION: Jobs are active on the main selected, or IJP or ACDS is
active for the main selected.
OPERATOR RESPONSE: Cancel the jobs or functions active on the main, or
allow them to complete and notify ASPAID via the START command when the
main is quiesced.

IAT1955 ASPAID initialized - job selection for migration started

EXPLANATION: ASPAID has been initialized and jobs that meet migration
criteria are being selected and queued for migration.
OPERATOR RESPONSE: When the JES system is active - issue a START ASPAID
to begin job migration.

IAT1956 ASP-JES3 migration active

EXPLANATION: Job migation has been started to the JES3 system.
OPERATOR RESPONSE: None.

IAT1957 ASPAID ACTIVE. Job scheduling for migration started.

EXPLANATION: In response to an operator *START command the ASPAID CTC
communications task has been started and JSS has been posted to start
the scheduling of jobs queued for migration.
OPERATOR RESPONSE: None.

IAT1958 ASPAID TERMINATION IS IN PROGRESS

EXPLANATION: In response to the ASP operator issuing a *CANCEL ASPAID
command, all ASPAID functions are being terminated. All migrated jobs
will be processed according to their SYSFAIL option.
OPERATOR RESPONSE: None.

IAT1959 ASPAID TERMINATED

EXPLANATION: ASPAID has terminated processing due to an ASP operator
*CANCEL.
OPERATOR RESPONSE: None.

IAT1960 ASPAID RESTART PROCESSING COMPLETE - START/RESTART JESAID ON
         JES.SYSTEM

EXPLANATION: In response to the ASP operator issuing a *RESTART ASPAID
command, ASPAID has processed all jobs active on the JES system
according to their SYSFAIL option and has re-initialized AIDADAP.
AIDADAP is waiting for an initial transmission from JESAID.
OPERATOR RESPONSE: Notify the JES operator to START/RESTART JESAID to
re-establish communications.

IAT1961 JESAID terminated by JES operator.

EXPLANATION: JESAID has been canceled by the JES operator.
SYSTEM ACTION: ASPAID will wait for *CANCEL or *RESTART from ASP
operator.
OPERATOR RESPONSE: Enter *CANCEL ASPAID if the migration function is to
be terminated. Enter *RESTART ASPAID if JES is to be COLDSTARTED. If
JESAID is restarted no operator action is necessary.

IAT1962   Job asp-job-number {ACTIVE|COMPLETE} on JES3 as jes-job-number

EXPLANATION: ACTIVE- The transmission of the job to the JES3 system is
complete. COMPLETE - The job has completed JES3 processing and all data
transmission for the job is complete.
OPERATOR_RESPONSE: None.

IAT1963   ASPAID {CLASS|ORIGIN} table
          {empty|{job-class1,2...n|origin1,2...n}}

EXPLANATION: The CLASS or ORIGIN migration selection criteria consisted
of the class(es) or origin(s) specified.
OPERATOR_RESPONSE: None.

IAT1964   AIDADAP FAILED - restart ASPAID to refresh or cancel ASPAID

EXPLANATION: AIDADAP, the ASPAID CTC I/O handler has failed.
OPERATOR_RESPONSE: Enter *RESTART ASPAID to refresh AIDADAP and restart
migration processing, or enter *CANCEL ASPAID to terminate migration
processing.

IAT1965   Message received from JES for JES job jes-job-number invalid.

EXPLANATION: A job started or completed message was received for a job
unknown to ASP from JES. This may occur as a result of a non-ASP
submitted JES job specifying ORG=ASPSYS or an improper sequence of
*RESTART ASPAID/JESAID commands.
OPERATOR_RESPONSE: None.

IAT1966   INVALID OPERATOR REQUEST

EXPLANATION: An operator message was directed to the JES3 processor and
is rejected.
OPERATOR_RESPONSE: None.

IAT1967   RESQUEUE INVALID..ASPAID RESTART PROCEEDING

EXPLANATION: After a JES3 cold start, transmitted jobs were found in
the ASP RQ and ASPAID restart processing is being performed.
OPERATOR_RESPONSE: None.
Note: ASPAID must be restarted or canceled whenever JES3 is cold
started if jobs previously transmitted to JES3 had not completed JES3
processing.

