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## SHARE PROGRAM LIBRARY SUBMITTAL FORM

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SPLA CONTROL NUMBER: 239

This form should be completed and submitted with the program package to the SHARE Program Library Agency at the address shown above. Standards and instructions for submitting programs are in the SHARE Reference Manual, Section 6.

(1) Program Number (to be filled by SPLA) . . . . . 370D-05.1.027

(2) Title of Program . . . . . JES/2 Monitor Display System

(3) System Type(s) (Machine) . . . . . IBM 370/ - 303x - MVS-JES/2

(4) Search Key(s) . . . . . 

(5) Programming Systems/Languages . . . . Assembler

(6) Primary Subject Code . . . . . 

(7) Minimum System Requirements MVS-JES/2, approx. 32K in JES/2 region.

(8) New (N) or Revision (R) (if revision, show prior Program Number in Item 1) N

(9) Date of Submittal . . . . . 14. feb. 1980

(10) Documentation (number of original pages submitted) . . . . . 49

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(12) Direct Technical Inquiries to Name & Address (if different than Author)

(13) Submitter's Installation Membership Code . . . . . SEAS S192

(14) Abstract (should contain sufficient information for a reader to determine the value of the program). Listed on the reverse side of this form are subjects which may serve as a guide for a descriptive abstract.

## SHARE PROGRAM LIBRARY SUBMITTAL FORM

Subject Guide:

a. Purpose
b. Programming Language used
c. Version and modification level or release number
d. Field of application
e. Type of routine (main program, subroutine, etc.)
f. Specific description of machine requirements



The program has been developed as a tool for the central operator. The system gives him a quick summary of the current activity in the MVS-JES/2 system, and he therefore no longer needs all those $DN/$DA commands.

The system has been tested on the models 370/158 and 3031, with MVS release 3.7 and JES/2 release 4.1 including APAR OZ20010.

Minor changes are known to be required for MVS/SE.

(Please attach additional pages if necessary) . . . . . Total pages attached _____

An "Acknowledgement of Assistance" statement must be attached to this Submittal Form.

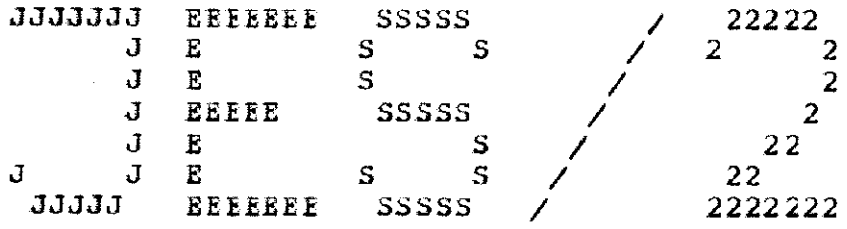
Permission to Publish

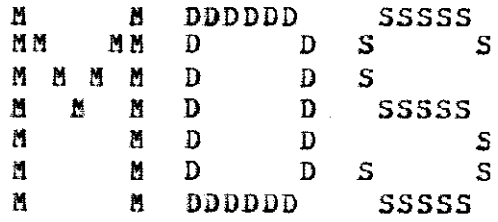
"I hereby give the SHARE Program Library Agency permission to reprint, reproduce, and distribute this program"

(15) Signature of Submitter and Date Leif Rasmussen 14. feb. 1980

(15) Signature of Installation Addressee [signature] 14. feb 1980.

SPLA 1001 (R) Revised 11-76





# Monitor Display System

## Version 0.1

## For JES/2 version 4.1

Advanced Computing Center

CONTENTS

This manual contains complete installation and users guide for the JES/2 Monitor Display System.

A special thanks is addressed to Mr. Rennie Petersen, Copenhagen, (author of TS/2) for his contribution.

Advanced Computing Center

## The installation tape

The monitor system is distributed on an installation tape containing all source, macroes and ptf-updates required to install the monitor system. The tape is produced with 1600 BPI density.

File 1 : The first file on the installation tape contains source and macroes for the monitor program itself. This file is an unloaded (iebcopy) pds-dataset. Use a job like the following example to laod this file:

```
//jobname   acct.   e.t.c.
//         EXEC  PGM=IEBCOPY,TIME=10
//SYSPRINT    DD  SYSOUT=A
//TAPE        DD  DSN=MONITOR.FILE1,LABEL=(1,SL),UNIT=TAPE1600,
//                DISP=SHR,VOL=SER=INSTAL
//DISK        DD  DSN=.source.dsn,UNIT=SYSDA,VOL=SER=diskvol,
//                DISP=(NEW,KEEP),SPACE=(CYL,(2,1,14)),
//                DCB=(RECFM=FB,LRECL=80,BLKSIZE=3600)
//SYSIN       DD  *
         COPY   INDD=TAPE,OUTDD=DISK
//
```

File 2 : The second file contains the source and macro updates required in JES/2. These updates is destributed in PTF-update format, and you just have to assign the PTF-numbers. If you are running TS/2, you should not use these updates, except the updates for HASPINIT and HASPNUC, since all other updates is distributed as part of TS/2. Use a job like the following example to load this file:

```
//jobname   acct.   e.t.c.
//         EXEC  PGM=IEBCOPY,TIME=10
//SYSPRINT    DD  SYSOUT=A
//TAPE        DD  DSN=MONITOR.FILE2,LABEL=(2,SL),UNIT=TAPE1600,
//                DISP=SHR,VOL=SER=INSTAL
//DISK        DD  DSN=.jes2.dsn,UNIT=SYSDA,VOL=SER=diskvol,
//                DISP=(NEW,KEEP),SPACE=(CYL,(1,1,14)),
//                DCB=(RECFM=FB,LRECL=80,BLKSIZE=3600)
//SYSIN       DD  *
         COPY   INDD=TAPE,OUTDD=DISK
//
```

The updates are stored in this dataset with membername equal to the name of the source or macro deck it updates. F.ex. the PTF-update to csect HASPNUC is stored under the name HASPNUC.

## Updating the JES/2 system

When the distribution tape is loaded, you first must update your JES/2 system with the distributed PTF-updates (file2). If your are running TS/2, you just have to apply the modifications to HASPINIT and HASPNUC. Otherwise all updates must be applied. The member AACCEBLK is not an update to JES/2, but is the same macro deck, which can be found in the monitor source library (file1). This macro is needed, when you assemble HASPINIT and HASPNUC, and is therefore also located in this PTF-update dataset, and you should copy it to the maclib dataset to be used, when you assemble the JES/2 modules. Also copy all members with name beginning with 'IJ' into your maclib dataset before assembly.

Before you apply the update to HASPINIT, you must decide, under which module-name you monitor program will reside (in sys1.linklib). This name must be placed in the attach macro in the update deck. This name is later used, when you generate the monitor program. Default module-name is: HASPMAIN.

## Generating the monitor program

When you have updated your JES/2 system macroes, you are ready to generate the monitor program itself. The generation of the monitor program is very simple, and much like a normal OS system generation. The procedure is to assemble a stage1 macro. This macro generates a stage2-jcl-deck, which then should be executed, and you are ready to start your monitor system.

## The stage 1 macro: MONITOR

In order to generate the monitor program, you should first assemble the stage1 macro MONITOR, specifying your parameters. Following datasets are assumed available and cataloged: SYS1.SMPMTS, SYS1.HASPSRC and SYS1.MACLIB.

