

NOTICE OF WARNING

THE ORIGINAL OSIE'S AND OSERG'S WERE SOMETIMES NEXT TO ILLEGBLE. AS A RESULT, MISTAKES MAY BE FOUND IN THIS PUBLICATION. UNDERSTAND THE MODIFICATION AND VERIFY THE CODE BEFORE ATTEMPTING TO APPLY IT.

IF THIS SUGGESTION IS FOLLOWED, YOU SHOULD HAVE NO PROBLEMS. I HAVE INCLUDED THE NAME AND ADDRESS OF THE ORIGINAL SUBMITTER WHERE THAT INFORMATION WAS AVAILABLE.

PLEASE LET ME KNOW IF YOU ENCOUNTER ANY ERRORS IN THIS PUBLICATION.

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The SHARE OS/MVT/MFT Project is sincerely grateful
to Mrs. Jacqueline B. Wood who donated many, many
hours of her time to type THE WOODEN PADDLE. Without
her assistance, THE WOODEN PADDLE would not exist.

Jackie: Our sincere THANKS!!!!!!!!!!!!!!!!!!!!

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AUTO DUMPING SYS1.DUMP.

The information for Auto Dumping SYS1.DUMP data sets in the Dallas issue of OSIE was applicable for Release 20.1 of OS. Following are the changes needed to apply this modification to Release 21.0.

Apply the following superzaps to SVCLIB. Replace superzaps in Step 2 for Release 20.1.

NAME IGC0LOIC
VER 0108 0A23
REP 0108 0AF3
NAME IGC7903D
VER 01DA 0A23
REP 01DA 0AF3
NAME IGC5303D
VER 013C 0A23
REP 013C 0AF3

Message IZE1461 has been replaced by Message IEE0921, therefore, Exhibit A (IGC0024C) must be modified.

Replace

CLC -C'IEE1461',4(11) Generated after dump command.

With

CLC -C'IEE0921',4(11) Generated after dump command.

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I - 1

OS OVERHEAD INFO

Knowledge of the amount of core storage utilized by OS is valuable in many instances. This routine has been written to acquire this information directly from the system at any point in time. The output from this routine follows:

O/S OVERHEAD INFORMATION

NUCLEUS=114688 BYTES (0112K)
SYSTEM QUEUE SPACE=43008 BYTES (0042K)
LINK PACK AND MAST SCHED=65536 BYTES (0064K)
FREE CORE=563200 BYTES (0550K) IF SYS. WAS EMPTY

The statistics displayed in the printout above are gathered by executing the following instructions under Rel. 20.6 MVT.

LA	2,16	CVT PTR
L	2,0(2)	CVT ADDR
L	9,164(2)	GET HIGHEST ADDRESS IN MACHINE
L	10,160(2)	SAVE HIGHEST TCB ADDRESS
L	2,200(2)	2ND CVT
L	2,108(2)	ADDR OF GOVFLB
LM	5,6,0(2)	5 IS LENGTH OF NUC AND SQS 6 IS DOE PTR
L	6,12(6)	6 IS NOW LENGTH OF SQS
LA	6,0(6)	
LA	5,0(5)	
SR	5,6	6 IS NOW LENGTH OF NUC
SR	9,5	LOWER FREE CORE
BAL	4,ARITH	MAKE NUC PRINTABLE (PUT IN YOUR OWN RTH)
MVC	N+8(6),WORK+2	MOVE TO MSG
BAL	4,HEX	DIV BY 1024 & MAKE PRINTABLE (YOUR OWN RTH)
MVC	N+22(4),WORK+4	MOVE TO MSG.
LR	5,6	
SR	9,5	LOWER FREE CORE
BAL	4,ARITH	MAKE SQS PRINTABLE
MVC	SQS+19(6),WORK+2	MOVE TO MSG
BAL	4,HEX	DIV BY 1024 & MAKE PRINTABLE
MVC	SQS+33(4) WORK+4	MOVE TO MSG
NXT	L 11,12(10)	GET TIOT
CLC	0(6,11),MASTER IS IT	THE MASTER SCHED. TCB
BE	MAST	YES
L	10,116(10)	GET NEXT TCB
B	NXT	
NXT	L 11,152(10)	GET DUMMY POE
L	11,8(11)	GRAB POE
L	11,20(11)	REGION SIZE OF LPMS
LA	11,0(11)	
SR	9,11	CAL. FREE CORE IF SYS WAS EMPTY
LR	5,11	
BAL	4,ARITH	MAKE LINK PK & MASTEP SCHED. PRINTABLE

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OS OVERHEAD INFO (continued)

MVC	LPMS+25(6),WORK+2	MOVE TO MSG
BAL	4,HEX	DIV BY 1024 & MAKE PRINTABLE
MVC	LPMS+39(4),WORK+4	MOVE TO MSG
LA	9,1(9)	
LR	5,9	
BAL	4,ARITH	MAKE FREE CORE PRINTABLE
MVC	FC+10(7),WORK+1	MOVE TO MSG
BAL	4,HEX	DIV BY 1024 & MAKE PRINTABLE
MVC	FC+25(4),WORK+4	MOVE TO MSG
BAL 4,	PRT	GO TO PRINT ROUTINE (INSERT YOUR OWN)

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SIO COMPREHENSIVE TRACE RECORD

A record with the following format is built when a start I/O (SIO) occurs in the I/O supervisor SIO subroutine and either TRACE-SYS or TRACE-SIO is in effect along with MODE-EXT.

Size(bytes)	Description
2	Length of record in bytes
2	X'0000'
1	Record identifier: X'FF' indicates trace record
1	Format identifier: X'00'
12	Optional timestamp: If TIME=YES is specified, this field contains 4 bytes of the CVTIZ field and the eight bytes of the TOD clock value
2	Event identifier: X'7000' indicates an SIO in the IOS SIO subrouting
8	Jobname
4	RQE TCB
2	SIO condition code (only the second byte is used):00 Successful SIO01 CSW stored10 Subchannel or channel busy11 Not operational
2	Device address
4	CAW
8	CSW
20	First five words of RQE
4	Starting address of virtual storage CSW chain

 SMF IEFU83 EXIT UNDER OS MVT

CRC has implemented the SMF Record Examination Exit, IEFU83, under MVT (21.8). The modules affected were examined (both th. MVT and VS2 modules) and it was determined that the technique used in VS2 is directly applicable to MVT (no examination of MVT was made).

The implementation consists of superzaps to three SMF modules. IEFMFI was zapped to increase the size of the SMCA to hold the address of the IEFU83 module. IEFMFOI was expanded and zapped to load IEFU83 and place its address into the SMCA. IGC0008C (DLIB IEFMFI) was expanded and zapped to branch to the IEFU83 Exit. IEFU83 should be placed in the Link Pack Area.

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SMF IEFU83 EXIT UNDER MVT

Name	IEESMFIT	IEESMFIT	(LINKLIB/CI505)
Ver	0084	F000,007C	SMCA SIZE (OLD)
Ver	0090	D77B,1000,1000	CLEAR OLD SMCA SIZE
Rep	0084	F000,00AC	SMCA SIZE (NEW)
Rep	0090	D7AB,1000,1000	CLEAR NEW SMCA SIZE
IDRDATA	IEFU83-EXIT-UNDER-MVT		

EXPAND IEESMFOI BY X'34' TO X'580'

Name	IEESMFOI	IEESMFOI	(LINKLIB/CI505)
Ver	0130	92EB,C033	Overlaid
Rep	0130	47F0,255A	Branch to Expand
Rep	0560	921A,C033	Overlaid Instruction
Rep	0564	4100,256E	Load ADDR of C'IEFU83
Rep	0568	1B11,0A08	Set DCB ADDR, SVC Load
Rep	056C	5000,C0A8	Store Address in SMCA
Rep	0570	47F0,212E	Return to Original Code
Rep	0574	C9C5,C6E4,F8F3,4040	C'IEFU83
IDRDATA	IEFU83-Exit-Under-MVT		

EXPAND IGC0083 BY X'86' TO X'3E0'

Name	IGC0008C	IGC0083	(SVCLIB/CI505-IEESMFBC)
Ver	00DA	41B0,91D0	Overlaid
Rep	00DA	47F0,935E	Branch to Expand Area
Rep	0360	9140,C001,4780,913C,D501,D01C,A000,4780	
Rep	0370	93D2,9120,C000,47E0,93D2,0700,4510,9382	
Rep	0380	F000,0050,5800,1000,0A0A,4180,A000,5080	
Rep	0390	1000,D703,1004,1004,185D,41D0,1008,41F0	
Rep	03A0	93AA,90EC,D00C,58F0,COA8,05EF,50F0,D000	
Rep	03B0	98EC,D00C,58F0,D000,18D5,185F,4180,0014	
Rep	03C0	5800,937E,4110,1000,0A0A,41F0,0004,195F	
Rep	03D0	4780,913C,41B0,91D0,47F0,90DC	
IDRDATA	IEFU83-Exit-Under-MVT		

This code was taken almost instruction for instruction from the VS2 version of this module. See it for an explanation of its logic (and in some cases, its illogic).

ZAP GTF TO OBTAIN CCHHR ON DISK - 10

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This zap changes GTF to place the CCHHR into SIO Trace-Records for Disk-10. The CCHHR overlays the first part of the RQE field in the SIO trace-record. After the zap is applied use these commands to test it.

S GTF.P1,285,SCRTCH Use CUU for tape drive to record trace
 Reply Trace options
 R 00,Trace-SIOP Specify trace for SIO for selected devices
 Reply devices for SIO option
 R 00,SIO-(150,151,152,153), End
 Options chosen - reply U to begin
 R 00,U
 P 285 to stop the trace

Substitute &HLTSIO with the corresponding value for your system.
 Substitute UU XXX YYY with the following values.

	OS-21.7	VS1-3.0	VS1-3.04	VS1-3.1	VS2-1.6
BRANCH	UU 48	6C	6C	6C	VS2-1:7
&HLTCOM	XXX 13C	184	1A8	184	
PATCH	YYY 380	49E	4C6	4D6	35E

NAME &HLTSIO &HLTSIO	(OS=&HLTSIO	VS1=&HLTSIO	VS2=&HLTSIO) LINKLIB
VER 00UU 47F0BXXX	B	&HLTCOM	(&HLTCOM/&HLTCOM/&HLTCOM)
VER 0YYY D7C1E3C3	DC	C'PATCH'	C'PATCH'
REP 00UU 47F)BYYY	B	PATCH	
REP 0YYY 58100048	L	R1,CAW	POINT R1 AT CCW
95071000	CLI	CCW,X'07'	IS IT A SEEK CCW?
4770BXXX	BNE	&HLTCOM	NO-GO TO &HLTCOM
95001006	CLI	CCW+6,X'00'	DOES CCW-COUNT=X'0006'?
4770BXXX	BNE	&HLTCOM	NO - GO TO &HLTCOM
95061007	CLI	CCW+7,X'06'	DOES CCW-COUNT = X'0006'?
4770BXXX	BNE	&HLTCOM	NO - GO TO &HLTCOM
58101000	L	R1,CCW	POINT R1 AT BCCCHHR
D206C0441000	MVC	RQEDATA,BCCCHHR	MOVE BCCCHHR INTO RQAREA
92E7C044	MVI	RQEDATA+0,C'X'	FLAG RQEDATA AS BEING XXCC
92E7C045	MVI	RQEDATA+1,C'X'	FLAG RQEDATA AS BEING XXCC
4770BXXX	B	&HLTCOM	GO TO &HLTCOM END OF ZAP

 * SUPERZAP FOR SYSTEM PARAMETERS JOB DEFAULT

The DAR Modules in MFT 21.0 and 21.6 use the reserved names of IGC0221C through IGC0521C. Thus a user SVC 213 that wants to use this name for its third through sixth loads will wipe them out upon being catalogued and the system will crash the first time ABEND (SVC13) calls DAR. This problem is not believed to exist in MFT since different names are used for these modules. MFT 21.7 is supposed to have this problem fixed as per AFAR P57856.

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For those MFT installations that require SYSTEM PARAMETERS to be specified at IPL time, the following can be implemented to assume an installation default reply when replying only with an EOB. For other than the default reply, a long message can be typed as normal.

Verify that the field ANSRAREA is not actually used by NIP prior to label IEARESPC. It may be referenced by some code yet never altered because the code is not executed for your environment. If ANSRAREA is not used prior to the label, zap ANSRAREA with your required default reply and change the MVC instruction at label IEARESPC to move blanks into the remainder of ANSRAREA. It will appear that the operator actually typed in the reply rather than just hitting EOB.

NAME	IEANUC02	IEAANIP0		EXAMPLE
VER	0F2C	D24FD7ABDA61	IEARESPC	ANSRAREA (80), IEABLNGS
REP	0F2C	D22DD7C0DA61	MVC	ANSRAREA +34(46), IEABLNGS
REP	7404	D940F0F06B70C2D3C4D3	MVC	R 00, 'BLDL
REP	740E	7EF0F06B70F16B09C1D4		=00,01,RAM
REP	7418	7EF0F06B70F16B208E2		=00,01,SQS
REP	7422	7EF2F07D		= 0'
LDRTDATA	IPLPARMS			

 * REDUCE 2740 CHECKING TIME DURING IPL

MFT installations with 2740 consoles with the checking feature can reduce the time spent checking those consoles during IPL by applying the following superzap to NIP.

Find label STPCONGD in IEAANIP. The second instruction after it is BZ STPCONOK which should be changed to: B STPCONOK

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 * ELIMINATION OF SERIALIZATION OF IEFACTRT

Users of the IEFACTRT exit in job/step termination who no longer use the old "SYS1.ACCT" dataset should apply the zap shown below. The module IEFACTLK causes system-wide serialization of use of IEFACTRT to protect the integrity of SYS1.ACCT. If you use SMF instead, this zap may increase your throughput a tiny bit.

NAME	IEFW21SD	IEFACTLK	MFT 21.6
VER	00F0	0A30	
VER	010A	0A30	
REP	00F0	1BFF	
REP	010A	1BFF	

CHE NOTES
 OSERC VOL 3 NO 1

The FORMAT option of IEHLIST (LISTPDS) carefully isolates and translates the SSI of load modules for easy inspection. However, no bit settings in the directory block appear to indicate whether or not an SSI is present.

Investigation of the microfiche reveals the following technique is employed:

```
* ASSUME R2 POINTS TO START OF DIRECTORY ENTRY
* FIRST, CALCULATE LENGTH OF DIRECTORY ENTRY
  SR      R3,R3      CLEAR R3
  IC      R3,11 (0,R2) 'C' OF 'TTRC' IN R3
  N       R3,-F'31'   ZERO OUT FIRST 3 BITS
  SLL     R3,2        DOUBLE IT - R3 CONTAINS NUMBER
                      OF BYTES OF USER DATA
  LA      R3,12(R3,R2) R3 POINTS TO END OF DIRECTORY ENTRY
                      THE 12 COMES FROM NAME (8) AND TTRC (4)

SPACE 2
* CALCULATE THEORETICAL LENGTH
  LA      R4,34
  TM      11 (R2), X'80' BASIC LOAD MODULE DIRECTORY ENTRY LENGTH
                      IS IT ALIAS?
  BNO     NOTALIAS     NO - BRANCH
  TH      20 (R2), X'CO' ADD IN EXTRA LENGTH DUE TO ALIAS AND
                      'RENT' OR 'REUS'

NOTALIAS EQU *
NOTRENT  EQU *
  TM      20 (R2), X'04' SCATTER LOADED?
                      NO - BRANCH
  BNO     NOTSCTR
  LA      R4,8 (0,R4)   YES - ADD IN EXTRA LENGTH DUE TO
                      SCATTER LOADING

NOTSCTR EQU *
* REG 4 NOW CONTAINS THEORETICAL LENGTH
  LA      R4,0 (R4,R2)  R4 POINTS TO THEORETICAL END OF ENTRY
  CR      R3,R4         DOES THEORETICAL = ACTUAL?
  BE      NOSSI         YES - THUS NO SSI PRESENT
SSIHRE EQU *
```

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1. PURPOSE. To vary devices online or offline through the IODEVICE macro at system generation time (except teleprocessing (TP) and graphic (GR) devices).
2. COMMENTARY. These changes allow input/output devices to be system generated as either online or offline.

The changes for Stage I are made to the IODEVICE, SGGBLPAK and SGIEC202 macros in SYS1.GENLIB (if ASP is used, the IODEVICE and SGIEC202 macros must be changed in SYS1.ASPMOD instead of in SYS1.GENLIB). See EXHIBIT 1.

Changes for Stage II are made to the IECIUCB macro in SYS1.MODGEN. See EXHIBIT 2.

3. ACTION. To invoke these changes the system programmer must apply these changes and add, optionally, a keyword to each IODEVICE macro statement currently in the Stage I deck. The LINE-OFF keyword must be added for each device to be generated as offline. Omission or coding of LINE-ON will generate the device as online.

The generation expansion of the IODEVICE macro produces a comment line documenting the device as online or offline. In the PUNCH statement generated as a result of IODEVICE macros in a successful Stage I assembly, those devices generated as offline will have a 1 generated before the second device address in the IECIUCB card (normally on the continuation card).

4. FUTURE. The changes in the attachments are for Release 21.6 macros. Similar placement of changes must be made to subsequent releases of OS in order to retain this feature.
5. CAUTION. Do not generate the system console as offline.

EXHIBIT 1

1. IODEVICE Macro

ADD:

```
4LINE=, X0029TA21
AIF (4LINE'NE'OFF'). EXCERR LINE-ON OR
                      OMITTED OR MISPELLED 95421021
MNOTE *,' ***** DEVICE OFFLINE *****
                      ****' 95422021
4SGLINE (GI) SETB 1 SET TO OFFLINE 95423021
AGO .MEND EXIT FROM IODEVICE MACRO. 95424021
EXCERR ANOP 95425021
MNOTE *,' ***** DEVICE ONLINE *****
                      ***' 95426021
```

2. SGGBLINAK Macro

ADD:
GSLB 6SGLINE (768)

0069TA21

3. SGIEC2-02 Macro

ADD:
AIF (6SGLINE(6COUNT) EQ 1). EXCL HAS DEVICE BEEN
SET OFF.
AGO .PCHIEC 14079021
.EXC...1 ANOP 14079121
6OFF SETBI 14079221
.PCHIEC ANOP 14079321
14079421

EXHIBIT 2

1. IECINLE Macro

DELETE:

DC X'8SYSRES' * STAT 'A' UCB IS OFFLINE **TA 17200020
.ONLINE DC X'8SYSRES' * STAT 'A' UCB IS ONLINE **TA 17800020

ADD:
.EXC...OFF DC X'8SYSRES' * STAT 'A' ***** UCB IS OFFLINE
***** 17200020
.ONLINE AIF ('6TYPE' EQ 'TP' OR '6TYPE' EQ 'GR'). ONLINE 17800020
AIF ('OFF EQ 1).EXC... 17801020
.ONLINE DC X'8SYSRES' * STAT 'A' ***** UCB IS ONLINE
***** 17802021

Richard Hight
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VA Data Processing Center
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DATA SET WRITER

Improved Data Set Writer performance can be obtained by forcing chained scheduling of the input data set. This will not be used for SNA processing.

NAME	IEFSD085	IEFSD085
VERIFY	0548	0000,0001,0000,0000
		Prototype DCB + 34
		(HEX)
REP	0548	2000

Check the address as it is dependent on release and PTF application.

Submitted by: Jeff Goldsmith
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* USING GDGS FOR SYSOUT WRITER OUTPUT *

At CRC, HARDCOPY (SYSLOG) is written to tape as a generation data set. The same tapes are re-used by the normal trick of back-referencing the +1 data set onto the -4 volume. However, the SYSOUT Writer insists that the IEFORDER DD statement be the first DD in the Writer Procedure. That requirement prevents using back-reference.

This zap circumvents this problem by using IEFORDER regardless of its DD position in the Writer Procedure. It imposes one restriction; the output of the writer must be contained on one volume only.

NAME IEFSD085
VER 009A D2072028601C
VER 01F4 F0404040404040
VER 023C F0404040404040
REP 009A 07000700000
REP 01F4 C9C5C6D9C4C5D940
REP 023C C9C5C6D9C4C5D940
IRDATA MAKE-HARDCOPY-WORK

The displacements are for 21.8, but this modification has been successfully installed on MVT 21.6 and V52 1.6 and 1.7.

EBCDIC SYNOU LISTINGS

The superzaps that follow take the period out of the EBCDIC synout listing for ABDUMP and IMPDPRMT and substitute blanks (X'40'). They were run in an MFT shop, but might be installed in an MVT shop by applying the zaps to IGC0A05A using address 05D4 as a reference to the MFT address of 0260. These zaps should provide a small increase in print speed when printing core dumps.

NAME	IMDPRDMP	IMDPRCCM		
VER	03AC	4B4B4B4B	REP	0450 40404040
VER	04AO	F4F5F6F7	REP	0454 40404040
REP	03AC	40404040	REP	0458 40404040
REP	03BO	40404040	REP	045C 40404040
REP	03B4	40404040	REP	0460 40404040
REP	03B8	40404040	REP	0464 40404040
REP	03BC	40404040	REP	0468 40404040
REP	03CO	40404040	REP	046C 40C1C2C3
REP	03C4	40404040	REP	0474 C8C94040
REP	03CB	40404040	REP	0478 40404040
REP	03CC	40404040	REP	047C 40D1D2D3
REP	03D0	40404040	REP	0484 D8D94040
REP	03D4	40404040	REP	0488 40404040
REP	03D8	40404040	REP	048C 4040E2E3
REP	03DC	40404040	REP	0494 E8E94040
REP	03E0	40404040	REP	0498 40404040
REP	03E4	40404040	REP	04A4 F8F94040
REP	03E8	40404040	REP	04AB 40404040
REP	03EC	40404040		
REP	03FO	40404040	NAME	IGC0405A IGC0405A
REP	03F4	40404040	VER	0260 4B4B4B4B
REP	03F8	40404040	VER	025C F8F94B4B
REP	03FC	40404040	VER	0250 4B4B4B4B
REP	0400	40404040	VER	024C E8E94B4B
REP	0404	40404040	VER	0244 4B4B4B4B
REP	0408	40404040	VER	0240 4B4B4B4B
REP	040C	40404040	VER	023C D8D94B4B
REP	0410	40404040	VER	0234 40D1D2D3
REP	0414	40404040	VER	0230 4B4B4B4B
REP	0418	40404040	VER	022C C8C94B4B
REP	041C	40404040	VER	0224 40C1C2C3
REP	0420	40404040	REP	0224 40C1C2C3
REP	0424	40404040	REP	022C C8C94040
REP	0428	40404040	REP	0230 40404040
REP	042C	40404040	REP	0234 40D1D2D3
REP	0430	40404040	REP	023C D8D94040
REP	0434	40404040	REP	0240 40404040
REP	0438	40404040	REP	0244 4040E2E3
REP	043C	40404040	REP	024C E8E94040
REP	0440	40404040	REP	0250 40404040
REP	0444	40404040	REP	025C F8F94040
REP	0448	40404040		
REP	044C	40404040		

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REP	044B	40404040	REP	0260	40404040
REP	044C	40404040			

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WRITING SMBS FROM IEFUJV

At the present time, there is no standard linkage to write SMBS from the SMF JCL Validation Exit, IEFUJV.

However, a technique can be employed which makes use of the common routine used by the interpreter to write SMBS IEFVGM.

IEFVGM is entered by a standard BALR instruction thus:

```
L    Rn,=V(IEFVGM)
BALR R14,Rn
```

IEFVGM requires the following parameters.

R2 contains zero
R9 points to an 80 character message to be written
R5-R10 and R12 point to various control blocks and work areas - explained later.

IEFUJV is invoked by a BALR from IEFVHEB. Furthermore, IEFVHEB contains the BCOP of IEFVGM and on entry to IEFUJV, IEFVHEB's registers 5-10 and 12 point to the work areas and control blocks required by IEFVGM.

Thus, on entry to IEFUJV, one should issue the SAVE macro or its equivalent and then get sufficient core for processing. Seventeen fullwords are required for this SMBS writing interface. Since IEFUJV is assembled and linked separately, one cannot resolve the VCON of IEFVGM in IEFVHEB directly. By consulting the microfiche, it is possible to determine the displacement in IEFVHEB of this VCON and also its displacement from the base register of IEFVHEB (which is currently R11).

Assuming that SMBS are to be written from this exit, the 17 fullwords are used as follows.

Access the save area of IEFVHEB (into which registers 14 to 12 were SAVED on entry to this routine) and move registers 5-12 to the work area thus.

```
L    R2,SAVE+4      R2 POINTS TO IEFVHEB'S SAVE AREA
MVC  OR5(32),R0(R2) MOVE REGS 5-12 TO WORK AREA
```

I - 14

Load a work register with the base register of IEFVHEB as it was on entry to this routine.

L R2,64(0,R2) LOAD IEFVHEB'S BASE REGISTER INTO REG.2

Move the VCON of IEFVCM into the work area using the value of the displacement of it from the base register obtained from the microfiche.

MVC ADDR,DISPL(R2) MOVE VCON OF IEFVCM TO WORK AREA

(The value of DISPL is 690 over releases 20-21.0)

Upon deciding to write a message, the following technique may be used.

```

LAA R2,MSG          R2 POINTS TO MESSAGE
SMBAL R6,SMBWRITE    GO TO SMB WRITE ROUTINE

SMBWRITE EQU
STM R5,R12,NR5       SAVE CURRENT REGS 5-12
LM R5,R10,OR5         RESTORE REGS 5-10 and 12
L R12,OR12            AS AT ENTRY FROM IEFVHEB
LR R9,R2              R9 POINTS TO MESSAGE
XR R2,R2              R2 HAS ZEROS
L R15,ADDR            R15 POINTS TO IEFVCM
SMBAL R14,R15         GO TO WRITE MESSAGE
STM R5,R12,OR5        RESAVE IEFVHEB REGS
LM R5,R12,NR5         RELOAD OUR REGS
BR R6                 RETURN TO CALLER

```

MSG JC CL80'THIS IS A SAMPLE MESSAGE'

The work area is mapped as follows.

ADDR	US	OF	SAVE
OR5	US	F	AREA
OR6	US	F	FOR
OR7	US	F	REGISTERS
OR8	US	F	5-12
OR9	US	F	AS AT
OR10	US	F	ENTRY
OR11	US	F	TO THIS
OR12	US	F	ROUTINE
OR13	US	BF	SAVE AREA FOR OUR REGS DURING SMB WRITE

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The following program will read a Stage 1 output tape and split each job step into a separate job. It will also propagate the JCBIN card if there is one. Modifications for your installation, if needed, would be a new job card if the one in the program is not valid for your installation, and added code to support multi-card JCBIN's. This edited Stage 1 tape can then be fed into the reader or NASP. The old Stage 1 tape must still be used with the IMAPTELE program for PTF application and the other SYSGEN AID in this article - Stage 1 Cross Reference.

IBM has a program that will read a Stage 1 tape and cross reference all the modules that are used. Thus mini gens can be done, since only those steps that use altered modules need be run. The program name is DSO32000.

```

SYSGEN CSECT
        USING *12
        SAVE (14,12),,*
        LR 12,15
        LR 11,13
        LA 13,SAVE
        ST 11,4(13)
        ST 13,8(11)
        OPEN (OLD,,NEW,(OUTPUT))
        LA 11,WORK1
        LA 10,WORK2
        GET OLD, (11)
        LR 11,1
        GET OLD, (11)
        LR 11,1
        CLC 2(6,11)-C'JOBLIB'
        BNE EXECLOOK
        MVC JOBLIB,0(1)
LOOP    GET OLD, (11)
        LR 11,1
EXECLOOK EQU *
        CLC 2(2,11)-C'SG'
        BNE PUT
        CLI 5(11),C' '
        BE *+14
        MVC JOB+4(3), 4(1)
        BNE PUT
        CLI 5(11),C' '
        BE *+14
        MVC JOB+4(3), 4(1)
        BNE *+10
        MVC JOB+4(1), 4(1)
        NOP BYPASS1
        MVI *-3,X'FO'
        B BYPASS2
BYPASS1 EQU *

```


ELIMINATE OVERHEAD WITH SMF

```

MVC      0 (80,10), SYSABEND
PUT      NEW, (10)
LR       10,1
BYPASS2  EQU      *
MVC      0 (80,10), JOB
PUT      NEW, (10)
LR       10,1
MVC      0(80,10),JOB LIB
PUT      NEW,(10)
LR       10,1
PUT      PUT      NEW, (11)
LR       11,1
B         LOOP
EOF      MVC      0(80,10),SYSABEND
PUT      NEW, (10)
CLOSE    (OLD,,NEW)
L         13,4 (13)
RETURN   (14,12), RC=0
JOB      DC       CL80'//SC      JOB  TYPRUN=HOLD, RD=R, CLASS=C'
SYSABEND DC       CL80'//SYSABEND DD SYSOUT=A, UNIT=(2314,3)
WORK1    DS       CL80
WORK2    DS       CL80
JOB LIB  DC       CL80'// * NO JOBLIB CARD SUPPLIED'
SAVE     DC       9D'0'
EJECT
OLD      DCB      BFALN=D, BFTEK=E, BLKSIZE=80,BUFNO=20,DEVD=DA,LRECL=80,
              DSGRC=PS,
              MACRF=(GT),EODAD=EOF,DDNAME=SYSUT1
EJECT
NEW      DCB      BFALN=D,BFTEK=E,BLKSIZE=80,BUFNO=20,DEVD=DA,LRECL=80,
              DSGRC=PS,
              MACRF=(PT),DDNAME=SYSUT2
END

```

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When using SMF, but not using Data Set recording, the SMF EXCP counter routine is still entered on every EXCP. To eliminate this overhead, all that is necessary is to ZAP the first instruction of the EXCP counter routine to a BR 14 (07FE). The SMF EXCP counter routine is assembled and starts at label IEASHFEX in csect IEAQU000. The routine starts with a string of NOPR (0700) instructions, the first of which is the one to be changed.

Submitted by:
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CUT DOWN OVERHEAD IN SHARED DASD

The PLSERVE/RELEASE overhead of SHARED DASD can be eliminated on sharable devices which are NEVER shared. This is done by zapping the UCB Device Type byte 2, bit 2 OFF. If requirements change, this bit can be zapped back on. COREZAP can be used if a re-IPL cannot be performed.

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SYSTEM TASKS

Often a system crash can be traced to HASP (and other control programs) abending on either a CPU time excessive or accidental operator cancel. To make any program into a system task (which under MVT will allow it to use less than MINPART), the table of names which denote system tasks can be changed. The table is contained in CSECT IEEVLNKT. The table exists in module IEEVRJCL in MVT and in 3 separate places in MFT (check SYSGEN STAGE II linkedits). IEEVLNKT is a single CSECT module in SYS1.C1505.

Two approaches can be used to alter this table. One is to ZAP over unneeded system task names, such as TSO names if TSO is not being used. The other is to ZAP DUMPT the module and reassemble it with IBM's names and your names added to it.

Note that there are several sections to this table, separated by one blank or one binary zero. If zapped or reassembled, all changes should be placed BEFORE the first separator, and the separators should be assembled exactly as coded.

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CORRECTING FORMAT 5 DSCB ERRORS

Format 5 DSCB errors can be corrected using a simple procedure as long as the following is true:

1. No. Model DSCB's exist on the disk volume.
2. If an overlap condition exists, the overlap involves a data set occupying certain tracks that also show up in a FORMAT 5 DSCB. If two data sets occupy the same tracks, this procedure will not correct the error.

The following describes the steps involved in restoring FORMAT 5 DSCB's to reflect the true status of the volume.

1. From a LISTVTOC of the volume using the DUMP option, determine the CCHHR of the FORMAT 4 DSCB.
2. At hex '3A' in the FORMAT 4 DSCB is a 1 byte VTOC indicator which is normally hex '00'. If the value is hex '04', it means that the FORMAT 5 DSCB's are in error. Using the IMASPZAP program change this byte to hex '80'.

Code the SYSLIB DD card as follows:

```
//SYSLIB DD DSN=FORMAT4.DSCB,
              DCB=(KEYLEN=44),
              UNIT=2314,DISP=OLD,
              VOL=SER=XXXXXX
              (Serial No.)
```

The following control cards are required:

CCHHR XXXXXXXXXXXX

where X...X is the hex value of the CCHHR of the Format 4 DSCB
VERIFY 003A 00 or 04
REF 003A 80

3. Allocate a 1 track data set on the disk volume. At this point, the FORMAT 5 DSCB's are rewritten to show the true status of the volume.
4. Now the value of the byte is '08'. Using the IMASPZAP program, change this value back to hex '00'.
5. Run a SUPERLIST of the volume to be sure the FORMAT 5 DSCB's have been correctly rewritten.

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In release 20.0 and 20.1 of both MFT and MVT, response to any display command referencing the job queue (e.g., D N. DQ) may be slower than in prior releases. This is due to modularization and extension of the queue alter routines of job management.

The following modules have been tested for re-entrant capability: IEESD563, IEESD564, IEESD583. The Storage Estimates SRI will be updated to indicate that these modules may be considered for residency. Inclusion of these modules in the BLDL or RAM list results in a performance improvement.

Submitted by:

F.W. Gerbracht, Jr.
IBM

DUMPING MANX AND MANY

By creating a copy of IFASMFDP under another name and applying the following SUPERZAP (verified and tested on a Release 18 MVT system), the MAN data sets, SYS1.MANX and SYS1.MANY, can be dumped without being closed.

NAME xxxxxxxx IFASMFDP

VERIFY 0498 4770 C4D0

REP 0498 47FO C4D0

Submitted by:

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The N.Y. Stock Exchange has overcome the problem of duplicate volume serial numbers for SYSRES in a shared dand environment. It requires a simple modification to IEAANIP prior to assembly and linkedit into the nucleus.

Following are the required changes including additional code to vary specific volumes offline to another CPU.

MVI	NYSESW,X'01'	*INDICATE COMING FROM THIS ROUTINE
CLI	NYSESW,X'01'	*IS NOT (111111 AND NOT IPL DEVICE)
BE	NYSE1	*YES, RESET NYSESW AND CONTINUE
CLI	NYSESW,X'02'	*IS VALID AND NOT IPL DEVICE
BE	NYSE2	*YES, THIS UCB IS TO BE MADE OFFLINE
SLOOP	B	*NOT 01 OR 02 IS ERROR. GO INTO LOOP
NYSE2	MVI	*RESET THE SWITCH
	B	*GO TO VARY THE UCB OFFLINE
NYSE1	MVI	*RESET THE SWITCH
	CLL	*NOT FROM DASD UCB INIT ROUTINE
	BE	*
	CLI	*VERIFY MUST BE FROM DASD UCB INIT
	BE	*YES, PERFORM TEST
SLOOP2	B	*NO, SHOULD NEVER HAPPEN
TESTVOL	CLC	*IS VALID 111111
	ONES,IEAVOLAB	*NO, GO TO TEST FOR OTHER PACKS
	BNE	*STORE CHAN/UNIT ADDRESS OF UCB
	STH	*SAME AS UNIT ADDRESS IPL DEVICES
	CLC	*YES, GO TO NORMAL PROCESSING
	BE	*NO, SET SWITCH SO UCB IS MADE OFFLINE
MKOFF	MVI	*RETURN WITHOUT MODIFYING UCB
	B	*IS VALID XXXXXX PACK
	IEAABUCB	*GO TO MAKE DRIVE OFFLINE
TSTOTHER	CLC	*IS VALID XXXXX PACK
	MDS1,IEAVOLAB	*GO TO MAKE DRIVE OFFLINE
	BE	*IS VALID XXXXXX PACK
	MKOFF	*GO TO MAKE DRIVE OFFLINE
	CLC	*IS VALID XXXXXX PACK
	MDS2,IEAVOLAB	*GO TO MAKE DRIVE OFFLINE
	BE	*ELSE GO TO NORMAL PROCESSING
	MKOFF	*CONSTANT
	CLC	*CONSTANT
	MDS3,IEAVOLAB	*CONSTANT
	BE	*
	MKOFF	
	B	
	OUT	
MDS1	DC	CL6'XXXXXX'
MDS2	DC	CL6'YYYYYY'
MDS3	DC	CL6'ZZZZZZ'
ONES	DC	CL6'111111'
HOLDUNIT	DS	H
OUT	STH	R7,36(R9)
****		*SET TT OF BTOC IN UCB + 36

* THE FOLLOWING CONSTANT IS USED BY THE NEW YORK STOCK EXCHANGE

NYSESW DC XL1'00'Y
EJECT

Submitted by:

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DEFAULT JOB CPU TIME

The following superzap to module IEFVIA in TS1.LINKLIB will put a default job CPU time limit into each job's JCT. As stated in the System Programmer's Guide, the ttt portion of the reader/interpreter parameter list specifies the default maximum time for job steps, not for the whole job. The default value used in the superzap is a three byte binary value in hundredths of seconds, and may be different from the step time default. The superzap is currently being used in Release 19.6 MFT.

NAME IEFVIA IEFVJA

*PUT A DEFAULT JOB CPU TIME INTO JCT

```
VER 02F4 VFF9F8F7F6F5F4F3F2      VERIFY END OF JOBCLASS TABLE, THIS
VER 02FD FIF0E9E8E7E6E5E4E3      PART IS NEVER USED SO WE CAN USE IT
REP 02F4 D202080CB300      MVC      JCT.JMRTL(3), DEFAULT
REP 02FA 92400000      MVI      WHICH WE WILL Clobber
REP 02FE 47F0002A      BRANCH BACK
REP 0302 00EA60      DEFAULT = 10 MINUTES IN HUNDREDTHS OF SECONDS
REP 0305 FF      END OF TABLE ERROR CHECK

VER 0028 92400000
REP 0028 47F002F2      BRANCH TO PATCH
```

Submitted by:

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ANOTHER ZAP

This one is to prevent the channel from being interlocked during rewind on Release 20.

```
SVCLIB      ICG0550B
VERIFY      037C 95F2
REP         037C 95F4,4011,4770,3273
```

DISPLAY UNITS DEFAULT

Currently, when an operator forgets to enter an operand in the DISPLAY UNITS command, unit status for up to 100 devices is displayed. The following SUPERZAP changes the 100 device default value to 1 device.

```
/**      ZAP TO CHANGE DEFAULT NO. OF
          UNITS WHEN USING THE
/**      DISPLAY UNIT COMMAND FROM 100
          TO 1. 0/S 19 AND 20
//NODEVDEF EXEC SUPERZAP
//GO.SYSLIB DD DSN=SYS1.LINKLIB,DISP=OLD
//GO.SYSIN DD*
DUMPT IEEUNIT1 IEEUNIT1
NAME IEEUNIT1 IEEUNIT1
VER 009A 9264
REP 009A 9201
VER 017A 9264
REP 017A 9201
```

Submitted by:

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ELIMINATE PRESRES MESSAGES

The following SUPERZAP eliminates PRESRES messages at IPL time for all devices in the "ready" state. If a device is in a "not ready" state, a message will be printed as if currently the case.

```
/**      ZAP TO ELIMINATE PRESRES MESSAGE
/**      AT IPL TIME. )/S REL 19 AND 20
//PRESRES EXEC SUPERZAP
//GO.SYSLIB DD DSN=SYS1.LINKLIB,DISP=OLD
//GO.SYSIN DD*
DUMPT IEEVPRES IEEVPRES
VER 00D2 0A23
VER 01A4 0A23
REP 00D2 0700
REP 01A4 0700
```

Submitted by:

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LPA OPTIMIZATION

The organization of NIP is such that modules are loaded in the following manner:

- 1) BLDD - IEABLDXX
- 2) Based on an internal list, certain modules are automatically made resident - first a group from LINKLIB and then a number from SVCLIB.
- 3) RAM & RENT - IEAIGGXX (multiple lists possible)
- 4) RSVC - IEARVXX (multiple lists possible)
- 5) RERP - resident error recovery procedures for MICR and OCR devices

Since space is allocated in 2K blocks, attempt to establish your lists for PARMLIB so that modules are loaded in order of descending size. When multiple lists are used for one option, specify the one containing the larger modules first. For example, normally you might use IEAIGG00 for RAM - SVCLIB and IEAIGG01 for RENT - LINKLIB. Since the access method routines are often relatively small in comparison to those from LINKLIB, you could achieve tighter packing in LPA by either reversing the suffix assignments and continue to use RAM = CC,01 or just reverse the order of entry without changing the suffix - RAM = 01,00.

When module loading for these options is completed, NIP rounds down to the next lower 2K boundary before allocating the Master Scheduler region of 12K. Therefore, if on checking the LPA you find a large free area at the point where it was rounded down (note - it may be in use for other MS processing), a minor revision to affect the order of loading could produce a 2K savings. Alternatively, you could use this area to make additional routines resident with no increase in core.

Other alternatives to consider:

- 1) If only a few LINKLIB routines are to be made resident, copy them to SVCLIB (this won't affect SVCLIB access time since they go in at the end) and add them to RAM list - IEAIGG00 - still keeping size in descending order.
- 2) Conversely - add a few RAM modules to LINKLIB.
- 3) Concatenate SVCLIB after LINKLIB in INKLST00 and use one list.
- 4) If a large number of routines are to be made resident (or a smaller number of rather large ones), consider moving them out to a separate PDS, delete them from original PDS and condense it, and then move them back - this will reduce seek time somewhat.

- 5) NIP contains a list of modules to be included in LPA. First are LINKLIB routines - note - includes:

IEFVME - ASB reader only - 224 bytes

IEFDSOLP - DSU only - 88 bytes

Second half consists of SAM routines to be included. If you are going to make resident additional modules (usually from LINKLIB) tighter LPA packing can be achieved by ZAP'ing a NOP switch in NIP (label IEASVLP) to branch so that it will bypass the second half of the list. Then include these A.M. routines in your list.

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 *NEW METH * A QUEUING FREE LOGICAL TRACKS IN SYS1.SYSJOBQ *

The algorithm used by the QUEUE MANAGEMENT DELETE routine (IEFQDELE) is FIFO (first in, first out) with all free logical tracks already "in" after JOBQ formatting. This technique causes a wide dispersion of logical track allocation and can cause excessive disk seek time if the size of SYS1.SYSJOBQ is larger than necessary. This modification changes the algorithm to LIFO (last in, first out) which should have the effect of restricting logical track allocation to within the high-watermark of JOBQ usage. Since the Queue Control Records at the beginning of JOBQ are also an activity zone, consistently using the lower addressed logical tracks can result in considerable reduction of disk seek time. This modification has been successfully implemented on a OS-MVT-TSO R21.6 / HASP IIR3.1 system without track stacking and with JOBQ on a 2314.

```
//C1505 DD DSN=SYS1.C1505,DISP=OLD
//LINKLIB DD DSN=SYS1.LINKLIB,DISP=SHR
//SMPCNTL KK *
RECEIVE.
APPLY S(LM000000).
ACCEPT S(LM000000).
LIST LOG
//SMPTFIN DD *
** PTF (LM000000).
** ZAP (IEFQDELE).
NAME IEFQDELE
VER 00A0 D001, 3078,4014
VER 00EC 1854,4190,0014,4570,817C,1856,D607,6018,6018
VER 00FE 4780,8110,D207,2024,6018,D200,204C,6020
VER 010E 4190,0014,4570,817C
REP 00A0 0700,0700,0700
REP 00EC D607,6018,6018,4780,810C
REP 00FE D201,400C,3060,D201,3060,600C
REP 010E 0700,0700,0700,0700,0700,0700
REP 010C 1854,4190,0014,4570, 817C
```

If you do not have SMP, apply the previous zap to name IEFQDELE IEFQDELE in SYS1.C1505 and run PTFLE to know which OS modules must be re-linked.

If you are using HASP, the following modifications must also be done:

```
./ CHNCE HASPWR,03,1,0
OC QNTIDM,QNTIDM T0656001
BZ NOFREES T0656002
MVC LTH-12(2),QMFLTH T0656003
STH R3,REC T0656004
MVC QMFLTH,REC T0656005
EQU * T0656006
* THIS CARD DELETED T0678000
* THIS CARD DELETED T0692000
```

Changes would also have to be done for ASP users.

Luis Marzulli
 C.A. NACIONAL TELEFONOS de VENEZUELA
 DPTO Procesamiento de Datos
 P.O. Box 1226 Caracas, Venezuela

 * SUPPRESSION OF TYPE B SMP RECORDS, I/O CONFIG *

Suppress type B SMP records which include full-word entries for each device online at IPL including all HASP pseudo-devices,

NAME	IEFSMF12	IEFSMF12	SYS1.LINKLIB	MVT Z1.8
VER 014A	0A53	SVC	83	
REP 014A	0700	NOPR	0	

A.W.G. Hale
 C6CSD-CDC-Systems Development
 Gulf Oil Canada Limited
 P.O. Box 130
 Calgary, Alberta T2P 2H7

 * REDUCTION OF MFT/MVT SVC TRANSIENT AREA TIE-UP TIME *

Installations which experience many tape mounts will find a performance improvement (slight for MVT systems depending upon the number of transient area, potentially significant for MFT systems with only two transient areas) by including the following modules in the link pack area:

IFG0194H (OPEN, first volume) IFG0551X (OPEN, subsequent volumes)

These modules are brought into a transient area at the time the mount request is issued and remain in the transient area until the tape is mounted by the operator and the label is read.

If the content of the link pack area is based only upon frequency-of-use of modules rather than load and reload of transient SVC modules, these two modules would probably not be considered for residency.

D.A. Weigle
 Caterpillar Tractor Co.
 Data Processing G.O.
 East Peoria, Illinois 61630

ELIMINATE PRINTER OUT-UT

FROM START COMMAND

In order to eliminate printer output from each START command, the following changes may be made to an MVI system. The SUPERZAP shown in Exhibit 1 changes the job cards for the START to remove the message level parameter and replace it with MSGCLASS=2. A Class 2 writer is started periodically to delete Class 2 entries from the Sysout Queue. The procedure for this writer is shown in Exhibit 2.

The message output for the start command may be needed under some diagnostic situations. It may be obtained by modifying a standard writer to Class 2. The MSGLEVEL for the START JOB card is not specified; however, if a change has been made to the reader to set the default MSGLEVEL to 1, the message output will appear.

Exhibit 1

* Change Job Card For Start Command Rel 16

DMPT	IEEPSTRT	IEEVSTRT	LINKLIB
NAME	IEEPSTRT	IEEVSTRT	
VERIFY	084E	C7D3,C5E5,C5D3,7EF1	GLEVEL=1
RED	084E	C7D3,D3C1,E2E2,7EE9	GCLASS=2

Exhibit 2

```
// ADD LIST = ALL, NAME = WTRZ
//IEFPROC EXEC PGM=IEFSD080,PARM=PZ,REGION=12K
//IEFPRDR DD DUMMY,DCB=(RECFM=FM,LRECL=133,BLKSIZE=133)
```

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Project Programmer
IBM Office Products Div.
New Circle Rd.
Lexington, Kentucky 40507
(606) 233-2000 - X7135

* 2740 MGS SUPPORT ENHANCEMENT FOR OS 27.1 *

By making some changes to SYSGEN macro SGH0000 and a one byte zap to NAP, it is possible to achieve the following improvements:

1. Fewer console switches due to implementation of error retries.
2. IOK savings in storage due to elimination of the need for the BTAM modules: IGG019MA, IGG019MB, IGG019MO.
3. Less CPU overhead.

Because of length of modification, contact:

Mr. S. Arnold Kedy
Software Specialist
Philip Morris U.S.A.
P.O. Box 26603
Richmond, Virginia 23261

* NIP WILL HONOR UCB OFFLINE FLAG *

This modification can be useful in a multi-CPU, shared DASD environment provided volume movement is minimized. If the appropriate UCB's are zapped at UCBSTAT (X'80'-online, X'00'-offline), this change will cause NIP to honor the offline status and not read the volume label. With this change it is possible to have multiple packs with the same VOLUME serial number with each system aware of only one of the volumes.

```
NAME IEANUC01 IEAANIP0 OS 21.6
VER 032E 48A90005
VER 0376 4770B416,1B33,D705D3E5D3E5,9220C70B,D2030048
REP 032E 47F0B378
REP 0376 47F0B416,91809003,4780B30A,48A90004,47F0B330
**Warning: This patch area in data cell code.
```

```
NAME IEAVNP02 IEAVNP02 V52 R1.7
VER 00CC D505A01CC781
VER 0126 9506A013,4780B11A, 9507A012
VER 0132 4770B12A,41A0000B, 5A00C751
REP 00CC 47F0B10E
REP 0126 47F0B12A,9180A003,4780B12A
REP 0132 D505A01CC781,47F0B0B6
**Warning: This patch area is 2305 code.
```

Bill Kindschy
Technical Support
Associated Hospital Service Inc.
4115 North Teutonia Avenue
Milwaukee, Wisconsin 53201

 * PUT DIDOCS CONSOLES IN ROLL MODE AT IPL *

The attached code (next page) causes a canned K S command to be issued for each DIDOCS console at IPL and at each re-open. If this canned K S command specifies DEL-RD, then at IPL and at each subsequent re-open (VARYxxx,CONSOLE) the consoles will come up automatically in roll deletable mode.

This modification as supplied issues the same K S command for each DIDOCS console and will have to be modified if different K S commands are desired for different device type consoles in a multi-console environment.

The first step makes a copy of IECEBET4 (IGC5407B) giving it the new name IGC5X07B. This routine handles the K S command and updates the DCM. The second step zaps IGC5C08B to process a K S command which is canned within the module itself. The third step zaps IGC5C07B (IEECVETC) to XCTL to 5X instead of the I/O routine when 5C is entered for re-open. IGC5X07B (which is a modified 54) will process the canned K S command, update the DCM, and exit XCTL to the I/O routine.