IAT1968   ASPAID message accepted

EXPLANATION: The last command entered has been processed by ASPAID.
This message will only be issued when the operator command did not cause
any other message to be issued.
OPERATOR_RESPONSE: None.

IAT1969   JES3 SYSMSG {START|END}

EXPLANATION: This message delimits the JES3 portion of the SYSMSG file
printed by ASP to better define that output generated by ASP and JES3.
OPERATOR_RESPONSE: None.

IAT199 "ctc trace"

EXPLANATION: AIDACAP trace. "ctc trace" contains a trace of CTC
operations.
OPERATOR RESPONSE: None.

VAR90 migration-system-name MIGRATION TOOL. CANNOT BE VARIED ONLINE ON
       SUPPORT

EXPLANATION: The main specified on the vary command is active as a
migration aid and cannot be varied online as an ASP main.
OPERATOR RESPONSE: No response is necessary if the migration tool is to
remain active. If the main is to be used as an ASP main, then enter
*CANCEL ASPAID and after ASPAID has terminated vary the main online.

ISV92 JOB job-name CANNOT BE SENT TO JES. 'text'

EXPLANATION:

● The job is a non-standard job and there is insufficient room to add a
  SE for JES in either the JCT or JD.B.

● The job's //*MAIN card migration request cannot be honored since the
  migration aid has not been called.
SYSTEM ACTION: The job is placed in operator hold.
OPERATOR RESPONSE: Release the job for ASP execution, cancel the job or
notify the programmer to determine action to be taken.
PROGRAMMER RESPONSE: Notify operator to release the job for scheduling
on the ASP system or to cancel the job and resubmit the job when the
migration tool is activated. The job cannot be held for migration since
the migration selection is only made during input service.

ISV93 JOB SELECTED FOR MIGRATION TO JES3

EXPLANTION: The job has been selected for migration to JES3 based on
job class, job origin, or the JESCPT parameter on the //*MAIN card.
SYSTEM ACTION: The job will be scheduled to be sent to the JES3
system. After executing on the JES3 system, of if the migration aid is
canceled, further scheduling on the ASP system will be dependent on the
system default or programmer options specified.
This will be the last message in SYSMSG if the migration aid is canceled
prior to the job being actually sent to the JES3 system and the job is
canceled with output.

JSS09 JOB job-name CANNOT BE SENT TO JES. ASPAID CANCELED. JOB HELD.

EXPLANATION: The specified job that had been selected for JES
processing cannot be scheduled for JES since the ASPAID function has
been canceled.
SYSTEM ACTION: The job has its JES SE marked complete and is placed in
operator hold.
OPERATOR RESPONSE: Release the job for ASP execution, cancel the job or
notify the programmer to determine action to be taken.
PROGRAMMER RESPONSE: Notify operator to release the job for scheduling
on the ASP system or to cancel the job and resubmit the job when the
migration tool is activated. The job cannot be held for migration since
the migration selection is only made during input service.

The following are programming notes and restrictions for the JES3 (VS2 Release 3) user.

PROGRAMMING NOTES

ACTIVATING JES3 STANDALONE DUMPS

Standalone Dump Formatting

Module IATABPR executes as a user exit routine to the OS/VS2 service aid program AMDPRDMP. It serves as an interface between AMDPRDMP and the JES3 dump formatting routines to produce printed control blocks from a raw core image dump.

Module IATABPR is reenterable. To improve performance when printing core image dumps with AMDPRDMP, it is recommended that IATABPR reside in the pageable link pack area.

Control Statements

Module IATABPR processes two additional control statements as input to AMDPRDMP: JES3 OFF and JES3 DEBUG.

JES3 OFF -- This control statement causes module IATABPR to bypass processing of any JES3 control blocks for the duration of the job step initiating AMDPRDMP. This aid is intended to enhance the performance of AMDPRDMP when either the core image dump does not contain a JES3 subsystem to be formatted or when JES3 control block formatting is not desired in the printed output.