Following is a list of all the parameters to the MONITOR-macro, and their default values:

```
 label  MONITOR   TPUNIT=0A1,
                  TPTYPE=LOCAL,
                  TPMODEL=2,
                  SUBPOOL=0,
                  INITOP=YES,
                  AUTODMP=YES,
                  USERID=ACC,
                  PFK1=,          * no default for pfk-keys *
                  PFK2=,
                  PFK3=,
                  PFK4=,
                  PFK5=,
                  PFK6=,
                  PFK7=,
                  PFK8=,
                  PFK9=,
                  PFK10=,
                  PFK11=,
                  PFK12=,
                  MODNAME=HASPMAIN,
                  JOBNAME=SHASPGEN,
                  ACCOUNT=(0001,ACC,9999,9999),
                  PRGNAME=HASP-MONITOR,
                  JOBCLAS=O,
                  MSGCLAS=A,
                  MSGLVL=(1,1),
                  ASMBLR=ASMBLR,
                  JOBLIB=,          * no default *
                  SYSOUT=A,
                  TIME=30,
                  MACLIB=SYS1.HASPMONS,
                  SRCLIB=SYS1.HASPMONS,
                  OBJLIB=SYS1.HASPMONO,
                  LKED=IEWL,
                  LINKLIB=SYS1.LINKLIB,
                  GEN=ALL
```

The parameters is defined as follows:

TPUNIT : TPUNIT describes the default device address of the display device to be used. Default is 0A1.

TPTYPE : TPTYPE describes whether the display device is local or remote. Since only local devices are supported at the moment, specify allways, or let it default to LOCAL.

TPMODEL : TPMODEL describes the type of 3270 display device. Since only model 2 devices are supported at the moment, specify allways, or

let it default to 2.

SUBPOOL : SUBPOOL describes the storage subpool number in which the 3270 display frame should reside. This parameter should normally be set to, or allowed to default to 0.

INITOP : INITOP describes, whether or not the display device should be opened, at monitor start time. Code INITOP=YES (or allow it to default) if you want the monitor to open the display device, at start time. Code INITOP=NO, if you do not want the monitor to open at start time.

AUTODMP : AUTODMP describes whether or not the monitor shall log a formatted dump of the internal monitor control block and other information, if the monitor system abends. Code AUTODMP=YES (or allow it to default), if you want a formatted dump and other informations logged on the system log. Code AUTODMP=NO, if you do not want a dump on the system log.

USERID : USERID describes the user-identification of the monitor system. This parameter may be from 1 to 4 characters long. This userid is placed leftmost in the general headline on the display frames. Default is: ACC.

PFK1-PFK12 : These 12 parameters describes the definition of the program function keys. If you want one of them defined, write like this: PFKx=(command,type) , where x is the PFK-number, command is a 1 to 25 character long text-string containing the PFK-command (if this command contains special characters, enclose the text-string in single quotes), and type is either Y, if you want the PFK to be a conversional pfk, or N, if you want the PFK to be a non-conversional pfk. If you uses an underscore character in the command text-string, and uses type=Y, this underscore will be replaced with an INSERT CURSOR control character, allowing you to place the cursor exactly where you want it.

MODNAME : MODNAME describes the name of the monitor load module. This name should be equal to the name specified in the ATTACH-macro in the modification to JES/2 csect HASPINIT. Default is HASPMAIN.

JOBNAME : JOBNAME describes the jobname to be generated in the stage2 JCL deck. Default is SHASPGEN.

ACCOUNT : ACCOUNT is the account field to be used in the stage2 jcl deck. Default is (0001,ACC,9999,9999).

PRGNAME : PRGNAME is the programmers name to be used in the jobcard in the stage2 jcl deck. Default is HASP-MONITOR.

JOBCLAS : JOBCLAS is the job input class, in which stage2 is to be queued. Default is 0.

MSGCLAS : MSGCLAS is the msgclass to be used in the stage2 jcl deck. Default is A.

MSGLVL : MSGLVL is the msglevel to be used in the

stage2 jcl deck. Default is (1,1).

ASMBLR : ASMBLR is the program name of the assembler to be used. Default is ASMBLR, which is the system assembler.

JOBLIB : JOBLIB describes the JOBLIB dataset to be used, if you uses a special assembler. If your joblib dataset is cataloged, specify the parameter like this: JOBLIB=dsname . If your dataset is not cataloged, specify the parameter as follows: JOBLIB=(dsname,unit-type,volume-serial).

SYSOUT : SYSOUT describes the sysout class to be used for the assembler listings e.t.c.. Default is A.

TIME : TIME describes the time in minutes to be assigned for each step in the stage2 jcl deck. Default is 30 (minutes).

MACLIB : MACLIB describes the dataset containing the internal monitor macroes. This dataset is normally equal to the source-dataset. If the dataset is cataloged, specify as follows: MACLIB=dsname. If the dataset is not cataloged, specify as follows: MACLIB=(dsname,unit-type,volume-serial). Default is MACLIB=SYS1.HASPMONS.

SRCLIB : SRCLIB describes the dataset containing the monitor source decks. If the dataset is cataloged, specify as follows: SRCLIB=dsname. If the dataset is not cataloged, specify as follows: SRCLIB=(dsname,unit-type,volume-serial). Default is SRCLIB=SYS1.HASPMONS.

OBJLIB : OBJLIB describes the dataset, into which the stage2 assemblies will punch the object decks. If the dataset is cataloged, specify as follows: OBJLIB=dsname. If the dataset is not cataloged, specify as follows: OBJLIB=(dsname,unit-type,volume-serial). Default is OBJLIB=SYS1.HASPMONO.

LKED : LKED defines the name of the linkage-editor to be used. Default is IEWL.

LINKLIB : LINKLIB describes the dataset, which is to contain the monitor load module. If the dataset is cataloged, specify as follows: LINKLIB=dsname. If the dataset is not cataloged, specify as follows: LINKLIB=(dsname,unit-type,volume-serial). This dataset should be the same dataset from which JES/2 itself is executing. Default is LINKLIB=SYS1.LINKLIB.

GEN : GEN defines, which type of generation to be performed. Specify GEN=ALL to generate the complete monitor program (this is done at installation time). Specify GEN=PARM if you only want to change the parameter definitions (pfk's, autodmp e.t.c).

Examples of stage1 input deck is located in the monitor source dataset under the names: STAGE1 (gen=all) and STAGE1P (gen=parm). Output from these assemblies (STAGE2) is also

located in this dataset under the names: STAGE2 (gen=all) and STAGE2P (gen=parm).

## JES/2 Procedure updates

A few changes must be made to the JES/2 start procedure in sys1.proclib Since the SYSOUT/SETUP routines requires a DD-card pointing to the spool-volume, such one must be included in the JES/2 procedure.

Specify it as follows: (Assuming dataset cataloged)

```
//SPOOL   DD     DSN=SYS1.HASPACE,DISP=SHR
```

## Monitor Start and Initialization

The Monitor is started automatically, when JES/2 is started, and the display-device should be turned on and ready.

## Monitor execution

When the monitor is running it will automatically change frame every 60 seconds, if this is not altered by a monitor command.

## Entering commands

You may pass commands to the monitor in two ways, either by directly write it on the display device and push enter, or by entering it via an operator console. When entering a command from an operator console, you should write like this:

```
F JES2,command
```

where command is a valid monitor command.

If you just press enter on the display device, or writes F JES2, without any command, the frame will just be updated.

## Monitor termination

The monitor is a never ending program, and will only stop at JES/2 shutdown time, when the operator issues the: /P JES2 command to terminate JES/2 processing.

## AUTODUMP

The AUTODUMP command is used to specify, whether or not the internal monitor control block is to be formatted and dumped to the system log, when an abend occurs in the monitor. If the formatted dump is wanted, specify: AUTODUMP=YES (this is normally default, and is an option for the monitor generation). If the formatted dump is not wanted, specify: AUTODUMP=NO , which only will cause a 3270 frame containing abend information to be generated.

## CLOSE

The CLOSE command is used to close and de-allocate the display device. Use the open-command to start it again.

## CMD

The CMD command is used to pass an operator command to the system via the monitor. Specify it as follows: CMD=command, where command is the OS or JES command you want to issue.