Prerequisites for application of this modification are DIDOCS PTFs US01037 and US03230, which are applicable to OS/MPT/MVT Releases 21.6 and 21.7. In the next OSIE there should be a VS2 R1.7 version of this modification

William H. Blair
 First Computer Services
 Technical Support Department
 Charlotte, N.C. 28288
 704-374-6177

 * ELIMINATE WRITE VALIDITY CHECK USED BY SMF MODULES *

```
//A EXEC PGM=IMASPZAP
//SYSPRINT DD SYSOUT=A
//SYSLIB DD DSN=SYS1.LINKLIB,DISP=SHR
//SYSIN DD *
NAME IEESMF01 IEESMF01
VERIFY 04A8 8000
      REP 04A8 0000
VERIFY 0514 8000
      REP 0514 0000
```

```
//IGC5X07B JON (1169545,56), 'K S,DEL-RD,CON=N',TIME=1
//STEP1 EXEC PGM=IEWL,COND=(0,LT),PARM=NCAL,LIST,XREF,REUS,RENT*
//SYSUT1 DD UNIT=DISK,SPACE=(CYL,(1,1))
//SYSPRINT DD SYSOUT=A
//SYSIMOD DD DSN=SYS1.SVCLIB,DISP=OLD,VOL=SER=NEWSF1,UNIT=3330
//SYSLIB DD *
```

```
      INCLUDE SYSIMOD(IGC5407B)
      NAME IGC5X07B (R)
//STEP2 EXEC PGM=IMASPZAP,COND=(0,LT)
//SYSPRINT DD SYSOUT=A
//SYSLIB DD DSN=SYS1.SVCLIB,DISP=OLD,UNIT=3330,VOL=SER=NEWSF1
//SYSIN DD *
* IECEVET4 AT PTF LEVEL US03037
      NAME IGC5X07B IECEVET4
      VER 0044 91019130
      VER 0192 47F0C19C
      IDRDATA IPLROLL
      REP 0192 47F0C19C
      REP 0044 58409040
      REP 0048 9240407E
      REP 0040 D26F40000,C054
      REP 0052 47F0C10A
      * CANNED K COMMAND FOR ALL DIDOCS CONSOLES AT (RE)OPEN FOLLOWS...
      REP 0036 D240E26B,C4C5D37F,D9C46BD9,E3D4C57F K S,DEL-RD,RTIME=
      REP 0046 F0F0F36B,E2C5C77E,F1F26BC3,D6D57ED5 003,SEG=12,CON=N
      REP 0076 68D9D5E4,D47EF1F2,40404040,40404040, RNUM=12
      REP 0086 40404040,40404040,40404040,40404040
      REP 0096 40404040,40404040,40404040,40404040
      REP 00A6 40404040,40404040,40404040,40404040
      REP 00B6 40404040,40404040,40404040,40404040
      * END OF CANNED K COMMAND
      DUMP IGC5X07B IECEVET4
//STEP3 EXEC PGM=IMASPZAP,COND=(0,LT)
//SYSPRINT DD DSN=SYS1.SVCLIB,DISP=OLD,UNIT=3330,VOL=SER=NEWSF1
//SYSLIB DD *
*** THIS CHANGES XCTL NAME TO IGC5X07B IF ENTERED FOR (RE)OPEN.
*** IGC5X07B WILL THEN XCTL TO THE I/O ROUTINE
* IECEVETC AT PTF LEVEL US03230
      NAME IGC5C07B IECEVETC
      VER 01BE 96F0912A
      VER 002A E9C1D7E9,C1D7E9C1,D7E9C1D7
      IDRDATA IPLROLL
      REP 01BE 47F0C028
      REP 002A 96E0912A,92E7B00C,47F0C1C6 NVI CSANAME+4,C'X';B EXIT
      DUMP IGC5C0C7B
//
```


The failure of an operator to see a message (IEE351I SMF SYS1.MAN RE-
CORDING NOT BEING USED) before it disappeared from the screen combined with
the willingness of OS to carry on without SMF recording recently resulted
in the loss of nine hours of accounting information. The situation can
be prevented by making the following modification to IEESMF01 (MVT) or
IEESMFIT (MVT):

NAME IEESMF01 IEESMF01 (MVT)
VER 0264 9120,9074,4710,2200,1810,0700,4750
REP 0264 D207,0040,2262,0013,0000,00FE,DCBA

NAME IEESMFIT IEESMFIT (MVT, untested)
VER 0200 50C0,80C4,9120,8074,4780,AA00,5810
REP 0200 D207,0040,2264,0013,0000,00FE,DCBA

These zaps place the system in a permanent wait state if message IEE351I
SMF SYS1.MAN RECORDING NOT BEING USED is issued.
The equivalent source code is:

MVC	X'68'(7,0),*+6	change program check new PSW to
NEWPSW	DC X'00'	cause wait state on next prog chk.
DC	X'13'	mask all interrupts and cause prog chk
DC	X'000000'	protect key 1, wait state, problem state
DC	X'FEDCBA'	int-code=), ILC=0, CC=0
		weird wait state address code

The drawback to this technique is that a second system must be available
to allow a repair of this zap if you ever wish to run without SMF.
This concept could be reworked to not overlay code (DELINK0), consisting
of the creation of a resume PSW and movement of it to the NEW RESTART
PSW (location 0). Then a LPSW instruction of the illustrated PSW could
be issued to stop the system. This technique would not destroy the
PROGRAM NEW PSW and would allow continuation without SMF by pressing the
RESTART key.

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A small Superzap has been made to a module of ALLOCATE (SVC 32) in-
creasing the real-time speed of its operation by up to 10%. This super-
zap corrects an inefficiency which appears to have been introduced at
Release 16 at the time of fixing a different problem.

For a simple non-ISAM allocation, SVC 32 usually does 5 I/O operations
on the VTOC:

1. Read F4 DSCB: Read first F5 DSCB: Search VTOC for duplicate name.
2. Search VTOC for F0 (available) DSCB.
3. Write the F1 DSCB where the F0 was found.
4. Rewrite the F5 DSCB.
5. Rewrite the F4 DSCB.

Of these I/O operations, only two (1,2) should involve a full VTOC search.
However, the channel program for I/O #3 is written:

Read R0 (start of VTOC)
Search ID M/T addr of F0 found by I/O #2
TIC *-8
Write KD the new F1 DSCB

Thus a full VTOC search is used here also when it need not be.

The superzap changes the channel program to start at the search ID and
avoids the setting of the multiple-track bit of this command. This means
that the I/O activity is now changed from 3 full VTOC searches and 2 small
operations to 2 full VTOC searches and 3 small operations.
For a more complex allocation, involving the writing of an F3 DSCB as
well as the F1, the same code as for steps 2 and 3 above is used to find
an F0 and write the F3. Thus the speed of operation is improved even
more in this case: 5 full VTOC searches are reduced to 3.
This fix is being used with 2314s but no problem is expected with RPS
devices.

NAME	IGG0325E	IGG0325E	SVCLIB 21.6
VER	02A6	92000194	
VER	02C2	D20301F4D1C84100D1E85000D1C8	
VER	02D0	9200D1C89281D1E89200D194	
VER	02EC	D203D1C8D1F49231D1E8	
REP	02A6	07000700	
REP	02C2	0700070007004100D1E85000D1A8	
REP	02D0	D203D1E8D240070007000700	
REP	02EC	07000700070007000700	

For R21.7 add 4 to the instruction offsets given above.

G.W. Cox
Australian Atomic Energy Commission
Sydney, Australia

 * PASS CONSOLE RESPONSES TO THE MCS EXIT *

When 21.6 was implemented, WIOs which were being sent to particular consoles (i.e. the responses to OS and HASP display requests, etc.) were not seen by the MCS Exit routine, although this was not the case with previous releases. In order to see these messages, apply the following superzap:

NAME IEANUCOI IEECMWSV 21.6;21.7
 VER 0146 4770A1B6
 REP 0146 4700

This zap does not affect multi-line or status-display WIOs; they are still not passed to the MCS Exit.

 * PREVENT MASTER CONSOLE ROUTECODE CHANGE AT IPL *

At SYSGEN, an MCS Master Console is given routecodes 1 and 2; subsequently, other codes are assigned as well, at IPL. To ensure that the Master Console has only the routecodes that you need:

1. ZAP the Master Console UCM to give it the routecodes that you want it to have in addition to codes 1 and 2.
2. Apply the following zap to stop the routecodes being changed at IPL:

NAME IEECVCTI 21.6;21.7
 VER 01FC D6015020A020
 REP 01FC 070007000700

John James
 Rolls Royce (1971), Bristol Engines

 * ELIMINATION OF DIDOCS HARDCOPY REQUIREMENT *

DIDOCS users who do not require the HARDCOPY facility which NIP attempts to force upon you at IPL can easily lose it. The console search routine in NIP contains this instruction:

CONHCCBQ 01 UCHMSFLGS,UCHMSYSB

HARDCOPY is effectively eliminated by zapping the above to a NOP.

 * ADDENDUM TO ELIMINATION OF MCS HARDCOPY *

The August, 1974 OSIE page 2, gives a facility for eliminating the hard copy requirement on an OS system by changing an instruction in NIP to a NOP. This is correct as far as it goes. Unfortunately, there are other modules which turn on the hard-copy-required bit in the UCM. One of these is IEE4903D (Vary Console Processor); another is IFSINIT (VSI RTAM Initiation Processor); there may be others. Rather than try to patch all the modules which turn this bit on, the user might find it more convenient to alter the Vary Hardcopy Processor to allow hardcopy to be switched off even though the tests for hardcopy required are passed.

NAME GCE470/3D	V HARDCOPY PROCESSOR VSI R3.0
VER 02FB 9120,502A	TEST FOR GRAPHICS CONSOLE
VER 02FC 4710,3336	YES-VARY WILL BE REJECTED
VER 0304 0640	TEST FOR ONLY ONE...
VER 0306 1244	...ACTIVE CONSOLE
VER 0308 4770,3336	NO-VARY WILL BE REJECTED
REP 02FC 4700	DO NOT REJECT
REP 0300 4700	DO NOT REJECT

+ For RTAM Users in VSI

VER 0244 9100,0004	TEST FOR RTAM ACTIVE
VER 0248 071E	YES-VARY WILL BE IGNORED
REP 0248 0700	DO NOT REJECT

With these changes, the command V cuu, HARDCPY, OFF will always be honored. Combined with the zap to NIP, this will allow the hardcopy console to be generated at the same address as the master console without receiving duplicate messages.

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 Philadelphia, Pa. 19102

* IEHDASDR FIX *

This is an outline of a procedure to insert additional JCL cards via the SMF exit IEFUJV. It is not the "cleanest" approach, since it is release dependent, however, it works. Specific code has not been submitted; instead the general approach is outlined:

The Interpreter Work Area (IWA) is pointed to by register 12 upon entry to IEFUJV. Fields of interest are supplied in the following

IWA	DSECT	IWA+16	
RDRDCBP	DS	F	IEFRDR INPUT STREAM DCB PTR
SWE	DS	C	
GPI	EQU	X'40'	INDICATES PROCLIB
RDRBUFP	DS	F	POINTS TO IEFRDR BUFFER
PDSBUFP	DS	F	POINTS TO IEFPSI BUFFER

When handling a JCL statement to be continued:

1. Save the pointer to the access method from the DCB pointed to by RDRDCBP.
 2. Replace the access method address with the address of your routine to add the continuation card.
 3. Save SWE for use in the routine to add the continuation card.
 4. Perform `NI SWE,X'FP'-GPI` so that the next read in IEFVHA will be from the input stream DCB and not from PROCLIB.
- IEFVHA will then re-enter IEFUJV at the address specified in step 2 above. The user routine then should:

1. Restore the saved access method pointer back to the IEFRDR DCB.
2. Restore the saved SWE.
3. If GPI is not set (SWE not set with a X'40' bit), then the card to be continued came from the input stream, hence:
 - a) Load register 1 with the address of the continuation card.
 - b) Return via `BR R14`
4. If GPI is set, then the card to be continued came from PROCLIB:
 - a) Load register 1 with address of PDSBUFP (from IWA).
 - b) Move the continuation card to the area pointed to by register 1.
 - c) Load the address of IEFVHC (from ???) into register 14.
 - d) Return via `BR R14`

Carl King
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San Francisco, Calif. 94105

S137 abends result in IEHDASDR during restore of tapes created by release 21.7 of OS. The first of two tape volumes runs off the end of the reel. Superzap for P65706 (EWS card 42 UT506).
Release 21.7 without US02492

NAME IEHDREST
VER 084C 41800002
REP 084C 41800001

Release 21.0, 21.6, 21.7 with US02492

NAME IEHDREST
VER 0818 41800002
REP 0818 41800001

Joe Fazio
W. R. Grace Co.
The Grace Building
West 42nd Street
New York, New York

* ACTION MESSAGE FOR ABENDS *

We have found it very useful to change the IEF4501 messages into "action" messages and add the route code for the tape pool area. The action flag will prevent the operators from inadvertently rolling or deleting this abnormal message off the display screen.

OS 21.6, 21.7

MICROFICHE IEFTNIMP

NAME IEFSD061 WTER0020
VER 02 8004
REP 02 8002

USE ROUTING AND DESCRIPTOR CODES ONLY

NAME IEFSD061 IEFYN
VER 0672 C504004000F0
DESCROUT
REP 0672 C544006000F0

ACTION MESSAGE, MC INFO, TAPE POOL

Jose Munoz
Bankers Trust Co.
N.Y., N.Y.

 * ELIMINATE IEHDASDR MULTIVOLUME REPLY *

Execution of a multivolume RESTORE job, using IEHDASDR, will cause the following WTOR at EOV:

IEH848D IS ANOTHER TAPE REQUIRED FOR THIS RESTORE JOB. REPLY Y OR N.

This message, which requires an operator reply, may be eliminated with no apparent problems by applying the following superzap:

NAME IEHDREST IEHDREST	Rel 21.6
VER 06FC 4770BCE4	BNE VOLCHK
REP 06FC 4770BDEE	BNE ANSWCHK+12

NAME IEHDREST IEHDREST	Rel 21.7
VER 072E 4770BD3C	BNE VOLCHK
REP 072E 4770BDE6	BNE ANSWCHK+12

For other releases, verify locations in source module IEHDREST after comment "TEST FOR RESTORE BEING COMPLETE HERE" which appears after label EOFTAPE.

 * PRINT SYSABEND DUMPS AT 8 LINES PER INCH *

With the advent of the recent increases in paper costs, it may be desirable to print dumps at 8 lines per inch. In addition to this superzap, all SYSABEND and SYSUDUMP DDnames must specify a special SYSOUT class or form type to allow the switch from 6 to 8 lines per inch (and back again). A 25% decrease in paper usage for dumps can be realized.

NAME IGC0A05A IGCJA05A	Rel 21.6
VER 0354 41100038	LINE COUNT = 56
REP 0354 4110004C	LINE COUNT = 76

For other releases, verify location in source module IEAQAD0A after label INCBYONE.

Thomas F. Rettig
 State Farm Mutual Automobile Insurance Co.
 One State Farm Plaza
 Bloomington, Illinois 61701

 * ALTERNATE CHANNEL PATH PERFORMANCE -- OS *

1. In order to prevent a SYSRES lockout because of a failing channel, OS does not automatically vary offline a nonexistent channel path to SYSRES. This results in many SIO CC=3 delays while servicing the I/O requests to SYSRES. A quick circumvention to this problem is to include VARY PATH commands in your IPL procedures to turn off the non-existing channel paths in the path mask for the SYSRES device.

2. Specification of an alternate channel path does not really provide an alternate channel path; rather it provides two (or three or four) equal channel paths to the devices. There is no primary path to the devices. Since single path devices may exist on a channel with devices that have multiple paths, it may be beneficial to continually force primary access to those multiple path devices through another channel which does not service the single path devices.

E.G.

Channel 2 is attached to one path into 16 3420 tape drives.
 Channel 5 is attached to the other path into the 16 3420 tape drive and additionally is attached to 4 2400 tape drives.
 It is most efficient to make all accesses to the 3420's through channel 2 before channel 5 since the less often channel 5 is used to access the 3420's, the less likely it is than an I/O request to the 2400's will be delayed because of channel busy (CC=2).

A permanent order of channel path usage can be assigned to any multiple path logical channel by performing some simple superzaps to IEAQFX00 in the nucleus. Locate the beginning of the section titled: TEST CHANNEL AND CHANNEL SEARCH ROUTINES-INPUT/OUTPUT SUPERVISOR. Contained in the expansion of each IEEXTCH macro for a logical channel with multiple paths are a table of physical channel addresses with bit masks and three instructions used to rotate the entries in the table. The halfword entries in the table after label XCPCINB should be rearranged into the order desired (first in list = first used). Do not change or move the last entry in the table which contains the number of paths and mask sum.
 Then NOP the LH, MVC, and STN instructions which follow label XCPCIN.

NAME IEANUC01 IEAQFX00
VER XXXX 4B00,0---
VER XXXX+4 D201,0---,8---
VER XXXX+A 4B00,0---
REP XXXX 4700,0---
REP XXXX+4 4700,0---,0700
REP XXXX+A 4700,0---

Do this for each logical channel macro expansion for which a constant order of path usage is desired.

Robert Graham
 Bankers Trust Co.
 N.Y., N.Y.

For Release 21.7 of OS the fixes to IMBLIST in US03089 are in error. The new function 'MODLIB' produces duplicate output. The following superzap corrects this problem:

NAME	IMBLKIDR	PL/S Module
VER	119E 9240.000	
VER	1458 473004E9	
VER	14BA 475004E9,47F003E3	
REP	139E 92F0.000	
REP	1458 470004E9	
REP	14BA 47500445,47F004B1	

Steve Gilder
 Metropolitan Life Insurance
 1 Madison Avenue
 New York, New York 10010

This is to inform you of two fixes we have applied to the FORTRAN(II) compiler (OS Release 21.8). Only when both had been applied were we able to use the compiler for production purposes in our shop. The problems we encountered and the superzaps used to correct them are:

- 1) The compiler does not allow concatenation of unlike devices for SYSIN unless the "SIZE" option is provided. The ZAP we installed disables this restriction.

NAME	IEKAA00 IEKFI0CS
VER	0408 4780
REP	0408 07000700

- 2) The compiler generated incorrect code with OPT=2, generally resulting in an ABEND during execution. Registers containing the address of common blocks are sometimes being used for internal processing of DO LOOPS, without restoring the register when the LOOP is completed. This ZAP correct the problem.

NAME	IEKAA00 IEKRS#
VER	05BA 1B22,4324,0006,1872,1978,4780,D3BC
VER	056B 5040,C07C,5070,C064,5800,C064
REP	05BA 9566,4006,4780,D3BC,9568,4006,4780
REP	056B D3BC,5040,C07C,1B00,4304,0006

One problem for which we have no fix for occurred only in one subroutine. The compiler generated incorrect displacements for "GO TO" statements, under both OPT=1 & 2. If and when a fix is available, I will pass it on.

The compiler has been on, with the fixes installed, for six weeks and no compiler errors have been encountered. Perhaps this information will prove useful to others who may contact you.

William O. Mingus

In OS R21.7, AVR does not alter the mountstatus of a volume just premounted. This zap will cause DASD devices to receive removable status when mounted through AVR.
 NOTE: The zap overlays 3400 tape code...rework if you have 3400's.

NAME	IEFXV001	IEFXV002	
VER	0102	9580201247709194	Test and branch if not tape.
VER	018A	9503201347709194	Test and branch if not 3400.
VER	0192	9210200047F09198	Set ATI for 3400 and branch.
REP	0102	92002000	Move up existing code
REP	0186	9520201247709200	Remove Attr Table Index
REP	018E	94DF2003	Test and branch if not DASD
REP	0192	0700070007000700	Insert modification
			Turn off any RESVD bit
			Pad with nulls

 * MAKE NON-PRESRES ONLINE VOLUMES PRIVT/REMOV *

Our installation applied the OSIE zap to make DASD devices PRIVT/RESVD if they were online at IPL, but not in PRESRES. However, since the installing of IMS, requiring up to nine 2314s to be mounted for its use, PRIVT/RESVD proved restrictive. The OSIE zap was modified to make the status PRIVT/REMOV:

NAME	IEEVPRES	IEFPRES	
VER	004A	9620	Make UCB RESERVED
REP	004A	9600	Make UCB REMOVABLE

 * LINKAGE EDITOR ENHANCEMENT *

The attached code (next page) changes the linkage editor module IEWLMPHL to append the DSNAME and VOLSER as additional information for the following messages:

**** NAME	DOES NOT EXIST BUT HAS BEEN ADDED TO DATA SET
**** NAME	HAS BEEN REPLACED IN DATA SET
**** NAME	HAS BEEN ADDED TO DATA SET

This modification has been developed on OS Release 21.7 but should work unchanged on all releases from 20.6 onwards. It is applicable to all levels of the linkage editor.

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DATE & TIME STAMP INSTEAD OF BLANK SSI

This is a superzap to IEWLFB80 (linkage editor) OS 21.6 to date and time stamp the directory entry if the SETSSI control statement is missing (since the SSI bytes are used for the date/time).

In module IEWLFB80, delink csect IEWLJFNL to x'878'.

Relink and superzap:

NAME IEWLFB80 IEWLJFNL	TEST FOR SETSSI
VER 010C 4780C136	PATCH AREA FROM DELINK
VER 085A 40404040,40404040	B PATCH GO TIME STAMP IF SETSSI ABSE
REP 010C 4780C858	TIME DEC GET DATE AND TIME
REP 085A 41100002,0A0B	SRL 1,4 SHIFT OUT SIGN
REP 0860 88,00004	STH 1,SSI STORE YDDD
REP 0864 401021D0	SRL 0,16 SHIFT OUT SECONDS,10TH,100TH
REP 0860 88000010	STH 0,SSI+2 STORE HOCM
REP 086C 400021D2	B BACK BACK TO PROCESS SSI INFO
REP 0870 47F0C10E	

*AFTER TIME SVC, REGISTER 1 = 00YDDDPF DATE
* REGISTER 0 = HRPDISSTH TIME
*SSI AFTER THE TWO STH WILL = YDDHHHMM

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* WRITE IPL TEXT WITHOUT FORMATTING PACK *

The following patch to the IBCDASDI program will enable a user to write the IPL text (IEAIPL00) on a system pack without disturbing the libraries or other data sets on the volume. No track formatting is done and the VTOC is not written. Such a capability is useful when one wishes to test a modified IPL or finds that a STAGE II of a sysgen has been completed without the IPL program having been written on the system resident volume.

With this modification, the writing of VOL1 label and the IPL text are the only functions performed by IBCDASDI.

In order to invoke this modification, it is necessary to specify "BYPASS=YES" in the control card set.

IBCDASDI VERSION 7.0 (Rel. 20.6)

REP 0030BC 00147F0,C242,0700
B CONSTRI, NOP

REP 0032FC 00147F0,C43E
B ZOJ

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CHANGE IEWLJFNL
*A097850,216010-216200,587300,589400,591300,626830-626860
*A58100-585400
*C181000-183000,187000,591000
EXTEN APTXLIST ADDRESS OF SYSLMOD EXIT LIST
CMT1 EQU 45 BYTE COUNT IN HALF-MESSAGE 1
CMT2 EQU 47 BYTE COUNT IN HALF-MESSAGE 2
CMT3 EQU 57 BYTE COUNT IN HALF-MESSAGE 3
GETMAIN EU,LV200,AHLMODJFCB GETMAIN AN AREA FOR JFCB
L R1,XLISTADR GET SYSLMOD EXIT LIST ADDR
L R1,XLISTADR MOVE ADDR INTO EXIT LIST
L SYSLMOD,DCBADR2 LOAD ADDRESS OF SYSLMOD DCB
R1,MODJFCB READ SYSLMOD JFCB
R1 - JFCB
MOVE DSNNAME INTO WORK FIELD
R1 - START OF DSNNAME
R0 0 MAX LENGTH OF DSNNAME
IS THIS A SPACE
YES - THEN GET OUT OF LOOP
UP POINTER
REPEAT TILL END OF DSNNAME
MOVE VOLSER TO MESSAGE
SET UP DSNNAME IN MESS01
SET UP DSNNAME IN MESS02
SET UP DSNNAME IN MESS03
FREEZAIN E,LV200,AHLMODJFCB FREE JFCB
DSNNAME WORK FIELD
WORK FIELD
PREFIX TO VOLSER
VOLUME SERIAL
SYSLMOD JFCB ADDR
ADDR OF SYSLMOD EXIT LIST

LMODDSN 08897021
LMODDSN 08897521
LMODDSN 08898021
LMODDSN 09785021
LMODDSN 18100000
LMODDSN 18200000
LMODDSN 18300000
LMODDSN 21601021
LMODDSN 21602021
LMODDSN 21603021
LMODDSN 21604021
LMODDSN 21605021
LMODDSN 21606021
LMODDSN 21607021
LMODDSN 21608021
LMODDSN 21609021
LMODDSN 21610021
LMODDSN 21611021
LMODDSN 21612021
LMODDSN 21613021
LMODDSN 21614021
LMODDSN 21615021
LMODDSN 21616021
LMODDSN 21617021
LMODDSN 21618021
LMODDSN 21619021
LMODDSN 21620021
LMODDSN 58510021
LMODDSN 58520021
LMODDSN 58530021
LMODDSN 58540021
LMODDSN 58550000
LMODDSN 58730021
LMODDSN 58940021
LMODDSN 59100000
LMODDSN 59130021
LMODDSN 62683021
LMODDSN 62686021

USER - WRITTEN OPERATOR COMMANDS

This modification illustrates one method of installing user-written operator commands in the OS command processing routines.

First, a few qualifications; the modification was made for a 360/165 under release 21.6 OS/MVT with MCS, but no TSO. Therefore, the modules/zaps described below may vary somewhat without MCS or with TSO. Also, all user-written operator commands are identified by a \$ as the first character of the command verb.

The hook into the operating system is provided via a superzap to module ICC0403D (IEE0403D in CI505). ICC0403D must first be expanded to X'390' bytes (use the old DELINK FE aid). The superzap causes ICC0403D to recognize the \$ and XCTL to a CNA command router which builds a pseudo CSCB and posts an ECB to activate a user-written system task which subsequently processes the command. However, the user-written command router could just as easily handle the command itself, the only caution being that it operates as a type 4 SVC under the communications task and performance is a consideration as there is usually significant processing required to complete the commands.

At the point ICC0403D XCTL's to the user-command module (which was named ICC9993D), the text of the verb, and address of the verb operands are placed in a formatted area in the SVRB extended save area. This makes the processing of the user command module rather uncomplicated in determining the command and operand data. Responses to commands, if they are processed by ICC9993D, are of course issued via SVC 35 (WRO, both single and multiple line KTO's are issued), the UCM id. is also in the SVRB XSA, allowing the response to return to the operator console that issued the command.

```
//....JOB....
//DLINK EXEC PGM=DELINKO
//STEPLIB DD DSN=SYS1.FELIB,DISP=SHR
//SYSPRINT DD SYSOUT=O
//SYSLIB DD DSN=SYS1.SVCLIB,UNIT=3330,VOL=SER=SRES21,DISP=SHR
//SYSPUNCH DD DSN=TEMPDS(IGC0403D),UNIT=SYSDA,SPACE=(TRK,(10,5,5)),
//DISP=(,PASS)
//SYSIN DD *
IGC0403D IEE0403D X'0390'
/*
//LINK EXEC PGM=IEM1,PARM='LIST,XREF,NCAL,LET,RENT'
//SYSPRINT DD SYSOUT=D
//SYSUT1 DD UNIT=SYSDA,SPACE=(TRK,(10,5))
//SYSUT2 DD DSN=SYS1.SVCLIB,UNIT=3330,VOL=SER=SRESXX,DISP=SHR (BACKUP SYSRES)
//SYSPUNCH DD DSN=*.DELINK.SYSPUNCH,DISP=(OLD,DELETE)
//OBJ DD DSN=CNAG.RELOCATE,DISP=SHR
//SYSLIN DD *
INCLUDE SYSPUNCH (IGC0403D)
NAME IGC0403D (R)
INCLUDE OBJ (R6803620) CNA COMMAND ROUTER
NAME IGC9993D (R)
/*
```

(COMMANDS Cont)

```
//ZAP EXEC PGM=IMASFPZAP
//SYSPRINT DD SYSOUT=O
//SYSLIB DD DSN=SYS1.SVCLIB,UNIT=3330,VOL=SER=SRESXX,DISP=SHR
//SYSIN DD *
***
* THIS ZAP IS DESIGNED TO CAUSE THE OS COMMAND ROUTER MODULE,
* IGC0403D, TO XCTL TO THE CNA COMMAND ROUTER MODULE, IGC9993D.
* WHEN CNA COMMANDS ARE ENCOUNTERED.
*
* IGC0403D MUST BE DELINKED AND EXPANDED TO X'390'BYTES.
*
* THIS ZAP IS WRITTEN AGAINST THE 21.6 MVT/MCS/NON-TSO VERSION
* OF IGC0403D.
*
* CNA COMMANDS ARE IDENTIFIED BY A '$' IN THE FIRST POSITION OF
* THE COMMANDVERB.
***
DUMP IGC0403D IEE0403D
*
NAME IGC0403D IEE0403D
*
NAME IGC0403D IEE0403D
VER 0070 41B0,31CE
VER 0360 4040,4040
*
INST TO BE REPLACED - LA R11, VERBLEN
VERIFY PATCH AREA, BLANKS
*
REP 0070 47F0,335E
REP 0360 955B,201E
REP 0364 4780,336E
REP 0368 41B0,31CE
REP 036C 47F0,3072
REP 0370 D207,2008,337E
REP 0376 47F0,31A2
REP 0380 C9C7C3F9F9F9F3C4
*
DUMP IGC0403D IEE0403D
/*
```

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JOB STREAM MANAGER

The CDP Center, as service organization, is continually looking for and developing ways of servicing user departments better. In the last issue of "ON/SITE", we discussed Job Stream Manager, how it is used and why Actra is interested in it.

After several weeks of use, the Job Stream Manager, in conjunction with the job accounting routines, has enabled us to analyze our testing job stream with much greater accuracy than before. By analyzing this information, we are in a better position to develop guidelines and requirements which, when adhered to, will significantly increase our machine utilization capabilities and, in time, greatly increase throughput.

We found some interesting facts about jobs in testing. About 74% of all job steps will run in 104K or less, an additional 24% of all job steps will run in 130K, and only 2% of all job steps require more than 130K of core.

The Job Stream Manager functioning as a part of the reader interpreter assigns a classification to each job based on the system resource requirements of the job. This classification is then used to determine into which of the 15 input job queues the job will be placed.

The whole purpose of the Job Stream Manager (JSM) is to increase system efficiency by feeding the system a job mix in which contention for system resources is much reduced or evenly balanced. For example, two jobs each calling for six tape drives will be placed in the same job queue to be executed sequentially rather than have both jobs try to execute simultaneously. In the latter case, one job would get a region and the drives while the other job would get a region and do nothing until the first job finished and released the drives.

The primary resource requirements which are used for job classification are region size, the number of tape drives required, DASD space for work files and SYSOUT, estimated maximum time, exclusive control requirements for DASD data sets (called enqueueing), and the number of data cells required. Each resource is given equal weight and the largest use of any resource in any step is the value used to determine job classification, with two exceptions.

The first exception is time. Maximum job time is used to classify each job. This time is obtained by totaling the maximum times of each individual step within the job. Step time is specified by the programmer with the TIME parameter in the EXEC card or, if no TIME is specified, by the default time. In both cases, whether TIME is specified or the default time is accepted, this time means CPU time. Since wait time can vary enormously depending on the job mix, the JOB WILL BE CANCELED BY THE SYSTEM ONLY WHEN THE CPU TIME FOR A STEP IS EXCEEDED OR THE STEP REMAINS IN A CONTINUOUS WAIT FOR 30 MINUTES. Once a job

is classified, time is used to determine priority within each job classification. The jobs of shorter duration within a job queue are given higher priority to increase system efficiency. Jobs with high CPU time tend to be process bound while jobs with low CPU time tend to be I/O bound. The higher I/O program is frequently waiting for I/O to complete and will allow the lower priority programs to process. If a process-bound program were given high priority, it would seldom be WAITING and programs of lower priority would not be given use of the CPU.

The second exception where the maximum usage of a resource within the job is not used to determine job classification is REGION size. For determining REGION, JSM divides all job steps into two categories: processors and non-processors. A processor is any language translator such as COBOL, RPG, or FORTRAN, and the LINKAGE EDITOR; a non-processor is any other program. The largest processor REGION and the largest non-processor REGION for a job are considered individually by JSM in determining job classification.

The following list shows the primary resources JSM uses in determining a job's classification:

1. Processor REGION size
2. Non-processor REGION size
3. Number of tape drives
4. Library usage
 - a. Which libraries are enqueued upon (DISP=OLD)
 - b. Which libraries are shared (DISP=SHR)
5. Amount of DASD SYSOUT space reserved
6. Amount of DASD work space reserved
7. Time
8. Data cell units required
9. Priority specified by the programmer

HOW JSM CLASSIFIES JOBS: As the JCL for a job is read, it is condensed by the system and stored in various tables and blocks. When all the JCL for a job has been stored, JSM next compares the quantities of resources required for the job with the maximum quantities allowed for the first job class. If none of the maximums allowed by the first job class are exceeded, the job is given that class. If any resources is required in greater quantity than the class allows, the next class is tried, and so on, until a job class is found which allows all of the resources in the quantity needed. If no class allows what the job needs, it is assigned the last class.

HOW JSM WILL FUNCTION: JSM will be operated in such a way as to encourage efficient use of system resources. Efficient use of the resources available will benefit all users by allowing more jobs in the system concurrently, and these jobs will have less chance of interfering with one another. In general, a job's turn-around time will be inversely proportional to the resources it requests be given

to it. the job which uses less core, tapes, disk space, and time will have faster turn-around time. Jobs which, with valid reasons and approval, exceed guidelines established by the CDP Center or Corporate Standards will be handled on an individual basis. Our effort will be directed toward providing the best possible service to the greatest number of users and to the company as a whole.

Changes in volume and usage and experience with JSM will make it necessary to periodically re-examine the criteria by which JSM determines each job's class and priority. It will be our policy when changes are required to make changes in such a way as to further encourage efficient use of system resources.

HOW TO MAKE JSM WORK FOR YOU: We solicit your assistance in helping the system to better serve your needs. Your cooperation will be of primary benefit to you and secondary benefit to the rest of the users in the company. The following steps will assure more efficient utilization of system resources and decrease your turn-around time:

1. Examine the accounting information printed on SYSOUT at the end of each step. This looks like,
STEP=COB, TIME=(CPU= .13, WAIT=52),
REGION=156K, USED=128K

It means that the COBOL compile step called COB took .13 minute of CPU time and .52 minute of wait time, and that the step requested and received a region of 156K and used only 128K.

2. Note how much of the Region was actually used to accomplish the step and how much CPU time was needed.
3. If there is a 26K difference between REGION and USED, the REGION specification in the EXEC card should be examined. Use the following method to determine how much core the step should be given:
 - a. Add 6K to the USED K. The extra 6K is required for an ABEND dump.
 - b. Find the lowest multiple of 26K which will contain core needed, and make this the REGION in the EXEC card or the Cataloged Procedure Override in the EXEC card.

NOTE THAT IF BY USING THE METHOD ABOVE THE REGION WOULD BE 26K, SPECIFY "REGION=26K." THIS WILL GET A REGION OF 26K ON A 768K SYSTEM AND A REGION OF 52K AUTOMATICALLY ON A 512K SYSTEM.

EXAMPLE:

At the end of a step the following accounting information is printed:

USED IS	14K
Dump core is	6K
Total is	20K

20K 5 26K(1)

Change to or add the following parameter in the EXEC card "REGION=26K. If this step was invoked by a cataloged procedure, change the EXEC card that calls the procedure to include:
"REGION,STEP04=26K".

4. Note how much CPU time was actually used to accomplish the step. Using the previous example, CPU=.58. This means 58/100 minutes of CPU processing was required to accomplish the step. CPU time will vary with the volume and nature of the input, but the same job step processing the same input will take just about the same CPU time every time it is run. Especially in testing where a test should be more likely to go into a locked loop, the CPU time specified should have some relation to reality.

If no TIME parm is used, the input reader will assign a TIME. The assigned TIME is presently 15 minutes, but it can be changed without notice.

Remember that JSM expects long-running jobs to be process bound and will assign them low priority. Using the accounting information from the example in 3 above, do the following:

- a. Convert CPU time to minutes and seconds $(.58 \times 60) = 36$ seconds to get a feel for how much time was used.
- b. Divide the time specified by the time USED. $(15 \text{ min.} / .58 \text{ min.}) = 25$
- c. Make a judgment of whether the nature and volume of input will change markedly. If this is very uncertain, it would be better to specify a little too high than too low. If in our example you decide that the volume of input may triple but will not increase by a magnitude of 25, the TIME parameter should be changed in the EXEC card.
 $(3 \times .58) = 1.74$ minutes. Just to be safe, you may want to add .25 minute as padding. $(1.74 + .25) = 2$ min).
Change or add time parm in EXEC card to "TIME=2" or, if cataloged procedure, to "TIME,STEP04=2.

The Aetna is interested in focusing on profits. The JSM is one method which can improve upon the utilization of our expensive computers. We can look forward to greater savings for our respective divisions while helping to improve our own turnaround time. Suggestions and questions concerning JSM may be directed to George Bird, O/S Management, ext. 5160.

IMPROVED PERFORMANCE FOR ISAM RECORD INSERTION

Under the current ISAM, records marked for deletion have provided a measure of 'track overflow'. When a record is inserted into a prime data block, displaced records are 'bumped' into subsequent blocks on the track. If the last record on the track is marked for deletion, track overflow is accomplished because this record is not 'bumped' into an overflow area. The track index is updated and the record is dropped from the data set.



Current ISAM - when the last record on the track is marked for deletion, it will be dropped from the data set.

Performance could be greatly improved by having records marked for deletion provide 'block overflow'. Instead of examining only the last record of the last block on the track, all other 'bumped' records should be examined. If one is found to be marked for deletion, it should be dropped from the data set. This would obviate the need to read, rearrange and rewrite the rest of the blocks on the track and the track index.



ISAM modification - when the last record in a block is marked for deletion, it is dropped from the data set.

To accomplish 'block overflow' under current ISAM:

1. Include in the ISAM Load Programs a routine to insert 'dummy' record(s) marked for deletion at the end of every block, and;
2. Modify the channel end appendage routines to exit after 'bumping' a deleted record.

Zap for 20.7, ICGO19C4, after delinking to length X'B08':

```
VER 076E 59L0,4040
REP 076E 47F0,FAFO * B patch
* PATCH AREA FOLLOWS
REP 0AFO 58D0,4040 * DO OVERLAYED INSTRUCTION
REP 0AF4 9102,4034 * Q. DELETE OPTION IN DCB
REP 0AF8 4780,F772 * NO, RETURN TO MAINLINE
REP 0AFC 95FF,C000 * Q. RECORD MARKED DELETED
REP 0B00 4770,F772 * NO, RETURN TO MAINLINE
REP 0B04 47F0,F1C2 * YES, GO TO APPH3B4
```

(ISAM Cont.)

The sequence L R12,DCBMSWA / AN R12,CC6+6 following APPD2D3 points R12 to the 'bumped' record. Following the AN, insert instructions to exit to label APPH3B4 if:

1. The delete option is on in the DCB, and
2. The record is marked for deletion.

Note that this routine is not executed for the last block on the track or in the prime data area.

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SMF FIXES

The two zaps that follow fix the problems encountered with the current version of SMF when record length is greater than block size. The zaps were applied to OS Release 19.6.

```
* LINKLIB
*TF100 SET SMF LRECL=6412, NOT 1/2 BUF
NAME IEESMFOI IEESMFOI
VER 04B5 0000 MANX DCBLRECL
REP 04B6 190C
VER 0522 0000 MANY DCBLRECL
REP 0522 190C
*TF101 DELETE OPTCD=W FROM MANX & MANY
VER 0498 8000 MANY OPTCD
REP 0498 0000
VER 0504 8000 MANY OPTCD
REP 0504 0000
```

```
*SVCLIB
NAME ICGO108C
*TF100
VER 0146 D201,3052,C00E NOP MOVE OF 1/2 BUF TO
REP 0146 4700,0000,0700 DCBLRECL - NO FLIP/FLOP
*TF104 FORCE SMF 10 RECORD ON MANX UNTIL FULL
VER 023C 4780,B270
REP 023C 47F0,B270
```

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MCS HARDCOPY LOG

The following patch to MCS forces the hardcopy log to come out in sequence. WTOR's are printed when they are issued, not when they are answered. Also, if the HC console is used for a status display, the display is not printed twice. The patches as shown are for Release 21.6. They are only effective on a 1052, 2150, 3210 or 3215 console. Essentially the same patch may be made to ICG2107B for 1403, 1443 or 3211's as consoles, or the 2740 module. This patch is not effective for the hardcopy log on SYSLOG.

The following source change must be made on SYS1.MODGEN.

```
./ CHANGE NAME=IEECUCH,SEQFLD=736,LIST=ALL
DC CL144' LOG MESSAGE BUILD AREA LOCAL 20299021
./ ENDUP
```

The assembly step should be extracted from your Stage 1 and be rerun. Alternatively, you can use the latest version of IMAPTFLE. Module IEECMNV must be extracted from the nucleus and delinked to X'590' long. Then the following zap must be applied.

```
NAME IEANUCOI IEECMNV
VER 000230 9680,4055
REP 000230 47F0,A34A
VER 0002B8 4590,A1D6
REP 0002B8 4590,A35A
VER 0003C8 9640,6088
REP 0003C8 47F0,A36A
VER 000560 4040
REP 000560 9102,4054,4780,A12C,9680,4055,47F0,A12C
REP 000570 5580,405C,4770,A1D6,9610,6088,47F0,A1D6
REP 000580 9110,6088,4780,A1B8,47F0,A1B6
IDRDATA HCQ7AP01
```

Module ICG0107B should be extracted from SYS1.SVCLIB and expanded to X'400' bytes in length. The following zap should be applied.

```
NAME ICG0107B IEECVPM
VER 0272 D200,9077,8007
REP 0272 47F0,C2CE,0700
VER 02D0 4040
REP 02D0 D200,9077,8007,9180,8095,4710,C276
REP 02DE 5820,0010,5820,2064,4820,C334,5830,2000
REP 02EE 59A0,305C,4770,C276,F363,30A0,80A4
REP 02FC F342,30A7,8096,D273,30AC,8008
REP 0308 DCOA,30A0,C246,9240,30A6,9240,30AB
REP 0316 4120,30A0,4330,9070,5020,9070,4230,9070
REP 0326 4330,9077,4130,300C,4230,9077,47F0,C276
REP 0336 0004,F0F1,F2F3,F475,F6F7,F8F9,C1C2,C3C4,C5C6
IDRDATA HCQ2AP02
```

If DIDOCS is generated, the following zap must be applied to IEECHNDM to prevent sporadic problems with messages not being marked deletable.

(MCS Cont.)

```
NAME IEANUCOI IEECHNDM 21.0 21.6
VER 4A 91106088,4710A076
REP 4A 47000000,47000000
NAME IEANUCOI IEECHNDM 21.7, PTF 2319 w/ 21.0, 21.6
VER 56 91106088,4710A0A6
REP 56 47000000,47000000
```

This removes a completely useless test.

The logic behind this set of changes is to treat a console being used for hardcopy the same as any other console. A message is queued to it at the same time as it is queued to all other consoles. When it comes time to write the message, the writer module must be made to add the timestamp and routing codes in a special buffer. The WQE cannot be used, since it could be in use concurrently by other consoles.

This routine has been in use in Release 20.1 for over a year with no problems.

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CATALOG INTEGRITY FOR TAPE DATA SETS

In order to maintain catalog integrity between release 20.6 and 21.6 of OS/MVT for 9 track, 1600 BPI tape data sets, the following circumvention was developed:

(applied to 20.6)

DELINK and expand CSECT IEFWA7 (module IEFWA000) to length X'B70'.
Relink expanded module and apply the following superzap:

```
NAME IEFWA000 IEFWA7
VER 01D8 D503403C3004
VER 0B40 404040404040
REP 01D8 47F09B3E0700 B PATCHAREA
REP 0B40 D503403C9B5C CLC SCTUTYPE (4),-X'34008003'
REP 0B46 47809B52 RE ALTER
REP 0B4A D503403C3004 CLC SCTUTYPE (4), DMTETTYPE
REP 0B50 47F091DC B NORMAL ROUTINE
REP 0B54 D203403C9B60 MVC SCTUTYPE (4),-X'34008001'
REP 0B5A 47FG9B48 B CLC ABOVE
REP 0B5E 34008003 DC X'34008003' 3400-3
REP 0B62 34008001 DC X'34008001' 2400-3
```

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WTO'S WITH JOBNAME

The two source modifications that follow were made to MVT Release 21.6 to assist the operator in sorting out console messages.

The modification to IEHNVWTO depends on MCS being generated in the system. It causes the system to look at every WTO or WTOR message that is issued by any job or TSO user when SMF recording is on. If the message contains the job name that is in the current task's TIOT, no change is made to the message. If it does not, the job name is added to the end of the message. The result is that the initiator's name is added to all job strated messages and all messages that the initiator writes during step initiation. JOB name is also appended to any messages that do not already include job name.

The modification to IEFSD102 changes the messages that follow the reserved data set message produced by the initiator to include the job name of the job that owns the data set and the type of enqueue that job has on the data set.

These modifications have had very positive effects on our operator performance.

IEHNVWTO

```
//STEP 1 EXEC PGM=IEHNVWTO,PARM=MOD
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=SYS1.SOURCE,DISP=SHR
//SYSUT2 DD DSN=SYS1.SOURCE,DISP=SHR
//SYSIN DD *
./ CHANGE LIST=ALL,NAME=IEHNVWTO
LA R14,117 GET MAXIMUM MSG LEVEL 56900021
LR R15,R7 GET LENGTH OF MSG 56900031
CR R14,R7 IS MESSAGE THIS LONG? 56900041
BL ARJW YES - GET OUT 56900051
NC 164(4,R4),164(R4) IS THERE A TCT PTR? 56900061
BZ ARJW NO - GET OUT 56900071
LA R14,WPLTXT GET ADDRESS OF OUTPUT TEXT 56900081
SH R15,SEVEN SEE IF MESSAGE IS TOO SHORT 56900091
BNP NOJOEN YES - DON'T CHECK FOR JOB 57000011
L R8,12(R4) GET JOBNAM FROM TIOT 57000021
LOOPJW CLC 0(8,R8),0(R14) IS JOBNAM ALREADY IN MSG? 57000031
BNE NOMATCH NO - KEEP LOOKING 57000041
LR R15,R7 RESTORE LENGTH 57000051
B ARJW FOUND JOB NAME GET OUT 57000061
NOMATCH LA R14,1(R14) BUMP UP MSG PTR 57000071
BCT R15,LOOPJW GO TRY AGAIN 57000081
NOJOEN LA R14,WQETXT GET MSG ADDR AGAIN 57000091
AR R14,R7 GET PAST MSG 57100011
MVC 1(8,R14),0(R8) MOVE JOBNAM TO MSG 57100021
MVI 0(R14),C' ' MOVE BLANK BEFORE JOBNAM 57100031
LR R15,R7 GET LENGTH IN 15 57100041
LA R15,9(R15) BUMP UP FOR JOBNAM 57100051
ARJW ST R15,WQENR STORE LEN IN WQE FOR CCW 57200021
```

WTO's (continued)

```
SEVEN DC H'7' CONSTANT FOR SHORT MSGS 85100021
./ ENDUP
//STEP 2 EXEC ASMFCL
//SYSLIB DD DSN=SYS1.MODGEN,DISP=SHR
// DD DSN=SYS1.PVTMACS,DISP=SHR
// DD DSN=SYS1.MACLIB,DISP=SHR
//SYSIN DD DSN=SYS1.SOURCE(IEHNVWTO),DISP=SHR
//LKED. SYSLMOD DD DSN=SYS1.SVCLIB(IGC0003E),DISP=SHR
/*

IEFSD102

//STEP 1 EXEC PGM=IEFSD102,PARM=MOD
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=SYS1.SOURCE,DISP=SHR
//SYSUT2 DD DSN=SYS1.SOURCE,DISP=SHR
//SYSIN DD *
./ CHANGE LIST=ALL,NAME=IEFSD102
L R8,16 GET CVT POINTER 01350119
L R8,200(R8) GET ADDR OF SECONDARY CVT 01350219
L R8,20(R8) GET ADDR OF 1ST MAJOR CHAIN 01350319
B GETMAJOR+4 GO DO MAJOR CHAIN 01350419
GETMAJOR L R8,0(R8) GET NEXT MAJOR QCB 01350519
LTR R8,R8 IS THIS THE LAST MAJOR? 01350619
BZ BRETURN YES - FAILURE 01350719
CLC SYSDSN(8),12(R8) IS THIS THE ENQ MAJOR NAME 01350819
BNE GETMAJOR NO-GO GET ANOTHER MAJOR 01350919
L R9,8(R8) GET 1ST MINOR QCB 01351009
B GETMINOR+4 GO DO MINOR CHAIN 01351019
GETMINOR L R9,8(R9) GET NEXT MINOR QCB 01351029
LTR R9,R9 IS THIS THE LAST MINOR? 01351039
BZ BRETURN YES - BOMB 01351049
CLC 12(1,R9),QMNLGTH ARE THE LENGTHS THE SAME? 01351059
BNE GETMINOR NO GO GET ANOTHER MINOR 01351069
L R7,QMINOR GET ADDRESS OF QCB MINOR 01351079
SR R8,R8 CLEAN OUT R1 01351089
IC R8,QMINLGTH GET DSN LENGTH 01351099
BCTR R8,0 DECREMENT FOR COMPARE 01351109
EX R8,COMPARE FIX LENGTH OF COMPARE 01351119
BNE GETMINOR NO - GO GET NEXT MINOR 01351129
L R9,0(R9) YES - GET QEL 01351139
L R7,8(R9) GET CURRENT ICB FROM QEL 01351149
L R7,12(R7) GET TIOT ADDRESS 01351159
TH 4(R9),X'80' IS THIS SHR 01351169
BO PSTSHR YES GO DO SHR 01351179
MVC DSNMSG+91(3),OLD NO - DO OLD 01351189
B MVJNAME GO MVC DSNNAME 01351199
PSTSHR MVC DSNMSG+91(3),SHR DO SHR 01351209
MVJNAME MVC DSNMSG+77(8),8(R7) MOVE JOBNAM TO MSG 01351219
```


BRECKN BCR	OKRETURN	RETI"RED NORMALLY	01151279
OKRETURN L	O, O	NOP	01151219
SR	R7, QMINOR	GET DSNAM ADDRESS	01152019
IC	RS, RD	ZERO REGISTER 8	01154019
SHR DC	RS, QMINLGTH	GET LENGTH OF DSNAM	01156019
OLD DC	C'SHR'	SHR TYPE FOR JOBNAME	01829029
SYSDSN DC	C'OLD'	OLD TYPE FOR JOBNAME	01829039
SUBPOOL DC	C'SYSDSN	MAJOR QCB NAME	01829049
COMPAR CLC	X'FF000070'	SUBPOOL AND LENGTH	01829919
WTO	14 (0,R9), 0 (R7)	ARE THE DSNAMES ALIKE?	01830719
	, JOB=	,TYPE	,MF=L,ROUTCODE=(2),
	LESC=(6)		X01832619
			01832719

```

./ ENDUP
//STEP2 EXEC ASMFCL
//SYSLIB DD DSN=SYS1.MODGEN,DISP=SHR
//      DD DSN=SYS1.PVTMACS,DISP=SHR
//      DD DSN=SYS1.MACLIB,DISP=SHR
//SYSIN DD DSN=SYS1.SOURCE(IEFSD102), DISP=SHR
//SYSLMOD DD DSN=SYS1.LINKLIB(IEFSD102),DISP=SHR
/*

```

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SUPERZAP IPL TEXT

When this zap is applied to multiple nucleus systems, the operator will be asked during IPL to supply the nucleus number. This patch is for the IPL text supplied with Release 21.6. It will not work on Release 20 because the IPL text was changed in 21.