JES3 DEBUG -- This control statement enables data collection to assist in problem solving in the event of a program check during format processing of JES3 control blocks. The JES3 DEBUG statement allows a snapshot dump (ID=77) to be written to the JES3SNAP data set. The snapshot contains registers at the time of the snap and the storage occupied by the failing module followed by the storage occupied by the ABNCSECT work area. Important registers convey:

- R11 Address of IATABPR work area (DSECT ABNXTN mapped by IATYXTN)

- R13 Address of formatting work area (DSECT ABNCSECT mapped by IATYABN)

Messages

Seven messages are possible during IATABPR processing. They are written
directly to the AMDPRDMP PRINTER data set at the time the conditions
that provoke the message is encountered.

{EXCESSIVE OUTPUT DURING JES3 FORMATTING IN module-name| PROGRAM CHECK
DURING JES3 FORMATTING IN module-name| POSSIBLE LOOP OF JES3 FORMATTING
IN module-name}

Explanation: Excessive output (more than 3K) lines, a program check, or
excessive time (more than 3 minutes) was detected while module-name was
in control. The PSW and registers at the time of failure are also
printed, followed by the module ID referenced by base register 10 at the
time of failure.
System Action: Continued processing is attempted with the next
formatting module.
Programmer Response: If the message is accompanied by unsatisfactory
dump output, rerun the job with a JES3 OFF control statement to bypass
JES3 formatting.
Problem Determination: Rerun the job with a JES3 DEBUG statement.
Table I, items 1, 5, 13, 22
Module: IATABPR

SNAPSHOT FAILED DURING JES3 DEBUG MODE

Explanation: The OS/VS2 macro SNAP failed to produce output during a
JES3 DEBUG interval when an unexpected return code was encountered.
System Action: Continued processing is attempted with the next
formatting module.
Programmer Response: Make sure the job step includes a JES3SNAP DD
statement. It may be necessary to increase the REGION size for
execution of AMDPRDMP.

JES3 PERFORMANCE-AID CDE AREA ERROR-FORMATTING MAY BE SLOWED

Explanation: An invalid address was encountered while obtaining CDE/XTNT
list data from VS control blocks (that is, module names and their extent
addresses). The table is marked incomplete and may or may not impact
the speed of JES3 dump formatting. A longer lookup method is used when
a name or address does not exist in the CDE table during JES3 MEMORY
USAGE formatting, FCT formatting, or trace table formatting.
System Action: None. JES3 dump formatting continues.
Programmer Response: The most likely cause of this condition is the dump
does not contain the area with a needed CDE or extent list (partial dump
or the area was previously destroyed before the dump). If this
condition is persistent on several different dumps, the problem is
likely to be an internal error in formatting module IATABN7.
Problem Determination: Table I, items 4, 7, 16; Table III, item 7. See
OS/VS Message Library: JES3 Messages, GC38-1012.
Module: IATABN7

JES3 PERFORMANCE-AID DSP AREA OVERFLOW-FORMATTING MAY BE SLOWED

Explanation: Too many DSP names exist in the JES3 DSP Dictionary to fit
in the JES3 dump formatting performance-aid DSP table (capacity is 140
names). The table is marked incomplete and may or may not impact the
speed of JES3 dump formatting. The DSP table is used to obtain DSP/MPC
names during formatting of FCTs and trace table entries. Names are
obtained by a longer lookup method when they do not exist in the DSP
table.

System Action: None. JES3 dump formatting continues.
Programmer Response: None. The internal table capacity of 140 entries
has been exceeded. Performance may not be appreciably affected in most
cases.
Problem Determination: Table I, items 4, 7, 16; Table III, item 7. See
OS/VS Messages Library: JES3 Messages, GC38-1012.
Module: IATABM9

JES3 PERFORMANCE-AID CDE AREA OVERFLOW-FORMATTING MAY BE SLOWED

Explanation: Too many CDE names exist on the JOB PACK QUEUE to fit in
the JES3 dump formatting performance-aid CDE table (capacity is 250
names). The table is marked incomplete and may or may not impact the
speed of JES3 dump formatting. The CDE table is used to obtain module
names/entry points during formatting of JES3 MEMORY USAGE, FCTs, and
trace table entries. Names will be obtained by a longer lookup method
if they do not exist in the CDE table.
System Action: None. JES3 dump formatting continues.
Programmer Response: None. The internal table capacity of 250 entries
has been exceeded. Only reducing the number of names on the job pack
queue will circumvent this condition. Performance may not be
appreciably affected in most cases.
Problem Determination: Table I, items 4, 7, 16; Table III, item 7. See
OS/VS Messages Library: JES3 Messages, GC38-1012.
Module: IATABM7