## D

See DISPLAY command for more information.

## DASD

The display mode is changed to display tape-/disk-devices.

## DISK

The display mode is changed to display tape-/disk-devices.

## DISLOG

The DISLOG command causes the log control program to become inactive. The log-control-program is used to control the queued system log-files. See ENLOG command for more information.

## DISPLAY

The DISPLAY command (or just D) is used to select the 13 initiator-ids used by the job-frame create module. Since the job-frame can only hold 13 initiatores at a time, but the JES/2 system might have defined more than 13, this command is used to select which to display. The command has following format: DISPLAY=select-list

Following examples shows how to use the command:

1) The initiatores with PIT(partition-information-table)-ids 1, 2, 3, 4, 5, 7, 8, 9, 10, 12, 13, 14 and 15 is to be selected:

DISPLAY=I1-5,I7-10,I12-15

2) The initiatores with PIT-ids: 1, 2, 3, 4, 5, 6, 7, 9, 11, 12, 13, 14 and 16 is to be selected:

DISPLAY=I1-7,I9,I11-14,I16

If just DISPLAY= is specified, the first 13 identifiers will be selected from the PIT-table. This is also initialization default.

## DISSMF

The DISSMF command is used to de-activate the smf-writer-program. See also ENSMF command.

## ENLOG

The ENLOG command is used to activate the log-control-program. The log-control-program is used to issue a START LOGWTR command, whenever it detects a queued system log output dataset in output-class Z. When the system log dataset has been removed from the output-queue, the log control-program will issue a STOP LOGWTR command to terminate the external writer handling these system log files. By doing this, the chance of loosing system log is minimized. See also DISLOG command.

ENSMF

The ENSMF command is used to activate the smf-writer-program, which records the smf record type 250 (MVS cpu usage). See also DISSMF command.

INTERVAL

The INTERVAL command is used to alter the default number of seconds between each automatic frame update. This value is specified as: INTERVAL=xxx, where xxx is from 10 to 999, representing 10 to 999 seconds timer-interval.

INTV

Same as INTERVAL command.

I/O

This command will change the mode to display tape-/disk-devices.

JOB

This command will change the mode to display job-related information.

MODE

The MODE command is used to choose which frame to be displayed. 6 operands are valid:

MODE=STATUS : Change mode to display the status frame.

MODE=DISK : Change mode to display tape-/disk-devices.

MODE=DASD : Change mode to display tape-/disk-devices.

MODE=TAPE : Change mode to display tape-/disk-devices.

MODE=I/O : Change mode to display tape-/disk-devices.

MODE=JOB : Change mode to display job-related information.

OPEN

The OPEN command is used to open the display after a previous CLOSE command. The OPEN-command has following formats:

OPEN(cuu) or just OPEN

If OPEN(cuu) is specified, cuu is the device address of the local 3270 display device to be allocated. If just OPEN is specified, the same display device will be allocated, as last used.

A default device address is assembled into HASPPARM when the monitor is generated. This address is used, at JES/2 start-time.

SET

The SET command puts a character-string into the input-line on the display-device, and it will stay there until it is explicitly removed. Use following format: SET=char-string , where char-string is the characters you want fixed on the input line. If you want the cursor on a certain place in the character-string, then write an underscore character in that place. This character string will only be in effect as input, if the input field is modified. To remove the SET string, specify SET= without any character-string.

SETUP

The SETUP command is used to request a partial or complete list of a jobs jcl-deck. Specify the commands as follows: SETUP,a,b,c , where a, b and c is 3 more or less optional operands.

Operand a is the selected jobs job-name or job-number(just the digits).

Operand b is optional (remember comma anyway), but may be one of the following operands:

*EXEC which means, that only the execution queue is searched for the specified job.

*ANY which means, that both the input- and the execution queues will be searched for one or more jobs with this name/(number).

The b operand may also the destination id, under which the job is known to be located.

If operand b is omitted, the input- and execution queues will be searched until the first job with correct

name/number is found.

Operand c may be omitted, which means, that only job-card(s), setup-card(s), and message-card(s) will be displayed. Operand c may be the keyword: ALL , which means, that the complete jcl-deck for the selected jcb is to be listed.

STAT

This command will change the mode to display the status frame.

STATUS

This command is used to change the display mode to status-frame display.

SYSOUT

The SYSOUT command is used to request a sysout status display for a job or for any output unit-record device. Specify it as follows: SYSOUT,a,b , where a and b is two more or less required operands.

Operand a is either the job-name or job-number(only digits) for a specific job, or an asterisk immediately followed by the symbolic name of an output unit-record device. f.ex.: sysout,*r1.pr1 , remote 1s printer 1.

Operand b is optional, but if it is present, it must be the word: ALL , which means, that a complete sysout status list is to be produced for the selected job or output device.

TAPE

This command changes the mode to display tape-/disk-devices.

?LNES

This command will create a frame containing the RJE-line status. This frame will only be displayed in one timer-interval.

/DUMP

This command is for future use, but at the moment it forces a S0C1 abend in the monitor, which should be caught by the STAE-interface.

/MODDIR

This command is used to request a frame containing the formatted Hasp MODule DIRectory. This frame will only stay on the display device in maximum 1 timer-interval.

The Program Function Keys may be used to contain often used monitor command, f.ex. mode=job, mode=i/o and so on. The PFK definition as assembled into the HASPPARM csect when the monitor is generated, and may therefore vary between installations. To display the PFK-keys, enter status mode.

## SPECIAL KEYS

The 3270 display device has a special set of keys, which may be used by the monitor. Following is a list of these, and their function:

CLEAR : The clear key will cause the display device to be closed/de-allocated, and then re-allocated and opened. A sort of recovery function.

PA1 : Is undefined.

PA2 : Is undefined.

PA3 : Is undefined.

TESTREQ : Is undefined.

## Job-display frame

An example of the JOB display frame can be seen on appendix A. Refer to this, when reading the following.

A The first line contains global system identification.
1) The first field is a one to four character user identification.
2) The second field is the real machine identification.
3) The third field is the size of the real storage in the computer.
4) The fourth field is the OS/VS2 system identification.
5) The fifth field is the JES/2 system identification.
6) And the last field is the current time and date.

B Line 2 and 3 contain the names of all system tasks active, and their associated address-space identifications. As you see in the example, JES2 will always appear first. In the example the only system task (beside JES/2) is NET, which is VTAM.

C Line 4 is used to display the activity on up to 3 local printers. In the example PRINTER3 with cuu=00F is printing output class A for job R937BTC0.

D The next 14 lines is used to display information related to the 13 initiatores selected for display. Each line has following format:
1) The selected initiators identificatcn.
2) The address space identification if there is a job active in this initiator.
3) The input-classes, which this initiators accepts.
4) The hasp job-number if a job is executing.
5) The job-name of an executing job, the word INIT, if no job is active, but the initiator is started, or just blanks, if nothing is active for this initiator id.
6) If present, the stepname of the executing job.
7) The current step-number, when a job is active.
8) The address space status, if there is an active job. This status may be as follows:

INCORE , if the address space is active in real storage.

NONSWP , if the address space is non-swappable.

PRIVLG , if the address space is priviliged.

SWO-xx , if the address space is swapped out. xx is swapout reason code.

SW-OUT , if the address space is in process of being swapped out.

SW-IN , if the address space is in process of being swapped in.

CHANGE , if the address space is changing status.

NWSENQ , if the address space is non-swappable due to enqueue.

RMAAPP , if RMA algorithm is applicable.