1. Link edit IBM IPL text.
2. Delink IPL text (CSECT IEAIPL) to X'OE00'.
3. Link edit expanded IPL text.
4. Superzap new IPL text as follows:

```

NAME CRCIPL00 IEAIPL
VER 0082 980E,0010
VER 0082 4040,4040
REP 0082 47F0,F000
REP 0082 4110,FD36,5010,0040,4120,001F,9C00,2000
REP 0092 4750,FD28,4720,FD0C,9D00,2000,4770,FD18
REP 00A2 980E,0010,47F0,F004,8200,FD2E,0000
REP 00B0 0002,0000,0000,C9D6,0100,0DD0,6000,0020
REP 00C0 0A00,0008,2000,0001,0000,0000,0000,0000
REP 00D0 C95B,C1F0,FOF1,C140,40C5,D5E3,C5D9,40D5
REP 00E0 E4C3,D3C5,E4D2,40D5,E4D4,C2C5,D940,7E40
DUMPT CRCIPL00 IEAIPL

```

5. Delink rapped IPL text and use when initializing your SYSRES.

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AUTO DUMP SYS1.DUMP DATA SET

The following OS Modification allows automatic creation of a job to DUMP SYS1.DUMP when it has been used.

1. Add Type 4 SVC to SYS1.SVCLIB. The code appears in Exhibit A. We used SVC 243.
2. Apply following Superzaps to SVCLIB.
Name IGC0801C IGC0801C
Ver 010E 0A23
Rep 010E 0AF3
Name IGC7403D IGC7403D
Ver 00C8 0A23
Rep 00C8 0AF3
Name IGC5303D IGC5303D
Ver 013C 0A23
Rep 013C 0AF3

These superzaps change the TWO SVC's to the SVC added in Step 1 above.

3. Add Procedure DUMPDAR to SYS1.PROCLIB as in Exhibit B. We added the job card so we could start the procedure from the console.
S HUTIL, JOB=DUMPDAR
(No H in HUTIL if HASP not in system).

The new SVC will automatically schedule IMPDPRMP Service Aid Program with HASP or without HASP in the system; after any of the following messages have been issued:

IEA023I-Core Image Complete
IEE146I-DUMP Completion Successful
IEE404I-Master Scheduler or Command Scheduler was processing a command, when a system task abnormally terminated.

The new SVC intercepts these messages so it can schedule IMPDPRMP Service Aid, but allows these messages to still appear on the console.
Example:

```

Operator issued DUMP Command,
IEE146I is followed by
IEF403I H UTIL Started
IEF404I H UTIL Ended
IEF403I DUMP DAR Started
IEF404I DUMP DAR Ended

```

Note: HUTIL - reads jobs into HASP Internal Reader.
UTIL - OS Reader Procedure

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EXHIBIT A

```
// Job Card
//STEP1 EXEC PROC=ASHFC,PARM=ASH-DECK
//ASM.SYSIN DD *
243 Title 'SVC 243 - Issue Automatic DAR DUMP Command'
ICCO024C CSECT
R3 EQU 3
R5 EQU 5
R6 EQU 6
R9 EQU 9
BALR 12,0
USING A,12
LR 10,14
LR 11,1
SPACE 2
WTO MF-(E,(11)) Do Register WTO
CLC -C'IEA0231',4(11) Is This DAR 'DUMP Complete' MSG
BE DOCMD Yes - Do Special Processing
CLC -C'IEE1461',4(11) Generated After DUMP Command
BE DOCMD Yes - Do Special Processing
CLC -C'IEE4041,4(11) Check for STAE
BE DOCMD Yes - Do Special Processing
BR 10 Return to Issuer (ICCO801C)
SPACE 2
DOCMD LA R3,16 Constant
L R3,0(R3) CVT Address
L R5,160(R3) TCB Head in R5
TIOT L R9,12(R5) TIOT Address
CLC -C'HASP',0(R9) Job Name
BE RMVRE
L R5,116(R5) Next TCB
LTR R5,R5 Anymore on List?
BZ CHDWT0A No
B TIOT
MOVE MVI CHDCON+2mx'CB' Move H in w/HASP in System
CHDWT0A MVC 4(L'CHDCON,11),CHDCON Move Command to WTO Area
SR 0,0 Clear Reg 0
MVC 0(4,11),CHDSIZE Command Length
LR 1,11
SVC 34
BR 10 Return
SPACE 2
CHDSIZE DC Y(L'CHDCON+4)
DC Y(0)
CHDCON DC C's --UTIL, JOB=DUMPDAR'
SPACE 2
LTORG
END ICC0024C
/*
```

Note: Follow Assembly with Link Edit and IOSUP.

Exhibit B PROC. NAME = DUMPDAR

```
//DUMPDAR JOB - - - - - DUMP SYS1.DUMP
//STEP1 EXEC PGM=DDPDUMP,REGION=60K
//PRINTER DD SYSOUT=A,SPACE=(CYL,(50,20)),
UNIT=SYSDA,DCB=BLKSIZE=1210
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD UNIT=SYSDA,SPACE=(2052,(513,5))
//TAPE DD DSN=SYS1.DUMP,DISP=OLD,UNIT=3330
//SYSIN DD DISP=SHR,DSN=SYS1.PROCLIB (DUMPOPTN)
/*
```

Procedure Member Name = DUMPOPTN

```
ONCO 1,Q,F,P S
GO
END
```

CHANGE DEFAULT CHARACTERISTICS OF 'STARTED'TASKS

Module IEEVRCIL in MVT systems contains the dummy interpreter parameter list used for interpreting tasks. Invoked via the START command. By using SUPERZAP, the user can change values within this list. The list starts at offset 0536 for Release 20.1. To change the default SYSOUT unitname and the MSGCLASS for startable tasks, the superzap is as follows:

NAME	IEEVRCIL	IEEVRCIL	
VER	054A	E2EB,E2C4,C140	SYSDA
REP	054A	XX	Your Unitname
VER	0558	C140	MSGCLASS A
REP	0558	XX	Your MSGCLASS

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CHANGE IN STATUS SVC CALLS

If you do not have collin/rollout in your system, the number of calls to SVC 79 can be cut to about 10 percent of its present level. ENQ in routine CREATEI calls status to mark a task "non-rolloutable" for each QEL built. DEQ in routine DETCTB call status to reset the task. If you do not have rollin/rollout, both of these status calls may be zapped out of your system.

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FORCING DCB PARAMETER ON LINKAGE EDITOR

The following zap forces the DCB BLKSIZE (and DSCB of an existing library) to take priority over device track capacity by default for SYSLMOD block size when relatively large SIZE values are used for link edits. This permits setting the block sizes of libraries at the time they are allocated, and bypasses possible problems in copying libraries to units having smaller track capacity (such as 3330 to 2314). The Superzap (for Release 20.1) follows:

NAME	IEWLF880	IEWLMINT
VER	01D2	4780
REP	01D2	4700
VER	0BB4	4710
REP	0BB4	47FO

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AUTOMATIC DISPLAY COMMAND

SUPERZAP to provide the following MONITOR (DISPLAY) commands automatically at IPL time:

FOR JOBNAMES,T
FOR DSNAME
FOR SPACE

This ZAP has been used with no problems on Release 19.6, 20.1, and 21.0 MFT. It would appear that it will work as well with MVT, though we have not tried it.

The ZAP is as follows:

NAME	IEANUCOI	IEEMSER
REP	20	40
REP	89	0E

Reference the PLM's "MVT JOB MANAGEMENT" (CY28-6660) or "JOB MANAGEMENT WITH MFT" (CY27-7128), Appendix "A", Master Scheduler Resident Data Area. All bits set on above are defined there except bit 6 of byte X'89' (see below). For those with no access to PLM's, the four bits set on above function as follows:

Byte X'20', Bit 1 MONITOR JOBNAMES
Byte X'89', Bit 4 MONITOR DSNAME
Byte X'89', Bit 5 MONITOR SPACE
Byte X'89', Bit 6 The "T" function of MONITOR JOBNAMES - as FOR JOBNAMES,T

! One may delete appropriate bits from the ZAP if he does not desire all the indicated functions

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ALLOCATING A MULTI-VOLUME DISK DATA SET

A disk data set is normally allocated on only one volume. The primary allocation is always on one volume. If a secondary quantity is specified, the system will obtain up to a maximum of 15 extents of secondary allocation. Through JCL, more than one volume can be specified for a data set. In this case, if all the space on the first volume has been used, the system will go to a second volume and allocate a "secondary quantity." This will continue up to a maximum of 16 extents, each of a "secondary quantity."

There is a way of creating a multi-volume data set which consists of only one continuous area on each volume. The space allocation can be different for each volume. This type of multi-volume data set is useful for high activity files where each volume can be placed on a different channel.

As an example, a multi-volume data set is to have 20 tracks on the first volume, 30 tracks on the second volume, and 20 tracks on the third volume. The following procedure is used.

Use the program IEFBR14 to allocate the multi-volume data set. One DD card is required for each volume.

```
//ALLOC EKEC PGM=IEFBR14
//DD1 DD DSN=DATASET,UNIT=2314,DISP=(,KEEP),
// VOL=SER=111111,SPACE=ITRK,(20),,CONTIG) (1st volume)
//DD2 DD DSN=DATASET,UNIT=2314,DISP=(,KEEP),
// VOL=SER=222222,SPACE=(TRK,(30),,CONTIG) (2nd volume)
//DD3 DD DSN=DATASET,UNIT=2314,DISP=(,KEEP),
// VOL=SER=333333,SPACE=(TRK,(20),,CONTIG) (3rd volume)
```

Supply any required DCB information on each DD card.

At this point, the DSCB for each extent indicates that it is the only extent of the data set. The DSCB for the second and third extent has to be changed.

1. Using the program IEHLIST, list the VTOC of 222222 and 333333 using the DUMP option. From this list, determine the CCHHR of the FORMAT 1 DSCB for "DATASET" on 222222 and 333333.
2. At hex '34' in the FORMAT 1 DSCB is a hex '01'. This value must be changed to a hex '02' for "DATASET" on 222222 and to a hex '03' for "DATASET" on 333333. The program IMASPPAP can be used to make these changes.

Code the SYSLIB DD card as follows:

```
//SYSLIB DD DSN=FORMAT4.DSCB,
// DCB=(,KEYLEN=44),UNIT=2314,
// DISP=OLD,VOL=SER=222222
// or 333333
```

Data Set (continued)

The following control cards are required:

CCCHR XXXXXXXXXX
where X...X is the hex value of the CCHHR of
the FORMAT 1 DSCB for DATASET on 222222 or
333333

```
VER 0034 01
REP 0034 02 (for 222222)
or
03 (for 333333)
```

Note: This job must be run once for each volume, since the SYSLIB card can point to only one volume.

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PRINTING STEP COMPLETION CODE IN JOB SMF'S

The following euperzap changes the SMF step termination message IEF3741 to contain the step completion code in place of LCS value (never used in most shops). The zap applies to Release 20.1 MVT.

```
NAME IEFSD061 IEFSD061
VER 0270 48FO,9020 GET LCS USED
REP 0270 48FO,9024 GET COMPLETION-CODE
VER 0274 4AFO,9022 ADD LCS BORROWED
REP 0274 0700,0700 NOP
VER 05DB D3C3,E240 'LCS' CHANGED TO
REP 05DB C3C3,7E40 'CO-'
VER 05E2 D240 'K'
REP 05E2 4040 CHANGED TO SPACE
```

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DEFAULT JOB CPU TIME

The following superzap to module IEFMVTJA in SYS1.LINKLIB will put a default job CPU time limit into each job's JCT (the ttt portion of the reader/interpreter parameter list only specifies the default step CPU time). The default value used is a three byte binary value in hundredths of seconds, and may be different from the step time default. The superzap is currently being used in Release 20.7 MVT.

NAME IEFMVTJA IEFVJA

* PUT A DEFAULT JOB CPU TIME LIMIT INTO JCT.

VER 02FC FFF9F8F7F6F5F4F3 VERIFY END OF JOBCCLASS TABLE: THIS
VER 0304 F2F1F0E9E8E7E6E5 PART IS NEVER USED SO WE CAN USE
VER 030C E4E3E2D9D8D7 IT AS A PATCH AREA.

REP 02FC 92408008 MVI WHICH WE WILL WIPE OUT
REP 0300 9103C018 TEST IN IWA TO SEE IF ACCT & PGMMER NAME REQUIRED
REP 0304 0784 IF NOT ASSUME TASK WON'T BE TIMED AND RETURN VIA R4
REP 0306 D202808CB30C MVC JCTJMTL(3),DEFAULT
REP 030C 07F4 RETURN VIA R4
REP 030E 004650 DEFAULT = 3 MIN IN HUNDRETHS OF SECONDS
REP 0311 FF END OF TABLE ERROR CHECK

VER 0028 92408008

REP 0028 4540B2FA BAL 4,PATCH

NOTE: This item was originally published in OSIE No.6. This version prevents job steps started via a START command from getting a default time limit (and thus being timed out!) It assumes that the installation requires either an account number or a programmer name on the job card.

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ABENDS HIGHLIGHTED

Following is a superzap modification that increases the length of abend message IEF4501 in order to display the abend code five (5) times in the message text. This message utilizes the full width of the 3215 console paper and has helped our operators pick out abend messages from the increased message traffic on our S/370 Model 155. This modification is for MVT Release 20.6.

NAME IEFSD510 IEFVH
VER 01AA 4100,0058 GETMAIN 128
REP 01AA 4100,0080
VER 020E 4100,0058 FREEMAIN 128
REP 02DE 4100,0080
VER 0202 9245,1001 MSG LENGTH OF 119
REP 0202 9277,1001
VER 020C D203,1045 ROUT & DESC CODES

Abends (continued)

REP 020C	D203,1077	
VER 027A	47F0,92DA	EXTEND ADDRESS
REP 027A	47F0,922C	
VER 02A4	47F0,92DA	
REP 02A4	47F0,922C	
VER 02CC	47E0,92DA	
REP 02CC	47E0,922C	
VER 02D4	4740,92DA	
REP 02D4	4740,922C	
VER 022E	5850,0010	EXTEND MESSAGE
REP 022E	D240,1037	
VER 0232	5855,0060	
REP 0232	1027,47F0	
VER 0236	D207	
REP 0236	92DA	

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EXCP COUNTS FOR DYNAMIC DD'S

For SMF users, the following zap to SYS1.SVCLIB for Release 20.7 can be used to accumulate EXCP counts for dynamic dd's. The USER COMMUNICATION field should be zeroed out in IEFUJI. The zap adds the EXCP counts into this field at UNALLOCATE: the TOTAL is then accessible in IEFACRTY.

NAME IGC28091 IGC28099
* ADD DYNAMIC DD EXCP COUNTS INTO USER COMM FIELD IN JMF SO THEY
* WILL BE AVAILABLE TO IEFACRTY.
VER 02D4 5860C008,D20050426012,D20050436013,D20050446004,D20050456005
* NOTICE THAT TWO MVC'S ARE SUFFICIENT. WE NEED TO KEEP REG 6 INTACT
* SINCE IT POINTS TO THE JMR, SO WE'LL USE 15 INSTEAD.
REP 02D4 58F0C009,D201504F012,D2015044F004,58F06020,5AF03014,50F06020

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ROUTING CODE CHANGE

The Routing Codes and/or Command Code Authorization for consoles under MCS may be changed by applying the following Supertap to module IEEUCMC.

NAME IEANUC01 IEEUCMC

VERIFY 03DC F010,0000,0000,0000
Routing codes of 1-4 and 12
REF 03DC RCOO
Routing codes of 3-6
VERIFY 03EA E000,0000
Command Authorization Codes 0-2
REF 03EA 8000,0000
Command Authorization Code 0

Note: Each bit represents a unique Routing and/or Authorization Code. Check the address as it is dependent on which console is to be changed.

Below is a method for locating the start of module IEEUCMC and entries within the module.

1. X'10' -A (CVI)
2. A(CVI) + X'64' -A (UCBASE)
3. A (UCBASE) - X'08' -A (IEEUCMC)
4. A (UCBASE) + X'4C' -A (1st UCM ENTRY)

Normal length of each entry is 64 bytes. See System/360 Operating System MVT Supervisor, GY28-6659 for format of individual UCM entries.

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OVERWRITE SYSABEND OR SYSUDUMP DD STATEMENTS

//ZAPDUMP EXEC EGM=ZAP
//SYSLIB DD DSN=SYS1.SVCLIB,DISP=SHR
//SYSPRINT DD SYSOUT=A
//SYSIN DD *,DCB=BLKSIZE=80

* MVT RELEASE 20.1
* FICHE NAME IS IEAQM02 MODULE NAME IS IGC0201C

* THE FOLLOWING CODE WILL ALLOW YOU TO OVERRIDE THE SYSABEND OR
* SYSUDUMP DD STATEMENTS IN THE INPUT JOB STREAM BY USING THE
* LAST DD STATEMENT IN THE JOB STREAM.
* AT PRESENT IBM IS USING THE FIRST DD STATEMENT IN THE JOB STREAM

*
NAME IGC0201C

* VERIFY IBM CODE

VERIFY 003A 9500C000	ABD05	CLI	O(TIOTREG),O
VERIFY 003E 47809196	BZ	GOTO6	
VERIFY 0042 D507C00492D2	CLC	TIOTDDNM(8,TIOTREG),SYSAB	
VERIFY 0048 47809064	BC	8,ABD09	
VERIFY 004C D507C00492B6	CLC	TIOTDDNM(8,TIOTREG),SYSUD	
VERIFY 0052 47809060	BC	8,ABD08	
VERIFY 0056 9BDD	SR	INGTREG,O(INGTREG)	
VERIFY 0058 43DC0000	IC	INGTREG,O(TIOTREG)	
VERIFY 005C 1ACD	AR	TIOTREG,INGTREG	
VERIFY 005E 47F09038	BC	15,ABD05	

* IBM PATCH AREA INCLUDED IN CSECT

VERIFY 02DE 00000000,00000000,00000000,00000000,00000000
VERIFY 02F2 00000000,00000000,00000000,00000000,00000000
VERIFY 0306 00000000,0000

* REP TO ALLOW SYSABEND OR SYSUDUMP OVERRIDES
* WILL PICK UP LAST DD STATEMENT IN THE JOB STREAM

REP 003A D70393069306	SYSOVER	XC	STIOT,STIOT
REP 0040 9500C000	ABD05	CLI	O(TIOTREG),O
REP 0044 478092EC	BE	FIN	
REP 0048 D507C00492D2	CLC	TIOTDDNM(8,TIOTREG),SYSAB	
REP 004E 478092DC	BE	SAVTIOT	
REP 0052 D507C00492B6	CLC	TIOTDDNM(8,TIOTREG),SYSUD	
REP 0058 478092DC	BE	SAVTIOT	
REP 005C 47F092E0	B	NTIOT	
REP 02DE 50C09306	SAVTIOT	ST	TIOTREG,STIOT
REP 02E2 1BDD	NTIOT	SR	INGTREG,INGTREG
REP 02E4 43DC0000	IC	INGTREG,O(TIOTREG)	
REP 02E8 1ACD	AR	TIOTREG,INGTREG	
REP 02EA 47F0903E	B	ABD05	
REP 02EE 58C09306	FIN	L	TIOTREG,STIOT
REP 02F2 12CC	LTR	TIOTREG,TIOTREG	
REP 02F4 47809196	BZ	GOTO6	
REP 02F8 D507C00492D2	CLC	TIOTDDNM(8,TIOTREG),SYSAB	
REP 02FE 47809064	BE	ABD09	
REP 0302 47F09060	B	ABD08	
REP 0308 00000000	STIOT	DC	F'0'

Lee A. Woodworth
Rohr Ind. Inc.
Box 87
Chula Vista, Calif 92012

EDIT STAGE 1 JCL

EDITGEN1 edits the JCL stream produced by Stage 1 of SYSGEN. The following changes are made:

1. ALL SYSOUT classes are changed to the class indicated on a PARM passed to EDITGEN1 via the EXEC card.
2. The card images are resequenced in columns 71-80.
3. References to SYS1.DMACLIB on SYSLIB cards are changed to SYS1.MACLIB.
4. A listing of the output is produced.

Direct inquiries to:

S. Chalem
Systems Supervisor
Allstate Insurance Co.
Allstate Plaza B-1
Northbrook, Ill. 60062

TO ALTER JOB QUEUE PARAMETERS

a) To alter JOBQFMT, JOBQLMT & JOBQINT

```

# SYS1.LINKLIB
NAME IEESQINT IEFQSCV
VERIFY 0000 00XX,00YY,00ZZ
REP
XX - JOBQFMT
YY - JOBQLMT
ZZ - JOBQINT
    
```

b) To alter SQS

```

# SYS1.NUCLEUS
NAME IEANUC01 IEANIP0
VERIFY XXXX 4150,00YY
REP XXXX 4150,00YY

YY - Number of 2K SQS BLOCKS
XXXX - Find as follows.
      Look in stage II listing
      for IEANIP0
      XREF portion, for IEASQSCN which is an equate statement
      for number of SQS blocks. It is REFERENCED in instruction
      'LA 5,IEASQSCN' in a routine labeled - IEASQS
    
```

Submitted by:
G. Ruiz
Hartford Group
Hartford Conn. 06115

S M F

This code, similar to that used by the "HALT END-OF-DAY" routine, switches the SMF data sets (MANX and MANY) without "turning off" the LOG.

SMFWTH MSG

```

MSG DC F'0'
DC C'HALT'
    
```

Of course, the problem program must be in supervisor state and interrupts should not be masked off.

This method once tested, will be implemented by Eastern Airlines shortly.

Submitted by: E.B. Wiesenhal
Senior Programmer
Eastern Air Lines Inc.
International Airport
Miami, Florida 33148

/s/

Permanently displaying JOBNAMES, T, DSNAME OR SPACE is as follows (using SUPERZAP)

NAME IEANUC01	IEEMSER	
Verify 0020	0000	
REP 0020	4000	JOBNAMES
VERIFY 0088	0000	
REP 0088	0000	
	08	DSNAME
	04	SPACE
	02	TIME NOTIFICATION
		BIT IN JOBNAMES, T

IEEMSER is the Manter Scheduler Resident Data area.

The above has been tested under OS 17, it was checked in the fiche of OS 12 and appears to still be valid.

Submitted by:
John F. Nastro
Chemical Bank, N.Y.

DISPLAY FREE DISK SPACE ON CONSOLE

This routine reads the VTOC's on direct access devices, totals up all free space, number of free space areas, and keeps track of what the largest contiguous free space area is:

Program needs no DD cards, Runs in 52K region. When the program is started, the operator will get the following message to which he replies:

"Enter VOL SER or ALL or END - - LSPACE"

When a volume serial number is started, the program will read the VTOC of that disk pack and type out a message then return to the beginning of the program to allow the operator to make more inquiries of the disk pack or end the program.

When 'ALL' is entered, the program will type out a message about any direct access device that is ready and then go to end of job, or the job can be cancelled by the operator.

The message that is displayed is in the following format:

WORK SPACE = CCCC, TTTT, No. of areas = AAAA, CONTIGSPACE -CCCC, TTTT
VVVV, UUU

CCCC, TTTT is total cylinders and tracks

AAAA is total number of free space areas.

CCCC, TTTT is the largest contiguous free space area

VVVVV is the disk volume ID

UUU is the unit address

If a volume serial is entered that is not mounted, the program will type the message "VOL SER NOT FOUND - -LSPACE" then go to end of job.

For more info contact:

Richard W. Harrod
CNA/Insurance
310 South Michigan Avenue
Chicago, Illinois 60604

DARDUMP MODIFICATION

The following zap modifies DARDUMP to write into SYS1.DUMP even though the previous dump had not been printed. This assures that when SYS1.DUMP is printed, you will get the most recent dump instead of one that may be several days old.

Version 19.6 MFT System

NAME IGC0221C

Verify 0172 4780, 323A

REP 0172 4700

Mr. J. E. Ham
Manager-Systems Technology
AT&SF Railway General Office
9th & Jackson
Topeka, Kansas 66612

CHECK REMAINING SPACE IN DISK DATA SETS

The PDSPACE program will examine VTOC's and display remaining space on the operator's console. Remaining space (in tracks) is loaded in Reg. 15 prior to return to OS to be used as a condition code for succeeding steps. A PARM can be supplied to provide a threshold level for the display.

For source listing inquire:

Mr. J. E. Ham
Manager - Systems Technology
AT&SF Railway General Office
9th & Jackson
Topeka, Kansas 66612

RESERVED AND PRIVATE DASD VOLUMES

The following zap initially assigns all DASD volumes a RESERVED and PRIVATE status at IPL. Any volumes found in the 1 PRESRES list are then assigned attributes from the list. This technique eliminates maintenance of the PRESRES list (except for work packs), and assures all packs are protected during IPL.

LINKLIB IEEVPRES IEFPRES

VER 004A 4780, 9056, 94EB, 4022, 9608

REP 004A 9620, 4003, 94F3, 4022, 9610

This zap is applicable for OS MVT Release 18 and 20.

Paul H. Dalman
Senior Computer Spc
USAMC, Automated
Logistics, Management
Systems Agency
P.O. Box 1578
St. Louis, Missouri

 * IGNORE THE SYNC SORT RC16-ABE OPTION *

This superzap causes the RC16-ABE option specification to be ignored in SYNC SORT. After it's applied, user exits which return code 16 will cause a final return code of 16 instead of a userabend (U0016).

NAME READCARD STAN
 VER 16CC 9201,6071
 REP 16CC 9201,6071

Jerry Gachwind
 Long Island Lighting Co.
 175 E. Old Country Road
 Hicksville, N.Y. 11801

 * REPLACE DDNAME WITH DSNAME IN IEBCOPY MSGS *

IEB1441 THERE ARE nnnnnnnnn UNUSUED TRACKS IN OUTPUT DATA SET data.set.name
 IEB1611 COMPRESS TO BE DONE USING data.set.name
 IEB1661 NO MEMBERS COPIED TO DATA SET data.set.name

First DELINK csect IEBVMS of IEBCOPY expanding it to X'530'.

NAME	IEBCOPY	IEBVMS	MVT 21.7
VER	0144	416049A6	
VER	04E0	40404040	PATCH AREA
REP	0144	47F0A4E0	
REP	04E0	D50249AAA520	PATCH
REP	04E6	4770A4F2	
REP	04EA	416049E3	
REP	04EE	47F0A512	
REP	04F2	D50249AAA523	CLC161
REP	04F8	47F0A524	
REP	04FC	416049CA	
REP	0500	47F0A512	
REP	0504	D50249AAA526	CLC 166
REP	050A	4770A518	
REP	050E	416049CE	
REP	0512	D228600044DA	MOVE
REP	0518	416049A6	DONE
REP	051C	47F0A148	
REP	0520	F1F4F4	C144
REP	0523	F1F6F1	C161
REP	0526	F1F6F6	C166

N. Stewart Kaplow
 Chase Manhattan Bank, N.A.
 One New York Plaza
 New York, New York 10004

 * DATE & TIME STAMP INSTEAD OF BLANK SSI *

This is a superzap to IEWLFB80 (linkage editor) 05 21.6 to date and time stamp the directory entry if the SETSSI control statement is missing (since the SSI bytes are used for the date/time).

In module IEWLFB80, delink csect IEWLMPNL to x'878'.

Relink and superzap:

NAME	IEWLFB80	IEWLMPNL	
VER	010C	4780C136	TEST FOR SETSSI
VER	005A	40404040,40404040	PATCH AREA FROM DELINK
REP	010C	4780C858	B PATCH GO TIME STAMP IF SETSSI ABSENT
REP	005A	41100002,0A0B	TIME DEC GET DATE AND TIME
REP	0060	08100004	SRL 1,4 SHIFT OUT SIGN
REP	0064	40102100	STH 1,SSI STORE YDDD
REP	0068	08000010	SRL 0,16 SHIFT OUT SECONDS, 10th,100TH
REP	006C	400021D2	STH 0,SSI+2 STORE H00M
REP	0070	47F0C10E	B BACK BACK TO PROCESS SSI INFO

*AFTER TIME SVC, REGISTER 1 = 00YYDDDF DATE

*SSI AFTER THE TWO STH WILL = YDDDH00M

R. L. Monnette
 Lumbermens Mutual Casualty Company
 Data Processing Technical Services
 Long Grove, Illinois 60049

SPECIFYING MODAL LENGTH WHEN
SORTING VARIABLE LENGTH RECORDS

Modal length is used by the sort to reduce the amount of space wasted by using fixed length "buckets" (each of Modal length + 4 bytes for a chain pointer) into which records are placed. Any record which is shorter than the Modal length is placed in a single "bucket" with any extra space in the bucket wasted, while a record longer than the Modal length is segmented across the minimum number of "buckets" with unused space in the last one wasted. Of course, the 4 byte pointers are also a waste.

The sort manual suggest specifying the most frequently occurring size as the Modal length, but clearly this is wrong in the simple case of 2X records 40 characters long and X records 84 characters long. A better Modal length in this case would be 44, not 40.

To minimize the wasted space for a file with record length $L_1, L_2, L_3, \dots, L_n$ occurring with frequencies $F_1, F_2, F_3, \dots, F_n$ find the Modal value which minimizes the following expression:

Where indicates that any fraction is to be truncated. The following program, written in Fortran C, will compute the two best Modal length values.

```
//STEP01 EXEC PORTCCLG
//FORT.SYSIN DD *
C      PROGRAM TO CALCULATE OPTIMUM MODAL RECORD LENGTH
C      INPUTS ARE RECORD LENGTHS (LENGTH=) AND
C      FREQUENCY OF OCCURENCE (FREQ=)
C      SAMPLE INPUT (STARTING IN COLUMN 2)
C      &INPUT
C      LENGTH= 100,127,145
C      FREQ= 5000, 2200, 30000,
C      &END
C
C      IMPLICIT INTEGER*4 (A-Z)
C      INTEGER*4 LENGTH (100), FREQ(100)
C      NAMELIST/INPUT/LENGTH,FREQ
C      JSAVE1 = 0
C      JSAVE2 = 0
C      SUMSV1=2**30
C      SUMSV2=2**30
C      DO 10 I=1,100
C      LENGTH (I) =0
10 FREQ(I) =0
      READ(5,INPUT,END=9999)
C
C      FIND THE LARGEST LENGTH AND ROUND IT UP TO THE NEXT MULTIPLE
```

```
C      OF 4 AS THE LIMIT OF THE POSSIBLE MODAL LENGTH LOOP. THIS
C      VALUE IS MAXLEN
C
C      MAXLEN = 0
C      DO 20 I=1,100
20 IF (LENGTH(I) .GT. MAXLEN) MAXLEN =LENGTH(I)
C      MAXLEN = ((MAXLEN-1) *4)+8
C
C      LOOP THRU 30 COMPUTING CORE REQUIRED TO HOLD THE FILE FOR
C      EACH POSSIBLE MODAL LENGTH. SAVE THE TWO LOWEST VALUES
C
C      DO 30 J=4,MAXLEN,4
C      SUM= 0
C      LOOP THRU 40 COMPUTES CORE REQUIRED FOR THIS MODAL LENGTH J.
C
C      DO 40K=1,100
C      SUM = SUM +FREQ(K) * (J/4)*(((LENGTH(K)+3 (J*4)) +1)
40 CONTINUE
C
C      NOW SEE IF SUM IS ONE OF TWO LOWEST AND SAVE IT IF SO
C      ALONG WITH THE CORRESPONDING MODAL LENGTH J
C
C      IF (SUM .LT. SUMSV1) GO TO 50
C      IF (SUM .LT. SUMSV2) GO TO 49
C      GO TO 30
49 SUMSV2 = SUM
C      JSAVE2 = J
C      GO TO 30
50 SUMSV1 = SUMSV1
C      JSAVE1 = JSAVE1
C      SUMSV1 = SUM
C      JSAVE1 = J
30 CONTINUE
C      WRITE (6,101)
101 FORMAT ('1', 'LENGTH FREQUENCY')
C      DO 60 I=1,100
C      IF (FREQ(I)) 59,60,59
59 WRITE (6,102) LENGTH (I),FREQ (I)
102 FORMAT (' ',15,' ',15)
60 CONTINUE
C      WRITE (6,100) JSAVE1,JSAVE2
100 FORMAT (' ',20X'BEST MODAL LENGTH IS ',15,' ',
C      'NEXT BEST IS ',15)
C      GOTO 1
9999 CALL EXIT
C      END
11GO.FT05F001 DD *
&INPUT
LENGTH = 100,127,145
FREQ = 5000,2200,30000,
&END
&INPUT
LENGTH = 50, 100, FREQ=10, 10
```

```

&END
&INPUT
LENGTH= 50,100,FREQ=1, 1000,
&END
&INPUT
LENGTH=50,105,FREQ=1000,1000,
&END
//

```

Geoffrey Goldsmith
Equitable Life Assurance
1285 Avenue of the Americas
New York, New York 10019

RLSE SYSOUT SPACE

The following superzap to Reader/Interpreter module IEFVMA in SYS1.LINKLIB will force RLSE for SYSOUT data sets. This will make unused tracks in the data set available to the system when the data set is closed. The superzap is for Release 19.6. For Release 20.1, the last VER/REF has changed to location 18DC.

* ALWAYS TURN ON RELEASE BITS IF IT IS A SYSOUT DATA SET

NAME IEFVMA IEFVDA

```

VER 0010 11111111,C4C1,D34BFOF5 GOOD PLACE FOR PATCH
REF 0010 96COAIDE 01 JFCBIND1,X'CO' OR IN RLSE BITS IN JFCB
REF 0014 9120A0B4 TM WHICH WE WILL WIPE OUT
REF 0018 07FE RETURN

```

```

VER 1016 9120A0B4 AT THIS POINT WE KNOW IT IS SYSOUT
REF 1016 45E0200E BAL TO PATCH

```

Richard J. Anderson
The Mitre Corporation
Bedford, Mass.

DUMP SMF DATA SET

The following OS MVT modification allows automatic creation of a job to dump an SMF data set when it is full.

The change is applied in the following manner"

1. Add the Type 4 SVC to SYS1.SVCLIB. In our installation we used SVC248. The code appears in Exhibit A.
2. Apply the following superzap to module IGC0108C, csect IEESNPOP in SYS1.SVCLIB.

```

NAME IGC0108C IEESNPOP
VER 031C 0A23
REF 031C 0A78

```

(DUMP DATA SET CONTINUED)

This superzap changes the WTO SVC to the SVC added in step 1 above.

3. Add procedures DUMPMANX and DUMPMANY to SYS1.PROCLIB as in Exhibits B and C.

The change is not effective until re-IPL. IPL should occur immediately following the change.

The application of the above modification virtually assures that an SMF lost data condition will not occur.

EXHIBIT A

```

IGC0024H CSECT
          BALR 12,0
          USING *,12
          LR 10,14
          LR 11,1
          CLC -C'IEE362A',4(11)
          BE DOCHD
          WTO MF-(E,11))
          LR 1,(11)
          SVC 35
          BR 10
          MVC 4(L'CHDCON,11),CHDCON MOVE COMMAND TO WTO AREA
          MVC 12(1,11),39(11) X/Y
          SR 0,0
          MVC 0(4,11),CMDSIZE
          LR 1,11
          SVC 34
          BR 10
          CHDCON DC Y(L'CHDCON+4)
          DC Y(0)
          CMDCON DC C'S DUMPMANX'
          END
          -C'IEE362A'

```

EXHIBIT B

```

//DUMPSTEP EXEC PGM=IFASMFD
//SYSPRINT DD SYSOUT=A
//DUMPOUT DD UNIT=TAPE,LABEL=(,NL),DISP=(,KEEP),DSN=PROD.S651.SMFMANX
//DUMPIN DD DSN=SYS1.MANX,DISP=SHR

```

EXHIBIT C

```

//DUMPSTEP EXEC PGM=IFASMFD
//SYSPRINT DD SYSOUT=A
//DUMPOUT DD UNIT=TAPE,LABEL=(,HLO,DISP=(,KEEP),DSN=PROD.S651.SMFMANX
//DUMPIN DD DSN=SYS1.MANY,DISP=SHR

```

Marvin Wapnitsky
Software Specialist
Doubleday & Co.
501 Franklin Ave.

Garden City, N.Y. 11530

CHE NOTES

Users of the IEFACTRT exit in job/step termination who no longer use the old "SYS1.ACCT" dataset should apply the ZAP shown below. The module IEFACTLK causes system-wide serialization of use of IEFACTRT to protect the integrity of SYS1.ACCT. If you use SMF instead, this zap may increase your throughput a tiny bit.

NAME	IEFW21SD	IEFACTLK	(R21.6)
VER	00FO	0A38	
VER	01QA	0A30	
REP	00FO	IBFF	
REP	01QA	IBFF	

EMULATOR OCS

The MFT Rel. 21.8 1401 Emulator will SOCS trying to open the PUNCH if the PUNCH is a DD DUMMY. The reason is that the OPEN Executors for DUMMY use the high-order two bytes of the DEB UCB address to save next executor id (in our case 'AV'). The Emulator loads the address without checking for DD DUMMY (via DEVTYPE, etc.) resulting in an OCS. We applied zap for APAR 71463 and changed the load to a load-halfword instruction in IIQETOC5 after label OFILDIR.

Submitted by:
Jerry Geschwind
Long Island Lighting Co.
175 E. Old Country Road
Hicksville, N.Y. 11801

VTOC ERROR-WARNING MOD

This contribution has not been submitted to any formal IBM test. Potential users should evaluate its usefulness in their own environment prior to implementation.

During the allocation of space by DADSM, the possibility exists that either an uncorrectable I/O error will occur or the system will be interrupted for some unknown reason and the Volume Table of Contents pointers will not be correctly updated. In order to ensure that the user is made aware that this has occurred during a VTOC update, the system sets a damage information bit (DIRF) any time that processing is not successfully completed. It is the user's responsibility to check this DIRF bit and ensure that the VTOC is correct.

Since the operating system does not issue any message to the user when the bit is on, the users must write their own routines to interrogate the DIRF bit on each VTOC. Some installations do this as a standard maintenance procedure.

VTOC Error Warning Mod (continued)

Problems can arise when the bit is set and valid damage has occurred resulting in the creation of overlapping extents in the VTOC. Though this happens very infrequently, the potential for allocating multiple data sets to the same extent does exist-especially in an environment where a user is doing a lot of allocation of small data sets, i.e., a testing environment.

A modification can be made to the space allocation routines that will notify a user when the bit has been set on. Normal processing DADSM will be allowed to proceed. The bit must be turned off by a user program. This modification will put an operator action message on the console when the routine detects that the DIRF bit has been turned on. The action to be taken when this occurs is a decision of the installation. You can either issue the message and continue processing or you can issue the message and cause the current job that is in allocation to be terminated with a JCL error. Though this will cause a user to lose his current run, it will prevent the allocation of dual extents. In practice, we have adopted the procedure of stopping allocation.

Since this modification was put onto the system, we have found that usually the system has not generated overlapping extents. But, there have been instances when data sets were allocated and the same space still existed in the format space five record. Consequently, we felt that it would be best to stop allocation.

Our recovery technique consists of running a listing of the VTOC to tape. We then wrote a program to take the as input and format it to give data set names with space allocations and free space. We then sort it in sequence. Then, we wrote another program to look for duplicate addresses. When we find duplicates, we scratch the data set since it will always correspond to free space. We then rerun the program without any problems.

The modification will print the message:

*USERMOD VTOC ERR arialne CALL TECH

an an operator action message. We have allowed six characters for the volume I.D. In our operation, we normally run with three character I.D.'s. The code has been installed on an OS/VS2 Release 1.0 system. Displacements may vary for other systems.

NAME	IGG0325A		
VER	012A	4780,C13C	BZ DIRBYZ
VER	0384	0000,0000,0000	
REP	012A	4780,C382	B PATCH IF DIRF SET
REP	0384	D205,C3D7,D2B0	MVC VOLTD, MIELNAME
REP	038A	4110,C3D2	LA 1,PARAM
REP	03BE	0A23	SVC 35
REP	03CO	47FO,C13C	B DIRBYP2
REP	03D4	0024,8080	length & flags

VTOC (continued)

REP	0308	E4E2,C5D9,D4D6,C440	DC	USERMOD
REP	03E0	E5E3,D8C3,40C8,D9D9	DC	VTOC ERR
REP	03E8	4040,4040,4040,40C3	DC	C
REP	03F0	C1D3,D340,E3C5,C3C8	DC	ALL TECH
REP	03F8	4000,8000		routing and descriptor codes

If you desire to terminate allocation, insert the following two lines:

REP	03C0	4180,0014	LA	RERRPASS,X"14"
REP	03C4	47F0,C276	B	ERREXIT

N.B. This article was published in a recent IBM Installation Newsletter without the superrap. This text is from the original submission to DFDHQ by the author.

Author:

Ronald J. Repking,
Consulting Systems Engineer
IBM Data Processing Division
Chicago Financial
One IBM Plaza - 6th Floor
Chicago, Illinois 60611

'BRILLIANT' D R

With some additional changes to IGC2003D, an invaluable extension to the 'Intelligent DR' can be arrived at. The READY UNTI-portion of the text outputted by this module will contain the volume serial number for all appropriate devices that have to be readied:

```

-IEE1101 READY UNIT: 581 WITH VOLSER= 007291
-IEE1101 READY UNIT: 583 WITH VOLSER=SCRTCH
    
```

The following superrap was made to a Release 21.7 MVT system with 3277 DIDOCS support.

```

NAME IGC2903D IEE2903D
VER 017C 1B6A,496C,9380,4740,9198
REP 017C D20E,6000,924A,47F0,9210
VER 0212 1255,4780,927A,1B6A,4960,9380,4740,922E
REP 0212 4166,009E,95FF,801C,4790,922A,47F0,9234
VER 022C 4160,001B,1A6A,D202,6000,8000,9261,6003,D200,6004
REP 022C D205,6000,9244,47F0,923A,D205,6000,801C,4166,0006
VER 0240 7001,96F0,6004,4166,0005,1B6A,4960,9380,4740
REP 0240 1B6A,47F0,9184,E2C3,D9E3,C3C8,40E6,C9E3,C840
VER 0252 9266,45C0,933E,4400,9224
    
```

Brilliant D R (Continued)

REP	0252	E5D6,D3E2,C5D9,407E,4024
VER	0106	4740
REP	0106	1/F0
VER	03C0	E3E2
REP	03C0	E340

Norman Brambrut
Chase Manhattan Bank, N.A.
IBM Planning & Support
1 New York Plaza
New York, N.Y. 10004

ABEND FORMAT CHANGES

The following superzap modifications are used at the CBS installation to improve their abend dump formatting. The OS and VS user may find them helpful changes in his own environment:

- 1) This mod changes Abdump 5 to produce a usable QCB TRACE by removing the dataset (SYSDSH) enqueue listing and listing the hexadecimal values of all RNAMEs in the QCB list. The new format will then apply to all SNAP and ABEND dumps.

Locations E4 to I31 inclusive become available for patch space once caect IGC0405A is delinked to X'3D0'. The patch is applied under temp (MODLIB) name IEAQAD04 and is valid from Rel. 20.1 to 21.7

NAME IEAQAD04 IGC0405A	NAME TO KEEP MODULE DURING UPDATE
IDRDATA CBS00009	
VER A4 4780C0CA	
VER EO 182A4550C270	
VER 012E 92F0D098	
VER 0132 4550C15C	
VER 0158 D200D0DD2002	
VER 016C D50310984098	
VER 02A3 3301C6D8C5D3	
VER 02BA 43030040FF	
REP A4 4780C0CE	
REP EO 47F0C35E	
REP 0158 D2005004A00E	
REP 016C D502107D407D	
REP 02A3 1001D3D52011D7D2C62311E7D5D4FF,2B03,3403,3D03,FF00,40D5D440	
REP 0360 4120A00C,4550C270,41202004,5860D128	
REP 0370 45B0623E,5860D128,1B11,4310A00C,0610	
REP 0380 1851,88500002,1A51,1A51,45155D0BD,9510A00C	
REP 0392 4740C398,415090DE,D2035000C2B8	
REP 03A0 D22450045003,952FA00C,4740C380,4110002E	
REP 03B2 4410C1564550C264,94FED12C,5880A000,47F0C130	

- 2) This second change causes the printing of only modules in the job pack area for abend dumps...it does not affect snaps! Thus, it removes list of LPA resident code from ABDUMPS.

It is valid from Rel. 21.0 through 21.7:

NAME IGC0901C IGC0901C	FIGR: IEAQTM09 - ABEND 9
IDRDATA CBS00009	
VER 82 92BE1003	
REP 82 92AE1003	

Submitted by:

John Kaplan

CBS, Inc.

2 Penn Plaza

New York, New York 10001

IEBUPDATE ZAP

The following superzap pertains to releases of OS and VS2. It will force any PDS member updated by IEBUPDATE to have the current date placed in the SSI-field of its directory entry in the format "00yyddd".

For OS 21.7

VER	1220	95F0 C027 4770 529C 95FF C8DC 4770 52AA
REP	1220	4110 0002 0A0B 5010 C098 4770 5280 E2D3

For OS 21.6

VER	1104	95F0 C027 4770 5196 95FF C8DC 4770 51A4
REP	1104	4110 0002 0A0B 5010 C058 4770 517A E2D3

For VS2 1.6

VER	11D0	95F0 C027 4770 5262 99FF C8DC 4770 5270
REP	11D0	4110 0002 0A0B 5010 C098 4770 5246 E2D3

Submitted by:

Stuart Lieber

Dean Witter & Co.

2 Broadway

New York, N. Y. 10004

"UPDATE" . . . PTPCH

This modification serves as an "update" of an old superzap that forces IEBPTPCH to print in an alphabetical sequence. It has appeared numbers of times in both the OSERG and OSIE newsletters during the last two years, and it appears here for current OS and VS2 releases:

NAME	IEBPTPCH	IEBPTCHI
------	----------	----------

FOR OS 21.7

VER	OCF6	4740 9D06
REP	OCF6	4770 9D06

FOR VS2 1.6

VER	OCFE	4740 9DOE
REP	OCFE	4770 9DOE

Submitted by:

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MOD TO OPEN PROCESSOR

This modification will keep a record of the date of last-access and a use count for all direct access data sets that are OPEN in an OS System. It is applicable to Release 21.7 systems.

The last-use date and use count will be maintained in the 7 reserved bytes in the Format 1 DSCB following the DSI SYSCD-field. The format of the last-use date will be a 3-byte packed decimal field, with a 'P' zone (for unpacking). The field will be comprised as "yydddP". The use count will be a 4-byte packed decimal field, and will reset after 9 million accesses. This will be done to prevent OPEN processing from terminating with a SOCA Decimal Overflowabend.