JES3 PERFORMANCE-AID NOT AVAILABLE-FORMATTING MAY BE SLOWED

Explanation: The GETMAIN for a performance table of 5688 bytes failed
during JES3 formatting. Formatting continues, but reverts to "normal"
mode which may have an impact of noticeably slower dump formatting of
JES3 control blocks.
System Action: None. JES3 dump formatting continues.
Programmer Response: Limit the virtual storage region size so PRDUMP
does not usurp all of virtual storage for use as buffers. This
limitation can be imposed by using the REGION keyword on the JOB/EXEC
statement. For example, //DUMP JOB REGION=256K will limit the buffer
area to 256K, and leave a sizeable residue for module loading and fixed
length GETMAINS.
Problem Determination: Table I, items 4, 7, 16; Table III, item 7. See
OS/VS Messages Library: JES3 Messages, GC38-1012.
Module: IATABM7

JES3 FORMATTING PERFORMANCE-AID FOR AENGET DID NOT INITIALIZE

Explanation: The internal buffer management could not be activated. The
buffering function reverts to "normal" mode to continue formatting.
Impact is a higher degree of CPU overhead.
System Action: None. JES3 dump formatting continues.
Programmer Response: The IATABPR formatting module driver for JES3 could
not locate a key comparand in PRDMP module routine AMDPRRDC, or the key
buffer map entry did not contain a JES3 ASID. The most likely cause of
the problem is that JES3 module IATABPR is operating as an exit routine
to an incompatible version of AMDPRDMP. Make sure the versions are at
compatible program levels. Only the CPU speed of formatting is affected
by this condition.
Problem Determination: Table I, items 4, 7, 16; Table III, item 7. See
OS/VS Messages Library: JES3 Messages, GC38-1012.
Module: IATABPR

ABEND USER=77

Explanation: A program exception occurred during JES3 formatting that
could not be processed as expected. Addressing to essential work areas
was lost.
System Action: The AMDPRDMP job step is abnormally terminated, with a
dump written to the SYSUDUMP/SYSABEND data set.
Programmer Response: To obtain a complete dump from AMDPRDMP, it will
be necessary to rerun the job with a JES3 OFF control statement.
Problem Determination: Table I, items 1, 5, 13, 22

Installing or Activating IATABPR

Module IATABPR executes as a user exit to AMDPRDMP. The service aid
program becomes aware of user exits by entries in a module named
AMDPRECT, which resides in SYS1.LINKLIB. The method for activating a
user exit is explained in Setting Up the ECT in the section for the
PRDMP User Exit Facility (see Appendix C in OS/VS2 Service Aids,
GC28-0674). The appropriate AMASPZAP input is:

  REP offset   C9C1E3C1C2D7D940,80000000
  REP offset+0C D1C5E2F340404040

which translates to: exit to module IATABPR on any TCB being formatted

or on any JES3 control statement verb.

ASP3.1 TO JES3 CONTROL CARD CONSIDERATIONS

Restrictions/Incompatabilities (ASP3.1 to JES3)

- Although the ACMAIN and ACHOLD parameters on the //*MAIN card are still allowed, an additional, more flexible function has been provided on the //*FORMAT card, namely the MAIN and HOLD parameters. The following FORMAT card would perform the identical function that is available via the MAIN card:

  //*FORMAT AC,DDNAME=, MAIN=main-name, HOLD=YES

  By moving these parameters to the FORMAT card, the TSO user can select by data set which ones he wishes to see at this terminal.

- The creation of Format Parameter Buffers (FRP) and the method with which the data is added to them has changed from ASP3.1. In ASP the use of the //*FORMAT card caused all fields in the FRP to be filled. If a parameter was not specified the default standard was used. No consideration as to whether the non-specified parameter had been defined on a default FORMAT card (where DDNAME=, was specified) or on the SYSOUT initialization card for the SYSOUT Class Table. The FRP's in JES3 are filled in the following sequence:

  1. //*FORMAT card for this data set

  2. JCL parameters on the JCL statement for this data set.

  3. SYSOUT Class Table entry for the SYSOUT class of this data set

  4. Default FRP resulting from a //*FORMAT DDNAME=, card

  5. JES3 defined standard.

  Only if a parameter is not specified in the first four sources is the JES3 standard used.