The swap-out reason codes is:

| | |
|---|---|
| 01 | Terminal output wait. |
| 02 | Terminal input wait. |
| 03 | Long wait. |
| 04 | Auxiliary storage shortage. |
| 05 | Real storage shortage. |
| 06 | Detected wait. |
| 07 | Reqswap sysevent issued. |
| 08 | Enq exchange by swap analysis. |
| 09 | Exchange based on recommendation values by swap analysis. |
| 0A | Unilateral swapout by swap analysis. |

OBS: These reason codes requires Supervisor performance *2 SU07.

9) The number of virtual k's in use by the job.
10) The number of real k's assigned to the address space.
11) The number of fixed k's assigned to the address space.
12) The page-rate for the address space, since last

frame update.

13) The number of cpu-seconds remaining for this job/step.
14) The percent of the cpu used by this address space, since last frame update.

E — This line contains the current JES/2 spool allocation percent, this field is bright, if larger than threshold value. The current cpu busy percent for the whole system. The current page-rate expressed in pages/second. The number of real k's not assigned to any address space. The time-difference, since the frame was last updated.

F — The next 3 lines may contain up to 3 outstanding operator requests. The format used is, first the address-space identification of the address-space owning this request, and then the request itself.

G — This line contains the device address of any tape-, disk- or local unit-record-devices, which has an intervention required pending. In the example device 384 is awaiting the operator to mount a tape.

H — The last line is used as input line, and may contain prefix characters, if the SET-command has been used, or a conversional pfk character string.

## I/O-configuration display frame

The I/O-display frame contains information about tape- and disk-devices. Refer to appendix B when reading this.

A — Is the general headline.

B — Is the two columns reserved for displaying the online tape-devices. The layout for each row in these columns is as follows:

1) The device address of the tape-device.
2) If the tape-device is unused, this field will be blanks. If the tape-device as mounted with a standard-label, the volume-serial of the tape will be in this field. If it is a non-standard-label, this field will contain the word ALLOC. If a mount is pending (as you see in the example for device 385), the word *MOUNT will be display, and underneath this, the volume-serial of the requested tape is displayed enclosed in parantheses.

C — Is the 3 columns reserved for displaying the online disk-devices. The layout for each row in these columns is as follows:

1) The device-address of the disk-device.
2) The volume-serial of the disk-pack mounted on the drive.

3) The volume-serial is immediately followed by a blank, an asterisk or a plus. If it is a blank, it indicates, that the disk-device is unallocated, and may be offlined (the row in the column will appear bright on the display device). If it is an asterisk, it indicates, that the disk-device is allocated by one or more jobs. If it is a plus, it indicates, that this volume contains an open page-file.
4) Last the mount status of the disk-pack. This may be PUBL for public, PRIV for private of STRG for storage.

Status display frame

This frame contains status information about JES/2 and the monitor itself. Refer tc appendix C, when reading this.

A The general headline.

B These lines contains information about the JES/2 system.

C These lines contains information about the monitor itself.

D These lines contains a complete list of the PFK and special function keys.

RJE line display frame

This display frame contains information about the RJE-line network. Refer to appendix D, when reading this.

A The general headline.

B Is the two columns containing an entry for each RJE-line defined. Each has the following format:

1) The rje-line-number.
2) The real line-address or SNA, if it is a logical sna-line.
3) The status of the line, which can be: ACTIVE, DRAINED, DRAINING, INACTIVE or HALTED.
4) The remote number, if any user is signed on.
5) The user-identification, if such one is defined (DESTID).
6) The status of the At lne,e= command. N if e=n, or Y if e=y.

Hasp Module Directory Display Frame

This frame contains the formatted hasp module directory. Refer appendix E, when reading this.

A The general headline.

B Is the formatted module directory, with the module/csect-name, it's entry-point address, and it's base-offset within the segment it belongs to.

## OUTPUT FROM SYSOUT STATUS ROUTINE

In appendix F you can see some examples of output from the sysout-command. The corresponding commands were:

A SYSOUT,ADITTO1

B SYSOUT,652,ALL

C SYSOUT,*PRT2

D SYSOUT,*PRT2,ALL

E SYSOUT,*R4.PR1,ALL

## OUTPUT FROM SETUP ROUTINE

In appendix G you can see some examples of output from the setup-command. The corresponding commands were:

A SETUP,EIRMV04C

B SETUP,647,,ALL

## General description

The JES/2 MDS system is designed to execute in the address-space containing JES/2, and as a subtask under the JES/2 mother task (HASJES20).

Because of this, a lot of information may be gathered from the various JES/2 control blocks, and get displayed on users request.

The monitor executes in problem state with prctection key 1, except when the mcnitor services a x-memory request. During x-memory service, the monitor enters supervisor state (to allow cross-memcry post), and protection key 0 (to allow copy into users parameter-list).

MDS operates on any local attached 3270 (Model 2) compatible display device.

The display device is allocated dynamically by the monitor during initialization or during the OPEN-command, and is deallocated at JES/2 closedown or by the CLOSE-command.

By doing this, the user has the possibility to run the monitor on any local 3270 compatible device, just by issuing the CLOSE-command, followed by the OPEN-ccmmand defining the new device address to be used. This can be useful, if for instance the display device breakes down, and you still want the monitor to run somewhere.

MDS has a feature, which can display the JCL- or SETUP-card(s) for jobs on the input-queue, or display the SYSOUT-status for jobs on the output-queue or on any output unit-record-device (printer or puncher, local or remote). These monitor routines requires access to the spool-dataset (SYS1.HASPACE), but to minimize cpu-usage, this access is done via a fixed DD-card in the JES/2 procedure (see: JES/2 Procedure updates), instead of dynamically allocate/de-allocate the spool-dataset.

The spool-dataset is only opened by the monitor during processing of the commands, and are therefore opened and closed every time such a command is processed.

## Module Overwiew

HASPMAIN : Main house-keeping module. This csect controls all program flow within the monitor system.

HASPJOB : Job display module. This csect creates the frame containing information related to executing jobs, system tasks, local writers e.t.c.

HASPIO : I/O configuration module. This csect creates the frame containing information related to tape- and disk-devices.

HASPSTAT : Status display module. This csect creates the frame containing the Monitor status information.

HASPLNES : RJE line display module. This csect creates the frame containing information related to RJE-lines.

HASPSETU : JOB-/SETUP-card(s) display module. This csect displayes or issues via wto, all or a part of a selected jobs JCL-deck.

HASPSYSO : Sysout status display module. This csect displayes, or issues via wto, information related to the sysout status for a job, or for any unit-record output device.

HASPDISP : Select initiators for display module. This csect controls which initiators the HASPJOB module should display.

HASPSTAE : STAE-abend exit module. This module receives control, if an abend occurs in the monitor. The csect creates a frame containing information about the abend.

HASPBTAM : BTAM local interface module. This csect is called whenever I/O to the display device is wanted, either to write or to read.

HASPOPEN : Display device open module. This csect receives control whenever the display device is to be opened, either at start time or by the OPEN-command. This csect dynamically allocates the display device.

HASPCLSE : Display device close module. This csect receives control whenever the display device is to be closed, by issuing the CLOSEcommand. The display device is dynamically de-allocated.

HASPWTO : Wto request module. This module receives control when an internal monitor wto request is issued. The input is passed to a normal svc 35 parm-list, and executed.

HASPLOG : Log control program. This module controls the system log. The module issues a start logwtr command, if it detects a queued system log dataset in output-class Z, and issues a stop logwtr command when the output has been removed from the output queue.

HASPSMF : Smf writer module. This csect creates and writes a smf record every 10 minutes. The smf-record type is 250, and it contains MVS cpu usage values. The smf-record is mapped by the ASMF250 macro. Minor changes may be required for predefined job-names e.t.c. This module is entered, when the smf writer is enabled (via: 'ENSMF' command). The smf writer may be disabled via the 'DISSMF' command.

HASPMDIR : Hasp module directory display module. This csect creates the frame containing the Hasp Module Directory.