The change is applied with the following superzap:

Name	IPGO195A	IPGO195A	
Ver	0150	D404405B405B	This is at tag 0D411800
Ver	0370	00000000	Patch area
Rep	0370	58100010	L R1,X'10' CWT POINTER
Rep	0374	D202301F1039	HVC DSCSYSCD+13(3), CVTDATE
Rep	037A	95004025	CLI DSCSYSCD+19,X'00'
Rep	037E	47803388	BE ZAPZERO - Not initialized
Rep	0382	95904022	CLI DSCSYSCD+16,X'90' Ck for 9 million
Rep	0386	4740318E	BL ADDUSE
Rep	038A	F830402233A2	ZAPZERO ZAP DSCSYSCD+16(3), PO
Rep	0390	FA30402233A3	ADDUSE AP DSCSYSCD+16(3), PI
Rep	0396	964040B0	OI JFCIMASK+4, JFCMODDD
Rep	039A	D404405B405B	Replace displaced instruction
Rep	03A0	47F03154	Return to main line code
Rep	03A4	0C	PO DC P'0'
Rep	03A5	1C	PI DC P'1'
Rep	0150	47F0336E,0700	Branch to patch area

Submitted by:
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Chase Manhattan Bank, N.A.
1 New York Plaza
New York, N.Y. 10004

IEHDASDR FIX

The fix for IEHDASDR failing on restore of two tapes is under P67579. It is a Release 21.7 superzap, but applies to Release 21.8 also. It's listed in Early Warnings microfiche on card 43E02.

NAME IGG019P9
VER 002C 9501,C010,4770,F060
REF 002C 9550,C010,4780,F080

Submitted by:

Jerry Cochwind
Long Island Lighting Co.
175 East Old Country Road
Hicksville, NY 11801

SYSOUT ENQ ZAP

The following superzap will remove the ENQ set on during warm start for all sysout data sets.

At warm start the sysout queue fills up with entries for unopened data sets. Our installation therefore had one entry for each SYSABEND DD statement in the initiators queued in a sysout queue. Some caution should be exercised when using this zap as some sysout data sets may be lost.

The zap is to the OI instruction after label RD155 in IEFVSDRD. It is applicable to OS Rel. 21.7 :

NAME IEFSD304 IEFVSDRD
VER 0116 9680,201B SET BIT FOR ENQ
REF 0116 0700,0700 NO-OP

Submitted by:

Andrea Trasborg
Supermarkets General Corp.
301 Blair Road
Woodbridge, N.J. 07095

PTPCH ZAP

From our friends at American Express, we have a venerable superzap that has been with us for several years brought to life again for application to OS Rel 21.8 systems. It's the Print/Punch zap that causes the listed output to appear in "alphabetical" order rather than by TTR location of each member:

NAME IEDPTPCH IEBPPCHI
VER 0006 4740,9D16
REF 0006 57F0,9D16

Submitted by
Richard Greenberg
American Express Co.
770 Broadway
New York, New York

PAPER SAVERS

For the paper-savers, here are some more 8 lpi superzaps. They are working on a Release 21.8 MPT system with HASP 3.1.

1. HASP \$LINECT default may be zapped:

Overlay HASORJCS (Job Card Scan)

CCIBR (installation dependant)
VER 8C 9238D134 MVI RJCTLINE, \$LINECT (56 lines)
REP 8C 9253D134 83 lines/page

The offset may vary depending on any HASP modifications you may have on. The source card sequence number is R1300000.

2. HASP number of lines separator:

Change the LA instruction prior to label PRIJECT (card sequence number P2354000 in HASPPPU) to "LA PNP, number" where "number" is equal to the lines of separator. Our installation has changed from 75 lines to 100 lines separation.

PAPER SAVERS

1. ABDUMP:

NAME IGC0L05A
VER 034E 41100038 56 lines
REP 034E 4110004C 76 lines

2. ANS Cobol Version 4:

NAME IKFCBL01
VER 000D 060C
REP 000D 080C

3. Assembler F:

NAME IEUF1
VER 0032 9235,BC38
REP 0032 924B,BC38

4. WATFIV:

NAME WATFIV MAINP
VER 0688 0000,03C
REP 0688 0000,050

5. Fortran H:

NAME IEKAA00 IEKAA01
VER 0016 003A
REP 0016 0050

6. Fortran G:

NAME IEYFORT IEYFORT1
VER 0A 003C
REP 0A 0050

7. IEBISAM

NAME IEBISPL
VER 058E 4190,003B
REP 058E 4190,0050

8. Assembler G: (Univ. of Waterloo)

NAME AMSGF2 COMMON
VER 083E 0037
REP 083E 0049

9. IMPRIMP

NAME IMPRIMP IMPRCTL
VER 00FA 0042
REP 00FA 0058

NAME IMPRIMP IMPRCOM
VER 0154 003A
VER 0156 003B
REP 0154 0050
REP 0156 004E

These superzaps eliminate the need for any JCL or control card changes!

Submitted by:

Jerry Cachwind
Long Island Lighting Co.
175 East Old Country Road
Hicksville, N.Y. 11801

LINKED PAPER SAVER

In the ZAP's below, let xx be the number of lines per page (base 16) which is desired. Let yy = xx-2. Let zz = xx-1.

SYSLIB points to LINKLIB

NAME IEWL IEWLHBT

VER 0114 41900037
REP 0114 419000xx

NAME IEWL IEWLHFN

VER 03DE 41100037
REP 03DE 411000xx

NAME IEWL IEWLHAP

VER 00B4 9237CE55
VER 0D90 9235CE55
REP 00B4 92xx
REP 0D90 92yy

NAME IEWL IEWLMROU

VER 00AC 41300035
VER 067A 41B00037
REP 00AC 413000yy
REP 067A 413000xx

NAME IEWL IEWLHINT

VER 0338 92362184
REP 0338 92zz

Submitted by:
Barry Pierce
CAI
(215) 775-2600 X2256

DUMP SUPPRESSION

The attached system modification to suppress dump printing is in operation at State Farm.

This is a modification to ABENDS (IC00801C) to ignore the SYSUMDPT or SYSABEND DDCard if the system abend code matches one in the table.

The table is contained within the module; table entries consist of three bytes each -

BYTE 1: Last two digits of abend code in hex

BYTES 2-3: Last two digits of abend code in char

The table must end with at least one byte of 'X'FF'.

If the system abend code matches a code in the table (byte 1), then two more checks are made before suppressing the dump:

1) Production job? (first char of jobname less than R)

2) Bytes 2-3 of table entry match last two char of jobname

The dump will not be suppressed if either of these questions is true.

The abend codes were selected as ones which very seldom require dumps. After some initial programmer concern, this modification appears well accepted; the codes are quite applicable to the production system as well and could very well be effective there.

```
00050 /*SETUP UNIT=DISK,NUHITS=0,ID=$SMACH
00060 //DELINK EXEC CEDELINK,LIB1=SVCLIB,LIBV=$SMACH
00080 IGC0801C IGC0801C X'0358'
00090 //RFLINK EXEC LKEDPTF,LIB1=SVCLIB,LIBV=$SMACH,
00100 // ANDL='REUS,RENT,REFR,DC'
00110 //SYSOBJ DD DISP=OLD,DSN=660BJ
00120 //SYSIN DD *
00130 INCLUDE SYSOBJ
00140 NAME IGC0802C(R)
00150 //ZAP EXEC SPZAPTF,LIB1=SVCLIB,LIBC=$SMACH
00160 //SYSIN DD *
00170 * ELIMINATE DUMP PRINT FOR ABENDS SPECIFIED IN TABLE
00180 NAME IGC0801C IGC0801C
00190 VER 0032 41C9,C018
00200 VER 02F4 0000,0000,0000,0000,0000,0000
00210 VER 0300 0000,0000,0000,0000,0000,0000,0000,0000
00220 VER 0310 0000,0000,0000,0000,0000,0000,0000,0000
00230 VER 0320 0000,0000,0000,0000
00240 VER 0328 4040,4040,4040,4040
00250 VER 0330 4040,4040,4040,4040,4040,4040,4040,4040
00260 VER 0340 4040,4040,4040,4040,4040,4040,4040,4040
00270 VER 0350 4040,4040,4040,4040
00280 REP 0032 47F0,92F2
00290 REP 02F4 5860,4010
00300 REP 02F8 8860,000C
00310 REP 02FC 4260,40A8
```

B	PATCH	GO TO DUMP MOD
L	PTR,TCBCHP	GET ABEND CODE
SRL	PTR,12	SHIFT SYS CODE
STC	PTR,TCBUSER	SAVE ABEND CODE

Dump Suppression (continued)

```

00320 REP 0300 4160,9136      LA PTR, TABLE GET TABLE ADDR
00330 REP 0304 D500,40A8,6000 LOOP CLC TCBUSER(1),0(PTR) IS CDE IN TBL
00340 REP 030A 4780,9324      BE IFND YES-GO CHECK JNH
00350 REP 030E 4160,6003      LA PTR,3(PTR) INCREMENT PTR
00360 REP 0312 95FF,6000      CLI 0(PTR),X'FF' TEST FOR EDT
00370 REP 0316 4770,9302      BNE LOOP CONTINUE SEARCH
00380 REP 031A 41C0,C018      RTRN LA TIOTREG,TIOTLNTH(TIOTREG)
00390 REP 031E 4780,9034      BC 8,BACK RETURN TO CODE
00400 REP 0322 47F0,919E      B MODD DON'T ALLOW DUMP
00410 REP 0326 95D9,C000      IFND CLI TIOTCNJOB,C'R' TEST JOB?
00420 REP 032A 4740,930C      BL BACK NO-ALLOW DUMP
00430 REP 032E D501,C006,6001 CLC TIOTCNJOB+6(2),1(PTR) CDE IN JNH
00440 REP 0334 47F0,9318      B RTRN GO RESTORE REG
00450 * TABLE
00460 REP 033B FDC6C4
00470 REP 033B 0AFC01
00480 REP 033E 04F0F4
00490 REP 0341 D6F0F6
00500 REP 0344 13F1F3
00510 REP 0347 14F1F4
00520 REP 034A 37F3F7
00530 REP 034D 22F2F2
00540 REP 0350 FFFFFF
00550 REP 0353 FFFFFF
00580 REP 0358 FFFF
00570 * TABLE MUST END WITH X'FF'
00580 IDHDATA ZAPSF098
00590 DUMP ICC0801C ICC0801C
00600 *** ZAPSF093 END
00610 /** ZAPSF098 END
READY

```

DC:clc

PDS STATUS PROGRAM

A handy program for a concise report on allocated and remaining directory blocks and space in partitioned data sets.

Service aid L15APTFL5 is used in the first step of the job, which is not supplied with VS2, but is promotable from OS.

SAMPLE REPORT

PROGRAM LIBRARY SPACE STATUS					
LIBRARY NAME	DIR BLKS ALLOC	DIR BLKS UNUSED	NO OF EXTENTS	ALLOCATED TRACKS	AVAILABLE TRACKS
SYS1.OPLIB	400	137	1	3420	1566
SYS1.OPLB2	400	30	1	3800	1115
SYS1.OPLB3	350	344	1	1900	1844
SYS1.RELCLIB	400	91	1	5700	2281
SYS1.RELCLB2	5	4	16	16	0
SYS1.SRCCLIB	15	4	1	228	31
SYS1.DOSLIB	160	23	1	2090	359

ASSEMBLY DECK. THIS USES THE RICH GREENBERG 'PROGRAM' MACRO. INSERT YOUR OWN HOUSEKEEPING AND EXIT ROUTINES IF YOU DON'T HAVE THE MACRO.

```

MLS      PROGRAM 7
OPEN     (IN,,PRT,OUTPUT)
PUT      PRT,HEAD 1
PUT      PRT,HEAD 2
PUT      PRT,HEAD 3
READ     GET IN,WORK
          CLC WORK+10(9),DIR
          BNE READ
          MVC LIBNAME+6(13),WORK+32
          GET IN,WORK
          CLC WORK+12(4),DATA
          BNE READ2
          MVC LIBNAME+22(4),WORK+29
          MVC LIBNAME+32(4),WORK+51
LINE2    GET IN,WORK
          CLC WORK+12(3),SEC
          BNE LINE2
LINE3    GET IN,WORK
          CLC WORK+12(5),BLOCK
          BNE LINE 3

```

OPEN INPUT AND OUTPUT
PRINT REPORT HEADING
PRINT FIRST COLUMN HEADING
PRINT SECOND COLUMN HEADING
GET INPUT RECORD
IS THIS A HEADING LINE
NO, GET NEXT RECORD
LIBRARY NAME TO PRINT AREA
GET NEXT RECORD
IS THIS FIRST STATUS RECORD
NO, KEEP LOOKING
INSERT # OF DIR BLKS
INSERT # OF UNUSED DIR BLKS
GET ANOTHER RECORD
IS IT THE 2ND SUMMARY LINE
NO, TRY AGAIN
YES, SKIP IT & GET NEXT REC.
IS IT THE 3RD SUMMARY LINE
NO, KEEP TRYING

```

LINE4      GET      IN,WORK      YES , SKIP IT
           CLC      WORK+12(4),DATA  IS IT THE 4TH SUMMARY LINE
           BNE      LINE 4        NO KEEP LOOKING
           MVC      LIBNAME+42(2),WORK+25 INSERT # OF EXTENTS
           MVC      LIBNAME+52(4),WORK+37 INSERT # OF TRACKS ALLOCATED
           MVC      LIBNAME+63(4),WORK +56 INSERT # OF AVAIL TRACKS
           PUT      PRT,LIBNAME    PRINT THE STATUS LINE
           B        READ          GO BACK TO PROCESS NEXT DATA SET
FINISH     CLOSE    (IN,PRT)      CLOSE ALL FILES
           B        EXIT          BR TO EXIT IN PROGRAM MACRO
HEAD1      DC      CL90'1        PROGRAM LIBRARY SPACE STATUS'
HEAD2      DC      CL90'        LIBRARY DIR BLKS DIR BLKS NO OF ALX
           LOCATED AVAILABLE'
HEAD3      DC      CL90'        NAME ALLOC UNUSED EXTENTS X
           TRACKS TRACKS'
LIBNAME     DC      CL90'0'      PRINT AREA FOR STATUS LINE
WORK        DC      CL121'
DIR         DC      C'DIRECTORY'  FCR COMPARES
DATA        DC      C'DATA'
SEC         DC      C'SEC'
BLOCK       DC      C'BLOCK'
IN          DCB     BLKSIZE=2178,LRECL=121,MACRF=(CH),RECFM=FB,DSORG=PS X
           DDNAME=IN,EODAD=FINISH
PRT         DCB     BLKSIZE=1800,LRECL=90,MACRF=(FM),RECFM=FBA,DSORG=PS,
           DDNAME=PRT
           END

```

SAMPLE JCL

```

//LISTPDS EXEC PGM=IMAPPLS
//SYSPRINT DD UNIT=SYSDA,SPACE=(CYL,(2,1)),DSN=&VTOC,
// DCE=(RECFM=FB,LRECL=121,BLKSIZE=6050),DISP=(NEW,PASS)
//LISTREST DD DUMMY
//A DD DISP=SHR,DSN=SYS1.OPLIB
//B DD DISP=SHR,DSN=SYS1.OPLB2
***** INCLUDE DD CARDS FOR ALL DESIRED LIBRARIES ***
//LISTSTAT EXEC PGM=LIBSTAT
//SYSPRINT DD SYSOUT=A
//IN DD DSN=&VTOC,DISP=(OLD,DELETE)
//PRT DD SYSOUT=A
//
Submitted by:

```

Mel Scull
Merck & Co., Inc.
Rahway, N.J.
201-574-6698

VTOC "DIRF" - BIT CHECK

A simple routine to check the contamination (Dirf) bit in the VTOC format 4 DSCB on any number of packs. It is the user's responsibility to check this. CS DASH PLM CY28-6607, under "Diagnostic Aids", and OSERG Newsletter Vol 2, No 6 both contain information on techniques for correcting the situation.

We run this periodically or after a power or other system failure where DAIGH may have been interrupted during a VTOC update.

SAMPLE REPORT

VTOC DAMAGE INFORMATION REPORT

DIRF BIT ON CALVOL IS OK.
DIRF BIT ON 1STVOL IS OK.
DIRF BIT ON 1S0001 IS OK.
DIRF BIT ON 1S0002 IS ON - NOTIFY TECH SUPPORT.
DIRF BIT ON 1S0003 IS OK.

ZAP TO A COPY OF IENLIST (NAMED LISTFMT4) TO STOP PROCESSING AFTER DUMPING THE FORMAT 4 DSCB. (OS REL 21.7)

NAME LISTFMT4 IENRSEG
VER 017A 47FD,B17C
REP 017A 47FD,COAD

ASSEMBLER INPUT. INSERT YOUR OWN HOUSEKEEPING AND EXIT ROUTINES IF YOU DON'T HAVE THE RICH GREENBERG "PROGRAM" MACRO.

DIRFANAL PROGRAM 3

OPEN (VTOC,,RPT,OUTPUTO	OPEN BOTH FILES
PUT RPT,HDR	PRINT HEADING
READ GET VTOC,WORK	READ A LINE
CLC WORK+17(8),CON1	IS IT CONTENTS LINE
BE VOLNAME	YES, GET VOL SER.
CLC WORK+2(8),CON2	IS IT FORMAT 4 LINE
BNE READ	NO, GET NEXT LINE
GET VTOC, WORK	YES, GET DIRF BIT LINE
TH WORK+40,X'04'	IS DIRF BIT OFF
BZ OFF	YES, SET UP MSG
MVC OUTWORK+27(25),CON3	NO, SET UP WARNING
B WRITE	GO TO PRINT MSG LINE
OFF MVC OUTWORK+27(25),CON4	FILL IN OK MSG
WRITE PUT RPT,OUTWORK	PRINT MSG LINE
MVI OUTWORK, 'C'O'	CHANGE SPACING
B READ	GET NEXT LINE
VOLNAME MVC OUTWORK+17(6),WORK+41	PICK UP VOL. SER
B READ	GET NEXT LINE

THE FULL INTELLIGENT OF D R

The modification to provide an "Intelligent" D R facility as published in the February 11, 1974 issue of the OSERG Newsletter is disastrous as it does not take into consideration that IGC2903D does a GETMAIN/FREEMAIN for only 88 bytes in constructing its WTO. The following superzaps provide total message recall and have experienced no difficulties since implementation.

OS Rel. 21.7

NAME	IGC2903D	IEE2	903D
VER	0072 D201	6000	8004
VER	00A0 5800	8000	
VER	01F6 4100	000A	
VER	020E 47F0	91C6	
VER	030C FF00	005B	
REP	0072 5850	000C 47F0 91F0	
REP	007E 0670	0670 4470 91F6 1A67	
REP	0080 4166	0001 1B6A 45C0 933E 1144 416A 0019 58C0 0010 58C0	
REP	01F6 0000	D200 6000 5009 1B77 4370 5007 47F0 9070	
REP	030C FF00	00A0	

OS Rel. 21.6

NAME	IGC2903D	IEE2903D	VER 01F4 4770911C
VER	0000 FF000050	VER 01F0 41770010	
VER	005C D20160000004	VER 0314 FF000050	
VER	0062 41660002	REP 0000 FF0000A0	
VER	0066 1B6A	REP 005C 5850000C	
VER	006B 4960937C	REP 0060 47F091EE	
VER	006C 4740907C	REP 0070 06700670	
VER	0070 45C0933C	REP 0074 447091EB	
VER	0074 1144	REP 0078 1A67	
VER	0076 416A0019	REP 007A 41660001	
VER	007A 47F09000	REP 007E 1B6A	
VER	007E 1A6A	REP 0080 45C0933C	
VER	0080 D2016000930A	REP 0084 1144	
VER	0084 41660002	REP 0086 416A0019	
VER	008A 58800000	REP 01E0 0000	
VER	01E0 4100000A	REP 01EA D20060005009	
VER	01EC 41700030	REP 01F0 1077	
VER	01F0 91007000	REP 01F2 43705007	
		REP 01F6 47F0906E	
		REP 0314 FF0000A0	

Submitted by:
Charles Romo
Human Resources Administration
Two Broadway, 6th Floor
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FINISH	CLOSE	(VTOC,,RPT)	CLOSE FILES
CON1	DC	EXIT	LEAVE
CON2	DC	C'CONTENTS'	
CON3	DC	C'FORMAT 4'	
CON4	DC	C'GN - NOTIFY TECH SUPPORT	
HDR	DC	CL25'OK.	
WORK	DC	CL80'1 VTOC DAMAGE INFORMATION REPORT	
OUTWORK	DC	CL121' '	
VTOC	DCB	CL80'- DIRF BIT ON IS'	
RPT	DCB	DSORG=PS,MACRF=(GM),DDNAME=IN,EQDAD=FINISH	
		BLKSIZE=80,LRECL=80,MACRF=(PH),RECFM=FBA,DSORG=PS	
		DDNAME=OUT	
	END		

SAMPLE JCL

```
//LISTFMT4 EXEC PGM=LISTFMT4
//SYSPRINT DD UNIT=SYSDA,DSN=6VTOC,DISP=(NEW,PASS),
//SPACE=(TRK,(10,4)),DCB=(RECFM=FB,LRECL=121,BLKSIZE=1210)
//A DD UNIT=3330,VOL=SER-CALVOL,DISP=OLD
//B DD UNIT=3330,VOL=SER-TSTVOL,DISP=OLD
***** ADD DD CARDS FOR ALL VOLUMES TO BE CHECKED *****
//SYSIN DD *
LISTVTOC VOL=3330-CALVOL,DUMP
LISTVTOC VOL=3330-TSTVOL,DUMP
***** ADD CNL CARDS FOR ALL VOLUMES TO BE CHECKED *****
/*
//RPT EXEC PGM=DIRFANAL
//SYSPRINT DD SYSOUT=C
//IN DD DSN=6VTOC,DISP=(OLD,DELETE)
//OUT DD SYSOUT=C
```

Submitted by

Mel Scull
Merck & CO.
Rahway, N.J. 201-574-6698

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EMULAT'R OC5

The MFT Rel. 21.8 1401 Emulator will SOC5 trying to open the PUNCH if the PUNCH is a DD DUMPY. The reason is that the OPEN Executors for DUMPY is the high-order two bytes of the DEB UCB address to save next executor id (in our case 'AV'). The Emulator loads the address without checking for DD DUMPY (via DEVTYPE, etc.) resulting in an OC5. We applied zap for APAR 71463 and changed the load to a load-halfword instruction in IIQEIOCS after label OFILDM.

Submitted by:
Jerry Geschwind
Long Island Lighting Co.
175 E. Old Country Road
Rockville, N.Y. 11801

VTOC ERROR- WARNING MOD

This contribution has not been submitted to any formal IBM test. Potential users should evaluate its usefulness in their own environment prior to implementation.

During the allocation of space by DADSM, the possibility exists that either an uncorrectable I/O error will occur or the system will be interrupted for some unknown reason and the Volume Table of Contents pointers will not be correctly updated. In order to ensure that the user is made aware that this has occurred during a VTOC update, the system sets a damage information bit (DIRF) any time that processing is not successfully completed. It is the user's responsibility to check this DIRF bit and ensure that the VTOC is correct.

Since the operating system does not issue any message to the user when the bit is on, the users must write their own routines to interrogate the DIRF bit on each VTOC. Some installations do this as a standard maintenance procedure.

Problems can arise when the bit is set and valid damage has occurred resulting in the creation of overlapping extents in the VTOC. Though this happens very infrequently, the potential for allocating multiple data sets to the same extent does exist—especially in an environment where a user is doing a lot of allocation of small data sets, i.e., a testing environment.

A modification can be made to the space allocation routines that will notify a user when the bit has been set on. Normal processing DADSM will be allowed to proceed. The bit must be turned off by a user program.

VTOC Error - Warning Mod (continued)

This modification will put an operator action message on the console when the routine detects that the DIRF bit has been turned on. The action to be taken when this occurs is a decision of the installation. You can either issue the message and continue processing or you can issue the message and cause the current job that is in allocation to be terminated with a JCL error. Though this will cause a user to lose his current run, it will prevent the allocation of dual extents. In practice, we have adopted the procedure of stopping allocation.

Since this modification was put onto the system, we have found that usually the system has not generated overlapping extents. But, there have been instances when data sets were allocated and the same space still existed in the format space five record. Consequently, we felt that it would be best to stop allocation.

Our recovery technique consists of running a Rating of the VTOC to tape. We then wrote a program to take the Rating as input and format it to give data set names with space allocations and free space. We then sort it in sequence. Then, we wrote another program to look for duplicate addresses. When we find duplicates, we scratch the data set since it will always correspond to free space. We then rerun the program without any problems.

The modification will print the message:

*USERMOD VTOC ERR serialno CALL TECH

an operator action message. We have allowed six characters for the volume I.D. In our operation, we normally run with three character I.D.'s. The code has been installed on an OS/VS2 Release 1.0 system. Displacements may vary for other systems.

NAME	IGG0325A		
VER	012A	4780,C13C	BZ DIRBY2
VER	0384	0000,0000,0000	
REP	012A	4780,C382	B PATCH IF DIRF SET
REP	0384	D205,C3D7,D280	MVC VOLID, MIELNAME
REP	038E	4110,C3D2	LA 1,PANAM
REP	03C0	47F0,C13C	B DIRBYP2
REP	03D4	0024, 8080	length & Hags
REP	03D8	E4E2,C5D9,D4D6,C440	DC USERMOD
REP	03E0	E5E3,D8C3,40C5,D9D9	DC VTOCERR
REP	03E8	4040,4040,4040,40C3	DC C
REP	03F0	C1D3,D340,E3C5,C3C8	DC ALL TECH
REP	03F8	4000,8000	routing and descriptor codes

If you desire to terminate allocation, insert the following two lines:

REP	03C0	4150,0014	LA RERRPASS,X"14"
REP	03C4	47F0,C276	B ERREXIT

VT0C Error - Warning Mod (continued)

N.B. This article was published in a recent IBM Installation Newsletter without the superzap. This text is from the original submission to DPHQ by the author.

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ABEND FORMAT CHANGES

The following superzap modifications are used at the CBS installation to improve their abend dump formatting. The OS and VS user may find them helpful changes in his own environment:

- 1) This mod changes Abdump 5 to produce a usable QCB TRACE by removing the dataset (SYSDSN) enqueue listing and listing the hexadecimal values of all RNAMEs in the QCB list. The new format will then apply to all SNAP and ABEND dumps.

Locations E4 to 131 inclusive become available for patch space once caect ICC0405A is delinked to X'3D0'. The patch is appli-d under temp (MODLIB) name IEAQAD04 and is valid from Rel. 20.1 to 21.7:

```
NAME IEAQAD04 ICC0405A NAME TO KEEP MODULE DURING UPDATE
IDBATA C5B00009
VER A4 4780C0CA
VER E0 182A4550C270
VER 012E 92F0D098
VER 0132 4550C15C
VER 0138 D200D0D02002
VER 016C D50110784098
VER 01A3 3301C6D8C5D3
VER 02BA 43030040FF
REP A4 4780C0CE
REP E0 47E0C35E
REP 0158 D2005004A00E
REP 016C D502107D407D
REP 01A3 1001D3D52011D7D2C62311E7D5D4FF,2803,3403,3D03,FF00,40D5D440
REP 0360 4120A00C,4550C270,41202004,5860D128
REP 0370 4580623E,5860D124,1811,4310A00C,0610
REP 0380 1851,88500002,1A51,1A51,4155D0BD,9510A00C
REP 0392 4740C398,4150D1DK,D2035000C2B8
REP 03AD D22450045003,952FA00C,4740C380,4110002E
REP 03B2 4410C1564550C264,94FED12C,5880A000,47F0C130
```

Abend Format Changes (continued)

- 2) This second change causes the printing of only modules in the job pack area for abend dumps...it does not affect snaps! Thus, it removes list of LPA resident code from ABDUMP5.

It is valid from Rel. 20.1 through 21.7:

```
NAME ICC0901C ICC091C FICRE: IEAQTH00 - ABEND 0
IDRDATA C8S00009
VER 82 92BE1002
REP 82 92AE1003
```

Submitted by:
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IEBUPDTE ZAP

The following superzap pertains to releases of OS and VS2. It will force any PDS member updated by IEBUPDTE to have the current date placed in the SSI-field of its directory entry in the format '00yydddf'.

For OS 21.7

```
VER 1220 95FO C027 4770 529C 95FF C8DC 4770 52AA
REP 1220 4110 0002 0A0B 5010 C098 47F0 5280 E2D3
```

FOR OS 21.6

```
VER 1104 95FO C027 4770 5196 95FF C8DC 4770 51A4
REP 1104 4110 0002 0A0B 5010 C098 47F0 517A E2D3
```

FOR VS1 1.6

```
VER 11D0 95FO C027 4770 5262 95FF C8DC 4770 5270
REP 11D0 4110 0002 0A0B 5010 C009 47F0 5246 E2D3
```

Submitted by:
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PUT A STEPNAME INTO HASP

The following HASP modification will display the OS stepname and procedure step name of job in execution as part of the response to the \$DA, \$DJXXX, and \$D'jobname commands. If a job is, between steps, executing an unnamed step, in the OS Reader/Interpreter or the OS job queue, then "EXECUTING" will be indicated.

```

./ CHANGE NAME=HASPCCOM
      &CVE=, &OPT=, &DA=NO
      GBLA 6JITSIZE, &COMPRTY, &MAXREQS
      AIF ('&DA' EQ 'YES').COFRJ
      AGO .COFRH
      BNO COF&R.H
      LR RO, WB
      L WB, $HASPICB
      $DISABLE ALL
      ICH WB, 15, TCBTCB-TCBDSCT(WB) PICK UP NEXT TCB
      BHZ COF&R.K
      $ENABLE ALL
      B COF&R.X
      ICH WA, 15, TCBTIO-TCBDSCT(WB) WA=A(USER STEP TIOT)
      BZ COF&R.I
      CLC COMMAND+5+COLJLEN(8), O(WA) DOES JOBNAME MATCH?...
      BNE COF&R.I
      $ENABLE ALL
      CLI 8(WA), C'A'
      BL COF&R.X
      CLI 8(WA), C'Z'
      BH COF&R.X
      MVC 1(8, R15), 8(WA) MOVE PROCSTEPNAME FROM TIOT
      MVI 9(R15), C'
      CLI 16(WA), C'A'
      EL COF&R.X
      CLI 16(WA), C'Z'
      BH COF&R.X
      MVC 21(1, R15), 11(R15) SHIFT JOB CLASS OVER
      LA R15, 10(, R15) NEXT AVAILABLE
      MVC 1(8, R15), 16(WA) MOVE IN STEPNAME
      LR WB, PD
      B COF&R.A
      COF&R.H NULL A
      .COFRH ANOP
      $CFJMSG CVE=CDACVE, OPT=A, DA=YES DISPLAY ACTIVE JOBS
      $CFJMSG JOB=SET, CVE=CDACVE, JDCT=CCJFND, DA=YES JOB INFO
      $CFJMSG JOBQE=(R1), CVE=CDJDCVE, DA=YES DISPL JOB INFO
      PJR-13*CI362000
      PJR-13*CI364000
      PJR-13*CI490200
      PJR-13*CI492010
      PJR-13*CI493010
      PJR-13*CI493100
      PJR-13*CI493102
      PJR-13*CI493104
      PJR-13*CI493106
      PJR-13*CI493108
      PJR-13*CI493112
      PJR-13*CI493114
      PJR-13*CI493116
      PJR-13*CI493120
      PJR-13*CI493126
      PJR-13*CI493127
      PJR-13*CI493128
      PJR-13*CI493129
      PJR-13*CI493130
      PJR-13*CI493131
      PJR-13*CI493132
      PJR-13*CI493134
      PJR-13*CI493136
      PJR-13*CI493137
      PJR-13*CI493138
      PJR-13*CI493139
      PJR-13*CI493140
      PJR-13*CI493141
      PJR-13*CI493142
      PJR-13*CI493144
      PJR-13*CI493150
      PJR-13*CI493160
      PJR-13*CI493800
      PJR-13*CI493810
      PJR-13*CI2874000
      PJR-13*CI3752000
      PJR-13*CI3928000
  
```

This mod is for HASP2 Version 3.1 and is compatible with OS/HPT and NVT. Note that the overlay size needs to be expanded to @1060 bytes, unless one makes overlays HAS\$OCJBI and HAS\$OCJB3 resident.

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NVT CORE FORMATTING

The two programs described here are made available to OSERG members free of charge by our contributor:

Two commands added our OS system for the benefit of operations are PPCORE and FCORE. Both are invoked by means of the START processor.

```

S PPCORE
*10.15.13 JOB 708 STARTAD ENDADRS REGSIZE JOBNAME PRC/STEP INVX/STP PK
*10.15.13 JOB 708 376K 998K 622K (FREE-REGION) *****
*10.15.13 JOB 708 998K 1108K 110K T3573207 LKED STEP4A B
*10.15.13 JOB 708 1108K 1178K 70K A08J8500 STEPIN A
*10.15.13 JOB 708 1178K 1278K 100K A08B2X48 A08B2X48 STEP03 D
*10.15.13 JOB 708 1278K 1284K 6K THCK THCK 0
*10.15.13 JOB 708 1284K 1310K 26K (FREE-REGION) *****
*10.15.13 JOB 708 1310K 1340K 30K A9456J83 S1 C
*10.15.13 JOB 708 1340K 1490K 150K T4515ECO A3512S15 7
*10.15.13 JOB 708 1490K 1700K 210K A0512J00 EMU $51200 E
*10.15.13 JOB 708 1700K 1722K 22K CBWTRHSP D90 0
*10.15.13 JOB 708 1722K 1782K 60K HOSRDR D43 0
*10.15.13 JOB 708 1782K 1898K 116K HASP HASP F
*10.15.13 JOB 708 **FREE-REGION= 622K, 26K
  
```

Exhibit 1.

In Exhibit 1 the sample output of PPCORE describes the start and end address of each active region, its size and protect key, as well as the jobnames and step names with the name of the invoking procedure if any. An other line displays any available area of dynamic storage with the comment FREE-REGION. The display is in collating sequence by storage address, and a final summary line displays the free region sizes.

```

S FCORE
*10.22.17 JOB 714 **FREE-REGION= 732K, 100K, 56K, 40K, 4K
  
```

Exhibit 2

The command and sample output in Exhibit 2 illustrate FCORE; a summary of the free region sizes available for jobs to allocate in.

On the 370/165 a suspected loop in a particular program (causing system degradation) can be isolated by turning the Storage Protection PSW KEY SELECTOR slowly around until the caliber needle moves all the way to the right. By noting the digit pointed to, and then running PPCORE the offender can be cancelled by the operator.

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An installation undergoing an early conversion to 6250/1600 bpi 3420 tape drives will not have all drives converted simultaneously, thus there will always be some drives not able to read 6250 bpi tapes until the conversion is completed. To avoid operations chaos and JCL modifications, it was decided to modify OS to default to 1600 bpi if density is not specified during the conversion period. If density is specified explicitly it will be used to allow selective testing during the conversion. The S/ZAP needed is:

```
NAME IFGO193B IFGO193B
VER 00A6 92D3
REP 00A6 92C3
```

It was further decided that after the drive conversion was complete, it would be desirable to force 6250 bpi output without modifying any procedures which had DEN=3. The S/ZAP to force 6250 bpi unconditionally is:

```
NAME IFGO193B IFGO193B
VER 00BA 92C3
VER 00BE 92C3
REP 00BA 92D3
REP 00BE 92D3
```

The cataloging of tape datasets through JCL will not function properly if dual density drives are replacing single density units and density has not been specified on the DD card. This was circumvented by cataloging 6250 information unless 1600 is forced. The S/ZAP is to SYS1.LINKLIB:

```
NAME IEFSD061 IEFZG
VER 0920 4770
REP 0920 4700
```

The modifications listed were made to an OS Release 21.6 system that had the "BIRCH" ICR (6250 bpi ICR) installed.

Taken from:

IDM Installation Newsletter 73-18

"SEVENING" OUT A REGION

The following modification was made to initiator module IEFSD263 after label SD06305 in a Release 21 MVT system. The purpose of the modification is to provide a uniform formatting of the user region in a scientific installation. In instances where the user program does not initialize data areas, the presence of zeroed-out memory can cause unsuspected problems during processing. By instituting this modification mathematical computation in the scientific application will be curtailed by floating point exceptions.

The code first checks that the region acquired for the step to be attached is indeed the one described by the DPQE pointer in the initiator TCB and that there is only one PQE and only one FBQE, etc. Secondly, the program then fills the region with X'77' so that all of the region will be "sevened" out.

Registers 14-1 and register 9 are used and are not reset:

```

L 1,X'10'(8) GET TCB ADDRESS RPR
L 1,X'98'(1) GET DPQE-8 ADDRESS FROM TCB RPR
LM 0,1,8(1) GET FIRST AND LAST PQE RPR
CF 0,1 TEST FOR SAME RPR
BNE NOFILL BYPASS 'FILLING' IF TESTS NOT MET RPR
LM 14,15,0(1) GET EEB AND LFB FROM PQE RPR
CR 14,15,VERIFY ONLY ONE FBQE IN PQE RPR
BNE NOFILL BYPASS 'FILLING' IF TESTS NOT MET RPR
UM D,1,X'14'(1) FROM PQE - REGION SIZE IN 0,ADD. IN 1 RPR
CB 14,1 COMPARE EFB TO REGION ADDRESS RPR
BNE NOFILL BYPASS 'FILLING' IF TESTS NOT MET RPR
L 15,8(14) GET REGION SIZE FROM FBQE RPR
CR 15,0 COMPARE SIZE IN FBQE TO PQE REGION SIZE RPR
BH NOFILL BYPASS 'FILLING' IF TESTS NOT MET RPR
OK...14 - REGION START 15- REGION SIZE RPR
SPACK 1
MVI 12(14),X'77' PUT 77 JUST BEYOND THE FBQE RPR
MVC 13(256,14),12(14) PROMIGATE 77 INTO NEXT 256 BYTES RPR
LA 1,256(14) POINT X1 TO A POINT 256 BEYOND REGION START RPR
MVC 8(256,1),0(1) NOW MAKE THE 2ND 256 OF REG INTO 77 RPR
AR 15,14 15 IS NOW THE END OF THE REGION RPR
LA 9,512(14) 9 POINTS 512 INTO REGION--FIRST TO LOOP RPR
LA 14,256 STORE CONSTANT IN 14 RPR
SR 15,14 POINT 15 256 SHORT OF REGION END RPR
LOOP MVC 0(256,9),0(1) CLEAR SUCCESSIVE 256 FROM REG RPR
BXL 9,14,LOOP ADD 14 TO 9--COMPARE 9 TO 15 - POINT RPR
NOFILL EQU * RPR
//
```

Submitted by:

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Release 21 and above rewrites of SVC 51 (SNAP) processing routines to accommodate CTV facilities may cause problems for MVT users accustomed to incorporating the IBM FE program VARDUMP into their systems.

The third edition of the FE Handbook lists the S/ZAP necessary for the SNAP routine IGC0205A (CDE,XL,DEB,TIOT formatting routine) to have it XCTL to IGC0050A (VARDUMP's link edited name). This overlays the original module name IGC0305A which formats the MSS entries on the sysabend/sysdump print out.

For Release 21 and above, IGC0205A's DEB/TIOT formatting work was given to a new module, IGC0050A that now XCTL's to IGC0305A. Thus, if the accustomed user in your installation wants to see a "transparent" change of OS release, this is the module to superzap in order to have VARDUMP continue to perform Data Management Control Block formatting after the TIOT is formatted.

For OS/MVT Rel. 21.7, the following S/ZAP will perform this:

```
NAME IGC0050A IGC0050A
INDRDATA VARDUMP
VER 0120 C9C7C3F0,F3F0F5C1 IGC0305A XCTL-name
REP 0120 C9C7C3F0,E5F0F5C1 IGC0050A XCTL-name
```

Submitted by:
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WTO EXTENSION

The modification below adds the jobname to all WTO(R)'s of the job that issued the message except for messages from the Master Scheduler, HASP, messages over 117 characters in length, and multi-line write-to-operators (MLWTO). The mod is useful in detecting programs that issue WTP's that fill up display screens and to track down OS generated messages that fail to include the jobname in their message text; e.g.-

IEC7051 TAPE ON ddd, ser IS labltyp,den BPI

here the jobname assists the operator in filling out control sheets for runs.

The S/ZAP is to OS/MVT Rel. 21.7 with MCS. The module must first be de-linked and extended to X'382' bytes. (This fix is compatible with the "Intelligent D R" modification...Editor)

```
NAME IGC0003E IGC0003E
* R1 - WQE ADDRESS
* R3 - WORK REGISTER
* R4 - TCB ADDRESS
* R8 - BASE REGISTER
* RF - WORK REGISTER
VER 01D6 58F0A03C
REP 01D6 47F0B376 B PATCH
REP 0378 5830400C L R3,TCBTIO ...start of patch area...
REP 037C 1233 LTR R3,R3 TEST FOR PRESENCE OF TIOT
REP 037E 47F0B31E B PATCH1
REP 0320 4780B35C BZ EXIT NO TIOT ...PATCH...
REP 0324 D5073000,B366 CLC TIOTCNJOB,-C'MASTER
REP 032A 4780B35C BE EXIT
REP 032E D5073000,B36E CLC TIOTCNJOB,-C'HASP
REP 0334 4780B35C BE EXIT
REP 032E D5073000,B36E CLC TIOTCNJOB,-C'HASP
REP 0334 4780B35C BE EXIT
REP 0338 48F01006 LH RF,WQENBR MESSAGE LENGTH
REP 033C 49F0B364 CH RF,-H'119'
REP 0340 4780B35C BH EXIT
REP 0344 41FF1008 LA RF,8(RF,R1) NEXT TEXT BYTE IN WQE
REP 0348 927BF000 MVI 0(RF),C'#' JOBNAME DELIMITER
REP 034C D207F001,3000 MVC 1(8,RF),TCBCHJOB
REP 0352 48F01006 LH RF,WQENBR MESSAGE LENGTH
REP 0356 41F0F009 LA RF,9(0,RF) ADD 9 TO LENGTH
REP 035A 40F01006 STH RF,WQENBR
REP 035E 58F0A03C EXIT - REPLACE DISPLACED INSTRUCTION
REP 0362 47F0B1D8 RETURN TO MAINLINE CODE
REP 0366 0077 DC H'119'
REP 0368 D4C1E2E3C5D94040 DC C'MASTER
REP 0370 C8C1E2D740404040 DC C'HASP
```

Submitted by
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DASD ALLOCATION ZAP

The following superzap will prevent the allocation of temporary data sets and non-temporary data sets with DISP=(NEW,DELETE) to direct access devices mounted with a volume characteristic of STORAGE. This modification will thus utilize storage volumes to their fullest in allowing only non-temporary data sets to allocate to these volumes and thereby reduce the incidence of overcrowding, jobs being "unable to allocate" on storage devices, and inefficient use of scratch volumes. The modification is to a Release 20.6 MVT system.

NAME	IEFWA000	IEFWA002
VERIFY	096A	9110,3022,4710
VERIFY	0A3E	9110,3022,4710
REPLACE	096A	9114,3022,4740
REPLACE	0A3E	9114,3022,4740

Data set allocation routines consider storage volumes for allocation of temporary data sets as well as PUBLIC volumes (scratch packs). In a situation where storage volumes are on lightly used channels, allocation takes into account the channel utilization encountered and if it light (as in the case of Shared DASD use), temporary data sets will be allocated to these volumes rather than scratch volumes. The superzap given treats temporary data set allocation as if the volume being considered was a PRIVATE volume instead of STORAGE, thus circumventing the problems of what we consider to be incorrect usage of this facility.

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OS AUTOMATIC RESTART

The following superzap will prevent automatic restart (either at a step or from a checkpoint) from taking place when specified in the user's JCL. The change was made to a Release 20.6 MVT system with HASP Version 3.1 due to the incompatibility of automatic restart in a HASP environment. The mod eliminates this type of restart ability:

NAME	IEFSD061	IEFSDPREP
VERIFY	0034	9120,A057,4710,92F6
REPLACE	0034	9620,A057,47F0,92F6

Submitted by:
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Chase Manhattan Bank, N.A.

3211 FCB INDEXING

This contribution pertains to 3211's using special feature of indexing, which is not clearly documented in IBM SML-63.5-1.5.1-1.

Shifting the print line may be performed by defining an index which resides in the third byte of the FCB. The length count (second byte in FCB) should be incremented by one to reflect the presence of the index byte. The indexing byte in the first byte transferred with the FCB load, but it is not stored in the FCB buffer and cannot be checked with a read FCB command. Bit 0 of indexing byte is set ON to indicate indexing, and Bits 1-7 can be a binary value from 1 to 31. This value is the number bytes that the print line will shift to the right.

When doing a verify of the FCB image the 3211 indexes correctly but does not print the index byte. This problem was APAR'd with IBM and in response, the following S/ZAP to Releases 21.0 and 21.6 was received:

Release 21.0

NAME	IGG0197F
VERIFY	006E 41EC,0002
REPLACE	006E 47F0,33A0
"	03A2 41EC,0002
"	03A6 9180,E000
"	03AA 47E0,3070
"	03AE 41EE,0001
"	03B2 47F0,3070

Release 21.6

NAME	IGG0197F
VERIFY	006E 41EC,0002
REPLACE	006E 47F0,3300
"	039A 41EC,0002
"	039E 9180,E000
"	03A2 47E0,3070
"	03A6 41EE,0001
"	03AA 47F0,3070

An example of the FCB's with Indexing is:

FCB2XX	CSECT	
DC	X'80'	This is default
DC	AL1(67)	Number of lines - index byte
DC	X'9F'	Index 16 positions
DC	X'01'	6 lines/inch, then 1 in line 1
DC	XL61'00'	61 lines, no channel
DC	X'09'	Channel 9 in line 63
DC	XL'00'	2 Lines no channel
DC	X-10-	Position 66 last line
END		

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MULTIPLE 370 SYSGENING

An OS system sysgen'd for any model of S/370 can be run on any other model with full MCH support if the model-dependent routines listed below are first copied from SYS1.00519 to SYS1.SVCLIB. Note that it will be necessary to reply with the correct model in response to "SPECIFY SYSTEM PARAMETERS" at IPL; the STIDP is used only to determine the length of the extended logout, not the model number of the CPU.

Model	Load Module Names
135	IGF13501, IGF13502
145	IGF29701, IGF29702, 41
155	IGF29601, IGF29602, 21, 22, 23
165	IGF55301, IGF55302, 31, 33, 34, 35, 36(there is no 32)

References for the models 155 and 165 was GY27-7198 of the MCH, and for the 135 and 145 it was GY27-7237.

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FORCING BLKSIZE IN SYSMOD

The following S/ZAP forces the DCB BLKSIZE (and DSCB of an exiting library) to take priority over the device track capacity by default for SYSMOD block size when relatively large SIZE values are used for link edits. This permits setting the block sizes of libraries at the time they are allocated, and bypasses possible problems in copying libraries to units having smaller track capacities (such as 3330 to 2314). The Superzap (for Rel. 20.1) is:

```
NAME IEML7880 IEML7881
VERIFY 0102 4780
REPLACE 0102 4780
VERIFY 0304 4710
REPLACE 0304 4770
```

Taken from:
OSIE Newsletter # 11

SYSVLOG MODS

The following OS modification is to a Rel. 21.7 MVI system run on a 370//155. The installation experienced great difficulty with the LOG datasets when they became full. The 'IEED421 LOG DATASET - SYS1.SYSVLOGX on 255 CLOSED message and 'IEED431 LOG DATA SET X OUTPUT TO SYSOUT CLASS L' were frequently missed by the operator. Later, when SYSVLOGX closes, the log data is directed to the master console. The only recovery at this point was to start a class L writer or to re-IPL the system.

The first modification automatically starts a class L writer - through a 'S WL. LOGG' command when and only when a log dataset is closed. The writer procedure writes the LOG dataset to tape so that it can be saved and later be put on microfiche. If desired, the tape can be fully or selectively printed by data and/or time. Alternatively, the writer procedure could route the log data directly to the writer, or flush it through a DUMP specification on the writer JCL. The only message the operator sees, though is a mount request for the LOG tape, when the dataset is closed.

After the writer completes, the tape is unloaded and procedure is automatically stopped without operator intervention with a second modification to execute a 'P LOGG' command. The only console messages seen are the tape keep message and the WTR closed message. Thus, in this case, a mount is issued when the LOG dataset becomes full and the tape unloaded when the writer procedure using any identifier.

The delink and superzap listings are available upon request to OSERG members. Direct all inquiries and/or comments to our submittor.

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PASSWORD VIA DDCARD

This modification provides each DDNAME in an executing jobstep as a reply to requests for password. If no valid DDNAME (password) is found in searching the PASSWORD data set, an S913 abend is forced.