- Any job that uses UNIT=(CTC,,DIFER) to reference a data set created via the //*DATASET card **must** be run on an ASP (MVT or VS2/1) Main Processor. The UNIT=(CTC,,DEFER) will not be supported by the Converter/Interpreter and Global/Local (MVS) Processor.

  A job may be run on any processor and access a card image (column binary) data set by using the JES3 supported MODE=C DCB parameter on the DD card. If MODE=C is used on the DD * statement, it must be the only parameter following the * or DATA. The data set must be terminated by a /* when the MODE=C parameter is used. Therefore, the card must be:

  //ddname DD *, DCB=MODE=C

  Input Service adds to each DD * or DD DATA card 'DCB=BLKSIZE=80'. If MODE=C was specified, BLKSIZE will be set to 160. Also, for a job containing card image data, the reader (CR) must be called with the C parameter (that is, *X CR,C).

- Any DSP specified on a //*PROCESS card must be defined in the JES3 DSP Dictionary as processable. Any job specifying a DSP that is

defined as not processable will be flushed.

- JESMSG, JESJCL, JOURNAL, JCBLOCK, JESInnnn are new ddnames used by JES3 and are added to the list of other reserved ddnames used by ASP: SYSMSG, JCBIN, JCBTAB, and JCLIN.

- If SEQCHK=YES was specified on the STANDARDS initialization card under ASP, Input Service would sequence check input object decks. Since the CS Linkage Editor performs its own type of validation, this function was removed from the JES3 Input Service.

- Due to the new method of reading data by the readers (CR, TR, and DR), the maximum blocking factor for input to TR and DR is now 40. The maximum for CR remains five.

- HOTJOB=YES specified on the //*MAIN card of jobs scheduled to run on a Global or Local (MVS) Processor will be ignored. This parameter will be honored if the job is scheduled and run on a ASP main processor.

Restrictions Removed (ASP3.1 to JES3)

- The continuation punch in column 72 is no longer required to continue a JES3 control card.

- The limit on the number of //*FORMAT cards per //*PROCESS card to the size of a JES3 buffer has been removed.

Other Compatability Considerations (ASP3.1 to JES3)

- Use of the //*PROCESS RICONTL is still permitted and will be converted to RI internally.

- //*PROCESS PRINT, PUNCH, or ACLS will still be allowed. The first one found will be converted to //*PROCESS OUTSERV. Any others of these three immediately following the first will be ignored and will be flagged as such. An intervening //*PROCESS card of another DSP followed by one of these three will cause a new //*PROCESS OUTSERV to be created. These three DSP's are grouped in this manner since all will be processed by Output Service under JES3.

- The /* prefix used in ASP Version 2 will still be supported for those ASP control cards orginally supported under that system.

- The //*ENDPROCESS card is no longer supported. It will be treated as an OS comments card.

DEFAULT UNIT PARAMETER

If a dynamic allocation is made on behalf of a time-sharing user without specifying a unit parameter, the unit parameter is obtained from the time-sharing user attribute data set (UAD). If the user is not a time-sharing user or if the UAD's entry does not contain a unit parameter, a MVS default of 'SYSALLDA', that is, all direct access devices, is used.

It is recommended that a default unit parameter value be defined in the UAD and that all dynamic allocations specify a unit parameter. Otherwise, the MVS default unit value of 'SYSALLDA' must be included in SETNAMES for all DA device types if JES3 is to manage the dynamic

allocations that do not have a unit parameter.

DIE ROUTINES IN FLPA

It is recommended that the disabled interrupt exit (DIE) routines,
IATDMDS and IATSSDI, be located in the fixed link pack area (FLPA)
rather than in the PLPA. These two routines will normally be
page-fixed, which will result in over-utilization of real storage in
PLPA.

DYNALLOC CARD

JCL DD statements are no longer valid for describing the various
procedure libraries under JES3. Instead, the DYNALLOC card in the JES3
initialization deck must be used. This is necessary in order to allow
the dynamic unallocation/reallocation of procedure libraries during
procedure library update jobs. The format of the DYNALLOC card may be
found in the Initialization and Tuning Guide manual.

