

ADDRESS LENGTH BINARY CONTROL CARDS.

0	1126	IDENT	OPNCLO
1126		END	

BLOCKS	TYPE	ADDRESS	LENGTH
ABSOLUTE*	ABSOLUTE	0	51
PROGRAM*	LOCAL	0	1126

ENTRY POINTS.

PSEUDO = 731	DETALL = 1626	CLOSE = 607
EPSEUDO = 733	OPEN = 608	ECLOSE = 602

EXTERNAL SYMBOLS.

OPERCL	APB	ERRADOR	DBR	RELCLAM	M.CLOSE	GF.LEN	FR.CLAM
IPLIST	TEMP0	ERRPACK	DBW	RELEASE	M.TVRES	GF.SUSF	FR.MEMB
FR.DOS	TEMP1	STKBUF	GETRESP	FRW	M.HELP	GF.SUSL	FHRADDR
SUSPLST	TEMP2	SETPCNT	TR.DRIV	MAKEMAP	M.SWAB	GF.IOTF	FILEADR
DSKFIND	TEMP3	DISKENT	TR.LEVL	LOADRUF	M.ABFCH	GF.IOTL	LFTFREE
COMMRCF	TEMP4	DISKERR	BLK.SIZ	AUDIT	M.ABFIL	GF.DDSF	LFHADDR
COMMROL	TEMP5	DISKINT	BLK.DTY	NOQLOCK	M.ACREQ	GF.DDSL	DARADDR
COMMRWE	TEMP6	FRWENT	BLK.FLG	PROBE	M.ACRES	GF.DATE	PAGESH
COMMRWL	TEMP7	FRWERR	SW.SW	RETCLK	M.USRCC	GF.DATL	MAPBUF
HOLDBLK	TEMP8	FRWINT	SW.DDS	SYSERV	M.FRWC	GF.APTF	SIZES
LOCTAB	TEMP9	ENTER	PG.PG	PRETURN	M.TRMCC	GF.APTL	SIZEI
LOCTARF	TEMP10	CLKBUF	PG.DDS	RETURN	M.CLOCC	GF.HSHF	NUMRESP
LOCTABL	TEMP11	DSYSTIM	PG.DTY	RETPAR	M.ACTCC	FHRHASH	CREATER
LFT	TEMPA	DSWPTIM	PTR.PTG	ERRPARM	M.TRYCC	DARHASH	CREBLKR
FLEN	TEMPB	DUSRIM	PTR.DDS	ERRFILE	M.DFILT	GF.HSHL	DELBLKR
USERRRWP	TEMPC	MYSCRF	PTR.CM	ERRALOC	M.DOBJS	GF.TRVF	OPENR
USERRWL	TEMPD	MYCODE	PTR.DTY	ERRMAP	NOBJS	FHB	ATTACHR
DATMAP	TEMPE	MYSUBP	PTR.NUM	CALBEAD	M.BFILE	FB.LEN	DETACHR
TERMRWL	TEMPF	MYEVCH	CREATE	REGS	M.DDREQ	FB.NAME	ZROMAPR
TERMROF	TEMPG	READCAP	CREBLK	D.ENTRY	M.DDRSP	FB.WD3	CHMAPR
TERMRWP	TEMPH	WRITCAP	DELBLK	D.FNAME	M.RBUFS	FB.SHAP	CHMAPB1
CLOSRWF	TEMPV	SAVEREG	ATTACH	DBG1	M.WBUFS	FB.FUND	SETUPR
CLOSRWL	TEMPW	RESTREG	DETACH	DSKLCK	M.SLOTS	FHR	CREATB1
CLOSROF	TEMPX	MAINCL	CONVERT	DBG2	M.LOCKS	FR.LEN	CLOSER
READRWF	TEMPY	FILCL	SETUP	M.AUTH	NLOCKS	FR.NAME	MOVBLKR
READRWL	TEMPZ	SLEEP	DECODE	M.MKCAP	M.DDSCT	FR.WD1	CREPTRR
READONF	MYIDENT	MYRESP	CRELPH	REDSHP	M.FHRL	FR.WD2	DORESPR
READONL	MYDAR	RESP	OPENDAR	GDSKHDR	M.DARL	FR.WD3	ERRNUM
HENTRY	MYUNIT	GFILE	PRVOPEN	FDSKHDR	M.HASHL	FR.SUSP	ERRCLAS
DENTRY	MYSWOCC	HFILE	MKPTR	GDSKPTR	M.ADDS	FR.LOCK	TABADDR
ORGADDR	DDSIPL	FILECAP	DSPTR	FDSKPTR	M.ASUSP	FR.DAR	DETALLR
ORGCLST	IOTIPL	CTEMP	DARSPA	GDSKDAT	M.ADISK	FR.OPEN	ECIGEVF
ORGMAP	HASHIPL	UDSKSCR	ZEROMAP	FDSKDAT	M.SDISK	FR.CAPX	ECICOUT