The IECDSECS macro must be modified to extend the SECCORE direct by one full-word labelled PSWTIOT. Modules SECLDADA, IFCD195T and READPSWD (with modifications) must be re-assembled and linked into SYS1.SVCLIB.

```

./CHANGE NAME=READPSWD
BYPASS      B   BYPASS THIS CODE AND DO ANICO PASSWORD VALIDATION  UM001 51800200
DS          DS   ON                                                UM001 54200100
MVI         MVI  MYCODE2,K3    BEGIN ANICO PASSWORD PROCESSING    UM001 54200110
L           L    R1,PSWTIOT    INSURE AT LEAST TWO TRIES          UM001 54200130
LTR         LTR  R1,R1        R1 POINTS TO TIOT                    UM001 54200140
BNZ         BNZ  NEXTDD       NO, NEXT DDNAME                      UM001 54200150
L           L    R1,CVTIPTR    YES, R1 POINTS TO CVT               UM001 54200160
L           L    R1,CVTICBP-CVT (,R1) R1 POINTS TO TCB POINTERS    UM001 54200170
L           L    R1,K4 (,R1)    R1 POINTS TO CURRENT TCB           UM001 54200180
L           L    R1,TCBTIO-TCB (,R1) R1 POINTS TO TIOT             UM001 54200190
LA          LA   R1,TIOENTRY-TIOT (,R1) SKIP JOB AND STEP NAME     UM001 54200200
B           B    FIRSTDD      GO TO FIRST ENTRY                  UM001 54200220
NEXTDD      L    R1,PSWTIOT    R1 POINTS TO CURRENT TIOT          UM001 54200230
SR          SR   RF,RF        NO, NEXT TIOT                       UM001 54200240
IC          IC   RF,TIOELNGH-TIOENTRY (,R1) RF-LENGTH OF TIOT      UM001 54200250
AR          AR   R1,RF        NEXT TIOT ENTRY                     UM001 54200260
FIRSTDD     DS   ON                                                UM001 54200270
ST          ST   R1,PSWTIOT    SAVE CURRENT TIOT ENTRY ADDRESS    UM001 54200280
CLI         CLI  TIOEDDMM-TIOENTRY(R1), BLANK IS DDNAME BLANK?    UM001 54200290
BNE         BNE  VALIDATE     NO, GO TRY DDNAME AS PASSWORD       UM001 54200300
B           B    NEXTDD       TRY NEXT DDNAME                     UM001 54200310
VALIDATE    DS   ON                                                UM001 54200320
MVC         MVC  MYREPLY,TIOEDDMM-TIOENTRY(R1) SHOW DDNAME AS REPLY UM001 54200330
SN          SN   RF,RF        CLEAR FOR INSERT                    UM001 54200331
IC          IC   RF,TIOELNGH-TIOENTRY (,R1) LENGTH OF TIOT ENTRY  UM001 54200341
AR          AR   R1,RF        NEXT TIOT ENTRY                     UM001 54200351
CLI         CLI  O(R1), K0    IS THIS LAST TIOT ENTRY?           UM001 54200361
BNE         BNE  NO913        NO, TRY NEXT DDNAME                 UM001 54200371
MVI         MVI  MYCODE2, K4    YES, NO MATCH - ABEND S913        UM001 54200381
NO913       XC   PSWTIOT,PSWTIOT CLEAR FOR INITIAL ENTRY          UM001 54200391
DS          DS   ON                                                UM001 54200400
              NO ABEND YET

```

Submitted by:

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I - 113

ALL STARTED JOBS TO HAVE SMF RECORDS

This change forces all started jobs except initiators and the executor to have SMF Records issued for them. Note that it is still not possible to record CPU time for any system task

```

Member Name      IEEVJCL
./ Change        Name=IEEVJCL.SOURCE=O
                                                    00000000
CLC              INITNAME,JSOLTJOB    IS THIS AN INITIATOR?  N101800 10620100
BE              BE                      BIF YES, NO SMF FOR HIM N101800 10620200
CLC              EXECNAME,JSOLTJOB    EXECUTOR?          N101800 10620300
BE              BE                      BIF YES                N101800 10620400
CLC              SPARENAME,JSOLTJOB    SPARE?                N101800 10620500
BE              BE                      BIF YES                N101800 10620600
OI              OI                      ELSE CAUSE SMF RECORDING N101800 10620700
BYSMF           DS   OH                LABEL                  N101800 10620800
*              *                      *                      N101800 10620900
INITNAME DC      CL4'INIT...'          ALL INITS HAVE      N101800 10660100
EXECNAME DC      CL8'EXECUTOR'          EXECUTOR           N101800 10660200
SPARNAME DC      CL8'                SPARE FOR ZAPPING      N101800 10660300
*              *                      *                      N101800 10660400
./ endup          N101800 10660500
End of data for SDS or member          99999999

```

OPTIMIZING THE FORMAT OF SYS1.SYSJOBQ

This change optimizes the format of SYS1.SYSJOBQ by causing the control records to occupy two full 2314 tracks instead of just 76 records. In this way, a logical track of 25 records will reside on one physical track. This zap was obtained from Ken Kashmarek at the University of Iowa.

```

*/
** Zap (IEFORMAT) DISTLIB (C1505)
NAME IEFORMAT IEFORMAT
VER 022C 954C    NUMBER OF JOBQ HEADERS = 76
VER 02D2 924C
REP 022C 956A    SET TO 106 (TWO 2314 TRACKS)
REP 02D2 9235    53 HEADERS PER TRACK
IDRDATA N100600
END OF DATA FOR SDS OR MEMBER

```

I - 114

ALL SCRATCH TAPES BEGINNING WITH 'SCR...'

This change to tape mount scheduling sets a requirement that all scratch tapes have a volume serial beginning with "SCR...". This is an attempt to avoid unintentional data destruction.

```

*/
** ZAP (IFG0194H) DISTLIB (DN508) .
NAME IFG0194H IFG0194H
VER 026A 4770,3276 BNE 0TA13800 BIF NOT 'SCRATCH'
VER 0284 4710,326C BQ 0TA13700 BIF SYSOUT
VER 03E8 0000,0000,0000,0000,0000,0000,0000,0000
REP 026A 4770,33E6 B PATCH
REP 0284 4710,33EA B PATCH+4
REP 03E8 4770,3276 BNE 0TA13800 BIF NOT 'SCRATCH'
REP 03EC 0502,4004,33AB CLC VOLSERNO(3),SCRATCH 'SCR...'
REP 03F2 4770,337C BNE 0TA14900 REMOUNT IF NOT
REP 03F6 4770,326C B 0TA13700 BACK TO NORMAL
IDRDATA N100701
END OF DATA FOR SDS OR MEMBER

```

WEAK EXTERNAL REFERENCES FOR ALL LOCAL TYPE I AND II SVCS

This change causes weak external references to be generated for all local Type I and II SVCS. As a result, the nucleus should have no unresolved external references.

```

*/
**UPDATE (SGIEA2ST) .
./ CHANGE NAME=SGIEA2ST, SOURCE=0
LCLC 4USRSWT, 6TYPE1, 2, 4WXSWT N101200 00000000
LCLC 4WXNAM(3), 4WXC(3) N101200 00102000
4USRSWT SETB 1 ONLY USER SVCS WILL BZ
WXRTR N101200 01482000
4WXNAM(6N) SETC * N101200 01642000
4WXC(6N) SETC * N101200 01644000
6 TYPE12 SETB 0 N101200 01646000
6 TYPE12 SETB 1 CANDIDATE FOR WXRTR N101200 01742000
AIF (NOT(4USRSWT AND 6TYPE12)).NEXT 27 N101200 02161000
4WXNAM(6N) SETC * N101200 02162000
4WXSWT SETB 1 N101200 02163000
.NEXT27 ANOP N101200 02164000
AIF (NOT 4WXSWT.NEXT 28 N101200 02165000
PUNCH * WXRTR 4WXNAM(1)4WXC(2)4WXNAM(2)4WXC(3) 4WXNAM(3) 02462000
.NEXT28 ANOP N101200 02464000
4WXSWT SETB 0 N101200 02466000
./ ENDUP N101200 02468000
END OF DATA FOR SDS OR MEMBER 99999999

```

JOB QUEUE RECORD CHANGED FROM FIFO TO LIFO

This change was derived from source code changes obtained from UIA which in turn was derived from a zap provided in OSIE #17, No. 1974. The effect of the change is that the Job Queue Record assign/delete algorithm is changed from FIFO to LIFO, thus reducing seeks over SYS1.SYSJQBQ.

```

*/
**ZAP (IEFVDELQ) DISTLIB (C1505) .
NAME IEFVDELQ
VER 00A0 D201,3078,4014 MVC QMTIM(2),QMTID
VER 00F2 4570,817C BAL R7,QMERT
VER 00FE 4780,8110 BE QMDEL04
VER 0102 D207,2024,6018 MVC QMIOBS(8,R2),24(R6)
VER 0108 D200,204C,6020 MVC SECT(1,R2),32(R6)
REP 00A0 0700,0700,0700
REP 00F2 4770,80F2 B **6
REP 00FE 4780,810C BZ QMDEL04-4
REP 0102 D201,400C,306D MVC QMTLM(2),QMTLM
REP 0108 D201,306D,600C MVC QMTLM(2),12(R6)
IDRDATA N104800
END OF DATA FOR SDS OR MEMBER

```

DEFAULT INTERPRETER PARAMETERS FOR JOBS

This changes the default interpreter parameters for jobs started from the console and mount commands (and TSO Jobs for those of you unlucky enough to have it). The new default parameters are:

MSGCLASS=0
MSGLEVEL=(1,1)

```

*/
** ZAP (IEEVRCTL) DISTLIB (C1505)
NAME IEEVRCTL IEEVRCTL
VER 0572 FOF0C1 00A
REP 0572 FIFIFO 110
IDRDATA N104700
END OF DATA FOR SDS OR MEMBER

```

CHANGING THE KEYWORD 'LISTCTLG'

This change provides a minimal restriction against users indiscriminately listing the catalog by changing the keyword 'LISTCTLG' in IEHLIST to lower case.

```

*//
** ZAP (IEHPRINT) DISTLIB (U15061)
   KME IEHPRINT IEHSEGE
   BASE 1088
   VER 1520 DYC9,E2E3,C3E3,D3C7
   REP 1520 9389,A2A3,83A3,9387
   IDRDATA N103901
END OF DATA FOR SDS OR MEMBER

```

SPECIFY ABEND CODE IN CANCEL COMMAND

This change allows the specification of the desired abend code on a cancel command when it is issued internally. The abend codes are restricted to the set of 'X22' which represent the use of SVC 34. The abend code is specified within quotes as the second operand of the cancel command in the format of the standard post code of cancel. For example, "Cancel JobName, 'XXXX'" where XXXX might be X'0000A220' for an A22 abend with no dump, or X'00808220' for an 822 abend with a dump.

```

IEE3703D
./PARM INSERT
./C IEE3703D
./G N105800
./I 10300020,2K,10302K

*   If the first and only operand is a four byte string
    enclosed in apostrophes, it is checked to assure that
    it conforms to post code format and, if so, replaces
    the standard X'00002220' as the abend post code. This
    allows any X22 abend code to be generated by cancel.

./I 49140019,2K,49142K
   CLC CODEPOST, D1(R7) Is this operand post code?
   BE SPECIAL BIF yes to handle

./I 52200019,2K,52202K

SPECIAL CLI D6(R7),C'''' Is string in quotes 4 Bytes?
   RNE INVAL BIF not, 'Command Invalid'
   MVC XAS(D4),D2(R7) Move code to aligned area
   L RO,XAS Set new completion code
   TH XAS+1,X'80' Is dump requested?
   MVC XAS(D4),XAS+D4 Reset to blanks in case not
   BZ *+10 BIF not
   MVC XAS(D4),PUMP Set dump indicator
   LA R7,D7(,R7) Move to next parameter
   B OMSTEXT Continue checking

```

```

*
./G N106300
./I 53480019,2K,53502K
   LA R1,CHCL5 POINT TO JOBNAME
   SVC 254 LOCATE JMR
   BXH R15,R15,NOTUNCAN BIF NOT FOUND
   USING JMR,R1
   L R1,JMRUCOM GET USERJMR
   LTR R1,R1 ANY?
   BZ NOTUNCAN BIF NOT
   USING USERJMR,R1
   TH UJHRFLGA+L'UJMRUCAN,UJMRUCAN UNCANCELLABLE?
   BZ NOTUNCAN BIF NOT
   NI CHACT,255-CHCL ELSE INSURE NOT CANCELLABLE
   DROP R1
   NOTUNCAN DS ON
./G N105800
./I 819C0020,,81950K
CODEPOST DC X'7000' QUOTE,ZERO
./G N106300
./I 84800018,2K,84802K
   TITLE 'IEE3703D--JMR AND USERJMR'
   IEFJMR
*
   USERJMR,
FOR SDS OR MEMBER

```

```

DUMMY SVC FOR UNUSED TYPE 3 AND TYPE 4
SVCS
ICCDUMMY START 0
   BALR 15,0 ESTABLISH BASE
   USING *,15 DEFINE BASE
   L 5,28(5) GET TO CALLER'S RB
   L 1,SETUP GET ABEND CODE SKELETON
   IC 1,19(5) INSERT INTERRUPT CODE (SVC
   NUMBER)
   SLL 1,12 SHIFT TO CORRECT POSITION
   SVC 13 ABEND SFX, WHERE XX IS SVC
   NUMBER
*
SETUP DC OF'0',X'000C0F00' SKELETON
*
END ICCDUMMY BROTHER, YOU ASKED FOR IT
LINKEDIT TITLE' PUNCH LINK EDIT CONTROL CARDS'
PUNCH ' IDENTIFY ICCDUMMY (''DUMMY FOR UNUSED
SVCS - MES'')'
PUNCH ' ALIAS ICC00221' SVC 229
PUNCH ' ALIAS ICC0023 ' SVC 230
PUNCH ' ALIAS ICC0023C' SVC 233
PUNCH ' ALIAS ICC0023D' SVC 234
PUNCH ' ALIAS ICC0023E SVC 235
PUNCH ' NAME ICCDUMMY(R)'
*
END BROTHER, YOU ASKED FOR IT
FOR SDS OR MEMBER

```

TAPE WITH VOL=REF=DSNAME

This is a tape with Vol=Ref=DSNAME. If requested to provide all tape serials referenced, bypass setting the volume count to one.

```
SR R1,R1          Indicate Current JMR wanted
SVC 254          Issue JMR Finder SVC
LTR R15,R15       Is there SMF for us?
BNZ VM7703        BIF not, standard behavior
USING JMR,R1       Define base to JMR
L R1,JMRUCOM       Get userJMR
USING USERJMR,R1   Define Base
TM UMRFLGA,UMRALLY All volumes requested?
BO VM7704          BIF so, else fall thru
DROP R1           Forget It
```

./I 39040K,1K,39041K

This is a tape with Vol=Ref=*.DDNAME. If requested to provide all tape serials referenced, bypass searching all of the JFCBS for the last serial.

```
SR R1,R1          Indicate current JMR wanted
SVC 254          Issue JMR Finder SVC
LTR R15,R15       Is there SMF for us?
BNZ VM7765F       BIF not, standard behavior
USING JMR,R1       Define Base to JMR
L R1,JMRUCOM       Get USERJMR
USING USERJMR,R1   Define Base
TM UMRFLGA,UMRALLY All volumes requested?
BO VM7780          BIF so, else fall thru
DROP R1           Forget it
VM7765F DS OH      Label for bypass
```

./I 59516221,1K,59520K

TITLE 'JMR AND USER (LOCAL) JMR'

IEFJMR

USERJMR

PRINT NOGEN

./D 59558221-59570221

FOR SDS OR MEMBER

REMOVE DUPLICATE LABELS

00020000
00030000
00040000
00050000
00060000
00070000
00080000
00090000
00100000
00110000
00120000
00130000
00140000
00150000
00160000
00170000
00180000
00190000
00200000
00210000
00220000
00230000
00240000
00250000
00260000
00270000
00280000
00290000
00300000
00310000
00320000
00330000
00340000
00350000
00360000
00370000
00380000
00390000
00400000
00410000
00420000
00430000
00440000
00450000

IPL ISSUE AUTOMATIC 'START SYSTEM' COMMAND

This mod changes the 'START1-AUTO' parameter to cause a 'START SYSTEM' command to be generated in place of the default 'START INIT' command.

```
*/.
** UPDATE (SGIEE201)
./ CHANGE NAME=SGIEE201,SOURCE = 0
4S(15) SETC 'SYSTEM'
./ ENDUP
FOR SDS OR MEMBER
```

00000000
15000018
99999999

SEMI - AVR

This modification to automatic volume recognition (AVR) code is called 'SEMI-AVR' since it allows AVR to recognize pre-mounted volumes but does not attempt AVR mounts; rather the unit is allocated and external action allowed to finish the processing. This tends to decrease Q4 time.

```
*/.
* ZAP (IEFXV001) DISTLIB (C1505)
NAME IEFXC001
VER 057A 4780,97BC BE DONETEST BIF ALL AWT5 ALLOC 34620020
REP 057A 47FO,97BC B DONETEST
IIRDATA NI00901
FOR SDS OR MEMBER
```

00010000
00020000
00030000
00040000
00050000
00060000
00070000
00080000
00090000
00100000
00110000
00120000
00130000
00140000
00150000
00160000
00170000

LET MVT WRITERS ISSUE 'WAITING FOR WORK' MSG

This change causes the message IEF8681 XXX WTR waiting for work message to be issued in an MVT System. The change is transparent in a HASP System using the HASPWTR and is useful for OS and Dummy Writers. This MOD was originally obtained through Share from Gerhard POSTPISCHIL (AMS).

```
*/.
00010000  
00020000  
00030000  
00040000  
00050000  
00060000  
00070000  
00080000  
00090000  
00100000  
00110000
```


** ZAP (IEFSD084) DISTLIB (C1505) .
 NAME IEFSD084
 VER OC 4780,9062 BZ SDB4MSG BRANCH TO AVOID MESSAGE
 REP OC 4700,9062 NOP SDB4MSG ALWAYS WRITE THE MESSAGE
 IERDATA NIOS700
 FOR SDS OR MEMBER

00120000
 00130000
 00140000
 00150000
 00160000
 00170000

INITIALIZES EVERY BYTE OF THE REGION

This code initializes every byte of the region just acquired to a specified fill character. Before doing so it checks that the region is indeed the one described by the DPQE pointer in the initiator TCB and that there is only one PQE (HARCHY 1 is not supported) and only one FBQE, etc. The region is then filled, requiring approximately 200 USEC to fill each 1K on the 360/67.

Registers 14-1 and 9 will be used and .NOT. RESET.

This code was originally obtained from R.P. Rannie at the Oak Ridge National Laboratory.

L R1,IEFTCBAD R1 -> INITIATOR TCB
 L R1,TCBPQE(R1) R1 -> DPQE-B
 LM RO,R1,PQEPQE-PQSECT (R1) GET 1ST AND LAST PQE
 CR RO,R1 CHECK FOR ONLY HARCHY 0
 BNE NOFILL BIF MORE THAN ONE REGION
 LM R14,R15,PQEPQE-PQSECT(R1) FFB & LFB FROM PQE
 CR R14,R15 VERIFY ONLY ONE FBQE IN PQE
 BNE NOFILL BYPASS FILLING IF MORE
 LM RO,R1,PQESIZE-PQSECT(R1) REGION SIZE AND ADDR
 CR R14,R1 IS FFB AT START OF REGION?
 BNE NOFILL BIF NO, BYPASS FILLING
 L R15,XB (R14) GET SIZE DESCRIBED BY FBQE
 CR R15,RO COMPARE TO SIZE OF REGION
 BB NOFILL BIF LARGER (WEIRD)

ALL TESTS PASSED... R14 = ADDR, R15 = SIZE OF REGION

MVI X12(R14), X'77 SET FILL CHAR AFTER FBQE
 MVC 13(256,R14),12(R14) PROPAGATE FILL TO NEXT 256
 LA R1,256(R14) R1 -> REGION ADDR + 256
 MVC X8(256,R1),0(R1) FILL SECOND 256 BYTE AREA
 AR R15,R14 R15 -> END OF REGION
 LA R9,512(R14) R9 -> REGION ADDRESS + 512
 LA R14,256 R14 = AMT FILLED EACH TIME
 SR R15,R14 R15 = ADDR LAST AREA TO FILL
 MVC 0(256,R9),0(R1) FILL 256 BYTES FROM START

00000000
 NIOS100 02260200
 NIOS100 02260400
 NIOS100 02260600
 NIOS100 02260800
 NIOS100 02261000
 NIOS100 02261200
 NIOS100 02261400
 NIOS100 02261600
 NIOS100 02261800
 NIOS100 02262000
 NIOS100 02262200
 NIOS100 02262400
 NIOS100 02262600
 NIOS100 02262800
 NIOS100 02263000
 NIOS100 02263200
 NIOS100 02263400
 NIOS100 02263600
 NIOS100 02263800
 NIOS100 02264000
 NIOS100 02264200
 NIOS100 02264400
 NIOS100 02264600
 NIOS100 02264800
 NIOS100 02265000
 NIOS100 02265200
 NIOS100 02265400
 NIOS100 02265600
 NIOS100 02265800
 NIOS100 02266000
 NIOS100 02266200
 NIOS100 02266400
 NIOS100 02266600
 NIOS100 02266800
 NIOS100 02267000
 NIOS100 02267200
 NIOS100 02267400
 NIOS100 02267600
 NIOS100 02267800
 NIOS100 02268000
 NIOS100 02268200
 NIOS100 02268400

EXLE R9,R14, *-6

CONT TO NEXT 256, UNTIL END

*
 NOFILL DS ON
 ./ ENDUP
 FOR SDS OR MEMBER

LABEL TO BYPASS FILLING

NIOS100 02268600
 NIOS100 02268800
 NIOS100 02269000
 NIOS100 02269200
 NIOS100 02269400
 NIOS100 02269600
 NIOS100 02269800
 NIOS100 99999999

QMANAGER MODS TO INHIBIT JOBQ WRITBACK

MEMBER NAME	QMANAGER		
./ CHANGE	NAME=QMANAGER, SOURCE=0		00000000
./ DELETE	SEQ1=00139000, SEQ2=00152000	NI04601	00139000
./ DELETE	SEQ1=00425000, SEQ2=00436000	NI04601	00425000
TM	BUFLAGS, WRITE DOES BUFFER NEED WRITING	NI04601	00448050
BZ	READNWRT BRANCH IF NOT	NI04601	00448100
OI	QWFLAGS, WRITE INDICATE WRITE IN PROGRESS	NI04601	00448200
MVC	QWSKCHR(5), BUFSRCH MOVE IN BLOCK ADDRESS	NI04601	00448250
BAL	R15, MVOLONVT CALCULATE CCHNR OF RQST	NI04601	00448300
MVC	QWREADWR(8), BUFCMD MOVE IN CCM TO WRITEN	NI04601	00448350
MVI	QWREADWR, 5 INSERT WRITE COMMAND CODE	NI04601	00448400
LR	R15, BUFPREG SET BUF AD FOR TR TABLE	NI04601	00448450
LA	R1, QWIOB POINT TO THE JOB QUEUE	NI04601	00448500
LR	RO, R1 COPY TO INDICATE SYSTEM RQST	NI04601	00448550
EXCP	(1) START THE WRITE	NI04601	00448600
NI	BUFLAGS, 255-WRITE RESET THE WRITE BIT	NI04601	00448650
READNWRT DS ON	LABEL FOR BYPASS		99999999
./ ENDUP			

SYSGEN SUPPORT FOR LINKAGE EDITOR CHANGES

This change prevents the aliases "LINKEDIT" and "IEWL" FFCM being assigned to IEWL128 if it is generated.

*/
 ++UPDTE (SGIEW400) .
 ./ CHANGE NAME=SGIEW400, SOURCE=0
 ./ PUNCH 'ALIAS LINKEDIT' NI05600 49500021
 ./ PUNCH 'ALIAS IEWL' NI05600 50000021
 ./ ENDUP
 FOR SDS OR MEMBER 99999999

LOADER TO ALWAYS BALR TO THE LOADED PROGRAM

This change forces the loader to always BALR to the loaded program rather than attach it under MVT. This provides the user with more useful dumps after P/P abends. ESP 5322. Note that the attach option was implemented for TSO users and is useless in any other environment.

```

*/.
** ZAP (IEWLDRGO) DISTLIB (LD547) .
NAME IEWLDRGO IEWLCTRL
VER 0056 4710
REP 0056 4700
IDRDATA NIO0500
END OF DATA FOR SDS OR MEMBER

```

SYSPEN SUPPORT FOR QUICKCELLS

This change causes the quickcell code to be linked into the nucleus during sysgen. It assumes that the quickcell object deck has been placed in the syspunch library.

```

*/.
** UPDTE (SGIEA31C0).
./ CHANGE NAME-SGIEA31C0, SOURCE=0
PUNCH * INCLUDE SYSPUNCH(QUICKCELL) * NIO2601 00000000
PUNCH * REPLACE IEASHMFGP' NIO2601 02701000
PUNCH * INCLUDE SYSPUNCH(IEASHMFGP' NIO2601 02702000
PUNCH * CHANGE IGC004($00004), IGC005($C0005, IGC010
($GC010) 'NIO2601 02703000
PUNCH * CHANGE GMBRANCH($GMBRANCH, FMBRANCH ($FMBRANCH ' NIO2601 02704000
PUNCH * CHANGE FMBRANCH($FMBRANCH), IEAQMH00($EAQM00) NIO2601 02705000
PUNCH * INCLUDE SYSPUNCH(IEAQMH01) NIO2601 02706000
PUNCH * INCLUDE SYSPUNCH(IEAQMH00, IEASVC00, NIO2601 02707000
IEAQMH01); NIO2601 02720015
./ ENDUP
FOR SDS OR MEMBER

```

STANDARD OIL IOS WINDOW

Developed by Mel Galke of Standard Oil of Indiana, allows processing of more interrupts by enabling the SVC FLIN. This breaks up sequences of disabled SVC. Assumes that the IOS side does not issue SVC */.

```

** VER (S218).
** UPDTE (IEAQUU).
./ CHANGE NAME-IEAQUU
./ NUMBER SEQ1-15480000, NEW1-15480100, INCR-100, INSERT-YES
L 3,102 GET ADDRESS OF SWITCH S080010
MVI 1(3),X'FO' ENABLE PSEUDO DISABLE SWITCHS080010
SSM **1 S080010
ORG **3 SET MASK IN INSTRUCTION S080010
DC X'FE' ENABLE EXECPT FOR TIMER/
EXTERNAL S080010
ORG 7 RESET INSTRUCTION COUNTER S080010
SSM **1 S080010
MVI 1(3),0 RESET PSEUDO DISABLE SWITCH S080010
102 DC A(IEA01002) S080010 16521119

```

*** END OF MEMBER *** 18 records processed.

TRACE TABLE ON SYSABEND

```

** PTF (DL10200). 00000010
** VER (S217 S218). 00000020
** ZAP (IEAQTH09) DISTLIB(C15x5) /* TRACE
TABLE ON SYSABEND */. 00000030
**A ICC0901C 00000040
**B CHANGE PARAMETER TO PRINT TABLE
ON SYSABEND 00000050
**C NO DELINK 00000060
**D NO PREREQUISITIES 00000070
**E NO CONCURRENT ACTIVITY 00000080
**F SYSLIB DD DSN=SYS1.SVCLIB 00000090
DUMP ICC0901C 00000100
NAME ICC0901C 00000110
VER 007E 9229 00000120
REP 007E 9239 00000130
IDRDATA DL10200 00000140
DUMP ICC0901C 00000150

```

*** END OF MEMBER *** 15 RECORDS PROCESSED.

IOS INTERCEPTS FOR VERSION 4 HASP

SEQUENCING - ALL DATA TYPES

```

** PIF (DL10110) /.
*** WASHINGTON AT/LEWIS BS 1MAR76
*** IOS INTERCEPTS FOR VERSION 4 HASP
** VER (5218) .
** UPDATE (IECKCP) .
./ CHANGE NAME-IECKCP,LIST-ALL
* ATTN TABLE INDEX FOR HASP
UCBHASP EQU X'01' HASP PSEUDO-DEVICE V4 10984019
SPACE 1 V4 10985019
INVSHP EQU X'10' V4 10986019
TH UCBAII(UCBREG),UCBHASP PSEUDO DEVICE V4 25612101
BC B,XCP061C1 NO V4 35220021
L APBSRG,AHASPE GET HASP ROUTINE V4 35280021
BALR LINKRGZ,APBSRG LINK TO HASP V4 35340021
***** HASP RETURNS ***** V4 35400021
B XCP021 NORMAL - IGNORE REQUEST V4 35460021
B XERX02C ABEND WITH 100 V4 35520021
***** V4 35580021
XCP061C1 DS OH V4 35640021
./ ENDUP V4 35700021
** UPDATE (IECIOS) .
./ CHANGE NAME-IECIOS,LIST-ALL V4 HASP
XERX02C MVI CODEDUMP,INVSHP INVALID HASP V4 09043201
B XERX02A HANDLE THE ERROR V4 09043401
AHASPE DC V(IECHASPE). HASP EXCP ROUTINE V4 74220001
./ ENDUP
*** END OF MEMBER *** 26 records processed.

```

ALL COMMANDS AS EDIT SUB-COMMANDS

```

NAME IKJEBEMA IKJEBEMA
VER 034C 97009271 XI MACFLAG2,MATABLE
VER 0350 4700B4FA BZ MA004020
VER 0354 5840B5AC L TBLPTREG,MAUSRTBL
VER 0358 47F0B2EC B MA002020
REP 034C 5860B5AB L R6,MAIBMTBL
REP 0350 41606084 LA R6,MA8016
REP 0354 1853 LR R5,R3
REP 0356 47F0B360 B MA002055

```

SGIKJ0E2

71300021

B

IN005065

VERIFY ON DEFAULTED

SGIKJ0E2

73360121

OI

CACFLAGI,CAVRFYSW

SEQUENCING FOR NONUM EDITS

NUM SETUP

USING IKJEBECA, R9

NI CACFLAGI,255-CANONUM

EXIT

IKJEBECA

END

DISPLAY PSEUDO SEQUENCE NUMBER

LISTPSN SETUP

USING IKJEBECA,R9

L R8,CACURNUM

CVD R8,DBLWORD

UNPK WORK(8),DBLWORD+3(5)

OI WORK+7,X'F0'

SHOWMSG

EXIT

IKJEBECA

REUSE SYS1. DUMP

FICHE - IEAQAD0V

NAME ICC0005A
VER 011A 4710C124 B0 DMP'CONTU
REF 011A 4770C124 B DMP'CONTU

NO JOBQ PARAMETER WTOR

NAME IEFSQINT IEFS0055
VER 012E 928B1000 MVI J(RI),X'BB'
VER 0164 0A23 SVC 35
VER 016E 0A01 SVC 01
REP 012E 92E41000 MVI 0(RI),C'V'
REP 0164 0700 NOP
REP 016E 0700 NOP

LOGICAL BACKSPACE ON CONSOLES

NAME ICC0107B IERCVPB
VER C6 95164000 CLI 0(X4), HEX16
VER DA 95164000 CLI 0(X4), HEX16
REP C6 954C4000 CLI 0(X4), C' ('
REP DA 954C4000 CLI 0(X4), C' ('

LENGTH OF REPLY IN WTOR ECB

NAME ICC1203D IEZIA03D
VER 02EA IBAA SR RI0, RI0
REF 02EA 06A0 BCTR RI0, 0

NO WTOR FOR MULTI-VOL RESTORE

NAME IEHDREST IEHDREST
VER 06FC 4770BCE4 BNE VOLCHK
REF 06FC 4770BDBZ BNE ANSNCHK+12

OFFLINE QUICK-DASDI OF LABELLED 2314

NAME IEHDVTOC IEHDVTOC
VER 0210 47708IC2 BNE ISMZ
REF 0210 47F08IC2 B ISMZ

OVERRIDE INCLUDED MODULE ATTRIBUTES

NAME IEWL IEWL1M1NC
VER 048E 4780C4DA B0 INCNREFR
REF 048E 47F0C4E3 B INCLU605

BY-PASS OF SVC 7

./ CHANGE NAME-IEFG019RA
./ NUMBER SEQ1-00500000, NEW1-00500100, INCR-100, INSERT-YES
* THIS MODULE HAS BEEN MODIFIED TO BY-PASS THE SVC 7, BUT
* DOES THE SAME JOB. 6-15-76
* SEE LINES 53190100-670, 54400010-450, 60270000
./ NUMBER SEQ1-53190021, NEW1-53190100, INCR-10, INSERT-YES
EJECT
* BY-PASS OF SVC 7, BUT DOES THE SAME JOB
* THIS MOD BY FRANK MYERS DEPT OF LABOR 523-1025 IS TO
* AVOID THE UNCESSARY XCTL'S DURING O-C-EOV PROCESSING
* WHEN THE CALLING AND CALLED MODULES ARE FOUND IN LPA;
* OTHERWISE THE NORMAL RA PROCESSING IS USED.
SPACE 1
* REG USAGE:
* EWIC - ADDR OF MODULE NAME IN WTC IBL IS INPUT
* USE REGS 0,1,9,10,14,15
* R9 - ADDRESS OF CURRENT SVRB FOR ROUTINE GIVING XCTL
SPACE 2
DUMSVCF EQU *
* NEED TO FIND CURRENT RB.
L R9,16 CVT
L R9,0(0,R9) TCB DBL WD ADDR
L R9,4(0,R9) CURRENT TCB
L R9,0(0,R9) SVRB ADDR
* TEST IF CALLER A TRANSIENT ROUTINE
TH 10(R9),X'10'. IS CALLER A TRANSIENT ROUTINE
BNZ DUMSVCF. YES, DO XCTL
* CHECK IF REQUESTED ROUTINE IS IN LPA
LM R0,R1,0(RWTC) LOAD NAME OF REQUESTED ROUTINE
BAL R14,CDESCAN
B DUMSVCF. NOT FOUND, SO DO XCTL

VS

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VSI REL. 3.0 FIXES

VS 1 Release 3.0 HMASPZAP has two errors. One is in the calculation of the displacement of SSI information in the PDS directory entries with the SCTR or ALIAS attributes. The following superzap corrects this problem:

```
NAME HMASPZAP HMASZIOR
VER 06F4 4155000B
VER 0700 4155000B
REP 06F4 4155000B
REP 0700 4155000A
```

The second error is that listed under APAR OXO2441. HMASPZAP incorrectly scans 80 columns looking for a correct name when no correct name was specified on the NAME card. If there is a serial number in columns 73 to 80, HMASPZAP picks up the serial number as a CSECT NAME and incorrectly issues message DMA1031. The following superzap corrects the problem:

```
NAME HMASPZAP HMASPZAP
VER 0316 41200050
REP 0316 41200047
```

For OS Release 21.7 the same problem as above exists with a circumvention listed in EMS. The fix I constructed for VSI Rel. 3.0 applies as follows:

```
NAME HMASPZAP HMASPZAP
VER 044E 41200050
REP 044E 41200047
```

Submitted by:
Steve Gilder
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1 Madison Ave.
New York, N.Y.

VSI PERFORMANCE TOOL

In order to evaluate a proposal for additional hardware or to reevaluate such needs, VSI customers can contact their IBM S.E. to have VSI-PT run on their system. This Performance Tool is administered by an IBM Representative at the customer's site. The program measures and evaluates utilization of the CPU, channels, disk, etc.

Reports are produced for the System Engineer to evaluate and at his discretion show to the account's programming staff. The VSI-PT program runs in Partition Zero and extracts information from system counters in a GTF-like fashion.

Carol Shapiro
Paramount Pictures, Inc.
Gulf & Western Place

HMBLIST USER FIX

After application of US0J089 to Rel. 3.0 of VSI the new 'MODLIB' function produces duplicate output as described in USERC Newsletter Vol. 2 No. 2 for OS Release 21.7. The following superzap corrects the problem:

```
NAME HMBLIST HMBLKIDR
VER 13CO 92401000
VER 147A 4730B50A
VER 14DC 4750B50B,47F0B405
REP 13CO 92F01000
REP 147A 47000000
REP 14DC 4750B467,47F0B4A7
```

NOTE: This module is written in PL/S.

Submitted by:
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VSI GDC PROBLEM

An S0B0abend occurs when the queue manager attempts to write an updated Bias Control Table (BCT) to the SYS1.SYSJOBQE data set in Release 3.0 of VSI. The terminator moves the Bias Control Table TTR into the queue manager parameter area from the middle of the BCT rather than from the beginning of the BCT. The following superzap corrects this problem in GDC processing:

```
NAME IEPSD161 IECZG
VERIFY D202,4034,1000
REPLACE D202,4034,5000
```

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The OSERG Newsletter of January, 1974 (Vol. 2 No. 1) contained a contribution from GUIDE member Bill Kindschy of Milwaukee titled "Intelligent D R". The modification changes the DISPLAY REQUESTS command to output the corresponding message text for each outstanding reply, plus one line for unsatisfied mounts.

The superzap listed below extends this facility for use with VS2 Release 1.6:

```
NAME 1GC2903D IEE2903D
VER 006C D201,6000,8004,4166,0002,1B6A,4960,9384
VER 007C 4740,908C,45C0,9344,1144,416A,0019,47F0
VER 008C 5C9C,1A6A,D201,6000,9392,4166,0002,5880
VER 009C BC00
VER 01EE 41D0,000A,4170,8038,9180,7008,4770,92C8,4177,0010
REP 006C 5858,000C L 5,12(8) ADDRESS OF WQE
REP 0070 47F0,91F4 BRANCH TO PATCH AREA
REP 0074 9532,5007 BACKIN CLI 7(5),50 LESS THAN 507
REP 0078 4740,907E BL *+8 YES
REP 007C 4170,0032 FORCE LENGTH OF 50
REP 0080 0670,0670 BCTR 7,0 BCTR 7,0 DECREMENT BY 2.
REP 0084 4470,91EE EX 7,MVID MOVE THE MESSAGE
REP 0088 1A67 AR 6,7
REP 008A 4166,0001 LA 6,1(6) R6-END OF WTO
REP 008F 186A SR MSGREG,MSGAD R6-LENGTH OF WTO
REP 0090 45C0,9344 BAL WTOREG,WTO WRITE THE MESSAGE
REP 0094 1144 LNR SWIREG,SWIREG ALREADY HAVE HEADER
REP 0096 416A,0019 LA MSGREG,25(MSGAD) POSITION TO AFTER HEADER
REP 01EE 0000 DC H'O' BLOW IF 2321 DATA CELL USER
REP 01F0 D200,6000,5009 MVID MVC 0(1,6),9(5) EXECUTED MOVE
REP 01F6 1B77 CLEAR REG 7
REP 01F8 4370,5007 IC 7,7(5) INSERT LENGTH
REP 01FC 47F0,9072 B 74 RETURN LENGTH
```

Submitted by:
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OS/VS2 Input/Output Supervisor Logic, SY26-JB1-1. 1st Release 1.6, page 85, ascribes meanings to two bits in the EC-mode PSW which Principles of Operation indicates as "must be zero". Bit 0 is described as masking all monitor-call interrupts; bit 4 when set to 1 causes the use of 31-bit addressing. Thus, with 64K segments, the Segment Table alone could be as large as 128K of storage.

Submitted by:
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VS2 TIPS

The following list of guidelines and warnings were developed for OSERG members planning to generate OS/VS2. They were compiled after generating VS2 and running it on a test basis for a short time:

- 1) SYSGEN must run under another VS system...attempts to run with Release 21.6 were unsuccessful. Primary differences are a new control statement (ORDER) which the Rel. 21.6 Linkage Editor will accept but NOT process, and changes to the utility programs.
- 2) SYS1.NUCLEUS now has more than one member..be sure to allocate sufficient directory blocks.
- 3) Unable to start a RDR task. The S/ZAP from SDD is to data set SYS1.LPALIB and has no APAR number as yet:

```
NAME IEFAB400 IEFAR400
VERIFY 030A 4AF09000
REPLACE 030A 1AF90700
```

N.B. The paging device munthe formatted after S/ZAP application.

- 4) SVCLIB is now a small data set, but Storage Estimates gives too few directory blocks. Out of the 17 blocks allocated, 6 were used.
- 5) The SYSGEN manual lists SYS1.DSSVM and SYS1.SAMPLIB as "required data sets," but they were not installed and were not needed. SYS1.DSSVM is used in VS1 and VS2 as a recent IBM announcement.
- 6) SMF "virtual storage used" figure is not dependable as the number given for storage space consumed is a multiple of 64K (segment size).
- 7) VS uses the date from the TOD Clock minus 60 years.
- 8) VS assumes the TOD Clock is set to GMT, and if the SYSGEN specified local time as 5 hours west of GMT, then the time that VS uses is TOD minus 5 hours. It is simplest to not specify a deviation from GMT in

GEN.

- 9) The IPL volume (containing SYS1.SYSJOBQE, SYS1.SVCLIB, and SYS1.PROCLIB) is not marked "Permanently Resident" after initialization, but with the mount characteristic "Removable." Simplest circumvention is to put an entry in the PRESRES list for this volume.

Stuart Lieber
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VS 1 SEMI-AVR

The following contributions are enhancements upon the Release 20.1 and 20.6 S/ZAP modifications to AVR processing that appear in OSERG Newsletter No. 2 in February of this year.

Briefly, the function of this mod is to bypass Phase 2 of AVR Processing (the issuing of a non-specific mount message and an ENQ interlock on the UCHs). Thus, premounted tapes are recognized in Phase 1; Phase 2 is then normally skipped, and the tape is processed by the job. However, in the case where Phase 1 finds that the tape is not premounted, Phase 2 will be bypassed with this S/ZAP applied and a "specific" mount request will be issued:

Release 21.6

VS1 Rel 2.0

NAME IEFXVAVR IEFXV001
VERIFY 055E 47F0,976E
REPLACE 055E 47F0,9780

NAME IEFXVAVR IEFXV001
VERIFY 0512 47F0,969A
REPLACE 0512 47F0,96AC

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VS2 VSAM PTF LIST

Users going to VSAM may be interested in the following list of PTFs. These were applied on a VS2 R1.6 system with the VSAM ICR on.

PTF No.	Tape No	Component	Remarks
UY70109	7315	VSAM	
UY70117	"	AMS	
UY70626	"	Job management supercedes UY70165	
UY70532	7406	VSAM	
UY70628	"	VSAM & JOB MGT	see non-SMP cover letter
UY71027	7411	VSAM	COREQ AY03712 supercedes UY70506
UY71032	"	VSAM	
UY71033	"	VSAM	
UY71035	"	VSAM	
UY71036	"	VSAM	
UY71037	"	VSAM	
UY71042	"	AMS	
UY71034	7412	VSAM	
UY71039	"	VSAM & EOV	COREQ APAR AT03020
UY71063	7413	VSAM	supercedes UY71038
UY71065	7416	VSAM	
UY71332	7416	IEHDASDR	supercedes UY70499
UY71497	7416	Linkage Editor	
UY70817	7417	Job management	
UY71980	"	AREND/AREUMP	

All these PTFs were applied with SMP, and the tapes listed are all in SMP format. Since most PTFs have prerequisites, it is advisable to put them on in the order listed.

Installations that create the VSAM catalog before applying PTF 70628, will have a problem after applying. Define MCAT before the PTF creates a CTOL pointer of AMASTCAT. After the PTF, VSAM expects SYSCATG to have a data set pointer, instead of a CVOL pointer. To go around this, after applying the PTF use IEHPROGM to

RELEASE INDEX-AMASTCAT
CATLG DSN=AMASTCAT,VOL=type=void

Submitted by:

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V5/TSO MOD

The following superzap is applicable to VS2 Release 1.6 and Release 1.7 systems. It changes the TSO allocation default from a disposition of OLD to SHR. Some installations may find it useful in their environment:

NAME ALLOCATE IKJEPD30

VER	08CA	41F00002
VER	08D6	96084044
VER	08DE	96014044
REP	08CA	41F00001
REP	08D6	96014044
REP	08DE	96084044

Submitted by:
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THE 8 LPI ZAP

The following superzaps will add 20 to the default lines per page in IEBCOPY, IEHLIST, IEHDASDR, IEBPTPCH and IEBUPDTE. They are currently installed on a VS2 RELEASE 1.7 system.

NAME	IEBCOPY	IEBVMS
VER	0298	95384B44
REP	0298	954C4B44

CHANGE 56 LINES PER PAGE DEFAULT
TO 76 LINES PER PAGE

NAME	IEHLIST	IEHLISTI
VER	0010	923AC35B
REP	0010	924EC35B

CHANGE 58 LINES PER PAGE DEFAULT
TO 78 LINES PER PAGE

NAME	IEHDASDR	IEHDASDR
VER	0024	923AC07D
VER	0028	923AC07F
REP	0024	924EC07D
REP	0028	924EC07F

CHANGE 58 LINES PER PAGE DEFAULT
TO 78 LINES PER PAGE

NAME	IEBPTPCH	IEBPPCHI
VER	00EC	923CA579
VER	1596	003C
REP	00EC	9250A579
REP	1596	0050

CHANGE 60 LINES PER PAGE DEFAULT
TO 80 LINES PER PAGE

NAME	IEBUPDTE	IEBUPLOG
VER	003E	95382300
REP	003E	954C2300

CHANGE 56 LINES PER PAGE DEFAULT
TO 76 LINES PER PAGE

The 8 LPI Zap (continued)

The PCB keyword should be placed; on the SYSFMIN DD card for IEBCOPY, IEHLIST, IEHDASDR, IEBUPDTE and on the SYSUT2 DD card for IEBPTPCH. Installations which have the HASP \$LINECT set for 6 lines per inch must specify a LINECT value on the job card.

Submitted by:

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VS2 R1.X PAPER SAVER

This technique applies to VS 2 R 1.X systems when TRACE=number was specified in the CTRLPROG macro at system generation time. It has proved to be both a time and paper saver when debugging wait states in a stand-alone environment. A SYSUDUMP or SYSABEND can be obtained along with a listing of the trace table by following the steps listed below:

1. When trace is active offset X'190' into the CVT contains a '07FA'. Trace can be turned off when the wait state is entered by placing a '07FB' at offset X'190' into the CVT.
2. At this point a SYSUDUMP or SYSABEND can be obtained by cancelling the problem job with a dump.
3. The following DUMP command is used to obtain a copy of the frozen trace table:

DUMP COND= (TRACE TABLE)
RXX,STOR=(ADDR1,ADDR2)

where: ADDR1 is the address of the first trace table entry.
ADDR2 is the address of the last trace table entry plus X'20'

Service aid AMAPRMP is then used to print the SYS1.DUMP data set.

Submitted by:
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FEB. 5, 1974

O/C/E XCTL MODIFICATION

Most OPEN/CLOSE/EOV routines (IFG (019 , XX) use the O/C/E router module (020)
(055)

IFG019RA to effect transfer of control to other O/C/E modules. An O/C/E routine which has completed processing for a given DCB and determined the next module required for this DCB, uses the IECRES macro to branch to the XCTL entry point of the router. When IFG019RA has determined which routine is to be executed next (lowest value suffix of all 'next' modules in the case of parallel OPEN or CLOSE), it uses XCTL (SVC7) to invoke the required module. This then causes the following supervisor activity (most of which is executed in disabled state):

- 1) SVC interrupt (7) and SVC FLIH processing
- 2) GETMAIN for SVRB via branch entry (for quickcell, if available)
- 3) Module search of active CDE queue and if not found there, search of LPA directory (plus SVRB initialization)
- 4) SVC interrupt (3)
- 5) FREEMAIN for XCTL's SVRB (branch entry)
- 6) Branch to dispatcher from EXIT routine to invoke the requested module.

The purpose of this modification is to eliminate the supervisor processing associated with items 1, 2, 4, 5 and 6 by including the logic necessary for item 3 within the router module.

Modification logic summary:

The additional code is entered from a point in the original logic which immediately precedes the issuance of the XCTL SVC. At this point all general registers have been initialized for entry to the next module which is to receive control.

After disabling the system for interrupts, the active CDE queue is searched using routine IEAQCDSCR (in nucleus csect IEAVLK00). Following this, the system is enabled in preparation for (1) entry to the required module if found on the CDE queue of (2) searching the PLPA directory.

The PLPA directory is searched using routine IEAVVMSR (in IEAVLK00). If this search fails, then registers are restored and an XCTL SVC is used in order to have the required systemabend (806) issued along with the associated problem determination information.

If the CDE queue or PLPA directory search is successful, SVRB/module initialization is performed, consisting of obtaining the module entry point from the CDE/LPDE and placing the CDE/LPDE address in the SVRB.

Registers are restored from the O/C/E work area and the requested module is entered via branch.