HASPPARM : Monitor initialization parameter module. This csect contains all initialization parameters for the monitor.

HASPINIT : Monitor initialization module. This csect is called by HASPMAIN, when the monitor is started. The csect initalizes the various control blocks needed by the monitor, based upon information in the HASPPARM csect.

HASPHEXC : Hex to ebcdic conversion module. This module converts a hexadecimal string into ebcdic representation.

HASPDSBA : Dynamic 3270 address module. This module creates a 3270 hardware buffer address, based upon callers parameters (row-column).

HASPTIME : Current time and date module. This module returns the current time, date and day-of-week to the caller.

HASPTODC : TOD-clock conversion routine. This module converts a tod-clock into year, day-of-year, hours, minutes, seconds and milliseccnds.

## Cross-memory service interface

The monitor has a special feature, allowing programs in other address-spaces tc request a specific 3270 display-frame. This is dcne via a cross-memory interface. The modification in JES/2 csect HASPINIT getmaines a control block in subpool 241 (always allocated until explicitly freemained). This control block is called: ACC EXTENSION BLOCK (macro AACCEELK), and its address is saved in the JES/2-SSVT label ASVQLCKE, which must contain an unique valme. The ACCEBLK is 32 bytes long, and contains in the first fullword the TCB-address of the monitor. The second fullword (label ACCXMPST) is an ECB. This ECB is included in the wait-list the monitor uses, and the monitor will be activated every time this ecb is posted.

A user-program (must be authorized) in another address-space can find this ecb via JES/2 SSCT->SSVT->ACCEBLK and post it, using x-memory post.

It is the user-programs responsibility, to prevent multiple posts against this ecb. This can be done either by using ENQ/DEQ logic, or by using the fullword (labeled ACCMONCS) reserved specially for this purpcse in the AACCEBLK block. This fullword is cleared to zeroes, whenever the monitor program has completed a crcss-memcry service request. To use this fullword as a LOCK, you may put f.ex. your programs ASCB address into this fullword via CS-logic, and SPIN if the fullword is in use by another requestor. An example of this can be found in the program named MON, which is a routine designed tc execute under the TS/2 system.

The user-programs POST must pass the address of a parameter-list as the post-code (this post-code is saved in the ecb by the VS/2 post routine).

The format of the parameter-list is mapped by macro AMONSERV.

The parameter-list MUST be allocated in CSA-storage subpool 241, which prevents storageoverlay, if the user-program abnormally terminates, before it receives response from the monitor.

When the monitor has created the 3270-frame, and copied it to the users parameter-list, it will issue a x-memory-post against the ecb in the users parameter-list, which the user-program shculd be waiting on.

The user-program should now immediately DEQueue the lock holding the JES/2 x-memory ecb, in order to allow other user-programs tc call the monitor for service.

The 3270-frame returned is a formatted 3270-frame including control characters e.t.c..

The user-program should fill values into the parameter-list having the following labels:

MONSFUNC : 1 byte containing the function requested.

MONSASCB : 3 byte containing the callers ASCE-address.

MONSECB : 4 byte response ecb, should be cleared to zeroes, before the monitor is called, and be ready for response post.

MONSMAXL : 4 bytes containing the length of the user-data field immediately following the parameter-list.

The monitor will post the response ecb with a return-code, indicating the status of the request. This return-code may be X'00', which means successfull completion, X'01', which means, that the function in MONSFUNC was invalid, X'02', which means, that the data-field was too small to contain the frame; the required length is returned in MONSCURL, or it may be X'FF', which means, that the monitor abended during cross-memory service, the system completion code is returned in byte 1 and 2 in the ecb (X'40CCCCFF').

When the return-code is X'00', MONSCURL will contain the actual length of the returned 3270-frame in the data-field.

A sample program (used from TS/2 terminal system) is located in the monitor source dataset under the name MON.

From MAIN house-keeping routine

AHASPS01 STAE CREATE FAILED. NO STAE-ENVIROMENT.

A stae create request failed. No stae enviroment will be active to schedule monitor abends.

AHASPS02 MONITOR ABENDED. RETRY IN CONTROL.

An abend has occured in the monitor, this abend was caught by the stae-interface, and a retry has been scheduled. Processing continues.

AHASPS03 UNABLE TO ALLOCATE TP-DEVICE. RC = cc.
AHASPS03 ERROR-CODE = eeee. INFO.-CODE = iiii.

The request to dynamically allocate the display device failed. Return-code is cc, error-code from svc 99 is eeee, and information-code is iiii.

AHASPS04 TP-DEVICE OPEN FAILED.

An open svc was issued against the display device. This request failed.

AHASPS05 TP-DEVICE DEALLOCATION FAILED. RC = cc.
AHASPS05 ERROR-CODE = eeee. INFO.-CODE = iiii.

The request to dynamically de-allocate the display device failed. Return-code is cc. Error-code is eeee and information-code is iiii.

AHASPS06 TP-DEVICE CLOSE FAILED.

A close svc has been issued against the display device, this request failed.

AHASPS07 I/O-REQUEST IGNORED. TP-DEVICE IS CLOSED.

A monitor routine tried to communicate with the display device, but the display device is not allocated/opened. The request is flushed.

AHASPS08 READ-REQUEST FAILED. CLOSE IN PROCESS.

A non-zero return-code has been detected from the display device. The display device will be closed and de-allocated. Issue the OPEN-command to start again.

AHASPS09 WRITE-REQUEST FAILED. CLOSE IN PROCESS.

A non-zero return-code has been received from the display device. The display device will be closed and de-allocated. Issue the OPEN=command to start again.

AHASPS10 INVALID I/O-REQUEST.

The HASPBTML module detected an unknown i/o-request. The request is ignored.

AHASPS11 SYSTEM COMMAND IGNORED.

The operator has probably issued a: F JES2 - command without jes/2 communication character. This interrupt is scheduled by the monitor, but is flushed.

AHASPS12 COMMAND INVALID.

An invalid command has been entered from the display device, or from the operator console via F JES2, interface.

AHASPS13 COMMAND OPERAND INVALID.

One or more operands has been detected in an input command.

From SETUP routine

ASETUP00I LAST MTTR USED = mmttttrr.

An i/o-error occurred while reading a spool-block. Last MTTR request is: mmttttrr. See also message SETUP07I.

ASETUP00I LAST MBBCCHHR USED = mmbbbbccccchhhhrr.

An i/o-error occurrec while reading a spool-block. Last MBBCCHHR request is: mmbbbbccccchhhhrr. See also message SETUP07I.

ASETUP01I NO INPUT PARAMETERS SPECIFIED.

No input has been specified for the setup-command.

ASETUP02I INVALID OR MISSING JOB-NUMBER/JOB-NAME.

An invalid or missing job-number/job-name was specified on the setup-command.

ASETUP03I INVALID DESTINATION SPECIFIED.

An invalid user-destination has been specified on the setup-command.

ASETUP04I DISPLAY REQUEST NOT: ALL.

3. parameter on setup command was not: ALL, which is the only one allowed.

ASETUP05I SPOOL OPEN ERROR.

An attempt to open the spool dataset failed.

ASETUP06I MTTR DASD ADDRESS INVALID.

The mttr of a spool-block was detected as being invalid.

ASETUP07I I/O-ERROR READING SPOOL. COMPIETION CODE = cc.

A non-zero return-code has been detected, trying to read a

spool-block. See also SETUP00I messages. cc is return-code from i/o-supervisor.

ASETUP08I SPOOL HAS BEEN UPDATED DURING PROCESSING. REQUEST FLUSHED.

A dataset key did not match the dataset key in the JCT (job control table) for the selected job.

ASETUP09I JCL-LIST IS INCOMPLETE.