INTERP PARAMETER ON STANDARDS CARD

The following describes the optional INTERP parameter on the STANDARDS
initialization card:

INTERP=[ANYJES|ANYASP|BOTH]

> Whenever SYSTEM=ANY has been specified for a given job, whether on
> the //*MAIN card or by default to the system indicated on the
> STANDARDS card during initialization, a decision must be made as to
> whether the CS Reader/Interpreter or the VS Converter/Interpreter is
> to process the JCL for that job. A user exit capability in Input
> Service will be provided to allow the user to determine under which
> system the job is to run. However a default must be provided if that
> exit routine has not been provided by the user. The INTERP keyword
> provides such a default.

> If INTERP=ANYJES (the default), the job will be processed for a VS2
> environment. ANYASP will cause the job to be processed for an MVT or
> VS2 release 1 (ASP MAIN) environment. INTERP=BOTH indicates that the
> job should be processed in such a manner that will allow it to be
> executed in any environment, the final decision being left to Main
> Service. However, since a significant amount of overhead is
> associated with the latter case, due to the necessity to process the
> job through both the VS Converter and the CS Reader, its use is
> strongly discouraged. Resolution of SYSTEM=ANY by the user, via the
> user exit, is to be preferred.

> Note: There is no //*MAIN override for the INTERP value set at
> initialization since it is only used when a SYSTEM=ANY situation
> cannot be resolved.

All JES3 modules are link-edited with the following attributes:

```
              LET
NCAL          LIST
XREF
```

In addition, the following modules have the 'RENT' attribute.

IATDMDK	IATOSDI	IATSIST	IATGSCI	IATIIRC
IATDMEB	IATSIBS	IATSIVL	IATIIAM	IATIIRM
IATDMFR	IATSICA	IATSIWO	IATIICA	IATUX04
IATIIFD	IATSICF	IATSI34	IATIICC	IATUX05
IATIICX	IATSICN	IATSSCM	IATIICM	IATUX06
IATDMDM	IATSIDM	IATSSDI	IATIIDR	IATUX07
IATDMDS	IATSIDO	IATUX01	IATIIPR	IATUX08
IATIIII	IATSIDR	IATUX02	IATIIPO	IATUX09
IATIMDL	IATSIJS	IATUX03	IATIIP1	IATUX10
IATIIRX	IATSIOP	IATUX26	IATIIP2	IATUX11
			IATIIP3	IATUX30

PAGES PARAMETER ON THE BUFFER INITIALIZATION STATEMENT

In selecting the size of the buffer pool using the PAGES parameter, consideration should be given to the fact that all functions might be active at the same time. The buffer pool should therefore be allocated to cover the worst case, since the buffer pool is not expandable after initialization. In addition, since JSAM page releases 4K blocks when they are no longer in use, it is advantageous to make the buffer pool as large as possible since very little penalty is incurred to make the pool large and the system is better able to accomodate bursts of activity.

PERMANENTLY RESIDENT MODULES

For modules not already permanently resident, JES3 uses a counter to determine the number of times a module has been loaded and deleted. Once a module has been loaded 5 times it is marked as resident and subsequent deletes are ignored. A module's resident threshold count can be dynamically altered using a JES3 *Modify command.

RESTRICTIONS

CATALOG REFERENCES

Utilities which establish entries in a catalog can not be executed as a step of a job which contains JCL references to those entries. Dependent Job Control (DJC) can be used to execute the utility as a separate job.

A catalog entry made as a result of the DISP=CATLG parameter on a DD

statement can be referenced in a subsequent step of the same job.

COMPLETION CODE ENDING IN '22'

Although abnormal termination occurs, a corresponding dump is not
provided by the operating system if the completion code specified
ends in a '22'. (For example, S122, S322, S722, etc.)

INITIALIZING JES3 FROM A CARD READER

When initialization is performed by reading statements in from a card
reader, initialization statements that precede the JES3 I/O
statements are not available for printing when the JES3OUT data set
is opened.

JES3 MODULE NAMING CONVENTION

JES3 modules created by the JES3 user (user-written DSPs) must
conform to the standard naming convention established for JES3. That
is, the first three characters of all JES3 module names must be IAT.