EXEC ZAP,DSN='SYS1.LPALIB'

NAME IFG019RA

* OPEN/CLOSE/EOV XCTL MODIFICATION

* FIRST EXPAND IFG019RA BY 156 BYTES FROM X'21C' TO X'28B'

```

VER 01AC 5060F000      ST  HWTC,0(0,15)
REP 01AC 47F0521C      B    XCTLPTCH
REP 021C 5060F000      XCTLPTCH ST  HWTC,0(0,15)
REP 0220 18A7          LR  RA,R7      SAVE R7
REP 0222 18C8          LR  RC,R8      SAVE R8
REP 0224 98016000      LH  RO,R1,HWTCMODIM LOAD MODULE NAME
REP 0228 58300010      L   R3,CVITPR  CVT
REP 022C 58D03000      L   RD,CVITCBP  TCB DOUBLE WORD ADDR
REP 0230 58D0D004      L   RD,OLD      CUPRENT TCB
REP 0234 58D0D000      L   RD,TSBRSP  SVRB ADDR
REP 0238 47005272      ***** NOF  LPDESCH  SWITCH TO SEARCH LPA ONLY
*REP 0238 47F05272      ***** B    LPDESCH  AVOID CDE SEARCH - OPTIONAL
*                               ***** SEE DOCUMENTATION OF MODIFICATION
*                               ***** FOR RESTRICTIONS WHICH THIS VERSION
*                               ***** OF MOD IMPOSES.

REP 023C 91FF3174      TH  CVTSYLK,CVTSYLK IS SUPV LOCK ON FOR DP7
REP 0240 47105250      RO  SETMODE YES, USE MODESET TO QUEUE DISABLE
REP 0244 ACFC41C8      STNSH DXRESIND,X'FC' DISABLE FOR CDE SEARCH
REP 0248 47F0525E      B    DISABLED
REP 024C 00FC0040      MODEMASK DC  X'00FC0040'
REP 0250 1870          LR  R7,R0      SAVE MODULE NAME
REP 0252 1881          LR  RB,R1      OVER SVC
REP 0254 5810524C      L   R1,MODEMASK GET MASK FOR MODESET
REP 0258 0A68          SVC  MODESET   DISABLE VIA SVC
REP 025A 1807          LR  RO,R7      RESTORE MODULE
REP 025C 1818          LR  R1,R8      NAME
REP 025E 58F030B8      DISABLED L   RF,CVTQCDSCR CDE SEARCH RTN ADDR
REP 0262 588030BC      L   RB,CVTQLPAQ CDE QUEUE ADDR
REP 0266 45E0F006      BAL  RE,6(,RF)  CALL CDE SEARCH
REP 026A 47F05282      B    FOUNDCDE
REP 026E AD0341C8      STOSH DXRESIND,X'03' ENABLE FOR LPDE SEARCH
REP 0272 58703160      LPDESCH L   R7,CVITLPSR  LPDE SEARCH RTN ADDR
REP 0276 05E7          BALR RE,R7     SEARCH LPA DIRECTORY
REP 0278 47F0528E      B    FOUNDLPD
REP 027C 1833          SR   R3,R3  IF NOT FOUND, SET SWITCH TO ISSUE XCTL
REP 027E 47F0529C      B    RESTORE
REP 0282 AD0341C8      FOUNDCDE STOSH DXRESIND,X'03' ENABLE FOR ENTRY TO MODULE
REP 0286 94EFD00A      NI   RBSTAB1,255-RBTRSVRB FLAG SVRB AS RESIDENT
REP 028A 47F05294      B    SETUP
REP 028E 1880          LR  RB,R0      USE LPDE ADDR AS CDE
REP 0290 9610D00A      OI   RBSTAB1,RBTRSVRB FLAG SVRB AS TRANSIENT
REP 0294 BEB7D00D      STCM RB,7,RBCDE1 STORE CDE/LPDE ADDR IN SVRB
REP 0298 5830B010      L   R3,CDEINTPT GET MODULE ENTRY POINT
REP 029C 920041C8      RESOTRE MVL  DXRESIND,X'00'RESET FLAG IN W.A.
REP 02A0 187A          LR  R7,RA      RESTORE R7
REP 02A2 188C          LR  RB,RC      RESTORE RB

```

REP 02A6 980141CO
 REP 02A8 9809E41A8
 REP 02AC 1233
 REP 02AE 0773
 REP 02BO 41F04:DB
 REP 02B4 0A07

LM R0,R1,DXR1G0 RESTORE OTHER REGISTERS
 LM R9,R0,DXREG9 FROM O/C/E W.A.
 LTR R3,R3 DID WE FIND REQ'D MODULE
 BCR NZ,R3 YES, ENTER IT VIA BRANCH
 LA RF,DXRCTL INIT XCTL PAIRN ADDR
 SVC XCTL IF NOT FOUND, AREND 806 VIA XCTL

***** If the NOP LPDESRCH instruction is changed to a BR, then the search of the active CDE queue is bypassed along with the related disabling and enabling. Although this further enhances performance, it imposes some restrictions by negating the use of the following facilities with respect to any O/C/E routines:

- 1) load list in PARMLIB - IEALODnn
- 2) fix list in PARMLIB - IEAFIXnn
- 3) modified LPA list in PARMLIB - IEALPAnn

since any modules specified through these lists are reflected by entries in the active CDE queue.

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 VS2 Release 1.x - Task Disable Algorithm (Thrashing Monitor)

PSTQE is contained in IEATPC (pseudo-clocks) and is used for the time interval specified by MTIM value in PAL parameter of IEASYSxx.

IEAVTI00 (TSLIN), on expiration of PSTQE, branches to IEAPDSBL entry point in module IEAPRPLS.

After completing deactivate of re-activate processing, this routine resets its timer element for the next interval at label DSBLEXIT:

LM NEWTIME,PVTIMBAD
 RC TQVAL(8),TQVAL
 STH NEWTIME,TQVAL+2

This new value is in 1.048576 second units (value of bit 31 in TOD clock or clock comparator). By changing the "STH" instruction to "MVI", any desired value can be set for the interval (in excess of the allowable values for MTIM of 1-9 seconds).

NAME IEANUC01 IEAPRPLS
 VER 057C 40509012 STH NEWTIME,TQVAL+2
 REP 057C 92399013 MVI TQVAL+3,57

This results in using an interval of $57 * 1.048576$ or 59.77 seconds i.e. approximately 1 minute.

Using MTIM = 1 minute, the following values might be appropriate for disable thresholds:

HRD = 900 HRC = 0
 LRD = 600 LRC = 9999.

This will cause the following action:

SHUTDOWN when READS (page-ins) 900/min or 15/sec IN or 30/sec total
 REACTIVATE when READS 600/min or 10/sec IN or 20/sec total

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 * D A MODIFICATION TO SHOW DEACTIVATION *

With this modification, the D A command in VS2 Release 1.6 will show 'D' (for deactivated) instead of 'V' for each job step which has been temporarily deactivated due to paging activity.

Expand module IEEVDSP1 by 16 (X'10') bytes by relinking it from SYS1.LPALIB, then apply the following superzap:

```
NAME IEEVDSP1
VER 0224 4780C188
VER 0668 00000000
REP 0224 4780C5F4
REP 0668 91200021
REP 066C 4780C188
REP 0670 92C47020
REP 0674 47F0C188

IS TCB PAGE FLAG ON?
NO...GO BACK
MOVE D TO DISPLAY
RETURN TO REGULAR PROCESSING
```

 * PREVENT PAGE-OUT OF MODULE THAT MODIFIES OWN CODE *

These superzaps correct modules so that they do not modify themselves (which caused pageouts). All members are in SYS1.LPALIB.

```
NAME IGC0201C
VER 0360 00000368
VER 037C 96801000
REP 0360 80000368
REP 037C 07000700
```

```
NAME IGCJ301C
VER 05D0 000005D8
VER 05EC 96801000
REP 05D0 800005D8
REP 05EC 07000700
```

```
NAME IGC3103D
VER 00F0 ACFC0C126
VER 012A AD04C126
REP 00F0 ACFC0C126
REP 012A AD062000
```

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 * SEMI-AVR FOR VS *

These modifications avoid the AVR mount-pending condition when tapes that are specifically referenced are not premounted. A specific mount is given instead.

```
VS/2 Release 1.6
NAME IEFXVAVR IEFXV001
VER 057E 4780979C
REP 057E 47F097AE
```

Tom Brophy
 Security National Bank
 125 Pinelawn Road
 Melville, New York 11746

```
VS/1 Release 3.0
NAME IEFXVAVR IEFXV001
VER 0546 47809706
REP 0546 47809718
```

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 1 Madison Avenue
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 * AMBLIST LINK PACK AREA MAP SORTED BY EP ADDRESS *

This is a superzap to the AMBLIST program for VS/2 Release 1.6. It will provide a numerical listing of the LPA in addition to the alphabetic listing.

```
NAME AMBLIST HMBLKLP
VER 0300 181C5800
VER 0320 C8D4C2D3
VER 0338 C1404040,40404040
VER 0340 40404040,40404040,40404040,40404040
VER 0350 4040
REP 0300 47F0B30C
REP 0320 D203B2ECB33A
REP 0326 D215B374B324
REP 032C 921180A1
REP 0330 921480A9
REP 0334 47F0B40C
REP 0338 D5E4D4C5,D9C9C3C1,D3D3E840,C2E840C5,D740C1C4,C4D9
REP 034E 181C5800
```

BRANCH TO PATCH AREA
 PUT BACK ORIGINAL INSTRUCTIONS
 CHANGE TITLES
 CHANGE START OF SORT FIELD
 CHANGE END OF SORT FIELD
 BRANCH TO RERUN MODULE
 ORIGINAL INSTRUCTIONS

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 * VS PERFORMANCE RECOMMENDED FIXES *

Our resident VS performance guru suggests that all VS users examine the following fixes if applicable:

370/168 MCH Handler leaves High Speed Buffer DISABLED.
 X06061 ---VS1 R3
 Y04965---VS2 R1.6+R1.7

Slow paging and swapping rate capacity using 3330 I or II with ISC or 3830-II.
 Y01905 ---VS2 R1.6

 * INTELLIGENT DR FOR VS2 RELEASE 1.6 *

This is a change to "B R" to display the outstanding replies and the message that go with them.

NAME	IGC2903D
VER 006C	D20160000004,41660002,1B6A,49609384,4740908C
VER 0080	45C09344,1144,416A0019,47F09090,1A6A
VER 0090	D201600009392,41660002,58800000
VER 01EE	41D0000A,41700018,9180700B,4770
REP 006C	5858000C,47F091F4,95325007,4740907E,41700032
REP 0080	0670,0670,447091EE,1A67,41660001, 1B6A
REP 0090	45C09344,1144,416A0019
REP 01EE	0000,D20060005009,1255,47809090,1B77
REP 01FE	43705007,47F09072

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 * APG AND THE SATURATED CPU *

Recently, several instances have appeared where APG was failing to dispatch CPU tasks. The situations were similar in that in each case the CPU utilization was near or at 100%. Further investigation showed APG to be working as designed.

CPU tasks are the lowest priority tasks within the APG group and are queued via a "round robin" technique. Tasks moving from I/O to CPU are queued at the top of the CPU queue. A CPU task that uses its entire slice is moved to the bottom of the CPU queue.

This means that at least one CPU task must be dispatched and use its entire time slice before the CPU tasks are reordered. In those situations where CPU utilization approaches 100%, CPU tasks, because they are at the bottom of the CPU Queue, may not get dispatched for extended periods of time.

There are several solutions to this situation. One is to increase the ratio in the APG parameter. This forces more tasks into the CPU category thus increasing the chances of a CPU task of being dispatched.

Another solution is the modification to APG that appears below. This change essentially makes all tasks within APG classified as I/O where tasks are queued by amount of time used within last time slice.

The modification for OS/VS2 Release 1.6 is:

NAME	IEANUC01 IEAVNU00
VER	0966 912060CA,4780C79C
REP	0966 94DF60CA,47F0C79C

The modification for OS/VS2 Release 1.7 is:

NAME	IEANUC01 IEAVNU00
VER	09F8 912060CA,4780C828
REP	09F8 94DF60CA,47F0C828

These modifications have been installed and tested on the applicable releases. All indications are that all tasks within APG are being dispatched with some degree of regularity even though CPU utilization approaches 100%.

Although the effectiveness of the two approaches described above have not been measured, it is my feeling that the modification to APG is somewhat more effective. This is because it is more direct in that it doesn't require determining what the APG ratio should be and secondly, it eliminates re-ordering the CPU queue.

Joe Hopkins
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 Beaumont, Texas

 * STAND-ALONE DUMP OF MAIN MEMORY TO IPL'ED TAPE *

This modification allows for a dump of main memory to an IPL'ed stand-alone dump tape, thus bypassing the need to IPL the 150 display console into 3215 mode. Only main memory is dumped to the tape that is IPL'ed and no console intervention is required. The change is in source form which applies to the AMSADH2 macro.

```

./      CHANGE NAME=AMSDAH2      VS2 Release 1.6
DUMTLL DC H'14'                  LENGTH OF TITLE      19360001
DUMPTTL DC CL100'VS2 FAST DUMP'  19400001
      B PROEXIT1                  37320101
      BC 8,XCBYPASS              41824011
      DS 0H                      41832005
      OI CTERRFLC,CTDEF          41832011
      MVC CTOUTAD,CTINADDR       41832021
      B GETITLE                  41832031
      B DUMTHD                  47920101
      B INTWAIT                  67760101
      MVI CTWAIT,HEXOC           68280101
      B WAITSTAT                 68280201
./      ENDUP
  
```

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 * OS/VS 2 D A MODIFICATION TO SHOW TASK DISPATCHING PRIORITY *

The subtask count shown on a display active is meaningless information in our installation. This information has been replaced with task dispatching priorities which we consider to be more important. It has led to the resolution of several problems involving task dispatching.

The following SUPERZAP is applicable to OS/VS 2 releases 1.6 and 1.7"

```

NAME IEEVDSP1
VER 01BA 4810,A004      LH R1,SUBYASK
VER 01BE 5010,7018      ST R1,SUBTSKC
VER 031B D201,901D,9056 MVC SUBCNT(E2),WORK+E6
VER 05DD E3E4,C2E3      "SUBT"
REP 01BA 4310,8023      IC R1,TCBDSF
REP 01BE 4210,701B      STC R1,SUBTSKC+3
REP 031B D202,901D,9055 MVC SUBCNT(E3),WORK+E5
REP 05DD D7D9,E3E8      "PRTY"
  
```

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VS2 SYSGEN UNDER MVT

Some installations may want to start their VS2 sysgen before arrival of virtual hardware, or may find that time to run the VS2 starter system is hard to get. The modifications below allow you to do the sysgen under OS/MVT. The runs were done under Release 21.6 and 21.7, but the modifications should apply to other releases as well. All ZAPS use OS INASFPZAP. Changes apply to VS2 Release 1.6.

1. Restore the VS2 starter system using OS IEHDASDH. The backup file is the second file on the tape. Rename the VS2 SYS1.LINKLIB and catalog it.
2. COPY ICGO19CB from SYS1.LPALIB to OS SYS1.SVCLIB giving it a new name. (Zaps below assume new name is ICGO19WA.) This is a PCI appendage for VS2 IEBCOPY.
3. Apply the following SUPERZAP's to VS2 IEBCOPY. (Zaps from IBM assume the OS IEBCOPY is no longer needed, i.e., ICGO19CB can be replaced. Also, the IBM notes are incomplete because the ICGO19FT appendage branches to an invalid location in OS IOS).

NAME	IEBCOPY	IEBDV1	
VER	07D4	C3F8	Load ICGO19WA
REP	07D4	E6C1	Instead of ICGO19CB
VER	07F0	0A08	Don't Load ICGO19FT
REP	07F0	0700	Appendage

NAME	IEBCOPY	IEBDSMCA	ZAP DCBS	
VER	0682	C3F8C6E3	SYSUT 1	APPEN CB,FT
VER	06CA	C3F8C6E3	SYSUT2	APPEN CB,FT
VER	07FA	C3F8C6E3	SYSUT4	APPEN CB,FT
REP	0682	E6C1F040	SYSUT1	APPEN CB
REP	06CA	E6C1F040	SYSUT2	APPEN CB
REP	07FA	E6C1F040	SYSUT4	APPEN CB

(The ICGO19FT appendage is a Page Fix and SIO appendage, and is not needed under OS/MVT.)

The OS/VS2 DLIB01 pack may now be restored using VS2 IEBCOPY. The only change necessary to the JCL on file 1 of the tape is to add a STEPLIB DD card to the job stream.

4. Apply the following SUPERZAPS to the VS2 linkage editor. (Zaps available from IBM apply to release 1.0 and are incomplete.) Zaps cure 430 and 438 abends when running under OS/MVT.

```

NAME IEWL      NEWLFINT
VER 0204      C02C4000
REP 0204      FF2C4000
  
```

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NAME	IEWL	HEWLFFHL
VER	06C0	4510C092,C02C4800
VER	06E0	4510C082,C02C4000
REP	06C4	FF2C4800
REP	06E4	FF2C4000

NAME	IEWL	HEWLFFINT
VER	0328	4510C052,C02C
REP	0328	4510C052,FF2C

(The linkage editor will run under TSO using the LINK command if a STEPLIB is added to the logon proc pointing to the VS2 LINKLIB. Only OS linkage editor commands will be accepted by the prompter, however. Also, the linkage editor still abends when linking Hesp under TSO, but works OK in batch).

The VS2 assembler runs under OS/MVT without modification. It can be used under TSO with the OS/MVT assembler prompter if a LOGON PROC is set up with a STEPLIB DD card pointing to the VS2 starter system's LINKLIB. Of course, only OS assembler options may be specified when using the TSO assembler prompter.

So far, we have done OS/VS2 sygen through Stage 1 and Hesp version 4.0 Hespgen, assemblies and linkedits, using this process. The only difficulty we encountered is an invalid assembler diagnostic assembling HASPPRPU, which has been APARED.

With the additional use of the program PSW in VS1, it has become increasingly difficult to debug certain types of abends. One such class of abends are the OFX type. From the present information given in a dump, the program PSW and program save area registers are not available, but are needed in correcting the problem.

A modification to ABTERH (IEADAB00) has been written to save the program PSW, program interrupt, and save area* at entry to ABTERH, and place a pointer to them in the USER field of the abending TCB. The modification has been written for VS1 Release 2 Modification level 0, and requires HEX '7C' bytes in the C.E. patch area (IEAPATCH) for patch instructions and the save area.

*Registers are saved A through 9.

VS1 Release 2 Modification level 0 IMASZAP control cards;

NAME	IEANUCO 1 IEADAB00	
VERIFY	2E 18C0	
VERIFY	30 41CC, 0000	
VERIFY	34 59C0, F056	
VERIFY	38 4770, F03E	
REPLACE	2E 58C0, F152	CVI pointer
REPLACE	32 53C0, C0DC	IEAPATCH pointer
REPLACE	36 41C0, CXXX	displacement in IEAPATCH
REPLACE	3A 07FC	branch to patch area.

NAME	IEANUCOI IEAPATCH	
REPLACE	XXX D207, C030,0028	save PSW
REPLACE	XXX+6 D203, C03B,008C	save interrupt
REPLACE	XXX+C D23F,C03C, 0YYY	save req. save area,
REPLACE	XXX+12 18A0	ptr. to TCB in req. A.
REPLACE	XXX+14 41C0,C030	ptr. Work Area in Reg.C.
REPLACE	XXX+18 50CA,00AB	save ptr. in TCB
REPLACE	XXX+1C 18C0	Replace
REPLACE	XXX+1E 41CC, 0000	instructions
REPLACE	XXX+22 59C0,F056	stolen
REPLACE	XXX+26 4770,F03E	from
REPLACE	XXX+2A 47F0,F03A	IEADAB00

XXX - Displacement in IEAPATCH.

YYY - Address of program save area from first level program check interrupt handler. Program New PSW will print to entry of first level program check interrupt handler. Scan from the entry for 90A90YYY, where YYY will be the address of the save area.

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 * REJECT 'P TCAM' AS AN INVALID COMMAND *

This superzap will prevent an operator from entering 'P TCAM', which hangs TCAM since it is not the acceptable stop command.
 IPL with CLPA to activate zap. VS2 R1.6 or R1.7, TSO, TCAM 5D.
 ** ZAP (IEE4503D).

EXPAND	IEE4503D (32)		
NAME	IGC4503D IEE4503D		
VER	004E 50702000		
REP	004E 47F0C2E2	B	PATCH
REP	02E4 50702000	DISPLACED-INSTRUCTION	
REP	02E8 D5039000C2F4	CIC	CIB(4), TCAM
REP	02EE 4700C004	BE	INVALID-COMMAND
REP	02F2 47F0C050	B	RETURN-TO-MAINLINE
REP	02F6 E3C3C1D4	DC	C'TCAM'
		TCAM	

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 * 8 LINES PER INCH ZAP FOR VS2 R1.7 *

The following superzaps will add 20 to the default lines per page in IEBCOPY, IEHLIST, IEHDASDR, IEHPATCH and IEHUPDTE:

NAME	IEBCOPY	IEBVMS
VER	0298	953b
REP	0298	954C

NAME	IEHLIST	IEHLISTI
VER	0010	923A
REP	0010	924E

NAME	IEHDASDR	IEHDASDR
VER	0024	923A
VER	0028	923A
REP	0024	924E
REP	0028	924E

NAME	IEHPATCH	IEHPATCH
VER	00EC	923C
VER	1596	003C
REP	00EC	9250
REP	1596	0050

NAME	IEHUPDTE	IEHUPLOG
VER	003E	953B
REP	003E	954C

Remember the FCB keyword on the SYSPRINT DD card or LINECT on JOB card.

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 Melville, N.Y. 11746

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 * VS1 SYSUDUMP, SYSABEND, SNAP LINES PER PAGE ZAP *

This will alter the lines printed per page for SYSUDUMP, SYSABEND and SNAP dumps under VS1 R3.0 and R3.1

NAME	IEAAADDN
VER	9C 41300038
REP	9C 413000nn

where nn is the desired linecount in hex.

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 129 South Ludlow St.
 Dayton, Ohio 45402 (313) 226-5520

 * ELIMINATION OR SEPARATION OF SYSTEM TASK OUTPUT *

These superzaps can be useful in eliminating the one-page printouts of RDR or WTR or anything started with the operator START command and the one-page printout from the operator MOUNT command. These zaps change the MSGLEVEL=1 parameter on the system task job cards to MSGCLASS=X (X being any sysout class not currently being used). After the zaps have been applied, the system programmer needs to add another writer procedure defaulting to the class selected for the MSGCLASS parameter and assigning IEPRDR to direct access, tape or DUMPR.

NAME	IEEVSTAR	IEEVSTAR	VS1 R3.0 Start Command
VER	0CB6	D3C5E5C5D37EF1	LEVEL=1
REP	0CB6	C3D3C1E2E27Exx	CLASS= xx is hex value of class X

NAME	IEEVMTI	IEEVMTI	VS1 R3.0 Mount Command
VER	0454	C7D3C5E5C5D37EF1	GLEVEL=1
REP	0454	C7C3D7C1E2E27Exx	GCLASS= xx is hex value of class X

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 * DISPLAY UNITS MODIFICATION TO DIFFERENTIATE 3330 MODELS *

The Display Units (DU) command gives only the first four characters from the Device Name Table in the console display. For devices differing only in the model number, a DU doesn't differentiate between models. The following superzap changes 3330 Model 11's to 3311 and leaves 3330 Model 1's as 3330.

```
NAME IGC21110 IEE21110      VS2 R1.7
VER 0006 F0F140D4D6C4,EAD3C540,C9C7C3D2F1F1,F1F06B40
VER 001A C6C9C3C9C540,C9C5C5F2
VER 00D4 D2030005E000,47F0C10E
REP 0006 D505E000C01B,4770C10E,D2030005C10E,47F0C10E
REP 001A F3F3F3F060F1,F3F3F1F1
REP 00D4 D2030005E000,47F0C004
```

 * ONLY ALLOW OPERATOR UNLOAD IF DRIVE IS ONLINE TO CPU *

In a multi-CPU, shared tape environment, it is possible to inadvertently unload tapes from one CPU, which are being used by the other CPU, even though the device is "offline". The following superzap only allows a drive to be unloaded if it is "online" to that CPU. Operator coordination is still required so that a drive is only "online" to one CPU, but it does reduce the potential for problems.

```
NAME IGC3103D IEE3103D      VS2 R1.7
VER 000E D9F0F1F0,F0F0,F0F661F1,F561
VER 01C4 96103003,07FE
REP 000E 91803003,070E,96103003,07FE
REP 01C4 47F0C00C
```

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 * VS/TSO ALLOCATION DEFAULT DISPOSITION OF SHR INSTEAD OF OLD *

```
NAME ALLOCATE IKJEFD30      VS2 R1.6 R1.7
VER 00CA 41F00002
VER 00D6 96004044
VER 00DE 96014044
REP 00CA 41F00001
REP 00D6 96014044
REP 00DE 96004044
```

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 * MODIFICATION TO VSI DYNAMIC DISPATCHING ALGORITHM *

This modification creates a fixed, installation-defined time slice for every task in the dynamic dispatching group. It retains the advantages of the reordering of tasks within the group. The fixed time slice is defined as the value of DDSTAT (the fourth subparameter of the SYSGEN parameter DYNINTN).
 The parameters DDDEL, DDMIN, DDRATIO and DDSTAT lose any previous meaning they might have had before the modification. The IEA101A message responses to Dynamic Dispatching are still valid. The zap has been successfully applied to VSI R3.0.

- 1) Locate the following statement in the SYSGEN assembly listing of the module IEASU00:

```
DDSTAT EQU *
```

- 2) Apply the following zap:
 XXXX is the address of csect IEAEXTEF (from the ESD listing)
 YYYY is the address of DDSTAT

```
NAME IEANUC01 IEAEXTEF
BASE XXXX
VER YYYY 92801000      MVI TQFLCS,TQOFFQ
VER YYYY+4 D203100CA01C MVC TQVAL(L4),DDSTAT
VER YYYY+E 45E0        BAL R14,TENQ
REP YYYY+6 A00C        DDTRG
REP YYYY+E 4700        NOP
```

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 * WTP HIGHLIGHTING ZAP *

The following is a zap to WTP to cause all WTPs to be padded to 120 characters with asterisks. Normally, the character string 'WTP' is moved into a GETMAINed area and the right most byte (a blank) is propagated through the area. The message text is then moved into the area and the message issued. By changing the padding character to *, the highlighting is achieved.

```
NAME IGC0203E IGC0203E      VSI R2.6
VER 041A D740      P0
REP 041A D75C      P0
```

Mike Kerford-Burnes
 The Stock Exchange
 England (UK Region, European Guide)

 * INCORRECT MESSAGES IEF4521 and IEF4531 in OS/VS R1 *

For reasons that are still obscure, IBM made messages "IEF4521 JOB NOT RUN-JCL ERROR" and "IEF4531 JOB FAILED-JCL ERROR" MONITOR JOBNAMES-type messages in OS/VS2 Release 1, even though no other control program that generates these messages (OS/360 MFT, MVT, OS/VS1, OS/VS2 Release 2) does, and the documentation for OS/VS2 Release 1 says that these messages are not MSGTYP messages, but ROUTCODE-routed messages. This means that if you wish to receive these messages at a console in VS2R1, you must be "monitoring" jobnames, and receiving all those other useless, junk messages. Unless your installation has more than one active console you have not noticed the absence of this message from all consoles other than the master console (which is where the message gets sent when no console has MCI JOBNAMES active and the message is WTO'd anyway even though NO console is "monitoring" jobnames). In any case, while we and several other installations are still trying to APAR this problem, and get IBM to understand that we do not want these messages to be MSGTYP-JOBNAMES messages, that they never have been before, and they are not and never should be in future releases, your installation can do the following to fix the existing problem and prevent a future one:

- (1) write a PSRR
- (2) do not install the following APARs on your OS/VS2 Release 1 system:

Y00913
 Y00215
 Y00221
 Y00316

(These fixes make "IEF4501 ABEND ..." and IEF4521 completely NON JOBNAMES-type messages).

- (3) put on the following zap to make IEF4521 and IEF4531 as they were before -- ROUTCODE messages:

```
++ PTF (AF00099).
++ VER (Y016,Y017).
++ ZAP (IEESD579).
NAME IEESWTO
VER 0028 B000 remove MSGTYP flag from
REF 0028 A000 IEF4521 parameter list
IDRDATA AF00099
++ ZAP (IEFWTERM).
NAME IEFWTERM
VER 0036 B000 remove MSGTYP flag from
REF 0036 A000 IEF4531 parameter list
IDRDATA AF00099
```

- (4) Message "IEF4511 ENDED BY CC" was also made a MSGTYP-JOBNAMES message in VS2R1. No zap to make this message a ROUTCODE message again was worked up because our installation doesn't WTO this message anyway.

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 * OS/VS2 RELEASE 1 "VADUMP" AVAILABLE *

This modification formats Data Management Control Blocks in OS/VS2 Release 1 ABEND DUMPS. It is roughly equivalent to the pseudo-supported "VADUMP" PE Service Aid for OS/360 MVT.

The features of this version of Data Management Dump (DMDUMP) are:

- (1) Data Management Control Blocks are formatted in both ABEND and SNAP dumps.
- (2) All devices, and access methods (including TCAM and VSAM) are supported.
- (3) Data Management Control Blocks are validity checked.
- (4) No modifications are made to any OS/VS2 code whatsoever, and neither SMP maintenance nor PTF application are impacted in any way.
- (5) Extensive validity checking of each unprotected data reference insures that DMDUMP will never DC4 (which would cause premature termination of ABDUMP or SNAP).

All other "VADUMP" - like routines that we have encountered (including the one being distributed clandestinely within IBM by PSRs) require modification at the source level to an ABDUMP routine (and thus you lose it if you put any of the available ABEND/ABDUMP PTFs on) and do little or no validity checking of control block addresses which results in on DC4 ABEND frequently (for example, an OPENed DCB being FREEMAINED --CLOSE gets an DC4, then so would "VADUMP").

It is our intention to provide an MVS version of DMDUMP and we welcome an industrious VSI installation to get it running on that control program.

We expect to have this modification available through normal SHARE distribution in the near future. In the meantime, we will send DMDUMP, including source code, to those installations who provide a magnetic tape, preferable a small (200') DTR.

Forward the tape, along with indication of desired recording mode (9/800, 9/1600, or 7/800), to:

FIRST COMPUTER SERVICES, INC.
 SYSTEMS SUPPORT DIVISION, M-4
 CHARLOTTE, N.C. 28288
 ATTN: PROGRAM DISTRIBUTION

Direct questions or inquiries to:

Steve White (704-374-4321), or William Blair (704-374-4320).

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If you do not want to have HASP 4.0 time stamp each WTO that goes out to your DIDOCS consoles (the messages will still be time-stamped in SYSLOG) a modification to HASP 4.0 and to DIDOCS is available. This modification performs the following functions:

- (1) HASP performs right-blank truncation on all WTO(R) messages. This avoids continuation lines on a graphics console except where there is really text to be continued.
- (2) WTO(R)'s are "job-numbered with jobname instead of job number, in the case of executing jobs WTO(R)'s, only. All other normal HASP messages are still job numbered.
- (3) WTO(R)'s from non-HASP-controlled jobs/tasks are "job-numbered" with their JOBNAME.
- (4) WTORs and MLWTORs are also identified in the HASP JOB CONSOLE LOG, as well as replies to WTORs, and HASP \$WTORs.
- (5) HASP \$WTORs which are not WTOed because of logical console list level setting (\$TCOM,n,...) are not discarded, but sent to the hard copy (MCS) log, identified with an "N".
- (6) The time stamp is not displayed for any message on any console. SYSLOG will still contain the regular time stamp.
- (7) ZAPS to DIDOCS modules are provided that recognize the new, edited (without time stamp) WQE format, so that intervention required (IEA000AA) messages and WTORs and replies are properly identified.
- (8) The authorization indicator (+ or -) is retained, but the HASP "\$" is moved over to the left to provide a more pleasing appearance now that the time is no longer present.
- (9) Zaps to DIDOCS routines are provided so that intervention required messages (IEA000AA) logged to a job by HASP PTF OY05819 will be recognized as such by DIDOCS and will be deletable when the device is ready. (This is really OY09196 if IBM ever gets it into Early Warning).
- (10) Code is provided, as a HASP mod, that forces MCSFLGS-(HRCOPY) for messages listed in a table. This provides the same function as message suppression in the MCS USER EXIT, but with the advantage that the message text is logged to SYSLOG instead of being ignored and discarded completely, and is therefore preferable.

This modification may be obtained by writing:

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 Systems Support, M-4
 Charlotte, N.C. 28288

The attached code causes a canned KS command to be issued for each DIDOCS console at IPL and at each re-open. If this canned KS command specifies DEL-RD, then at IPL and at each subsequent re-open (caused by VARY xxx,CONSOLE) the consoles will come up in roll-deletable mode.

This modification as supplied issues the same KS command for each DIDOCS console and will have to be modified if different KS commands are desired for different device type consoles in a multi-console environment.

The first step makes a copy of IEECVET4 (IGC5407B) naming it IGC5X07B. This routine handles the KS command and updates the DCM. The second step zaps IGC5X07B to process a KS command which is canned within the module itself. The third step zaps IGC5C07B (IEECVETC) to XCTL to 5X instead of the I/O routine when 5C is entered for re-open. IGC5C07B (which is really 54) will process the canned KS command, update the DCM, and exit (XCTL) to the I/O routine.

Prerequisite for application of this modification is DIDOCS PTF UT70126, which is applicable to VS2 Release 1.6, and pre-applied to Release 1.7. The MVS version of this modification will be published in the next OSIE.

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 704-374-6177

```
//IGC5X07B JOB (1169527,24....3200,3,,601,'K S, Del-RD, CON-N', Class -H Job 45
//STEP 1 EXEC PGM = IEWL,CONO=(8,LT), PARM=NCAL,LIST,AREF,REUS,RENT'
//SYSUT1 DD UNIT=DISK,SPACE=(CYL,(1,1))
//SYSPRINT DD SYSOUT=A
//SYSLMOD DD DSN=SYS1.LPALIB,DISP=OLD,VOL=SER=SYSRLS,UNIT=3330
//SYSLIN DD *
        INCLUDE SYSLMOD(IGC5407B)
        NAME IGC5X07B(B)
//STEP2 EXEC PGM=IMASPZAP,COND=(0,LT)
//SYSPRINT DD SYSOUT=A
//SYSLIB DD DSN=SYS1.LPALIB,DISP=OLD,UNIT=3330,VOL=SER=SYSRLS
//SYSLIN DD *
        NAME IGC5X07B IEECVET4
        VER 0018 91C1,9128
        VER 017E 477,C18C
        REP 0018 58409040
        REP 001C 9240407E
        REP 0020 D26F,4000,C028
        REP 0026 47F0,COF6
        REP 017E 47F0C18C
        L R4,DCHAENTR
        MAKE SURE CHAR 127 IS BLANK...
        MOVE K COMMAND TO ENTRY AREA
        B ENTRY
        DON'T BLANK GUM
* CANNED K COMMAND FOR ALL DIDOCS CONSOLES AT (RE) OPEN FOLLOWS...
REP 002A D240E26B,C4C5D37E,D9C46B09,E304C57E
REP 003A F0F0F36B,E2C5C773,F1F96B03,D6D57ED5
REP 004A 6BD9D5E4,D47EF1F9,40404040,40404040
REP 005A 40404040,40404040,40404040,40404040
REP 006A 40404040,40404040,40404040,40404040
REP 007A 40404040,40404040,40404040,40404040
REP 008A 40404040,40404040,40404040,40404040
```


* END OF CANNED K COMMAND.
 DUMP IGC5XC7B IECEVET4
 //STEP 3 EXEC PGM=IMASP2AP, COND=(0,LT)
 //SYSPRINT DD SYSOUT=A
 //SYSLIB DD DSN=SYS1.LPALIB,DISP=OLD,UNIT=3330,VOL=SLR-SYSRES
 //SYSIN DD*
 *** THIS CHANGES XCTL NAME TO IGC5X07B IF ENTERED FOR (RE) OPEN.
 *** IGC5X07B WILL THEN XCIL TO THE I/O ROUTINE
 NAME IGC5C07B IECEVETC
 VER 0172 96E09122
 VER 035C 40404040,40404040,40404040
 REP 0172 47E0C35A
 REP 035C 96E0, 9122, 92E7B00C, 47F0C17A
 DUMP IGC5C07B IECEVETC

/*

C O N T E N T S

HASP

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HASP CARD PRINTING

These modifications to HASP 3.1, under OS Release 21.6, will allow printing on cards via the two-line print feature of the IBM 3525 card punch. The intent of each change is described prior to the instructions for accomplishing it. Several simplifying assumptions have been made. They are:

1. No real use is made of special forms or special-routed punched output. Printing is invoked by:

SYSOBT=(8,,2) to cause printing of the entire contents of the punched card - columns 1-40 and 73-80 on the first line columns 41-80 on the second line.

SYSOBT=(8,,3) to cause printing of columns 2-4 and 73-80 on the first line (intended for object decks).
2. The special MITRE format job separator card is also printed.
3. Possible hardware errors on printing are effectively ignored; we intend to investigate how to handle these when we catch one - so far none has occurred since we installed Release 21.
4. Only one 3525 is used; the code is not usable simultaneously by two punch processors.

Instead of the standard HASP separator cards, we produce one as follows:

COLUMNS	1 - 20	21 - 34	35 - 42	43 - 45	46 - 48	49	50 - 53	54	55 - 80
		12 - 11 - 8 - 9 (which prints as Q)							
		Blank							
		Jobname							
		JOB							
		HASP job number							
		Blank							
		Room Number							
		Blank							
		12 - 11 - 8 - 9							

The major purpose of this change is to make a card which, when printed is identifiable to the operator and contains the data he needs.

```

./      DELET P090F000,P0950000
MVI     JCTACCT,X'58'
MVC     JCTACCT+1(19),JCTACCT
MVI     JCTACCT+20,C' '
MVC     JCTACCT+21(34),JCTACCT+20
MVC     JCTACCT+34(8),JCTJNAME
MVC     JCTACCT+42(3),C'JOB'
MVC     JCTACCT+45(3),JCTJOBEB
MVC     JCTACCT+49(4),JCTROOMN
MVI     JCTACCT+54,X'58'
MVC     JCTACCT+55(25),JCTACCT+54

```

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HASP (continued)

Put the punch CCW for the separator card in the chain, and if using a 3525, put a CCW to print columns 15 through 80 on the top line of the card.

Set error recovery pointer after CCM's for separator card.

BAL	PL,PFUTOLAY		P0984001
CLI	PDEVTYPE+3,X'OC'	IS THAT A 3525?	P0984002
BNE	PUNLACEX	NO	P0984003
LA	PC1,14(PC1)	PRINT COLS. 14 THRU 77	P0984004
AL	PC1,PRLCCW	PRINT LINE CCM LEFT HALF	P0984005
L	PC2,PRLCCW+4	PRINT LINE CCM RIGHT HALF	P0984006
BAL	PL,PFUTOLAY	ADD CCW TO CHAIN	P0984007
PUNLACEX	EQU *		P0984008
./	DELET P0986000,P0986000		
LA	PW,PCCWCHN		P0988001
LA	PW,24(,PW)		P0994000

If the device being used is a 3525, and if the special forms bit is on, set up print line or lines after first ensuring that unused characters in the image will be replaced with blanks. Then build print line CCM's and cause a buffer drain to avoid error recovery problems.

*			P1418040
*MITRE ADDITION TO ALLOW PRINTING ON PUNCHED CARDS.			P1418080
*THIS CODE IS ENTERED ON RECEIPT OF A PUNCH SPECIAL FORMS REQUEST.			P1418120
*FORMS TYPE 2 WILL CAUSE PRINTING OF COLUMNS 1-40 AND 73-80 ON			P1418160
*THE FIRST PRINT LINE AND COLUMNS 41-80 ON THE SECOND PRINT LINE.			P1418200
*FORMS TYPE 3 WILL CAUSE PRINTING COLUMNS 2-4 and 73-80 ONLY.			P1418240
			P1418280
CLI	PDEVTYPE+3,X'OC'	IS THIS A.3525?	P1418320
BNE	PRNOPRNT	NO,BYPASS PRINTING CODE	P1418360
L	PW,PDCCT	GET PUNCH DCT ADDRESS	P1418400
USING	DCTDSECT,PW		P1418440
CLC	DCTFORMS(2),-H'O'	SPECIAL FORMS REQUEST?	P1418480
BE	PRNOPRNT	NO	P1418520
L	R1,+A(DUNHAY)		P1418560
MVI	O(R1),C' '		P1418600
MVC	I(79,R1),O(R1)		P1418640
LA	PL,O(PC2)		P1418680
S	PL,-F'1'		P1418720
IM	PRNOPRNT		P1418760
EX	PL,MOVEIT		P1418800
L	PWP,-A(PRLHUF)	GET ADDRESS OF PRINT LINE	P1418840
		HUF5	
MVI	O(PWP),C' '	CLEAR PRINT LINE BUFFER	P1418880
MVC	I(55,PWP),O(PWP)		P1418920
MVC	56(8,PWP),72(R1)	MOVE COLS. 73-80 TO PRT	P1418960
		LINE	

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RASP (cont. Inad)

STM	PCI, PC2, PSAVEPCS	PRESERVE PUNCH CCM REGISTERS	P1419000
CLC	DCTFORMS(2), -H'2'	DID HE REQUEST TWO-LINE PRINT?	P1419040
BE	PTWOLINE		P1419080
CLS	DCTFORMS(2), -H'3'	DID HE REQUEST OBJECT DECK ID?	P1419120
RNE	PRINTINT	IGNORE UNDEFINED FORMS TYPE	P1419160
DROP	PW		P1419200
MVC	1 (3, PNP), 1 (R1)	MOVE IN OBJ DECK CARD TYPE FIELD	P1419240
LM	PCI, PC2, PRLCCW1	GET PRINT LINE CCM	P1419280
B	PPRINTLN	GO PRINT ON THE CARD	P1419320
MOVEIT	MVC		P1419360
	0 (0, R1), 0 (PCI)		

PTWOLINE	MVC	0(40, PNP), 0(R1)	PRINT COLUMNS 1-40
LM	PCI, PC2, PRLCCW1		GET PRINT LINE CCM
BAL	PL, PPUT		ADD TO CCM CHAIN
L	PCI, PSAVEPCS		RESTORE PCI TO POINT TO CARD IMAGE
MVC	64(40, PNP), 40(R1)		MOVE 2ND PRINT LINE TO 2ND BUFFER

L	PCI, PRLCCW2	GET LEFT HALF OF CCM FOR 2ND LINE
BAL	PL, PPUT	ADD TO CCM CHAIN
BAL	PL, PWRITE	FORCE BUFFER DRAIN
BAL	PL, PWRITE	
LA	PCI, PCCWCHN+8	
ST	PCI, IOBSTART	
LM	PCI, PC2, PSAVEPCS	RESTORE PUNCH CCM TO REGISTERS

END OF MITRE ADDITION TO PRINT ON PUNCH CARDS

THIS AVOIDS THE ISSUE OF A POSSIBLE VARIABLE NUMBER OF CCM'S PER CARD

L	PW, PCCWPT	PICK UP POINTER TO LAST	p1768000
LA	PW, 8(PW)	CHANNEL COMMAND IN CHAIN	p1769000

IF 3525, DO NOT REQUIRE OPERATOR ACTION FOR SPECIAL FORMS. SOME MORE SOPHISTICATED TEST IS NECESSARY IF REAL SPECIAL FORM PUNCHING ON A 3525 IS TO COEXIST WITH THIS CODE FOR PRINTING ON CARDS.

CLI	PDEVTYPE+3, X'0C'	IS THIS 3525?	p4396400
BE	PFORMST+10	SET FORMS CODE IN DCT & RET.	p2396800

* THE ABOVE MUST BE CHANGED IF ANY REAL SPECIAL FORMS ARE TO BE USED ON THE 3525 PUNCH.

This has been inserted to prevent re-starting a CCM chain with a print command. The real significance and proper handling of punch errors due to print failure has yet to be determined.

CLI	0(PW), X'0D'	IS THIS A PRINT LINE CCM?	p2740500
SL	PW, -P'B'	YES. BACK UP TO PUNCH CCM	p2741000

CCM's and work areas.

PRLCCW	CCW	X'0D', 0, X'60', 64	3525 PRINT LINE CCM	p3193000
PRLCCW1	CCW	X'0D', PRLBUF, X'60', 64	PRINT LINE CCM - 1ST LINE	p2193200
PRLCCW2	DC	XLI' ID', AL3(PRLBUF+64)	LEFT HALF OF CCM FOR 2ND LINE	p3193400
PSAVEPCS	IS	2F	INDEX REGISTER PRESERVE	p3194200
PRLBUF	DC	128C'	PRINT LINE BUFFERS	p3574100
DUPPY	DC	80C'		p3574200

Prevents queuing of SYSOUT-(B,,x) data sets on special routing queues. Again, this may have to be changed if this printing is to co-exist with real special form punching.

CLI	XJCLUSK1+3, C'B'	IS THIS NORMAL PUNCH?	x6414000
BE	XJCLSRIB+4	YES, DON'T SET SPROUTE BIT	p6415000
B	XJCLSRIB		x6416000

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The Mitre Corporation
Bedford, Mass. 01730

CORE SAVER FOR OS NUCLEUS USING HASP

This technique allows savings of up to 18 bytes in the OS nucleus per HASP pseudo-device UCB.

1. SYSGEN all of your pseudo-devices as the highest addresses in the system. The best technique is to use a non-existent channel; this example will use channel 4 as the high, non-existent channel.
2. The IECIUCB macro should be changed to delete the 8 bytes normally generated for dummy devices: (MVT 21.7)

```
.1      .10      .16      .36      .73
AGO      .END      FOR DUMMY DEVICES  47500018
```

3. The last input statement of the IEAQPX00 assembly generates the statistics table entries for all UCBs defined in the system. Reduce the count on the IECIST macro card only by the count of pseudo-device UCBs in the system. This change increases the savings by 10 bytes per pseudo-device, bringing the total to 18 bytes.

4. If step 3 is used, a zap must be applied to IFBSTAT (IGC0307F) to prevent it from trying to write non-existent stat records. This zap inhibits EOD processing for the HASP pseudo-devices, which it assumes have the highest addresses in the UCB list. The zap is required due to a rewrite of the EREF stats routines (IFBSTAT) for Release 21.7.

```
NAME IGC0307F      (MVT 21.7)
VER 0060  43650009  IC  WORK3,UCBSTAT(WORK2)
VER 0334  00000000  --PATCH AREA--
REP 0060  47F0A332  8  PATCH
REP 0334  D5015004A344 CLC  UCBCHA(2,WORK2),PSEUDO Q/Pseudo UCB
REP 033A  47B8A238  BNL  NSCHECK Y/Ignore it
REP 033E  43650009  IC  WORK3,UCBSTAT(WORK2) *Displaced*
REP 0342  47F0A062  *Return to Mainline*
REP 0346  0400      Lowest Pseudo Address, 400
```

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III - 5

HASP AND MVT R21.8

Users of HASP planning to install OS Release 21.8 should take note of two APARS outstanding against module IGC0201A which will cause S100 ABENDs during the close of DDs for HASP Pseudo Devices. It is especially important for those installations using HASP 4.0 retrofitted. The APARS are: P73766 and P67994.

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* USING THE SYSIN BATCHING READER UNDER HASP 4.0 *

Because HASP 4.0 uses STATUS STOP to freeze a task waiting for SYSIN or SYSOUT on the SPOOL, the entire Reader/Interpreter is frozen when the last card of a job is passed to it. If HASP 4.0 is retrofitted to MVT, the SYSIN Batching Reader is unusable, since the Interpreter is frozen along with the Reader task (the Interpreter runs as an asynchronous subtask).

This superzap corrects this problem by making the Reader task wait for the interpreter to complete as each job is passed to it. The core savings (real core in MVT) can be about 40K.

```
NAME IEFVMB IEFVMB      MVT 21.8
VER 084C 07F7
REP 084C 0700
IRDATA ASBRDR-UNDER-HASP4
```

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HASP PRINTER ALARM
Here's a simple fix to prevent HASP from using a printer while writer (or any other task) is allocated on the printer.
Follow the HASPGEN input deck with:
CHANGE NAME=HASP COM
*TESTAT,X'08'
C4571100
C4571200
ccp manual.

HASP HOSRDR

Here's a fix suggested by the HASP Development Team that prevents HOSRDR from being fragmented away from the HASP region when HASP is allowed to start initiators and HOSRDR during initialization.

Follow the HASPGEN input deck with:

```
./          CHANGE NAME=HASPINIT
           STIMER WAIT, DINTVL=TMEDLAY      N6038010
           B      TMEDLAY + 8                N6038020
           DS      OD                        N6038030
           DC      C'00001200'              N6038040
           ENDUP
./
/*
```

using the procedure described on pg. 658 of the HASP manual.

This was applied to a MVT 21.6 system on HASP 3.1 and the fragmentation previously experienced was eliminated. The fragmentation was originally attributed to an OS problem that was appearing intermittently in previous releases. This fix eliminates the problem permanently, regardless of what OS release is used.

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HASP PRINTER ALLOCATION

Here's a simple fix to prevent HASP from using a printer while an OS writer (or any other task) is allocated on the printer.

Follow the HASPGEN input deck with:

```
UPDATE
./          CHANGE NAME=HASPCOMM
           TM      SRTSTAT,X'08'            C4571100
           BO      CSXINVO                  C4571200
           ENDUP
./
/*
```

using the procedure described on pg. 658 of the HASP manual.

After this fix is applied, and an operator types in the \$SPRTn command while OS has the printer allocated, the INVALID OPERAND error message will be typed and the \$SPRTn is ignored.

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HOSRDR MODIFICATION

When running MVT with HASP, the HASP reader (HOSRDR) must be stopped and re-started by an operator each midnight so that the correct date will be used to calculate retention periods. This modification eliminates the need for an operator to perform this cumbersome procedure.