A total jcl-list request was too big to be contained on the display device. The list is incomplete, and truncated. If a complete list is wanted, issue the command from the operator console, and save the hardcopy.

ASETUP10I NO IOT FOUND FOR JOB. REQUEST FLUSHED.

No IOT (Input-Output Table) has yet been allocated to this job.

ASETUP11I NO JCL FOUND FOR JOB. REQUEST FLUSHED.

No jcl file has been found for the selected job.

ASETUP12I DATASET KEY NOT MATCHING. REQUEST FLUSHED.

A spool block has been read, but its dataset key did not match the dataset key in the JCT (job control table) for the selected job.

ASETUP13I jjjjjjjj, JOB NOT FOUND.

Job or job-number: jjjjjjjj, was not found on the input queue.

From SYSOUT status routine

```
ASYSOUT00I   STEPNR   DDNAME   SYSOUT-LINES   CLASS   FORM
                COPIES   LRECL   RECFM.
ASYSOUT00I      sss   dddddddd   lllllllllll      c     ffff
                  cop    lrecl   recfm
```

These messages is displayed, when a total sysout status list is to be made. The first line is the header line, and will only be displayed once. The second line will be displayed for each sysout dataset defined in the job.

Where:

| | |
|---|---|
| sss | : Is step-number within job. |
| dddddddd | : Is DD-name within step, or N/A if not valid ebcdic. |
| lllllllllll | : Is number of lines created on this sysout file. |
| c | : Is the output class for the sysout file. |
| ffff | : Is form required for this sysout-file. |
| cop | : Is number of copies requested for this sysout file. |
| lrecl | : Is logical record length of sysout file. |
| recfm | : Is record format of sysout file. |

ASYSOUT01I SYSOUT STATUS FOR JOB: jjjjjjjj (nnnn), (pr,pu):

A SYSOUT-status request has been issued for job: jjjjjjjj, job-number: nnnn, with print-destination: pr, and punch-destination: pu.

ASYSOUT02I TOTAL NUMBER OF LINES/CARDS : xxxxxxxxxxxx.

xxxxxxxxxxxx is total number of lines/cards (including copies) created by the selected job.

ASYSOUT03I NUMBER OF LINES PRINTED/PUNCHED: xxxxxxxxxxxx.

A SYSOUT-status request has been issued against an output unit-record device. xxxxxxxxxxxx is current number of lines/cards printed/punched.

ASYSOUT04I jjjjjjjj, JOB NOT FOUND.

Selected job or job-number: jjjjjjj, was not found on the output-queue.

ASYSOUT05I INVALID OR MISSING 1. PARAMETER.

Invalid or missing job-name or job-number specified on the syscut-command.

ASYSOUT06I 2. PARAMETER NOT: ALL.

The only 2. parameter allowed is: ALL, this was not specified.

ASYSOUT07I INVALID DEVICE-ADDRESS SPECIFIED.

Invalid device address specified.

ASYSOUT08I ddddddddd (cuu) IS DRAINED.

A status request has been issued against device: ddddddddd, but the device is drained. cuu is either real(VS/2)-device address or N/A if logical JES/2 device (remote printer/puncher).

ASYSOUT09I ddddddddd (cuu) IS WAITING FOR WORK.

A status request has been issued against device: ddddddddd (cuu or N/A), but the device was waiting for work.

ASYSOUT10I SYSOUT STATUS LIST INCOMPLETE.

This message is displayed if a: ,ALL request from the display device causes a status-list so long, that it can not be contained on the display device. The rest of the list is ignored. To get complete list, issue the command from an operator console, and save the hardcopy.

ASYSOUT11I SPOOL READ I/O-ERROR. COMPLETION CODE=cc.

An i/o-error has been detected while reading a block from the spool-dataset. The completion code: cc, was returned from the OS/VS2 i/o-supervisor. The request is terminated.

ASYSOUT12I LAST MTTR USED=mmttttrr.

This message is displayed together with sysout11i, and displayes the mttr (mmttttrr) of the last read request.

ASYSOUT13I LAST MBBCCHHR USED = mmbbbbccccchhhhrr.

This message is displayed together with sysout11i, and displayes the mbbcchhr (mmbbbbccccchhhhrr) of the last read request.

ASYSOUT14I ddddddddd DEVICE NOT FOUND.

A status request has been issued against device: ddddddd, which is not a valid device name.

ASYSOUT15I SPOOL VALIDATION FAILED. SPOOL HAS BEEN UPDATED BY JES/2.

A spool-block was read, but the dataset key did not match the dataset key defined in the JCT (job control table) for the requested job. The request is terminated.

ASYSOUT16I DASD ADDRESS CONVERSION ERROR.

A mttr address was detected as invalid. The m may not be zero, which is required, since the sysout-status module supports only one spool-dataset.

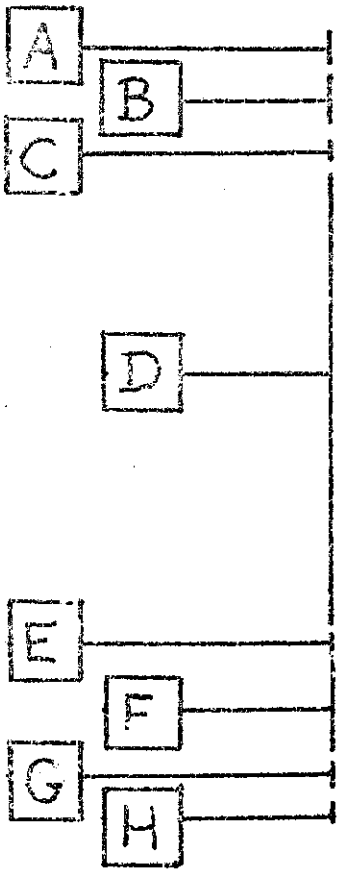
ASYSOUT17I SPOOL OPEN FAILED.

An attempt was made to open the spool dataset, but it failed. The request is terminated.

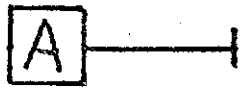
From SMF writer routine

AHASPSMF2 *** UNABLE TO WRITE SMF TYPE 250 RECORD ***

The smf writer program received a non-zero return code from SVC 83. The smf record is lost. Processing continues.



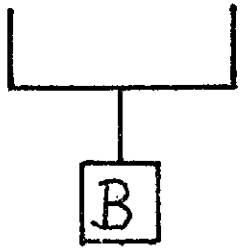

```
ACC  IBM 370/158   6.0MB  VS/2 03.70  JES/2 4.1   8:43:35   3 MAR 80  MONDAY
SYST: (0002)JES2     (0012)NET

P2 30E,C=T,WAITING;P3 30F,C=A,J=R937BTC0
INO ASID CLASS  JOBÆ JOB ---- STEP --- NO STATUS  VIRT REAL FIXD PG/S CPU - CPU%
I1  0010 N        24 AIMS     IEFPROC   1 NONSWP  1148 1136  212    5 86040   4%
I2  000D X        30 MESSAGE1 REGION    1 NONSWP   136   56    0    0 86313   0%
I3  000F Y        28 MESSAGE2 REGION    1 NONSWP   132   52    0    1 86307   2%
I4  000E Z        29 MESSAGE3 REGION    1 NONSWP   136   56    0    0 86331   0%
I5        T          INIT
I6  0011 Q        23 TS2      TS2       1 NONSWP   844  620   60    0 59676   9%
I7  000B 2HA      78 KST50              1 INCORE    60  668    0    0    32  12%
I8  0009 2RA      99 HA4UDD19 HA4B0300  4 INCORE   216  288    0    3   294   6%
I9       2RA         INIT
I10 000A 2RA      65 ADITTO1  DITTO     1 SWO-0A   512    0    0    0    48   0%
I11 000C KA       77 KSLCHAN  COMPILE   2 INCORE   256   56    0    2   178  34%
I12      I2         INIT
I13 0008 P        98 SAZ41216 SMP       2 SWO-09  1536    0    0    0  5978   0%
--- SPOOL 20% -- CPU  98% -- PAGE   24/SEC -- FREE   88K -- TDIFF  0 M 56.78 S -
0010 *55 DFS996I *IMS READY*  A115


INT REQ: 30F 584
_
```