JOBCAT AND STEPCAT DATA SETS

In order for JES3 to perform pre-execution setup for JOBCAT and
STEPCAT data sets, units on which these data sets are to reside must
be JES3 managed devices (that is, the unit must be defined on a
SETNAMES initialization statement).

JOB NUMBERING AFTER A RESTART

After a restart, the internal numbering of jobs resumes with the next
available number not assigned to an active job or job in the queue.
This means that it is possible to restart with a job number assigned
prior to the restart if that job had been purged after the last
checkpoint taken prior to the restart.

PROCEDURE LIBRARY UPDATE FACILITY

Procedure library data sets (designated by IATPLBxx DD cards) can not
be concatenated data sets. Each procedure libary data set must be
specified in the initialization deck by a DYNALLOC card, and must be
cataloged in the sytem catalog. Prior to update of the standard
procedure library (IATPLBST), an initiator must already be active on
the global machine.

All procedure library update jobs must run on the main processor
designated as JGLOBAL.

SPECIFYING THE UNIT PARAMETER WITH CATALOGED DATA SETS

At the time JES3 resolves catalog references, there is no way to
determine whether the UNIT specified is a subset of the unit type
referenced. If the user specifies a unit that is incompatible with
the cataloged data set (such as a data set on a 2314 device with a
UNIT=3330 specified), then JES3 will flush the job.

SYSOUT BLOCKING

SYSOUT block size limit is 32767 and is independent of JES3 buffer
size. Actual blocking of data is transparent to the user.

ORDERING, DISTRIBUTION, AND PUBLICATIONS SUPPORT

ORDERING PROCEDURES

To order JES3 as an independent component of OS/VS2 Release 3, contact your IBM representative or the IBM Branch Office serving your locality. It is no longer necessary to fill out a Program Order Form; your IBM representative places the order for you.

An OS/VS2 Release 3 Starter System is required for initial system generation.

DISTRIBUTION PROCEDURES

JES3 is distributed on magnetic tape only. The number of user tape volumes required is specified in the basic and optional material lists which follow.

JES3 basic machine-readable object code is distributed in SUP format. JES3 optional material is distributed as a SYSIN data stream compatible with the IEBUPDTE utility program.

BASIC PROGRAM MATERIAL LIST

You get one copy of machine readable material consisting of the JES3 Distribution Library. Order the basic program material by selecting one of the following feature numbers.

Feature Number	Track/Density	Number of Tape Volumes
5039	9 track/1600 BPI tape	None (DTR)
5040	9 track/6250 BPI tape	None (DTR)

OPTIONAL PROGRAM MATERIAL LIST

You can optionally order one copy of JES3 source code and JES3 macros. Order the optional program material by selecting one of the following feature numbers.

Feature Number	Track/Density	Number of Tape Volumes
5428	9 track/1600 BPI tape	1
5429	9 track/6250 BPI tape	1

PUBLICATIONS SUPPORT OF JES3

The following publications contain specific information about JES3 and are used in conjunction with other publications that support OS/VS2.

Planning and Implementing a JES3 System

Title	Base Order Number	Applicable TNLs
Introduction to JES3	GC28-0607-0	None
OS/VS2 System Programming Library: Initialization and Tuning Guide	GC28-0681-1	GN28-2603
OS/VS2 System Programming Library: Job Management	GC28-0627-0	GN28-2601

Operating a JES3 System

Title	Base Order Number	Applicable TNLs
Operator's Library: OS/VS2 Reference (JES3)	GC38-0226-0	None
Operator's Library: OS/VS2 Remote Terminals (JES3)	GC38-0228-0	None

JES3 Job Applications

Title	Base Order Number	Applicable TNLs
OS/VS2 JCL	GC28-0692-1	GN28-2600

Problem Determination

Title	Base Order Number	Applicable TNLs
OS/VS2 Message Library: JES3 Messages	GC38-1012-0	None
OS/VS2 System Programming Library: JES3 Debugging Guide	GC28-0703-0	None

Maintenance, Modification, and User-written DSPs

Title	Base Order Number	Applicable TNLs
OS/VS2 System Programming Library: JES3 Macro Instructions	GC28-0608-0	None
OS/VS2 JES3 Logic	SY28-0612-0	None