The mod is to MVT Rel. 21.7 after expanding IEFVHCB to X'SAB' bytes:

NAME	IEFVHCB	IEFVHCB	
VER	01A2	9201A004	MOVE VERB ID TO PARM LIST (JOB)
VER	01B2	47F0B11E	B B233
VER	055C	4040	PATCHAREA FROM EXPAND
REP	01B2	47F0B55A	B PATCH
REP	055C	1841	LR R6,R1 SAVE REG 1
REP	055E	5800B5A0	L TO,-P'B' LOAD LENGTH OF GETMAIN
REP	0562	4510B564	BAL R1,*4 INDICATE GETMAIN
REP	0566	0A0A	SVC 10 GETMAIN THE WORK AREA
REP	0568	1841	LR R4,R1 SAVE ADDRESS OF WORK AREA
REP	056A	1800	SR R0,R0 ZERO REG 0
REP	056C	41100002	LA R1,2 INDICATE TIME DEC
REP	0570	0A0B	SVC 11 TIME
REP	0572	50104000	ST R1,WORK STORE DATE
REP	0576	F37340004000	UNPK WORK,WORK GET DATE IN ZONE DECIMAL
REP	057C	D204C0374003	MVC UNQNAME+3(5), WORK+3 MOVE IN DATE
REP	0582	50004000	ST R0, WORK STORE TIME
REP	0586	F37340004000	UNPK WORK, WORK UNPACK THE TIME
REP	058C	D205C03E4001	MVC UNQNAME+10(6),WORK+1 MOVE IN TIME
REP	0592	5800B5A0	L RQ,-P'B' GET LENGTH FOR FREE
REP	0596	41104000	LA R1,0(R4) GET ADDR TO BE FREED
REP	059A	0A0A	SVC 10 FREE MAIN
REP	059C	1816	LR R1,R6 RESTORE R1
REP	059E	47F0B11E	B B233 BR BACK
REP	05A2	0000,0008	VALUE FOR GET/FREEMAIN

Submitted by:
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HASP FCB INDEXING MACRO

The following enhancement provides print position indexing support for 3211 printers, under HASP Version 3.1 by additional parameter input to the FCB macro.

e.g.: label FCB _____, INDEX = K, number

./	CHNCE FCB	
6LABEL	FCB 6LP1,6INDEX-	
	LCLA 6NDX	USTNDX FC004000
	AIF (T'6INDEX EQ 'O'), UST1	USTNDX FC007000
	AIF (N'6INDEX EQ 2), UST2	USTNDX FC319000
	MNOTE 4,'*** INDEX MUST HAVE 2 SUBPARAMETERS'	USTNDX FC319050
	AGO .UST1	USTNDX FC319100
.UST2	AIR (T'6INDEX (2) EQ 'N'), UST3	USTNDX FC319150
	MNOTE 4,'*** 2ND INDEX SUBPARAMETER MUST BE NUMERIC	USTNDX FC319200
	AGO .UST1	USTNDX FC319250
.UST3	AIF ('6INDEX (1) ' EQ 'L'), UST4	USTNDX FC319300
	AIF ('6INDEX (1) ' EQ 'R'), UST5	USTNDX FC319350
	MNOTE 4,'*** 1ST INDEX SUBPARAMETER MUST BE L OR R:	USTNDX FC319400
	AGO .UST1	USTNDX FC319450
.UST4	ANOP	USTNDX FC319500
6NDX	SETA (64*6INDEX(2))	USTNDX FC319550
	AGO .UST6	USTNDX FC319600
.UST5	ANOP	USTNDX FC319650
6NDX	SETA (128*6INDEX(2))	USTNDX FC319700
.UST6	ANOP	USTNDX FC319750
6LP	SETA (6LP-1)	USTNDX FC319800
.UST1	ANOP	USTNDX FC319850
	AIF (6NDX EA 0), UST7	USTNDX FC319900
	DC ALI (6NDX),	USTNDX FC327000
6LP	SETA (6LP-1)	USTNDX FC327100
.UST7	ANOP	USTNDX FC327200
		USTNDX FC327300

Submitted by:
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HASP HOSRDR

Here's a fix suggested by the HASP Development Team that prevents the HOSRDR from being fragmented away from the HASP region when HASP is allowed to start initiators and the HOSRDR during initialization.

Follow the HASPGEN input deck with:

```
./ CHANGE NAME=HASPINIT
  STIMER WAIT, DINTVL=THEDELAY N6038010
  B THEDELAY+B N6038020
  DS 00 N6038030
  DC C'00001200' N6038040
./ ENDUT
/*
```

using the procedure described on page 658 of the HASP Manual.

This was applied to an MVT 21.6 system using HASP 3.1 and the fragmentation previously experienced was eliminated. The fragmentation was originally attributed to an OS problem that was appearing intermittently in previous releases. This fix eliminates the problem permanently regardless of what OS release is used.

Submitted by:
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INTELLIGENT \$DD

The Chase Manhattan Bank is currently operating two 360/65s and an MF65 with 19 banks of 2314 disk drives, three of which are shared between the systems. As can be imagined, the operators face quite a problem in determining whether a given disk pack is mounted and where it is.

Because of this we have expanded the function of the HASP \$DD Command to display the device on which a given disk pack resides, as well as five additional command options. As such, our \$DD Command serves as a highly efficient and responsive replacement for the OS 'D U, DASD' Command on our 2250 Display Consoles.

All displays generated by our \$DD adhere to the following structure:

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```
(ONLINE )(volser#) (PRIVT ) (RESRV ) (SHR )
$ * tttttt ccu (OFFLINE )(NO-ID ) NTRDY ALLOC BUSY(STRGE ) (RSDNT )
(PUBL ) (REMOV ) MTP (-R- )
```

where: tttttt is the time
ccu is the channel/controller/unit address
ONLINE the device is online
OFFLINE the device is offline
volser# is the volume serial number of the disk pack
NO-ID no volume serial number is in the UCB
NTRDY the device is not ready
ALLOC the device is allocated
BUSY the device is busy
PRIVT the pack is mounted as private
PUBL the pack is mounted as public
STRGE the pack is mounted as storage
RESRV the pack is mounted as reserved
REMOV the pack is removable
RSDNT the pack is resident
MTP a mount is pending
SHR the unit is sharable
-R- the unit has a Reserve CCW outstanding

The options available with our new command are as follows:

```
$DD all devices are displayed
$DD,ON all ONLINE devices are displayed
$DD,OFF all OFFLINE devices are displayed
$DD,volser# the specified pack is displayed
$DD,ccu the specified device is displayed
$DD,ccX the specified bank is displayed
```

To install \$DD into HASP Version 3.1 on our systems we made the following changes within the module HASPCOMM:

1. Replaced the \$CONGRUP Macro that defined the \$DL, \$DR, \$DU, and \$DD Commands with a \$CONGRUP Macro just defining the \$DD Command. This was done because the changes necessary to \$DD would push the overlay module over 1K in length.
2. Added the code for the new \$DD Command following the \$CONGRUP macro thereby establishing \$DD as a separate 1K overlay module.
3. Coded a new \$CONGRUP Macro as the last operation in the \$DD Command defining the \$DL, \$DR, and \$DU Commands, thereby retaining the continuity of HASPCOMM.

Graphically, the changes appear as:

```
//.....JOB.....
//STEP EXEC PGM=IEBUPDTE
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=SYS1.HASPSRC,DISP=OLD ) HASP SOURCE LIBRARY
//SYSUT2 DD DSN=SYS1.HASPSRC,DISP=OLD )
//SYSIN DD *
./ CHANGE NAME =HASP COMM
HASPCHS0 $CONGRUP DD,PRTY=0
C5970000 (note 1)
```

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HASPCMS1 \$COMGRUP DL,DR,DU,PRTY-0
./ ENDUP
/a

C6029990 (note 2)

note 1 (this card establishes \$DD as an overlay module. The original label (was HASPCMS1 and we changed it to HASPCMS0.

note 2 (this card re-establishes \$DL, \$DU, \$DR as an overlay module.

For further information or the deck, contact our submitor:

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3525 HASP MOD

The following code is a modification to the HASP Version 3.1 PRINT/PUNCH processor. It causes punched output to an IBM 3525 Card Punch to be printed on the card. The first 64 bytes of the card are printed on line 1 and if necessary the excess is printed, left adjusted, on line 3. Right adjustment would have required additional CCWs and would have increased the size of our version of the PRINT/PUNCH Processor to over 4K. Therefore, it was not implemented.

Note that this modification is not applicable to the HASP accounting cards, and that S/370 instructions are employed.

CLI	PDEVTYPE+3,X'03'	TEST DEVICE TYPE		P1408000
BE	PUNCH1	BRANCH IF 1442 PUNCH	AEP07	P1410000
PRT CLI	PDEVTYPE+3,X'0C'	TEST FOR 3525 PUNCH	AEP07	P1410100
RNE	BRZCL	NOT A 3525	AEP07	P1410200
L	PC1,PCWORK	PICK UP MODIFIED PUNCH CMD	AEP07	P1410300
BAL	PL,PPFUT	ADD CCW TO CHAIN	AEP07	P1410400
ICM	PC1,B'1000',PUPRTL1	SET PRINT ON LINE 1	AEP07	P1410500
CLM	PC2,B'0001',-X'40'	RESET RECORD LENGTH	AEP07	P1410600
BNH	PUPRT1	NOT GREATER THAN 64	AEP07	P1410700
IC	PC2,-X'40'	PRINT 2 LINES .64 BYTES	AEP07	P1410800
BAL	PL,PPFUT	ADD CCW TO CHAIN	AEP07	P1410900
S	PC1,-'2'	POINT TO RECORD LENGTH	AEP07	P1411000
XI	O(PC1),64	PRINT LINE 3	AEP07	P1411100
IC	PC2,O(PC1)	RECORD LENGTH-64	AEP07	P1411200
A	PC1,PUPRTL3	FROM BUFFER+2+64	AEP07	P1411300
B	PUPRT1		AEP07	P1411400
NCHI NVI	PCWORK,X'C1'	SET STACKER 2 COMMAND	AEP07	P1412000
RZCL L	PC1,PCWORK	PICK UP MODIFIED COMMAND	AEP07	P1416000
PRT1 BAL	PL,PPFUT	ADD CCW TO CHAIN	AEP07	P1418000

PRTL3 DC OF'0'X'10000042' 3525 PRINT ON LINE 3
PRTL1 DC X'0D' 3525 PRINT ON LINE 1
AEP07 P3003000
AEP07 P3003500

Submitted by:
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HASP/3705 LOOP

The following contribution stems from questions asked at the June 22, 1973 OSERC Meeting with regard to problems bringing HASP up when a 3705 loaded with the emulator is online to the system. The solution to the problem of HASP going into T10-loop at initialization time is to make the value for the HICHAN=parameter in the BUILD macro of the 3705 Emulator Gen equal to the highest channel address hard-wired into the 3705. It does not matter whether or not there are physical lines attached to every channel address. Thus, if a 3705 has hard-wired ports for addresses 060 through 077, and only 060 through 068 have physical lines attached to them, the values substituted in the gen are HICHAN=77 and LOCHAN=60.

Submitted by:

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\$MP COMMAND FOR HASP

The source listing on the following pages is of a HASP modification that permits the console operator to display tape and disk mounts that are still pending. The reply to the command is

jobname dname unit volser

or if no mounts are pending the reply is

*** NO MOUNTS OUTSTANDING ***

To install this new command into your HASP system, the HASP Command PCE workarea should be increased by 120 bytes, and an entry in the CONTAB table must be added with the following format:

\$CONTAB MP,HASPCMP1

The source listing of the routine now follows.

```

ASPCMP1 $COMGRP MP,PRTY=0                                UST C6574000
*****                                                    UST C6575000
                                UST C6576000
                                UST C6577000
                                UST C6578000
                                UST C6579000
                                UST C6580000
                                UST C6581000
MP      DS      OH                                UST C6583000
        L      WC,BCVPPTR                        CVI POINTER    UST C6584000
        L      WB,CVILK2-CBTDSCT(WC),UCB LOOKUP TABLE    UST C6585000
        LA     WF,COMN,IBID+2                     WORK AREA WITHIN PCE    UST C6586000
        SR     WD,WD                               COUNTER FOR UCBS NEEDING MOUNTS    UST C6587000
        LA     WF,MOUNTMAX                         MAX # UNITS AWAITING MOUNTS TS    UST C6588000
MPMOUNT DS      OH                                UST C6589000
        LH     WA,)(,WB)                          POINT TO UCB          UST C6590000
        LA     WB,2(o,WB)                         NEXT UCB              UST C6591000
        LTR    WA,WA                              VALID UCB         UST C6592000
        B7     CMPHOUNT                           NO, GET NEXT UCB      UST C6593000
        BH     CNHWRT                             FND OF LIST         UST C6594000
PEDISK  EQU     X'5F'                             UST C6595000
UNIMAX  EQU     40                                UST C6596000
        USING  UCBDSECT,WA                        UST C6597000
        TH     UCBIYI3,TAPEDISK                   IS IT TAPE OR DISK    UST C6598000
        BNE    CMHOUNT                            NEITHER GET NEXT UCB    UST C6599000
        TH     UCBNCT,UCBMOUNT                    IS MOUNT PENDING      UST C6600000
        B7     CMHOUNT                            NO, FIND NEXT UCB      UST C6601000
        CL1    UCBIYI3,UCB3DACC                   IS THIS A DA DEVICE    UST C6602000
        BE     CMPLACE                             YES SAVE UCB ADDRESS    UST C6603000
        TH     UCBIYI2,UCBNTRD                     IS TAPE READY         UST C6604000
        BZ     CMHOUNT                            NO, GET NEXT UCB      UST C6605000

```

SMP Command For Hasp (Continued)

```

PPLACE DS      OH                                UST C6606
        LA     R15,COMN,IBID+2                     ANY UCBS FOUND REQUIRING MOUNT    UST C6607
        LTR    R14,WD                               NO, STORE THIS ONE    UST C6608
        BZ     CMPTSTORF                            UST C6609
PDUP    DS      OH                                UST C6610
        CH     WA,0(,R15)                          WAS THIS UCB PREVIOUSLY FOUND    UST C6611
        BE     CMPOINT                             YES, DO NOT SAVE IT    UST C6612
        LA     R15,2(,R15)                         NEXT UCB SAVED        UST C6613
        BCT    R14,CMPDUP                          CONTINUE SEARCH FOR DUPLICATE UCBS    UST C6614
PSTORF  DS      OH                                UST C6615
        STH    WA,0(,WF)                          SAVE UCB ADDRESS       UST C6616
        LA     WF,2(,WF)                          NEXT SAVE AREA        UST C6617
        LA     WD,1(,WD)                          INCREMENT FOUND COUNTER    UST C6618
        BCT    WE,CMHOUNT                            UST C6619
PWRIT   DS      OH                                UST C6620
        STH    WD,COMN,IBID                         SAVE TOTAL NUMBER OF MOUNTS PENDING    UST C6621
        LTR    WD,WD                               ANY MOUNTS PENDING    UST C6622
        B7     CMHOUNT                             NO, ISSUE NO MOUNTS PEND    UST C6623
        &CWID  NSC-CMPOINTNS,L=32                  UST C6624
        L      WF,$HSPICB                          HASP TCB              UST C6625
PTCBX   DS      OH                                UST C6626
        USING  TCBDSECT,WE                          UST C6627
        L      WF,TCBTB                             NEXT TCB              UST C6628
        LTR    WF,WE                              ANY TCBS LEFT TO CHECK    UST C6629
        B7     CMPTCBL                             NO MORE TCBS ON CHAIN    UST C6630
        COMMAND(40),COMMAND                        UST C6631
        L      WF,TCB(10)                          TIOT FOR THIS TASK     UST C6632
        LTR    WF,WF                              TIOT EXIST             UST C6633
        BNZ    CMPTIOT                             YES IT DOES PROCESS     UST C6634
        L      WA,TCBRBP                          ANY RB ASSOCIATED WITH JOB    UST C6635
        LTR    WA,WA                              UST C6636
        B7     CMPTCBX                             NO RB, TASK NOT ACTIVE    UST C6637
        C      C IFWDOOD,PROGRAM(WA) ARE WE IN ALLOCATION    UST C6638
        BNE    CMPTCBX                             NO, FIND NEXT TCB      UST C6639
        L      WF,TCBGRS+B                         GET REGISTER 12        UST C6640
        BAL    WB,CMPTVALCK                       VALIDITY CHECK ROUTINE    UST C6641
        BNZ    CMPTCBX                             GET NEXT TCB          UST C6642
        L      WF,X'24'(,WF)                       POINT TO TIOT POINTER    UST C6643
        BAL    WB,CMPTVALCK                       CHECK ADDRESS VALIDITY    UST C6644
        BNZ    CMPTCBX                             POINTER NOT VALID      UST C6645
        L      WF,0(,WE)                          TIOT ADDRESS           UST C6646
        BAL    WB,CMPTVALCK                       UST C6647
CMPTIOT DS      OH                                UST C6648
        MVC     COMMAND(8),0(WF)                   JOB NAME              UST C6649
        LA     WF,24(,WF)                          FIRST DD ENTRY         UST C6650
        CMPTDIN DS      OH                          -D ENTRY              UST C6651
        SR     R15,R15                               UST C6652
        TC     R15,0(0,WF)                         DD ENTRY LENGTH        UST C6653
        LTR    R15,R15                             ANY DD ENTRY           UST C6654

```


* Command For Hasp (continued)

B7	CHPTCRUX	NO, GET NEXT DD CARD	UST	C6648000	
LA	WC,16,(WF)	POINT TO FIRST DEVICE	UST	C6649000	
SRI	WC,1	MAKE SURE ON HALFWORD BOUNDARY	UST	C6650000	
SLI	WC,1	MAKE SURE ON HALFWORD BOUNDARY	UST	C6651000	
SR	R10,R10		UST	C6652000	
IC	R10,1,(WF)	NUM DEVICES REQUESTED	UST	C6653000	
LTR	R10,R10	ANY DEVICES	UST	C6654000	
BZ	CHPDDNX	NO, GET NEXT DD CARD	UST	C6655000	
PHNCHT DS	OH		UST	C6656000	
LR	R14,WF	SAVE REGISTER	UST	C6657000	
LA	WF,2,(WC)	POINT TO UCB ADDRESS	UST	C6658000	
BAL	WB,CHPVALCK	CHECK FOR VALID ADDRESS	UST	C6659000	
BH7	CHPICBNX		UST	C6660000	
LR	WF,R14		UST	C6660500	
LH	R1,CONJBJID	COUNT OF MOUNTS PENDING	UST	C6661000	
LA	WA,CONJBJID+2	FIRST MOUNT PENDING	UST	C6662000	
PHNTES DS	OH		UST	C6663000	
LH	RO,0,(WA)	MOUNT PEND UCB ADDR	UST	C6664000	
LA	WA,2,(WA)	NEXT UCB ADDRESS	UST	C6665000	
CH	RO,2,(WC)	UNIT ADDRESSES EQUAL	UST	C6666000	
BE	CHPHOV	YES, MOVE DDNAME, VOL SER AND UNIT TO BUFFER AREA	UST	C6668000	
BCI	R1,CHPHNTES		UST	C6669000	
DS	OH		UST	C6670000	
LA	WC,4,(WC)	NEXT DEVICE IN TIOT	UST	C6671000	
BCT	R10,CHPHCHNT	CONT LOOP FOR DEV FOR THIS DD	UST	C6672000	
DS	OH		UST	C6673000	
LA	WF,0 (R15,WF)	NEXT DD ENTRY	UST	C6674000	
BAL	WB,CHPVALCK	CHECK ADDRESS FOR VALIDITY	UST	C6675000	
BZ	CHPDDIN	GET NEXT DD CARD	ITY	UST	C6676000
B	CHPTCRUX	GET NEXT TCB	ITY	UST	C6677000
DS	OH		UST	C6678000	
S	NO,16	PURIFY ADDRESS	UST	C6679000	
BCTB	WA,RO		UST	C6681000	
BCTB	WA,RO		UST	C6682000	
XC	0(2,WA),0(WA)	REMOVE UCB FROM LIST	UST	C6683000	
LB	WA,RO	UCB ADDRESS OF MOUNT	UST	C6684000	
MVC	COMMAND+10(8),4(WF) DDNAME		UST	C6684500	
BAL	WB,CHPUNITH	GET UNIT AND VOL SER	UST	C6685000	
B	CHPDEVNX	GET NEXT DEV FOR THIS ENTRY	UST	C6687000	
DS	OH		UST	C6688000	
CLT	UCBNAME,C'A'	IS THIS VALID ADDRESS	UST	C6688100	
BL	0(WO)	NO DO NOT ISSUE MOUNT MSG	X	UST	C6688200
MVC	COMMAND+19(3),UCBNAME UNIT ADDRESS		UST	C6689000	
MVC	COMMAND+25(6),SRTEVO T VOL SER #		UST	C6690000	
TM	SATEVOLT,SCRATCH	IS SCRATCH NEEDED	UST	C6691000	

SHP Command For Hasp (continued)

BM	CHPVOLPR	NO, VOLUME SER IS PRESENT	UST	C6692000	
CRCH	EQU X'FF'		UST	C6693000	
MVC	COMMAND+25(6),SCRATCH INDICATE SEARCH		UST	C6694000	
MPVOLPR	OS OH		UST	C6694500	
LR	WB,R15	SAVE U DD INDEX	UST	C6694600	
GCWTO	I=32		UST	C6695000	
LR	R15,WH	RESTORE DD INDEX	UST	C6695500	
XC	COMMAND(40),COMMAND		UST	C6696000	
BR	WD		UST	C6697000	
MPHONIT DS	OH		UST	C6698000	
BCRFT	HAS-CHPNOHF,1-29		UST	C6698200	
MPHONIT DC	CL 29'***NO MOUNTS OUTSTANDING ***'		UST	C6698500	
MPICBLS DS	OH		UST	C6699000	
DROP	WF		UST	C6700000	
IH	WT,CONJBJID	COUNT OF UCBS	UST	C6701000	
LA	WF,CONJBJID+2	FIRST UCB	UST	C6702000	
DS	OH		UST	C6703000	
LH	WA,0,(WE)		UST	C6704000	
LA	WF,0,(WE)	NEXT UCB	UST	C6705000	
LIR	WA,WA	ANY UCB ADDRESSES	UST	C6706000	
BZ	CHPUNITH	NO CONTINUE SEARCH	UST	C6707000	
SRL	WA,16	PURIFY ADDRESS	CH	UST	C6709000
SRL	WA,16	PURIFY ADDRESS		UST	C6710000
MVC	COMMAND(4),NQHF		UST	C6711000	
BAL	WD,CHPUNITH	WRITE UNIT AND VOL SER	UST	C6712000	
MPUNITH DS	OH		UST	C6713000	
BCT	WF,CHPUNITH		UST	C6714000	
DROP	WA		UST	C6715000	
\$CRET			UST	C6715700	
EFWD000 DC	CL8'IEFWD000'	ALLOCATION MODULE	UST	C6720000	
ROGNAMF EQU	0		UST	C6721000	
CRATCH DC	CL6'SCRATCH'		UST	C6722000	
ONE DC	C'NONE'		UST	C6723000	
MPVALCK DS	OH		UST	C6724000	
STM	WF,R10,CONJBJID+100		UST	C6725000	
L	WC,\$CVTPTR	CVT ADDRESS	UST	C6726000	
L	WC,CVTOVL00-CVTDSCT,(WC)VALIDITY CHK RTN		UST	C6727000	
LR	B9,WE	TCB ADDRESS	UST	C6728000	
BALR	R10,WC	GO TO VALIDITY CHK RTN	UST	C6729000	
LH	WE,R10,CONJBJID+100		UST	C6732000	
BR	WB	RETURN TO MAINLINE	UST	C6733000	
MPHNTS DS	CL32'JOB NAME DDCARD UNIT VOL-SER'		UST	C6733500	

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VS RETROFIT

Introduction

The OS/VS2 Release 1.6 utility program, IERCOPY, has been modified to run on a 360 OS/MVT Release 21.6 system. While no major problems have been encountered, it must be emphasized that all options in all combinations have probably not been tried and some incompatibilities may still exist. In most part few incompatibilities were encountered.

In addition to the familiar IERCOPY functions (copy, compress inplace), the VS2 utility also loads and unloads partitioned data sets to sequential data sets. This is similar to the IEMOVE load/unload functions. The advantages of using IERCOPY rather than IEMOVE are 1) IERCOPY allows the use of SELECT and EXCLUDE control cards for both load and unload operations while IEMOVE will only load or unload entire partitioned data sets; 2) IERCOPY uses EXCP with PCI resulting in better job timings than IEMOVE using BSAM; 3) IERCOPY uses variable length records for its unloaded data sets for better efficiency than IEMOVE's fixed length records; 4) IERCOPY does not require explicit volume serial numbers to be specified on its control cards while IEMOVE does.

The only drawback the VS2/IERCOPY presents is that the list of its supported devices does not include the 2301 (drum) and 2321 (data cell). A few test cases seem to indicate that the load/unload operations will work successfully from a 2301 but that it definitely will not work from a 2321.

Installation

The VS2/IERCOPY consists of the three load modules: IERCOPY, ICG019CB (PCI appendage), ICG019FT (SIO appendage). Copy these modules to a library in the link list, renaming IERCOPY to VSCOPY and ICG019CB to ICG019DS. These modules are renamed to avoid confusion with their MVT counterparts. The following superzaps must then be applied:

NAME	VSCOPY	IERDSMCA	
VER	06B2	C3F8	CS - PCI APPENDAGE
REP	06B2	C4E2	DS
VER	06CA	C3F8	CS
REP	06CA	C4E2	DS
VER	07FA	C3F8	CS
REP	07FA	C4E2	DS
NAME	VSCOPY	IEBDV1	
VER	07D4	C3F8	CS - PCI APPENDAGE
REP	07D4	C4E2	DS
VER	07C2	58201054	DCB OF SYS1.SVCLIB
REP	07C2	41200000	ZERO DCB ADDRESS
NAME	VSCOPY	IEBVIM	
VER	06F6	C3F8	CS - PCI APPENDAGE
REP	06F6	C4E2	DS
NAME	ICG019FT	ICG019FT	
VER	92	41E0E008	CCW TRANSLATE RETURN
REP	92	41E0E000	NORMAL RETURN
NAME	ICG019DS	ICG019CB	
VER	FC	47F0E004	CCW TRANSLATE RETURN
REP	FC	47F0E000	NORMAL RETURN

Using Component Release for OS/VS2 Time Sharing Option (Feature #5011, 5012, 5409, 5410, Program #5742-010) with a 360 OS/MVT Release 21.6 gen.

The component release for OS/VS2 TSO has been installed in an OS/MVT Release 21.6 system and has been running on a 360/91 since June 6, 1973. While no major problems have been encountered, it must be emphasized that all options in all combinations of the various commands have probably not been tried and some incompatibilities may still exist. Generally few incompatibilities were encountered and a description of the new features and how they were installed follows:

- 1) ALLOCATE Command (ALLOCATE)
 - a) specify space in tracks or cylinders
 - b) request release of unused space in a data set
 - c) DUMMY keyword to allocate a dummy data set
 - d) when file in use, prompt to free-and-reallocate file or terminate

Changes for 360 (not required for 370)

NAME	ALLOCATE	IKJFDD30
VER	17D0	41F0C2E1
VER	17F6	41F0C2F9
REP	17D0	41F0C2E0
REP	17F6	41F0C2F8

- 2) ACCOUNT Command (IKJEFA10, IKJEFA20)

Enhancements:

- a) update the installation data field in the UADS

Changes because of change in format of ENQ/DEQ parameter list.

NAME	IKJEFA10	MACLFORM
VER	00	C0
REP	00	FF

NAME	IKJEFA20	IKJEFA20
VER	12E0	C0
VER	12EC	C0
VER	12F8	C0
VER	1304	C0
REP	12E0	FF
REP	12EC	FF
REP	12F8	FF
REP	1304	FF

- 3) EDIT Command (IKJEEMA, IKJEERU)

Enhancements:

- a) SEND subcommand of EDIT
 - b) specify private user libraries on the RUN subcommand
- No changes required.

- 4) OPERATOR SEND Command (IEEVSEND)
DO NOT INSTALL. Work area incompatibility destroys OS core.

- 5) PROFILE Command (PROFILE)
 Enhancements:
 a) list a user's profile
 Changes:
 The load module must not be marked reentrant.
- 6) RUN Command (RUN)
 Enhancements:
 a) specify private user libraries
 No changes required
- 7) SEND Command (SEND)
 Enhancements:
 a) an option not to wait for a message to be received by a user's terminal.
 b) write a message to the invoking user's terminal.
 Changes because of change in format of ENQ/DEQ parameter list

NAME	SEND	IKJES10
VER	109C	C0
VER	10AB	C0
VER	10B4	C0
REP	109C	FF
REP	10AB	FF
REP	10B4	FF
- 8) Parse Service Routine (IKJPARS)
 Enhancements:
 a) append character '+' to prompt messages when second-level messages are available.
 b) identify keyword in prompt message when prompting for keyword value
 c) continue scan after error when in no-prompt mode.
 No changes required.
- 9) Scan Service Routine (IKJSCAN)
 No changes required.
- 10) Dynamic Allocation
 DO NOT INSTALL. Not applicable to a non-virtual operating system.

David G. Sager (AP)
 from OSERC Newsletter March 22, 1974

INSTALLING VS2 UTILITIES ON OS

Our installation had a requirement to perform our VS2 SYSGEN under MVT (on a 155) prior to delivery of new relocate hardware (168).

To accomplish this, we extracted the necessary processors from the VS2 (release 1.6) starter system and copied them into the appropriate MVT libraries, followed by modifications (where necessary) to make them compatible with the MVT control program.

1. VS ASSEMBLER (XF)
 It is fully compatible with MVT and required no modifications. All IFOXnn modules were copied from SYS1.LINKLIB of the S.S. to SYS1.LINKLIB of MVT. IFOX00 was copied including its alias names of IEUASM and ASMBLR so that all assembler requests under OS would access the new version without having to change existing catalogued procedures or other JCL.
2. VS LINKAGE EDITOR
 Module HEWLFO64 was copied from SYS1.LINKLIB(S.S.) to SYS1.LINKLIB(MVT) together with its alias name of IEWL and LINKEDIT. The following SUPERZAP changes are necessary to make the ENQ/DEQ and RESERVE/RELEASE parameter lists compatible with OS.

NAME	HEWLFO64	HEWLFFNL
VER	06E0 C0	VER 0700 C0
REP	06E0 FF	REP 0700 FF

NAME	HEWLFO64	HEWLFINI
VER	0254 C0	VER 0DC4 C0
REP	0254 FF	REP 0DC4 FF
VER	0278 C0	VER 0DE4 C0
REP	0278 FF	REP 0DE4 FF

3. IERCOPY

The VS version provides the added facility to LOAD/UNLOAD PDS's between tape and disk. This function is required to restore (LOAD) the VS2 distribution library tape to disk.

- a) Copy IGG019FT from SYS1.LPALIB(S.S.) to SYS1.SVCLIB(MVT)
- b) Copy IGG019CB renaming it to IGG019C9 (via IERCOPY control card) from SYS1.LPALIB(S.S.) to SYS1.SVCLIB(MVT)
- c) Copy IERCOPY from SYS1.LINKLIB(S.S.) to a private library (subsequent use of the new version requires JOBLIB/STEPLIB).
- d) SUPERZAP the copied IGG019C9 appendage routine to make the return branch to IOS compatible with OS -

NAME	IGG019C9
VER	FC 47F0E004
REP	FC 47F0E000

- e) Change (SUPERZAP) the FCI appendage identifier from C8 to C9 and change the SIO appendage identifier from FT to 0b in the DCB's for SYSUT1, SYSUT2, and SYSUT4.

NAME	IERCOPY	IERDSNCA	(fiche IERDSCPY)
VER	0682 C3F8		VER 06CC C6E3
REP	0682 C3F9		REP 06CC F040
VER	0684 C6E3		VER 07FA C3F8
REP	0684 F040		REP 07FA C3F9
VER	06CA C3F8		VER 07FC C6E3
REP	06CA C3F9		REP 07FC F040

- g) Change the 'DELETE' for IGG019C8 to IGG019C9
NAME IEBCOPY IEBVTM
VER 06P6 C3P8
REP 06P6 C3P9

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PDSLIST PROGRAM

The following program prints an alphabetically arranged table of contents for each member of a partitioned data set. Each member is printed on a separate page and the page number is reflected in the table of contents at the beginning of the sysout listing:

```

PDSDUMP  START 0
        STM 14,12,12(13)
        BALR 12,0
        USING *,12
        LA 15,PCHSAVE
        ST 15,8(13)
        ST 13,5(15)
        LR 13,15
        OPEN (DCBPDS,,CONTENTS,(OUTPUT),MEMBERS,(OUTPUT))
        RDJFCB (DCBPDS)
        MVC DSHAME,PDSJFCB
        MVI BLANKLIN,C' '
        MVC BLANKLIN+1(132),BLANKLIN
START    BAL 14,NEXTMEMB
        CLI EOFPOSSW,X'01'
        BE EOJ
        MVC CURMEMBR,MEMNAME
        MVC MEMTITLE+1(8),MEMNAME
        MVC MEMTITLE+21(8),MEMNAME
        MVC MEMTITLE+41(28),MEMTITLE+1
        MVC MEMTITLE+81(28),MEMTITLE+1
        AP PAGCOUNT,-P'1'
        UNPK PAGEDETL,PAGCOUNT
        OI PAGEDETL+4,X'FO'
        MVC PAGCHEN,PAGEDETL
        CP COMBLINCT,-P'54'
        BL WRITCONT
        ZAP COMBLINCT,-P'4'
        PUT CONTENTS,CONTITLE
        MVI BLANKLIN,C'-'
        PUT CONTENTS,BLANKLIN
WRITCONT PUT CONTENTS,CUNDET
        AP COMBLINCT,-P'2'
        PUT MEMBERS,MEMTITLE
        MVI BLANKLIN,C'-'
        PUT MEMBERS,BLANKLIN
        ZAP MEMBLINCT,-P'4'
READMLX  READ DECBMEM,SF,DCBPDS,MEMBLK,'S'
        CHECK DFCMEM
        L 5,DECBMEM+16
        LH 5,14(5)
        LH 4,DCBPDS+62
        SR 4,5
        SRDL 4,32
        D 4,-F'80'
        LA 4,MEMBLK-80
DETLOOP  LA 4,80(4)

```

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PDSLIST PROGRAM (continued)

```

        MVC LINOUT,0(4)
        CP MEMBLINCT,-P'54'
        BL WRITMEM
        AP PAGCOUNT,-P'1'
        UNPK PAGCHEN,PAGCOUNT
        OI PAGCHEN+4,X'FO'
        PUT MEMBERS,MEMTITLE
        MVI BLANKLIN,C' '
        PUT MEMBERS,BLANKLIN
        ZAP MEMBLINCT,-P'4'
WRITMEM  PUT MEMBERS,MEMDET
        AP MEMBLINCT,-P'1'
        BCI 5,DETLOOP
        B READMEM
        B START
        EDDAD
        EOJ CLOSE (DCBPDS,,CONTENTS,,MEMBERS)
        L 13,4(13)
        LH 14,12,12(13)
        SR 15,15
        BR 14
        EJECT
NEXTMEMB STM 14,12,REGSAVE2
        B PDSREAD
        L 2,CURRADDR
        NI 11(2),B'00011111'
        SR 1,1
        IC 1,11(2)
        SLL 1,1
        LA 2,12(1,2)
        ST 2,CURRADDR
        MVC MEMNAME,0(2)
TESTEOF  CLC MEMNAME,-BX'FF'
        BNE TESTEOB
        OI EOFPOSSW,X'01'
        B EXIT
TESTEOB  CLC MEMNAME,-XLB'00'
        BNE PNTTOMEM
        OI NOTFOUND+3,X'01'
        POINT DCBPDS,NOTEADDR
PDSREAD  NI NEXTMEMB+5,X'OF'
        READ DECBPOS,SF,DCBPDS,DIRMLK,'S'
        CHECK DECBPOS
        NOTE DCBPDS
        ST 1,NOTEADDR
        LA 2,NAME
        LH 1,LENGTH
        LA 1,LENGTH(1)
        MVC 0(8,1),-XLB'00'
        B STORCURR
PNTTOMEM MVC FULLWORD,8(2)
        NI FULLWORD+3,X'00'
        POINT DCBPDS,FULLWORD
EXIT      LH 14,12,REGSAVE2
        BR 14

```

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```

EJECT
PCMSAVE DS 18F
NOTEADDR DS F
CURRADDR DS F
RECSAVE2 DS 15F
FULLWORD DS F
MEMNAME DS CL8
EOFFDSW DC X'00'
PAGECOUNT DC PL3'0'
CONSLINCT DC PL2'99'
MEMSLINCT DC PL2'99'
DIRBLK DS 00,CL264
ORG DIRBLK
LENGTH DS R
ENTRY DS OCL74
NAME DS CL8
TTR DS CL3
C DS CL1
USERDATA DS CL62
ORG
CONTITLE DC C'1',22C'A',22C' ',C'TABLE OF CONTENTS FOR '
DSNAME DC CL44' ',22C'A'
CONDETL DC C'0',CL20' '
CONMEMBR DC CL8' ',C' ',77C'-' ',C' '
PAGEDETL DC CL5' ',CL20' '
MEMTITLE DC C'1',CL120' ',C'PAGE '
PAGEMEM DC CL5' ',C' '
DCBPDS DCB DSORG=PO,MACRF=(R),EXLST=JFCBEXIT,EODAD=EODAD,
RECFM=U,BLKSIZ=16000,DDNAME=POS
CONTENTS DCB DSORG=PS,MACRF=PM,DDNAME=CONTENTS,RECFM=FBA,LRECL=133
MEMBERS DCB DSORG=PS,MACRF=PM,DDNAME=MEMBERS,RECFM=FBS,LRECL=133
JFCBEXIT DC OF'0',X'87',AL3(PDSJFCB)
PDSJFCB DS OF,CL176
ORG PDSJFCB
BLANKLIN DS CL133
ORG
MEMDETL DC CL26' '
LINOUT DC CL80' '
DC CL27' '
LTORG
MEMBLK DS CL16000
END PDSDUMP
./ ALIAS NAME=TDMP

```

Submitted by:
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The superzap that follows is method of suppressing the automatic start and stop initiator commands issued by IMS. In our HASP/IMS environment, IMS jobs are passed to HASP via the internal reader making the IMS initiators redundant.

The modification is to IMS module DFSICSCO, however, the zap listing shows the module name as IGC1025C...after it was renamed in our IMS Gen.

```

NAME IGC1025C
VERIFY 0072 4780,0080
REPL 0072 47FO,0080
VERIFY 00F6 4780,C104
REPL 00F6 47FO,0104
DUMP IGC1025C

```

Submitted by:
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SON OF HOLY MACRO

It was in the Vol. 1 No. 6 issue of this newsletter that our author first published a useful macro that all but programed itself; the title of that article was "Holy Macro?". He has offered up several new macros for our pleasure in this month's issue:

Several new macros are now available to ease the burden of the overworked system programmers. They are VWTO, VWTOR, VWTL, and VWTLST. The VWTO, VWTOR, and VWTL macros correspond to the standard WIO, WTOR, WIL macros supplied by IBM (VWTLST is an inner macro to the others). The difference is that these new macros allow variable information to be inserted into the message at execute time! To use, the "text" is coded as several fields enclosed in parentheses: i.e. (field1, field2, ..., fieldn), where each field is in one of the following formats:

Fixed Field: 'text segment'

Variable Field: (name, length [,fill])

Each variable field will insert into the message text a DC with the name "name" of the length "length". "fill" is an optional single character that the entire "name" will be filled with; its default is blank.

e.g: VWTO ('MOUNT', (SER,6), 'ON' (DEV,3,*))

This will generate into:

```

DC C'MOUNT'
SER DC CL6' '

```


DEV DC C'ON'
DC CLJ'***'

All facilities of the standard WTO, WTOR, and WTL macros are supported except MCSFLACS=, MSGTYPE=, and multiple line WTO/WTOR.

If desired, the WVTOLST could be used by itself to assemble print lines. If WVTOLST had been used in the above example instead of WTO, it would have generated only the four DC's.

To save space, I have not submitted the macros for printing here. They are available upon request in card from without charge.

Submitted by:
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CHANGING BUFFER SIZE IN LINKAGE EDITOR

For reasons of efficiency or convenience, it may be necessary to change the second value of the SIZE parameter in the PAJM options of the Linkage Editor. On the 88K Linkage Editor the default value of SIZE is (88K,8K) which will produce a block not greater than 4K, while it might be convenient to have a block of 6K for a 2314. To change the default buffer value (and thus the maximum block size) the following S/ZAP may be applied. The description is of a Release 20.6 system with the 88K Linkage Editor installed.

NAME IEWLFB80 IEWLHDEF
VERIFY 000C 0000,2000 8K buffer
REPLACE000C 0000,3000 12K buffer

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OS SEMI - AVR

The following superzap will give what is in effect a semi-AVR system. This modification will enable tapes to be premounted before a job is started. If, however, the tapes are not premounted, then standard allocation will take place which will avoid tying up the initiators while an ABR mount is pending. Also, the operator command DISPLAY REQUESTS (DR) will give the specific unit address requiring operator attention, not the message "AVR MOUNT PENDING."

Release 20.1

NAME IEFXVAVR IEFXV001
VERIFY 04B6 470,98CB
REPLACE 04B6 47F0,98DA

Release 20.6

NAME IEFXVAVR IEFXV001
VERIFY 04BE 4780,98FA
REPLACE 04BE 47F0,990C

The zap allows a system generated with AVR to execute the code recognizing premounted tapes and then branches around the AVR allocation routine to the specific device allocation code used if the tapes are unlabelled or if a symbolic unit tape (i.e., other than a generic name) is in the JCL. Knowing this, one can easily make up a similar zap to Release 21.X allocation routine IEFXV001 to accomplish this same function.

Taken from:
IBM Installation Newsletter.

HOLY MACKO??

The macro **PROGRAM** will establish entry and exit linkage for a program or subroutine, setup a save area, chain the save areas, and establish base register(s) for the program. What follows is a complete description of the **PROGRAM** macro and a source listing:

```

symbol  PROGRAM          base
      base1, base 2,...base n) SAVE=savearea
      EXIT=exitname ,EON=exnaddress , WTO = YES
      ROUTCODE = code ,RENT = YES , WORKA =n
      RECEQ=NO , VER = version
  
```

symbol

is required and will be the CSECT name of the program/subroutine.

base

Is required and is the register(s) to be used as base registers. The first or only register will be loaded with the CSECT address. Subsequent registers will be loaded with multiples of 4096 beyond the CSECT address. Corresponding multiples of 4096 beyond the CSECT address. Corresponding USING's are generated. If more than one register is specified, they must be separated by commas and enclosed in parentheses.

savearea

Is optional. If specified, it will be the name of the 18-word save area. If omitted, "SAVE" will be used. Required if macro is used more than once in an assembly. If **RENT=YES** is specified, the label will still be generated but no core reserved.

exitname

Is optional. If specified, it will be the name of the code for the exit linkage. A branch to exitname (or to "EXIT" if exitname is not used) will restore registers 2 - 14 and branch on Reg. 14.

Contents of regs. 0, 1, and 15 are not altered at EXIT. Required if macro is used more than once in an assembly. Higher save area is flagged with an X'FF' in the R14 position on exit. When EXIT is branched to, R13 must point to the current save area.

exnaddress

Is optional. If coded, the initialization code will branch to exnaddress instead of falling through to the next instruction.

WTO=YES

Is optional. If specified, a WTO of "symbol ENDED" will be issued in the exit code.

code

Is optional. It will be ignored unless **WTO=YES** is specified. If present, code will be the route code(s) assigned to the WTO. Default is 2. If more than 1 route code is specified, they must be separated by commas and enclosed by parentheses.

RENT=YES

Is optional. If coded, a save area will be gotten by a **GETMAIN** instead of being hard coded into the macro expansion and will be released upon exit. Required if module is to be re-entrant.

n

Is optional. It will be ignored unless **RENT=YES** is coded. If specified, it must be a number and the **GETMAIN**'d area will be extended by this number of double words which may be used as a work area. This work area may be referenced by using R13 as a base and starts at R13 plus 72 bytes.

RECEQ=NO

Is optional. If not coded, equates for R0 thru R15 will be generated to use for symbolic register notation. Required on all but 1 call if macro is used more than once in an assembly.

version

Is optional. If coded, it is a 1 to 8 character version and level ID (such as VO1100) and will be generated as a character constant after the CSECT name in the macro expansion. It must be enclosed in apostrophes.

```

&NAME  PROGRAM & BASE, &SAVE=SAVE, &EXIT=EXIT, &EXN=, &WTO=NO, &RENT=NO, .000000
      &VER=, &ROUTCODE=2, &RECEQ=YES, &WORKA=0      000000
      LCLA  &A, &B, &C, &D, &E, &F      000000
      LCLB  &FAIL      000000
&FAIL  SETB  0      000000
&D     SETA  0      000000
&E     SETA  0      000000
&F     SETA  72 +(&B*&WORKA)      000000
      AIF  ('T'&VER EQ '0'), T1      000000
&D     SETA  B      000001
      AIF  ('&NAME' NE ''), T2      000001
      .T1  AIF  ('&NAME' NE ''), T2      000001
      .E1  MNOTE 12, 'CSECT NAME IS REQUIRED'      000001
&FAIL  SETB  1      000001
      000001
  
```

WTO=YES

is optional. If specified, a WTO of "symbol ENDED" will be issued in the exit code.

code

is optional. It will be ignored unless WTO=YES is specified. If present, code will be the route code(s) assigned to the WTO. Default is 2. If more than 1 routecode is specified, they must be separated by commas and enclosed by parentheses.

RENT=YES

is optional. If coded, a save area will be gotten by a GETMAIN instead of being hard coded into the macro expansion and will be released upon exit. Required if module is to be re-entrant.

n

is optional. It will be ignored unless RENT=YES is coded. If specified, it must be a number and the GETMAIN'd area will be extended by this number of double words which may be used as a work area. This work area may be referenced by using R13 as a base and starts at R13 plus 72 bytes.

RECEQ=NO

is optional. If not coded, equates for R0 thru R15 will be generated to use for symbolic register notation. Required on all but 1 call if macro is used more than once in an assembly.

version

is optional. If coded, it is a 1 to 8 character version and level ID (such as V01L00) and will be generated as a character constant after the CSECT name in the macro expansion. It must be enclosed in apostrophes.

NAME	PROGRAM & BASE, &SAVE=SAVE, &EXIT=EXIT, &EXN=, &WTO=NO, &RENT=NO, .000000	
	&VER=, &ROUTCODE=2, &RECEQ=YES, &WORKA=0	000000
LCLA	&A, &B, &C, &D, &E, &F	000000
LCLB	&FAIL	000000
&FAIL	SETB 0	000000
&D	SETA 0	000000
&E	SETA 0	000000
&F	SETA 72 + (&B * &WORKA)	000000
	AIF (T'&VER EQ '0'), T1	000000
&B	SETA B	000001
.T1	AIF ('&NAME' NE ''), T2	000001
.E1	MNOTE 12, 'CSECT NAME IS REQUIRED'	000001
&FAIL	SETB 1	000001

.T2	AIF (N'&BASE GE 1), T3	000001
.E2	MNOTE 12, 'AT LEAST ONE BASE REG IN RANGE 2-12 MUST BE SPECIFIED'	000001
	D'	000001
&FAIL	SETB 1	000001
.T3	AIF (N'&BASE LE 11), T4	000001
.E3	MNOTE 12, 'MORE THAN 11 REGISTERS SPECIFIED IN &BASE'	000002
&FAIL	SETB 1	000002
.T4	ANOP	000002
&A	SETA 1	000002
.TEST	AIF (&BASE(&A) LT 2 OR &BASE(&A) GT 12), E4	000002
&A	SETA &A+1	000002
	AIF (&A LE N'&BASE), TEST	000002
	AIF (&FAIL), END	000002
&NAME	CSECT	000002
	USING &NAME, 15	000002
	B *+14+&D	000003
	DC AL1(&+&D)	000003
	DC CL8'&NAME'	000003
	AIF (&D FQ C) NOVER	000003
	DC CL8'&VER	000003
.NOVER	STM 14, 12, 12(13)	000003
	LR &BASE(1), 13	000003
	AIF ('&RENT' EQ 'YES'), RENT1	000003
	ST 13, &SAVE+4	000003
	LA 13, &SAVE	000003
&F	SETA 72	000004
	AGO .RENT2	000004
.RENT1	ANOP	000004
	GETMAIN R, LV=&F	000004
	ST &BASE(1), 4(1)	000004
	LR 13, 1	000004
	LH 0, 1, 20(&BASE(1))	000004
.RENT2	ANOP	000004
	ST 13, 8(&BASE(1))	000004
	LR &BASE(1), 15	000004
	DROP 15	000005
	USING &NAME, &BASE(1)	000005
&A	SETA 1	00000530
.LOOP1	AIF (N'&BASE EQ &A), OUT	00000530
&A	SETA &A+1	00000530
&B	SETA (&A-2) *4	00000530
&C	SETA 4096*(&A-1)	00000530
	: &BASE(&A), ADR&SYSNDX, +&B	00000530
	USING &NAME, +&C, &BASE(&A)	00000580
	AGO .LOOP1	00000590
.OUT	AIF ('&EXN' EQ ''), OUT1	00000600
	B &EXN	00000610
	AGO .OUT2	00000620
.OUT1	B &SAVE+&E	00000630
.OUT2	ANOP	00000640

TSO ENHANCEMENT

Normally TSO performs region selection as follows:

1. If the user is already logged on, go to step two. Select the active region with the fewest number of users (if equal, use one with highest region#) or the least activity.
2. Process the LOGON command in the initial region.
3. If the initial region is large enough to contain the user's SIZE request, allow him to remain in that region.
4. Otherwise, select the region (large enough) with the fewest number of users (if equal use one with the highest region#) or the least activity.
5. Log the user into the new region.

The changes that follow modify the TSO driver to cause the user to initially LOGON to the smallest active region. When a subsequent region selection is made, the active region which "best fits" the user's LOGON SIZE request will be assigned to the user. The modification will only take effect if the DRIVER option of NOACTIVITY has been specified.

Cust ion:

1. If two regions are the same size, the second region will never be used!
2. LOGON SIZE should not include the SOA portion of the region size definition.

NAME	TKJEAD02	TKJEAD02
VER	06AE	4720,668E
VER	06F2	49C0,4004,4720,672A
VER	074A	4980,4000,4740,672A,4880,4000
REP	06AE	4770,668E
REP	06F2	0700,1B0C,4740,672A
REP	074A	0700,1980,47D0,672A,1880,0700

On the next page is the actual assembly listing representation of the superzap required for this modification.