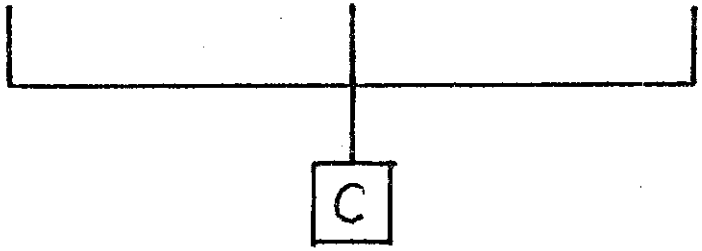


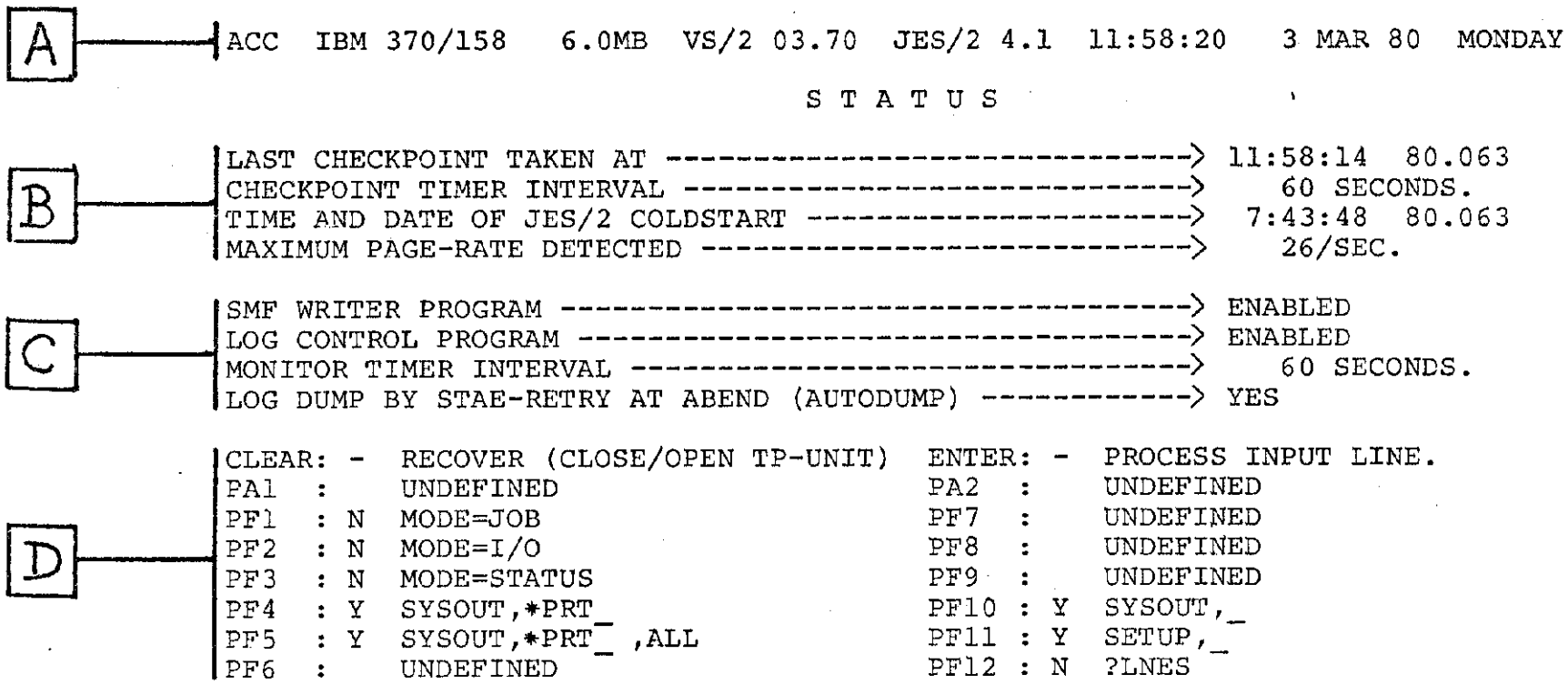

ACC IBM 370/158 6.0MB VS/2 03.70 JES/2 4.1 8:18:10 3 MAR 80 MONDAY

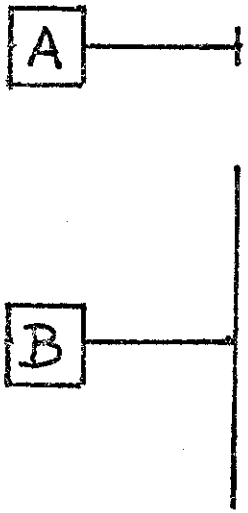
T A P E A N D D A S D D E V I C E S

| -- TAPE -- | -- TAPE -- | ----- DASD ----- | ----- DASD ----- | ----- DASD ----- |
|---|---|---|---|---|
| 580 000306 | | 140 ASYS02* PRIV | 15C IPORES* PRIV | |
| 581 | | 141 ASYS03* PRIV | | |
| 582 003707 | | 142 ASYS04* PRIV | | |
| 583 *MOUNT | | 143 ASYS05* PRIV | | |
| (004134) | | 144 AGEM01* PRIV | | |
| 587 | | 145 ASYS08* STRG | | |
| | | 148 ASYS09* PRIV | | |
| | | 149 ASYS10+ PRIV | | |
| | | 14C ASYS11* PRIV | | |
| | | 14D ASYS12* PRIV | | |
| | | 14E ASYS06+ PRIV | | |
| | | 14F ASYS07+ PRIV | | |
| | | 158 ASYS01* PRIV | | |
| | | 159 IRMA03 PRIV | | |
| | | 15A ACCLIB PRIV | | |
| | | 15B CR0001* PRIV | | |




A
ACC IBM 370/158 6.0MB VS/2 03.70 JES/2 4.1 11:58:20 3 MAR 80 MONDAY
S T A T U S
B
LAST CHECKPOINT TAKEN AT -----------------------------> 11:58:14 80.063
CHECKPOINT TIMER INTERVAL -----------------------------> 60 SECONDS.
TIME AND DATE OF JES/2 COLDSTART ----------------------> 7:43:48 80.063
MAXIMUM PAGE-RATE DETECTED ----------------------------> 26/SEC.
C
SMF WRITER PROGRAM ------------------------------------> ENABLED
LOG CONTROL PROGRAM -----------------------------------> ENABLED
MONITOR TIMER INTERVAL --------------------------------> 60 SECONDS.
LOG DUMP BY STAE-RETRY AT ABEND (AUTODUMP) ------------> YES
D
CLEAR: - RECOVER (CLOSE/OPEN TP-UNIT) ENTER: - PROCESS INPUT LINE.
PA1 : UNDEFINED PA2 : UNDEFINED
PF1 : N MODE=JOB PF7 : UNDEFINED
PF2 : N MODE=I/O PF8 : UNDEFINED
PF3 : N MODE=STATUS PF9 : UNDEFINED
PF4 : Y SYSOUT,*PRT_ PF10 : Y SYSOUT,_
PF5 : Y SYSOUT,*PRT_ ,ALL PF11 : Y SETUP,_
PF6 : UNDEFINED PF12 : N ?LNES