Submitted by:

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000000		
000000		
00007C		
000000		
0006AE	4720	663E
0006AE		00633E
00063E		
0006F2		
0006F2	49C0	4004
0006F2	4720	672A
00072A		
00072A		
00074A		
00074A	4980	4000
00074E	4740	672A
000752	4B80	4000
0006AE		
0006AE	4770	663E
0006F2		00633E
0006F2	0700	
0006F4	IE0C	
0006F6	4740	672A
00074A		0072A
00074A	0700	
00074E	1880	
00074E	4700	672A
000752	1B80	
000754	0700	0072A
000000		
000004		
000005		
000005		
000006		
000006		
00000C		
000000		
000000		
000001		
000004		

```

1  INJLAD02  CSECT
2  USING *,XBASE
3  USING =+L092,XBASE
4  USING DCARE,XDCARE
5  ***
6  ORG
7  7.
8  FIRSTSTRN
9  DS
10 ORG
11 DS
12 CH
13 ORG
14 NEXTRN
15 DS
16 CH
17 BL
18 NEXTRN
19 ***
20 REPLACE
21 ORG
22 BNE
23 ORG
24 NOBR
25 SR
26 NEXTRN
27 ORG
28 NOBR
29 CR
30 BNE
31 LR
32 NOBR
33 EQU
34 EQU
35 XBASE
36 XN1
37 XN2
38 DCARE
39 DCARFUSER
40 DS
41 DCANSIZE
42 END

INJLAD02-X'6AE'
FIRSTSTRN
INJLAD02-X'6BE
DS
INJLAD02-X'6F2'
XN2.DCANSIZE
NEXTRN
INJLAD02-X'72A'
OR
INJLAD02-X'74A'
XN3.DCARFUSER
NEXTRN
XN3.DCARFUSER

INJLAD02-X'6AE'
FIRSTSTRN
INJLAD02-X'6F2'
0
XN3,XN2
NEXTRN
INJLAD02-X'74A'
0
XN3,XN2
NEXTRN
XN3,XN2
0
EQU
4
4
5
6
8
12
C
3C
B

IS OLD DIFF LT NEW DIFF
NOPE...
YEP...FEDDGER

NO-DIFFERENCE BETWEEN S
WILL NOT FIT IN THIS ONE

USE IF EXACT FIT

```


SMP ENHANCEMENT

The current version of SMP (after PTF UX01212,UY71208 or US4810) supports PTFs which require a csect to be expanded and then zap'd. SMP recognizes a csect must be expanded before it is zap'd when the first control card, which immediately follows the ++ZAP card, is a Linkage Editor EXPAND control card. The creators of SMP were smart enough to realize that an EXPAND control card could be continued onto another card and programmed accordingly. However, SMP will allow only an EXPAND card and its continuations to be passed to the Linkage Editor. This means that if a load module has SSI and a csect within that load module must be expanded, the module will not be re-link edited with SSI.

This modification allows any Linkage Editor control cards to be passed through SMP as long as the first control card is an EXPAND control card.

NAME	BMASMP	BMASMPREG
VER	2FF2	9540504F, 4780AFE4, 9640C839, 47F07E22
VER	3CC0	16 BYTES X'00'
VER	3CDO	8 BYTES X'00'
REP	2FF2	47F0CCA7 B PATCH PATCH AREA +X'200'
REP	3CC0	9540504F CLI CC72,C' IS THE EXPAND CONTD
REP	3CC4	4770AFE0 DNE INDCONT YES - INDICATE CONTINUATION
REP	3CC8	95E2504E CLI CC71,C'S' IS ANOTHER LKED - CONTROL CARD TO FOLLOW
REP	3CCC	47707E22 NO - BRANCH BACK
REP	3CDO	9240504E MVI CC71,C' MAKE S A BLANK
REP	3CD4	47F0AFE0 GO INDICATE A CONTINUATION

e.g. :

EXPAND	CSECT1(XXXX),	
	CSECT2(XXXX)	S
IDENTIFY	CSECT1('USERMOD')	S
IDENTIFY	CSECT2('USERMOD')	S
SETSSI	XXXXXXXX	
NAME	etc	

NOTE: To indicate that Linkage Editor control cards will follow the EXPAND card, code as 'S' in card column 71.

Submitted by:
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Metropolitan Life Insurance
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***** * PLI PRE-PROCESSOR COMPATIBILITY * *****

The following zap changes the Release 21.7 PLI (F) macro pre-processor to act like the Optimizing PLI pre-processor. That is, text replaced by pre-processor statements will not have blanks appended to either end of the replacement value.

NAME	IEBPG
VER	0158 45E0
REP	0158 47B0

***** * DIFFERENT IEBUPDTE CONTROL CARD IDENTIFIER * *****

The following zaps modify a copy (XXXX) of the 21.7 IEBUPDTE program so that it recognizes '/' as identifying a control card instead of '.'. This is useful in maintaining ASP delta decks.

NAME	XXXX	IEBUPDTE
VER	156C	4861
REP	156C	614B
NAME	XXXX	IEBBSKAN
VER	04CC	4861
REP	04CC	614B

Jim Elan
Wellco Data Corporation
525 Market Street
San Francisco, Calif. 94105

* ASSEMBLER PROGRAM SEGMENT ALIGNMENT *

Alignment of Assembler program segments may be achieved by the technique illustrated in the statement:

DC (((*C-1) /N) *N+H+C-A) X'D'

where C is the name of the point from which alignment is desired (such as CSECT name), and N is the alignment boundary (such as 4096). A simpler duplication factor, (N-(A-C)), may be used if N = A-C.

In an MVT test, this padding ensures alignment of the beginning of the program at a 2K boundary (N=2048) thus greatly reducing the hex arithmetic required in solving dumps. The same technique may be used to force segments of code on page boundaries in a VS system.

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SORT TECHNIQUE

When using the balanced direct access sorting technique with either sort package (SMI or SRT), it may not always be possible to assign each work area to a separate device. Therefore, two or more work areas could be allocated to the same volume and cause degradation. To insure the same volumes are never accessed at the same time, a technique may be used when coding JCL for sort work files.

Starting with SORTWK02, request unit and channel separation from the preceding SORTWK DD only and request a space allocation of one track longer than the preceding DD card. The sort will use the work areas in order of increasing size, and the intermediate merge passes merge back and forth between adjacent work areas only. By only separating adjacent areas, maximum performance is achieved with minimum allocation difficulties.

Example - Assume a data set containing 14000 500 characters is to be sorted with six work areas.

$$T = \frac{14000}{500} (6) + 12 = 1212$$

202 tracks per area

The following DD cards would be used for the work areas.

```
//SORTWK01 DD UNIT=2314,SPACE=(TRK,(202),,CONTIG)
//SORTWK02 DD UNIT=(2314,SEP=SORTWK01),SPACE=(TRK,(203),,CONTIG),
//          SEP=SORTWK01
//SORTWK03 DD UNIT=(2314,SEP=SORTWK02),SPACE=(TRK,(204),,CONTIG),
//          SEP=SORTWK02
//SORTWK04 DD UNIT=(2314,SEP=SORTWK03),SPACE=(TRK,(205),,CONTIG),
//          SEP=SORTWK03
//SORTWK05 DD UNIT=(2314,SEP=SORTWK04),SPACE=(TRK,(206),,CONTIG),
//          SEP=SORTWK04
//SORTWK06 DD UNIT=(2314,SEP=SORTWK05),SPACE=(TRK,(207),,CONTIG),
//          SEP=SORTWK05
```

This JCL will not necessarily assign six separate volumes, but optimum performance will still be maintained.

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Milwaukee, Wisconsin 53202

TSO PERFORMANCE TIPS

The following tips are specifically for TSO, but may also be applicable to batch systems.

1. Command Processors resident in ESLPA should have LINKLIB BLDL entries also.
2. Module IEDQND should be marked re-entrant to prevent TCAM region fragmentation.
3. Intervention Required for a TSO user will prevent him from being swapped out until satisfied.
4. Error Recovery Routines although not seen in many traces are good candidates for SVCLIB BLDL entries. Frequently used routines at Mattel are (all IGC0xxxx):

000A, 000D, 000G, 000I, 001C
025C, 025D, 025E, 025F, 1001,
101C, 125C, 125F, 225C, 3001,
525F, 625F
5. I/O Support routines that you might think should have XCTL tables in them sometimes do not. Such routines are candidates for SVCLIB BLDL entries. Frequently used modules are (all IGC0xxxx):

190S, 190Y, 200F, 325A, 550L,
550S, 550Z, 552H, 553A, 553B,
553C, 553D, 553E.

Less frequently used (all IGC019XX):

GB, GD, CF, CG, CO, CW, GS, HA,
HB, HD, HG, HI, HK, HL, JH, JI,
JK, JM, JQ, JV, JW, JO, JJ, ZI,
ZJ, ZK, ZL, ZN, ZH, ZP, ZQ

Ron Markel
Mattel, Inc.
Hawthorne, Calif.

TSO - TPUT FOR WTP - OS

The following job will issue a TPUT to the TSO user whenever a WTP is done in the foreground. This is currently in use in Release 20.7 MVT. After issuing the TPUT, normal OIT processing continues.

```
//IEFWPT00 EXEC PGM=DELINKO
//SYSPRINT DD SYSOUT=A
//SYSPUNCH DD DSN=6EXITS(IEFWPT00),DISP=(,PASS),UNIT=SYSDA,
// DCB=(LRECL=80,BLKSIZE=400,RECFM=FB),SPACE=(TRK,(10,1,10))
//SVCLIB DD DSN=SYS1.SVCLIB,DISP=SHR
//ICG0203E IGC0203E X'0258'
//LKEDS EXEC LKED,PARM='NCAL,LIST,XREF,LET'
//SYSLMOD DD DSN=SYS1.SVCLIB,SPACE=,DISP=SHR
//EXITS DD DSN=6EXITS,DISP=(OLD,PASS)
INCLUDE EXITS(IEFWPT00)
NAME IGC0203E(R)
// EXEC PGM=SUPERZAP
//SYSPRINT DD SYSOUT=A
//SVCLIB DD DSN=SYS1.SVCLIB,DISP=SHR
NAME IGC0203E
* IF TCB INDICATES A FOREGROUND JOB, DO A TPUT AND CONTINUE WITH WTP.
VER 0224 EGEJ07C3C2 VER END OF MODULE
REP 022A 0004 -H'4'
REP 022C 47D0B01E BNP BACK
REP 0230 9180A094 TH 148(TCB),X'80' TEST FOR FOREGROUND JOB
REP 0234 4780B0A2 BZ XXI NO, CONTINUE
REP 0238 1816 LR 1,6
REP 023A 95006000 CLI 0(6),X'00'WTOR?
REP 023E 4780B244 BC 8,AROUND NEXT INSTR IF NOT
REP 0242 41101008 LA 1,8(1) GET FAST WTOR PREFIX
REP 0246 48001000 LH 0,0(1) GET LENGTH (TJIB-0)
REP 024A 4800B228 SH 0,-H'4' SUBTRACT 4 BYTE HEADER
REP 024E 41101004 LA 1,4(1) MESSAGE (OPTION BYTE-0)
REP 0252 0A5D SVC 93 TPUT EDIT NOHOLD
REP 0254 47F0B0A2 B XXI
VER 001C 4720B0A2 BP XXI
REP 001G 47F0B22A BRANCH TO PATCH
```

R. J. Anderson
The Mitre Corp.
Bedford, Mass. 01730

CANERR

Useful for determining the cause of an abend without the coverage from the FORTRAN error handler.

```
//CANERR JOB
//CANERR EXEC ASMFCL
//ASM.SYSIN DD *
CANE TITLE 'CANCEL FORTRAN ERROR MONITOR ROUTINE'
* THIS ROUTINE WILL NEGATE THE FORTRAN ERROR MONITOR.
* THE FORTRAN PROGRAM WILL CALL CANERR TO
* ACCOMPLISH THIS.
*
```

```
CANERR      SPACE 5
CSECT
  USING CANERR,15
  B      4,14
  DC     AL1(8)
  DC     CL8'CANERR'
  STM    14,12,12(13)
  ST     13,SAVE+4
  LR     12,13
  LA     13,SAVE
  ST     13,8(12)
  LR     12,15
  DROP   15
  USING CANERR,12
  SPACE 5
  SPIE
  STAE 0
  WTO     '*****',ROUTCDE=11
  WTO     '*****',FORTRAN ERROR
  FACILITY NEGATED',ROUTCDE=(1,11)
  WTO     '*****',ROUTCDE=11
  L       13,SAVE+4
  MVI     12,(13),X'FF'
  LM      14,13,12(13)
  SR      15,15
  BR      14
  DS      18F
  END
```

TEMP BASE
BRANCH AROUND NAME

NAME
SAVE REGS
CHAIN
SAVE
AREAS
FOR AND BACK
BASE

BASE REG

MARK SAVE AREA USED
RESTORE REGS
ZERO RC

```
SAVE
DS 18F
END
/*
//LKED.SYSLNMOD DD DSN=SYS1.FORTLIB(CANERR),DISP=OLD
/*
```

Richard M. Greenberg
Systems Programmer Electronic Installations

* TSO "BEST FIT" REGION ZAP *

Normally TSO performs region selection as follows:

1. If the user is already logged on, go to step 2. Select the active region with the fewest number of users (if equal, use one with highest region#) or the least activity.
2. Process the LOGON command in the initial region.
3. If the initial region is large enough to contain the user's SIZE request, allow him to remain in that region.
4. Otherwise select the region (large enough) with the fewest number of users (if equal use one with highest region#) or the least activity.
5. Log the user into the new region.

These changes modify the TSO driver to cause the user to initially LOGON to the smallest active region. When a subsequent region selection is made, the active region which "best fits" the user's LOGON SIZE request will be assigned to the user. The modification will only take effect if the DRIVER option of NOACTIVITY has been specified.

Caution: If two regions are the same size, the second region will never be used.
LOGON SIZE should not include the SQU portion of the region size definition.

```
SYSLIB LINKLIB
NAME IKJEAD02 IKJEAD02
VER 06AE 472066BE
VER 06F2 49C040044720672A
VER 074A 498040004740672A48804000
REP 06AE 477066BE
REP 06F2 07001B0C4740672A
REP 074A 0700198047D0672A18800700
```

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Operations Support
9th Floor-Data Center
Bankers Trust Co.
16 Wall Street
New York, New York 10015

SOURCE STATEMENT

```

1 IKJEAD02 CSECT
2 USING *,XBASE
3 USING *+4092,XBASEE
4 USING DCARE,XDCARE
5 *** VERIFY
6 ORG IKJEAD02+X'6AE'
7 BH FIRSTRG
8 ORG IKJEAD02+X'6BE'
9 FIRSTRG DS OH
10 ORG IKJEAD02+X'6F2'
11 CH XWK2,DCAR SIZE
12 BH NEXTRG
13 ORG IKJEAD02+X'72A'
14 NEXTRG DS OH
15 ORG IKJEAD02+X'74A'
16 CH XWK3,DCAR#USR
17 BL NEXTRG
18 LH XWK3,DCAR#USR
19 *** REPLACE
20 ORG IKJEAD02+X'6AE'
21 BH FIRSTRG
22 ORG IKJEAD02+X'6F2'
23 NOPR 0
24 SR XO,XWK2
25 BM NEXTRG
26 ORG IKJEAD02+X'74A'
27 NOPR 0
28 CR XWK3,XO
29 BM NEXTRG
30 LR XWK3,XO
31 NOPR 0
32 XO EQU 0
33 XDCARE EQU 4
34 XBASEE EQU 5
35 XBASE EQU 6
36 XWK3 EQU 8
37 XWK2 EQU 12
38 DCARE DSECT
39 DCAR#USR DS C
40 DS 3C
41 DCAR SIZE DS H
42 END

```

USE IF EXACT FIT

NO-DIFFERENCE BETWEEN SIZES
WILL NOT FIT IN THIS ONE

IS OLD DIFF LT NEW DIFF?
NOPE...
YEP...REMEMBER

V - 21

TSO EDIT OF DATA SET WITH CONTROL CHARACTERS

A special copy of EDIT can be created to allow a user to edit a data set which has ASA or Machine control characters. Link IKJEDEIN with attributes of NCAL, LIST,MAP,RENT,REFR into SYSLCMLIB with a new name. Then for R21.7 superzap:

```

NAME NEWEDIT
VER 070C 912E4028
REP 070C 91284028

```

Systems Programming
Quantas Airways
Sydney, Australia

CIRCUMVENTION OF ANS COBOL V2 MSG IKFO0201

Under IBM OS ANS COBOL Version 2 Level 78, occasionally a level D diagnostic IKFO0201 is posted causing the compiler toabend with a User 0016, when a dictionary spill has occurred during compilation.

A temporary fix for this problem is listed below. It should be noted that the return code of the compiler after this patch is unpredictable, so it would be advisable to use only during re-compilation of the ABENDING source program.

```

NAME IKFCBL00 PH0SECT2
VER 04F4 91FF436B4710
VER 051E 91FFF63C4710
REP 04F4 92FF436B47F0
REP 051E 92FFF63C47F0

```

James W. Rilling
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COBOL V4 INCLUDE FROM OTHER THAN SYSLIB

The ANS COBOL V4 compiler often outputs linkeditor INCLUDE cards to the SYSPUNCH dataset, as well as the object module. For example, when a special DISPLAY subroutine is required, it will be INCLUDED explicitly when the object deck goes through the linkeditor. The following zap will alter the INCLUDE card default Dname in the ANS compiler output to whatever you want (in the example, it is changed from SYSLIB to LKDLIB):

```

NAME IKFCBL64 IKF6455
VER 07BB E2E8E2D3C9C2
REP 07BB D3D2CAD3C9C2

```

John Hames
Rolls Royce (1971) Ltd.
Bristol Engines

V - 22

 * TSO SUBMIT FOR PRINT IMPROVEMENT *

There is a more convenient method than the sample in the HASP System Programmer's Guide (370H-TK-001) for submitting data sets via TSO to HASP for printing. The problem with the suggested method is that it presumes an ASA control character. Additional CLISTS would be required for Machine Character, "No Control" and/or variable records.

The IEFPRT program from Release 21.7 OS, intended for printing DSO output will print any sequential file, tape or direct access, fixed or variable, ASA, Machine, or no carriage control. The program will work under VS.

Since IEFPRT normally looks for an 'END-OF OUTPUT' record to trigger termination instead of normal EOF, the following supersap is required to cause termination on EOF:

```
NAME IEFPRT
VER 0590 4710D612
VER 05C6 4750D612
REP 0590 47F0
REP 05C6 47F0
```

The following CLIST will submit any cataloged sequential data set or partitioned data set member for hard copy listing:

(assuming a one card 'DUPRT' already exists)

```
10 PROC 1 DSN DISP (KEEP) COPIES (1)
20 EDIT DUPRT.CNTL
30 10 //PRTJOB JOB MSGLEVEL=1, etc.
40 20/* OUTPUT PRT1 COPIES=4COPIES
50 30 //PRTSTEP EXEC PGM=IEFPRT
60 40 //PRINTER DD SYSOUT=(A,,PRT1)
70 50 //PRINTAP DD DSN=6DSN,,DISP=(SHR,4DISP.)
80 SUBMIT
90 END
```

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 Manager Systems Technology
 Santa Fe
 Information Systems Department
 9th and Jackson Sts.
 Topeka, Kansas 66628

 * COBOL V4 DEFAULT OF OBJECT-COMPUTER. IBM-370 *

Cobol V4 as distributed defaults to using the 360 instruction set. In order to generate code which uses the 370 instruction set, the programmer must specify:

CONFIGURATION SECTION.
 OBJECT-COMPUTER. IBM-370

This modification will cause the COBOL V4 compiler to use the 370 instruction set as the default. Use of the 360 instruction set must be explicitly requested:

CONFIGURATION SECTION.
 OBJECT-COMPUTER. IBM-360

Compiler byte label=PHIBYTE, bit equate=S370IN.

```
NAME IKFCBL00
VER 0216 5000
REP 0216 5000
```

Turn on S370IN as default.

```
NAME IKFCBL10 IKF103
VER 07B4 C9C2D460F3F7F0
REP 07B4 C9C2D460F3F6F0
```

Scan for IBM-360 instead of IBM-370

```
NAME IKFCBL10 IKF114
VER 000A 960011D3
REP 000A 94F711D3
```

Turn off S370IN if IBM-360 was found.

Stu Rovin
 Insurance Co. of North America
 401 White Horse Road
 Voorhees Twn, N.J. 08043

 *ALLOCATE GENERATION DATASETS WITHOUT MODEL DSCB

This modification will allow the user to code the DD card for a generation data set group without a model DSCB name in the DSCB keyword. If the model DSCB is omitted without this modification, the system would normally fail the job with message IEF218I. The zap does the following after the OBTAIN fails for the pattern DSCB.

- 1) A test will be made to see if allocation is for a generation data set group-- TM SCTSBYT4,X'80'
- 2) If the bit is off, then allocation is not for a GDG, so normal processing of the error condition will continue.
- 3) If the bit is on, then control will be transferred to the point that indicates patterning is done. Normal processing thereafter is to return to caller.

```

++ZAP (IEFVMSLS).
EXPAND IEFVMS(12)
NAME IEFVMS
VER 01F0477091C6
VER 020A 00000000,00000000,00000000
REP 0100 47709200 Obtain failed, branch to patch area
REP 020A 9180A03B TM SCTSBYT4,X'80' GDG SINGLE ENTRY?
REP 020E 478091C6 If not, branch to issue msg. IEF218
REP 0212 47F091AA GDG, branch and indicate patterning done
  
```

Gray Balasaygun
 RCA Solid State Div.
 Mail Zone 119
 Route 202
 Somerville, N.J. 08876

 * SUPPRESS IMS START/STOP INITIATOR COMMANDS *

This superzap will suppress the automatic start and stop initiator commands issued by IMS. In a HASP/IMS environment, IMS jobs are passed to HASP via the internal reader, making the IMS initiators redundant. The modification is to IMS module DFSICSCO, however the zap listing shows the module name as IGC1025C due to the rename in the IMS generation.

```

NAME IGC1025C
VER 0072 4780,C080
VER 0076 4780,C104
REP 0072 47F0
REP 0076 47F0
  
```

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 Software Systems
 Con Edison Co.
 4 Irving Place
 New York, New York 10003

 *FORCE CSECT IDENTIFICATION INFORMATION TO BE PRODUCED BY COBOL V4 R1.2

```

NAME IKFCBL60 IKF606
BASE 4628
VER 40A0 4040404040404040,4040404040404040
VER 40B0 4040404040404040,4040404040404040
VER 40C0 4040404040404040,4040404040404040,404040
REP 40A0 D202D1A1C074,41100001,0A00,5010D1BC
REP 40B0 F342D1C0D100,96F0D1CF,D20ED1BCD79C
REP 40C0 47F0A026,F1F5F7F3F4C3C2F2404040F0F1F2F0
  
```

```

NAME IKFCBL60 IKF604A
BASE 3CF8
VER 3D1A D202D1A1C074
REP 3D1A 47F0D778,0700
  
```

```

NAME IKFCBL65 IKF653
BASE 1000
VER 1548 4770F06C,D201D37CCB4C,41000040,4A00
VER 1558 D37C,4000D37C,D201CB4CD37C,D201CB50
VER 1568 D37C,D201D1D4D37C,47F0F000,980FF078,07FE,43
REP 1548 D2024005D07C,41100001,0A00,50104020
REP 1558 F342402F4021,96F04033,D20EA020D4BC
REP 1568 47F0095C,F1F5F7F3F4C3C2F2404040F0F1F2F0
  
```

```

NAME IKFCBL65 IKF651
VER 0960 D2024005D07C
REP 0960 47F00490,0700
  
```

Refer questions or problems to:
 W. Henry Harrison
 Girard Bank
 3 Girard Plaza - 6th Floor
 Philadelphia, Pennsylvania 19102
 215-585-2668

 SORT/MERGE (5734-SM1 SUPPORT OF 3330 MOD 11)

This zap to 5734-SM1 will allow sort/merge to support 3330 model 11 drives as sortwork files. Intermixing of model 1 and model 11 files is also supported.

Csect ICHRCI contained in ICHRCM must be expanded by 32 bytes before zap.

NAME ICHRCM ICHRCI Version 01 Mod Lvl 03 PTF 24 Applied
 VER 00FA 1300,0A18
 VER 00FA 00000000
 REP 00FA 47F0BF84
 REP 00FA 1300,0A18,D501BF9A506A,4770FE,9209506B,47F0BF84,2000
 IDRDATA ADDMOD11

NAME ICHRCM ICHRCI Version 01 Mod Lvl 03 PTF 25 Applied
 VER 00FA 1300,0A18
 VER 00FA 00000000
 REP 00FA 47F0BF84
 REP 00FA 1300,0A18,D501BF9A506A,4770FE,9209506B,47F0BF84,2000
 IDRDATA ADDMOD11

Boris Klena
 J.M. Huber Corp.
 Thornall St.
 Edison, N.J. 08817

 PL/I F COMPLIER UNDER MVS

The PL/I compiler runs correctly under MVS provided that the Spill file is not required. This can be ensured by requesting a large region for compiler execution.

Barry Mawer, I.B.M.

COBOL/SORT

COBOL programs which use the SORT verb are unable to use the DISPLAY, TRACE and EXHIBIT verbs. These latter verbs write their output to ddname SYSOUT. When SORT also opens the ddname SYSOUT, DISPLAY, TRACE and EXHIBIT output cannot be produced.

One circumvention for this problem is to change the ddname for the DISPLAY, TRACE and EXHIBIT output. Supersap for SYS1.COBLIB is as follows:

NAME	ILHODSPO	ILHODSPO
VER	05B0	E2E8,E2D6,E4, -
REP	05B0	E3,4040.
		new ddname

Submitted by:

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 500 Gas & Electric Building
 Baltimore, Maryland 21203

ANS COBOL

Version 1.1 of the ANS COBOL Language Conversion Program (LCP), in converting a COBOL F program, builds a table of condition-names (88-level items) with a relative limit of 500 entries. This table is created so that the LCP can correctly expand "IF" statements in the conversion of the Procedure Division. The LCP converts a COBOL F source statement with an implied relational operator, such as:

IF A B AND NOT = C AND D

to:

IS A B AND A NOT = C AND A NOT = D

The condition-name table is created so that, if D were a condition name, the expansion would be:

IF A B AND A NOT = C AND D

A problem can result in trying to convert a COBOL F program which contains more entries than the table will accept. The LCP will cease processing and issue error message IKL2251 'INSUFFICIENT CORE FOR TABLES, CONVERSION ABANDONED'. The problem may be circumvented by modifying three of the LCP's processing modules, so that the condition-name table may be optionally built. Once the changes to the modules are made, the programmer may select to add one additional parameter to the 'PARM' field of his 'EXEC' card. This parameter would be 'DELS8'. The condition-name table would then not be built and the program could be successfully converted. The programmer should, however, insure that the LCP has not expanded an 'IF' statement, which contains a condition-name, in an incorrect manner.

The changes which must be made to the LCP in order not to create the condition-name table are:

- 1) In module IKLB22, replace instruction 35, which presently reads

BAL R9,TESTREC2

with:

IM CPOPSW2,X'08'
BNO GETFIRST
NI COTOBULD+23,X'00" NOP LEV88 -TABLBULD

These instructions nullify statement No. 239, which reads:

BZ PUTNAM

- 2) In module IKLO6A, insert the following notation:
BIT 4 - DELS8 TABLE

- 3) In module IKLO6B, add the following after statement NO. 134.

DELS8BIT EQU X'08' NO LEVEL88 TABLE

After instruction No. 356, insert:

DC CL8'DELS8'
DC A(DELS8OPT)

After statement No. 436, insert:

DELS8OPT EQU *
OI CPOPSW2,DELS8BIT
B SCANOPT

Submitted by:

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 * IFCEREPO PERFORMANCE IMPROVEMENT *

Printed output from EFCEREPO on DD card EREPT is specified as unblocked within the program. Where the printout is to be handled by an OS writer or put to tape, the run time for IFCEREPO may be reduced by up to 50% by applying the following superzap to block the printout:

```
NAME IFCEREPO IFCEREPO      MVT 21.7 LINKLIB
VER 0C38 82                RECFM=FA
VER 0C52 0079              BLKSIZE=121
REP 0C38 92                RECFM=FBA
REP 0C52 05AC              BLKSIZE=1452
```

R. Jackson
 Reckitt and Colman Ltd. European Guide (UK REGION)

 * MORE 8 LINES PER INCH ZAPS *

1. PL/1 Optimizer Rel 2.0

```
NAME IELOAS
VER 2A 003A
REP 2A 004E
```

2. PL/1 F Compiler Rel 21.6 (version 5.4)

```
NAME IEMAP
VER 12 003A
REP 12 004E
```

3. Assembler F Rel 21.6

```
NAME IEUPFI (or IEUPFI 7)
VER 32 9237
REP 32 924B
```

4. For PL/1 Dumps, PL/1 Optimizer Rel 2.0

```
NAME IEMTAB
VER 0A 003C
REP 0A 004E
```

 * FASTER ANS COBOL EXECUTION FOR S/370 *

Without "SYNC" specified for binary ("COMP") items, ANS COBOL generates alignment code which is unnecessary on S/370 systems. This superzap shortens some COBOL programs' procedure divisions significantly:
 * ANS COBOL V4 R1.2 OR R1.1
 * TREAT ALL FIELDS AS SYNCHRONIZED AT CODE GENERATION TIME. BUT NOT AT DATA DIVISION TIME. THIS WILL WORK ON A SYSTEM 370 AND RESULT
 * IN LESS CODE AND FASTER EXECUTION.

```
NAME IKFCBL50 IKF502
IDRDATA SYNCHRO
VER 0602 91404007:471089F8.9120D101 TEST FOR SYNC, BRANCH IF YES
REP 0606 47F0                      BRANCH ALL THE TIME
```

Edward J. Leary
 CBS Inc.
 2 Penn Plaza
 New York, New York

 * PAPER SAVINGS ON XREF OF PL/1 OPTIMIZER R1.2 AND R2.1 *

```
NAME IELOIK XPRNTN
VER AA D57610061005
REP AA 40000490
REP AE 95401004
REP B2 47809018
REP B6 0600
REP B8 95F01004
REP BC 47809018
REP C0 0600
REP C2 40000490
REP C6 92401004
REP CA D57610061005
REP D0 47709036
REP D4 0600
REP D6 40000490
REP DA 47F0905E
```

CAN2

```
LH R0,XPLN
CLI 4(R1),X'40'
BE CAN2
BCTR R0,0
CLI 4(R1),C'0'
BE CAN2
BCTR R0,0
STH R0,XPLLN
MVI 4(R1),X'40'
CLC 6(119,R1),5(R1)
BNE XPRNT2
BCTR R0,0
STH R0,XPLLN
B XPRNT3+10
```

M F Kerford-Byrnes
 Stock Exchange
 England
 European Guide *UK Region)

INHIBIT ALLOCATION TO AN OFF-LINE OR ALLOCATED TP DEVICE

OS allocation allows allocation to occur even if the TP line is -

- (1) off-line;
- (2) already allocated to another job; or
- (3) being changed from on-line to off-line.

TP devices are not checked for these three cases.

The following superzap sends TP devices through the same 'strikeout' logic as tape devices, therefore, allowing allocation only if the line is on-line and not allocated.

The zap was applied to a MFT Release 21.8 system. TP support is BTAM. This fix should be reviewed carefully if TP support is TCAM.

```
// EXEC PGM=IMASPZAP
//SYSPRINT SYSOUT=A
//SYSLIB DD DSN=SYS1.LINKLIB,DISP=SHR
//SYSIN DD *
NAME IEFWAO00 IEFWAO02
BASE OAB8
VER 1062 47FO,958A B XCF530
REP 1062 47FO,95F8 B NOTDA000
```

/*

D. J. Yule
C&CSD-CDC-Systems Development
April 4, 1975

ASSIGN AN ALIAS TO PDS MEMBER WITHOUT RELINKING OR RE-CREATING

Occasionally, it is necessary to assign an ALIAS name to a member on a PDS. The following program subset can be used rather than relinking the member (in the case of a load library) or re-creating a source member with IEBUPDTE.

* PDSDCB is DCB for PDS opened as UPDAT

MVC	BLDNAME,memname	move member name to BLDL list
BLDL	PDSDCB,BLDLST	get directory entry for member
(Check Return Codes)		
MVC	LISTAD(11),BLDLNAME	move last 11 bytes of BLDL list
MVC	LISTAD+11(63),BLDLC	move user data and length thereof
MVC	LISTAD(8),aliasname	overlay member name with alias name
OI	LISTAD+11,X'80'	turn on alias bit
STOW	PDSDCB,LISTAD,A	store adding alias name

(Check Return Codes)

Work Areas

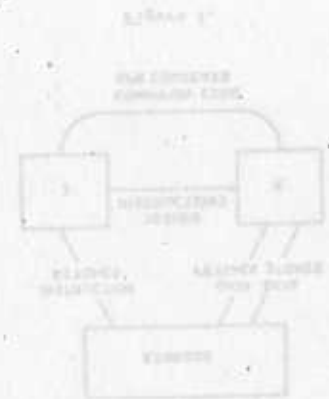
```
*
BLDLST DS OCL80
DC H'1'
DC H'76'
BLDLSTA DS OCL76
BLDNAME DS CL8
BLDLTTR DS CL3
BLDLK DS CL1
BLDLZ DS CL1
BLDLC DS CL1
BLDLUSER DS CL62
LISTAD DS CL74
```

(Note: memname is the name to which aliasname is to apply).

A.W.G. (Casey) Hale
C&CSD-CDC-Systems Development
April 4, 1975

IBM

CODING HINTS FOR LARGE SYSTEMS



Coding Hints for Large Systems

by

D. B. Martin

ABSTRACT

Execution time on large models of IBM System/360 is dependent on instruction ordering as well as function. This paper shows how commonly used code sequences can be reworked for a performance advantage with little or no core penalty.

Coding
IBM System/360
Large systems
05 Computer Applications
21 Programming

IBM

International Business Machines Corporation
Systems Development Division, Poughkeepsie, New York

There are some simple coding practices which will make programs run faster on large systems. This report gives some examples and explains why these coding hints work. Often there is a core/speed trade-off to be decided. Some of the alternatives presented here require a few more bytes of core. Only the project objectives, coupled with the programmer's judgment, determine the 'right way' to code a given routine.

Figure 1 is a simplified schematic drawing of a large processor unit. It does not represent any specific model, but the function of the three units shown have counterparts in all of our machines. Storage contains the systems code, problem program code and data areas for both. The instruction decoder (called "I-box") does decoding, address generation and instruction issuing. The execution unit (called "E-box") is a slave which must do all the work that the I-box directs to it. However, it is not entirely passive: sometimes the I-box is forced to wait for information to be signalled from the E-box. It is this feedback requirement that prevents true independence of the two units. IBM System/360 architecture uses the same registers for indexing and fixed-point arithmetic. This is one cause of I-box delay, and its effects can be lessened by intelligent coding.

Notice that the I-box does some fetching because the program, like the data, resides in storage. These "I-fetches" are done automatically by the hardware and are not under program control. Nevertheless, an awareness of their existence can help the programmer to write faster-running code.

Consider the role played by the three units in performing a simple operation like an RX add. First, the I-box does an instruction fetch from the storage location pointed to by the instruction address portion of the Program Status Word (PSW). On receiving the I-fetch, the I-box decodes it; that means it decides what operation is to be performed (branch, shift, add, etc.). For the RX add the next step would be address generation -- the displacement, base and index values are summed to arrive

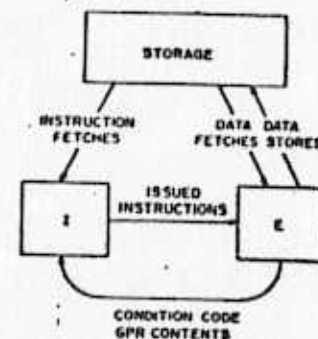


Figure 1.

at the effective address. The instruction is 'issued' to the E-box, freeing the I-box to work on another instruction unless it is forced to wait for a signal from the E-box. Storage is asked to deliver the data from the effective address. The E-box waits for the fetch and when the data arrives, it performs the required add operation, modifying the contents of the specified register. Finally, the E-box signals 'operation complete' to the I-box (which might or might not have been waiting for the signal).

Figure 2 presents a coding example with a timing chart showing the sequence of activity in each of the three units. Suppose that GPR1 points to an address table and the objective is to place the values of the first two arguments in GPRs 2 and 5, respectively.

Instruction A loads register 2 with the address of the first argument.

Instruction B loads register 2 with the value of the first argument.

Instruction C loads register 5 with the address of the second argument.

Instruction D loads register 5 with the value of the second argument.

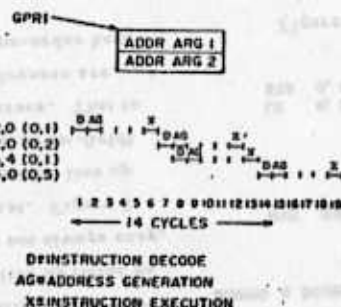


Figure 2.

A is decoded on cycle 1, its effective address is calculated during cycle 2. Cycles 3, 4 and 5 are blank indicating a delay while the data fetch is made. At cycle 6 the contents of GPR2 are updated. Notice that instruction B could not be decoded until cycle 7 because it depends on the value in GPR 2, and that register was not available until A had been completed. Contrast that delay to instruction C which is decoded immediately following the decode of B. This was possible because C did not need a register made not available by a preceeding instruction. D depends on the

outcome of C, so it cannot get started until C is finished. Observe that instructions B and C are actually in progress at the same time during cycles 8, 9, 10, 11 and 12. This is an example of the overlapped operation characteristic of large systems.

Figure 3 portrays the same four loads, but in a different order: the two in the middle have been reversed. This really is the same code, with the same core requirement, but when written this way it will run faster. The timing chart shows that register-unavailable problem causes less of a delay and permits more overlapped operation to occur.

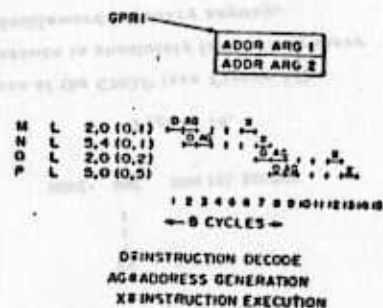


Figure 3.

Running time is measured in terms of I-box busy time. The 14 cycle to 8 cycle (42%) improvement would make a noticeable difference in total CPU time if this code were part of a loop in an often-used routine. These timing charts are simplified but accurate for Model 195; those of the Model 75 or Model 85 would show a similar effect. The charts show how alert coding practices will produce predictable, quantifiable advantages. It isn't important for a programmer to be able to draw these charts, but it is quite helpful to recognize inter-instruction dependencies. The sequentially dependent instruction pairs A, B and C, D are examples of the load-use situation. Figure 4 repeats the code from Figures 2 and 3 with the load-use dependencies highlighted. Notice that they are still there in sequence MNOP, but the pairs have been split up so the I-box delays are decreased.

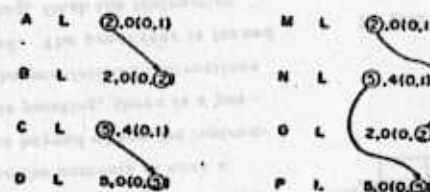


Figure 4.

Figures 5, 6 and 7 show how a load-store instruction pair could be used instead of a move instruction. The load-store is eight bytes of code versus six bytes for the MVC, but is faster to execute (52% faster for a fullword move on the Model 65). The pair requires a general purpose register, but GPR0 is usually available because it is not used for indexing purposes. Fields of odd length, or those not falling on appropriate boundaries would require use of MVC.

MOVING A HALFWORD

MVC SINK (2), SOURCE

LH 0, SOURCE
STH 0, SINK

Figure 5.

MOVING A FULLWORD

MVC SINK (4), SOURCE

L 0, SOURCE
ST 0, SINK

Figure 6.

MOVING A DOUBLEWORD

MVC SINK (8), SOURCE

LD 0, SOURCE
STD 0, SINK

Figure 7.

Longer fields should definitely be moved with the MVC. It's neat to line up fields on doubleword boundaries, but not always easy, and in fact, not always fastest. Figure 8 illustrates a good rule-of-thumb: line up the sink (to-field) and source (from-field) on corresponding byte addresses. That is to say, whatever the two addresses are, they should have the same low-order hexadecimal digit.

Many programmers would employ the MVI, MVC pair (Figure 9) to fill a large field with zeros. The SS-format exclusive OR instruction takes less core and is much, much faster.

The programming practice of program (self) modification was a way of life with the IBM 1401 and frequently used in IBM 7090 code. Program modification is the governing of execution by changing instructions rather than data areas. A simple example is the setting of a switch by replacement of unconditional branch with a "no-op." Figure 10 shows two ways to do a variable-length data move. Though both are

legitimate (according to the System/360 Principles of Operation), the use of the EXecute instruction is preferred. Large processors attempt to do their instruction fetching well in advance of the actual operation being decoded. The pre-fetched instructions are held in an instruction stack to be used as needed. If any store-type instruction (store, move, OR, AND, etc.) modifies the contents of core a short distance beyond where the instruction counter is pointing, there is a possibility that the pre-fetched instructions are invalidated. The processor is forced to stop decoding, flush the instruction stack and re-fetch. This is a costly defensive maneuver, and usually unnecessary. Figure 11 depicts a code sequence that would trigger the program store alarm wastefully since location TEMP would never have been executed. Fullword TEMP should be placed elsewhere, preferably out of the 48-byte area immediately following the store instruction.

Aligning the top of a loop on a doubleword boundary will minimize the number of instruction fetches required. On those processors with the loop mode feature, the effective size of the instruction stack is thus at a maximum. Where execution time is a primary concern, a loop that will iterate more than ten times justifies the use of the CNOP (see Figure 12). Twenty-five percent of the time this bit of insurance is absolutely free, since there is a one out of four chance that LOOP is on a doubleword boundary anyway.

MOVING LONG FIELDS --

LINE UP THE FIELDS SO THAT THEY START ON CORRESPONDING BYTE ADDRESSES WITHIN THEIR DOUBLEDWORDS.

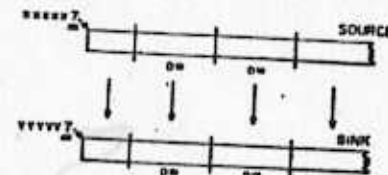


Figure 8.

TO "ZERO-OUT" A 100-BYTE FIELD

MVI FIELD, X'00'
MVC FIELD+1(99), FIELD
XC FIELD(100), FIELD

Figure 9.

PROGRAM MODIFICATION

STC 3,=03
MVC SINK(10), SOURCE

CONVENTIONAL METHOD:

EX 3, MOVE
I
I
MOVE MVC SINK(10), SOURCE

Figure 10.

```

|
|
|
|
L    15, ADDR
ST    4, TEMP
BALR 14, 13
TEMP  DS    F
|
|
|
|

```

Figure 11.

FOR LOOPS THAT WILL PASS THROUGH
A FEW ITERATIONS, USE A CONDITIONAL
NO-OP TO START IT ON A DOUBLEWORD
BOUNDARY.

```

|
|
|
|
LOOP L
|
|
|
|
SLL
|
|
|
|
BCI 10, LOOP
|
|
|
|

```

Figure 12.

Figure 13 shows three ways to create a mask of all ones in a general purpose register (GPR). The load is the most straightforward way, but also the slowest. It requires 8 bytes of storage, counting the literal. The SR, BCTR is faster and takes only four bytes. LA, LCR is even somewhat better on some processors, but it is six bytes long.

TO CREATE A MASK OF ALL 1'S

```

L    7, F'-1'
SR    7, 7
BCTR  7, 0
LA    7, 1(0,0)
LCR   7, 7

```

Figure 13.

TO DOUBLE THE CONTENTS OF A GPR

```

SLL    7, 1
LA     7, 0(7,7)
AR     7, 7

```

Figure 14.

Figure 14 offers three ways to double the contents of a GPR. When multiplying by two, it is common to think of using a shift instruction, but that is not the best way. The Load Address instruction is acceptable if 24-bit arithmetic will suffice. It is the Add Register that is preferred, both for reasons of speed and storage. Use the others where there is another

consideration such as to avoid changing the condition code. Those who relish clever code will realize that register contents may also be doubled by unorthodox use of the BXII or BXLE operations. In the interest of performance, programmers should avoid unnecessary branching instructions.

I=I+25 is a simple example, in FORTRAN notation, of incrementing a counter in storage. Figure 15 show two alternative methods the assembler language programmer might use, assuming 24-bit arithmetic and an increment of less than 4096. This is often true, such as when the objective is to manipulate pointer values. Instruction sequence DEF is an example of the load-use situation already described. Instruction sequence GHI does not suffer from the same problem. On the Model 195 GHI is twice as fast as DEF. On the Model 91 the advantage is a factor of three.

TO INCREMENT A COUNTER IN STORAGE
I=I+25

```

D    L    1, 1
E    LA   1, 25(0,1)
F    ST   1, 1

G    LA   1, 25
H    A    1, 1
I    ST   1, 1

```

Figure 15.

The CALL macro, with no arguments passed, is one of the simplest. It is worth consideration because it has the same shortcoming as many of the larger, more complex macros. The expansion as done by the assembler is shown in Figure 16. The L and BALR at the end cause another load-use delay. Figure 17 gives the expansion the way it ought to be done. Simply moving the load up to the top would yield a significant speedup on large systems with no core penalty and no compatibility problems.

```

CALL SUB

CNOP  0, 4
B     *+8
DC    V(SUB)
L     15, IHB
BALR  14, 15

```

Figure 16.

Very often a programmer knows whether or not a particular branch instruction will be successful. This is especially true when checking for an error condition that is only rarely encountered. The rule-of-thumb in such cases is to favor the fall-through path of the branch (as in Figure 18).


```

L    15,IHB
CNOP 0,4
B    *+8
IHB  DC  V(SUB)
BALR 14,15

```

Figure 17.

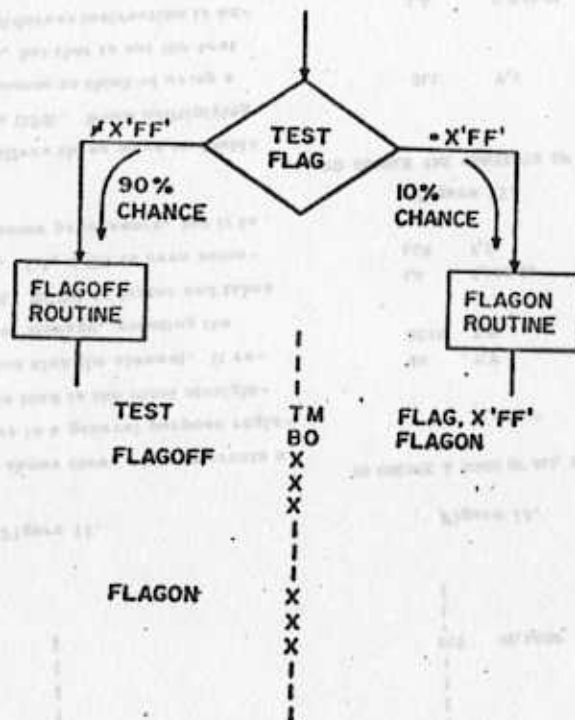


Figure 18.

The TM, BC pair is frequently seen in system code. It is convenient to use these instructions in sequence but performance will benefit if they can be separated. Of course, the intervening instructions must not disturb the condition code (see the example in Figure 19). Looking back to the schematic diagram (Figure 1), one of the feedback items is the condition code. Moving the TM away from the branch increases the time in which the E-box may perform the test operation and signal the condition code to the I-box without forcing a delay in decoding the branch. This hint is by no means limited to TM and BC; it is true for any CC-setting instruction and branch.

Some applications require the scanning of a multidimensional array (e.g., a search or a summation). The matrix might be scanned by row or column, either method yielding the right answer. However, one way is likely to get that answer substantially faster than the other. Figure 20 shows a trivial matrix for the purpose of illustration; the principle involved holds true for all matrices regardless of size or number of dimensions. The optimum approach is to scan the matrix so that the code is referencing contiguous storage locations. The only differences in these two FORTRAN program segments is that the nested DO statements are reversed. Caution: PL/I and FORTRAN map arrays into core in precisely opposite ways, so the 'bad' FORTRAN method is 'good' in PL/I and vice versa.

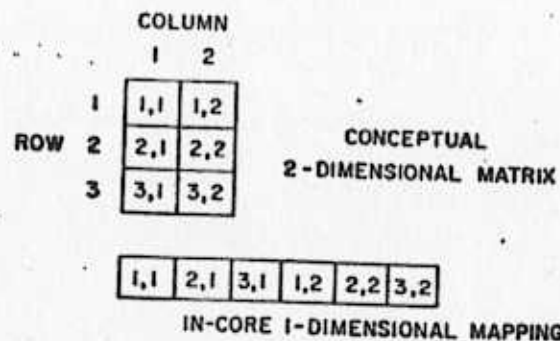
```

I
I
L    3, SUGAR
L    8, SPICE
TM   SWITCH, X'FF'
BC   1, TARGET
I
I
I
I
TM   SWITCH, X'FF'
L    3, SUGAR
L    8, SPICE
BC   1, TARGET
I

```

SEPARATE THE CC-SETTER FROM THE BRANCH INSTRUCTION

Figure 19.



FORTRAN EXAMPLES OF SUMMATION

```

SUM = 0.0
DO 10 J=1,2          GOOD
DO 10 I=1,3
10 SUM = SUM + ARRAY (I,J)

SUM = 0.0
DO 10 I=1,3          BAD
DO 10 J=1,2
10 SUM = SUM + ARRAY (I,J)

```

Figure 20.

Figure 21 shows two ways to code a FORTRAN array summation. The stretched loop requires more core than the tight one, but it will execute faster because it sums five numbers per branching instruction rather than only one.

STRETCH YOUR LOOPS

```

SUM = 0.0
DO 10 I=1,1000
10 SUM = SUM + A(I)

SUM = 0.0
DO 10 I=1,1000,5
10 SUM = SUM + A(I) + A(I+1) + A(I+2) + A(I+3) + A(I+4)

```

Figure 21.

In conclusion, there are two main things to be aware of: load-use situations and CC-setter, branch pairs. Learning to recognize them and split them up will enhance execution speed on all large System/360 models.

ACKNOWLEDGMENTS

The author appreciates the advice and suggestions of Mr. Michael Gordon and Mr. John Sowa.