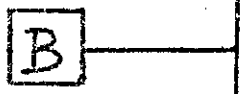

ACC IBM 370/158 6.0MB VS/2 03.70 JES/2 4.1 12:09:52 3 MAR 80 MONDAY

REMOTE JOB ENTRY LINE STATUS

| LINE | ADDR | STATUS | RMTNO | USER-ID | E | LINE | ADDR | STATUS | RMTNO | USER-ID | E |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 021 | ACTIVE | 11 | LN1 | N | 2 | 022 | ACTIVE | 3 | KX1 | N |
| 3 | 023 | ACTIVE | 15 | KP1 | N | 4 | 024 | DRAINED | | | N |
| 5 | 025 | ACTIVE | 4 | CRI1 | N | 6 | 026 | ACTIVE | | | N |
| 7 | 027 | ACTIVE | | | N | 8 | 029 | ACTIVE | 17 | CRIVM | N |
| 9 | 028 | ACTIVE | | | N | 10 | 035 | ACTIVE | | | N |
| 11 | 034 | ACTIVE | | | N | 12 | 03B | ACTIVE | | | N |
| 13 | 036 | DRAINED | | | N | 14 | 037 | DRAINED | | | N |
| 15 | SNA | ACTIVE | | | N | 16 | SNA | ACTIVE | | | N |
| 17 | SNA | ACTIVE | | | N | 18 | SNA | ACTIVE | 21 | HS1 | N |


ACC IBM 370/158 6.0MB VS/2 03.70 JES/2 4.1 12:30:42 3 MAR 80 MONDAY

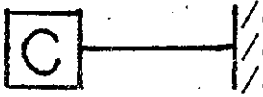
HASP MODULE DIRECTORY



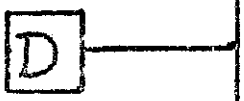

| EP-NAME | EP-ADR | BASE | EP-NAME | EP-ADR | BASE | EP-NAME | EP-ADR | BASE |
|---|---|---|---|---|---|---|---|---|
| HASPABS | 000000 | 000000 | HASPACCT | 095130 | 000000 | HASPCOMA | 0A2BD0 | 001D20 |
| HASPCOMM | 0A0EA8 | 000000 | HASPCON | 098190 | 000000 | HASPINIT | 0A9000 | 000000 |
| HASPMISC | 095270 | 000000 | HASPNUC | 085000 | 000000 | HASPPRPU | 090000 | 000000 |
| HASPRDR | 088B00 | 000000 | HASPRDRO | 089BB0 | 0010B0 | HASPRSCN | 08B4A0 | 0029A0 |
| HASPRTAM | 098AC0 | 000000 | HASPSSSM | C88000 | 000000 | HASPSSVT | B84B58 | 000000 |
| HASPXEQ | 08BB60 | 000000 | | | | | | |
| HASPPPI1 | 090928 | | HOSPOOL | 0979F0 | | $HASPWTO | 0987A6 | |
| HASPIMAG | 094A68 | | HASPATTN | 0868A4 | | HASPVTAM | 0A0838 | |
| HOSALLOC | 088A28 | | $ABEND | 088246 | | $IOAPPEN | 086944 | |


```
/SYSOUT01I   SYSOUT STATUS FOR JOB: ADITT01  ( 652), (CENTRAL ,CENTRAL ):
/SYSOUT02I   TOTAL NUMBER OF LINES/CARDS    :          1445.
```

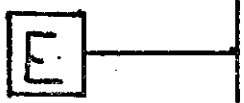

```
/SYSOUT01I   SYSOUT STATUS FOR JOB: ADITT01  ( 652), (CENTRAL ,CENTRAL ):
/SYSOUT00I   STEPNR   DDNAME   SYSOUT-LINES  CLASS  FORM  COPIES  LRECL  RECFM.
/SYSOUT00I     N/A      N/A              17    A     STD.      1     133   U M
/SYSOUT00I     N/A      N/A               7    A     STD.      1      90   F
/SYSOUT00I     N/A      N/A              41    A     STD.      1     164   V A
/SYSOUT00I       1   SYSPRINT          1380    A     STD.      1     133   FBA
/SYSOUT00I       1   SYSUDUMP             0    A     STD.      1       0
/SYSOUT02I   TOTAL NUMBER OF LINES/CARDS    :          1445.
```




```
/SYSOUT01I   SYSOUT STATUS FOR JOB: ADITT01  ( 652), (CENTRAL ,CENTRAL ):
/SYSOUT02I   TOTAL NUMBER OF LINES/CARDS    :          1445.
/SYSOUT03I   NUMBER OF LINES PRINTED/PUNCHED:           365.
```




```
/SYSOUT01I   SYSOUT STATUS FOR JOB: ADITT01  ( 652), (CENTRAL ,CENTRAL ):
/SYSOUT00I   STEPNR   DDNAME   SYSOUT-LINES  CLASS   FORM  COPIES  LRECL  RECFM.
/SYSOUT00I     N/A      N/A              17    A     STD.      1     133   U M
/SYSOUT00I     N/A      N/A               7    A     STD.      1      90   F
/SYSOUT00I     N/A      N/A              41    A     STD.      1     164   V A
/SYSOUT00I       1   SYSPRINT          1380    A     STD.      1     133   FBA
/SYSOUT00I       1   SYSUDUMP             0    A     STD.      1       0
/SYSOUT02I   TOTAL NUMBER OF LINES/CARDS    :          1445.
/SYSOUT03I   NUMBER OF LINES PRINTED/PUNCHED:            94.
```




```
/SYSOUT01I   SYSOUT STATUS FOR JOB: RIMORGEN ( 589), (CRI1    ,CRI1    ):
/SYSOUT00I   STEPNR   DDNAME   SYSOUT-LINES  CLASS   FORM  COPIES  LRECL  RECFM.
/SYSOUT00I     N/A      N/A              11    A     STD.      1     133   U M
/SYSOUT00I     N/A      N/A               3    A     STD.      1      90   F
/SYSOUT00I     N/A      N/A              97    A     STD.      1     164   V A
/SYSOUT00I       1   SYSPRINT           616    R     0101      1     131   F A
/SYSOUT00I       2   SYSPRINT           299    R     0101      1     133   F M
/SYSOUT00I       3   SYSPRINT          1453    R     0101      1     121   FBA
/SYSOUT00I       4   SYSPRINT             9    A     STD.      1     121   FBA
/SYSOUT02I   TOTAL NUMBER OF LINES/CARDS    :          2488.
/SYSOUT03I   NUMBER OF LINES PRINTED/PUNCHED:            98.
```


```
** JOB= 647,RIRMV04C ** CLASS=I ** PRTY= 9 ** STATUS=*EXEC    ********************
//RIRMV04C JOB (4201,CRI,200,200,CRI1),'FAKT. OCR',CLASS=I,              JOB  64
//    MSGLEVEL=(1,1),
//    PRTY=9
/*SETUP  TAPE=1,OUTPUT=(4314,4319)
```


```
** JOB= 647,RIRMV04C ** CLASS=I ** PRTY= 9 ** STATUS=*EXEC    ********************
//RIRMV04C JOB (4201,CRI,200,200,CRI1),'FAKT. OCR',CLASS=I,              JOB  64
//    MSGLEVEL=(1,1),
//    PRTY=9
/*SETUP  TAPE=1,OUTPUT=(4314,4319)
//JOBLIB DD DSN=&&GOSET,UNIT=SYSDA,DISP=(,PASS),SPACE=(CYL,(5,1,28))
//RIRMAV04   EXEC RIV04X,
//    GENNR=04,FPOSTUD=004314,POSTUD=004319,AFS=V04C,
//    JOB=V04C,KREDNOT=1,FAKTURA=1,S12DRP=5,S12ADRP=0
//S4.IRMAOCR DD DSN=CRI.OCROMK(V04D),DISP=SHR
//S5.KKORTI  DD  *,DCB=BLKSIZE=2000
```