OPEN / CLOSE DISK FILE
STORAGE ALLOCATION.

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INTDAT	SUSIPL	BFILE	CHMAP	GETDSK	M.FDISK	FR.DBSZ	EC:STMP
AP0	DATIPL	DDRSP	CLODAR	FREEDSK	M.FCLEV	FR.ONEL	EC:DFIL
AP1	APTIPL	R8UFS	HASH	BUSYDSK	M.UNAME	FR.FROZ	EC:DBLK
AP2	RETPARM	RETRY	DELHASH	L.MNCL	M.USCTR	FR.WRIT	EC:MCAP
AP3	RETERR	SLOTS	EXCLAIM	M.GFILE	M.OPCL	FR.SIZE	EC:ICIN
AP4	PASSERR	HBR	SHCLAIM	M.HFILE	M.IOCTR	FR.SHAP	EC:SEV
AP5	USRPACK	HBW	LOCK	M.FILCL	M.TWAIT	FR.FUND	EC:GEVH
AP6	IOTBUF	PBR	UNLOCK	M.EMPTY	M.CLTIM	FR.FLAG	EC:DSCP
AP7	PROCADR	PBW	UNLOCKW	M.RETRY	M.IOSEC	FR.ROOT	

OPEN / CLOSE DISK FILE

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IDENT OPNCL0

	PARAMS	XTEXT	
	MACROS	XTEXT	
	SYSCALL	XTEXT	
		*	
		EXT	OPERCL,IPLIST
		MACSET	OPERCL,IPLIST,FCS
	READTST	XTEXT	
	ERRORS	XTEXT	
	TYPES	XTEXT	
	OBRITS	XTEXT	
		*	
		EXT	FR,DDS
		*	
		*	PARAMETER INDICES
0	P0	EQU	0
1	P1	EQU	1
2	P2	EQU	2
3	P3	EQU	3
4	P4	EQU	4
5	P5	EQU	5
6	P6	EQU	6
		*	
		PAGE	OPEN...OPEN...OPEN

OPEN DISK FILE

NOTES:

- A) THE SPECIFIED DISK FILE IS LOCALLY OPENED FOR THE PROCESS.
- B) IF THE FILE IS ALREADY OPEN, THE LOCAL OPEN COUNT IS INCREMENTED. THE ↑OPEN WRITE↑ FLAG IS ALSO SET IF REQUESTED.
- C) IF THE FILE IS ALREADY GLOBALLY OPEN, IT IS OPENED LOCALLY AND THE GLOBAL OPEN COUNT IS INCREMENTED. THE ↑OPEN WRITE↑ FLAG IS SET IF REQUESTED.
- D) IF THE FILE IS NOT ALREADY GLOBALLY OPEN, THE FILE HEADER BLOCK MUST BE READ FROM THE DISK. THE FILE HEADER BLOCK IS USED TO CONSTRUCT THE FILE HEADER RECORD (FHR).
- E) IF THE FILE IS NOT GLOBALLY OPEN, THE APPROPRIATE DISK ACCOUNTING RECORD (DAR) MUST BE OPENED.
- F) UNLESS THE FILE IS FROZEN OR LOCALLY OPEN, THE ECS ALLOCATION BLOCK OF THE PROCESS MUST FUND THE REQUIRED FIXED ECS SPACE FOR THE FILE.
- G) EXCLUSIVE OPEN:
 - 1) IF FILE IS ALREADY OPENED

EXCLUSIVELY... ALL OPENS DO A
F-RETURN

- 2) IF FILE IS NOT GLOBALLY OPENED,
EXCLUSIVE OPEN SUCCEEDS.
- 3) IF FILE IS GLOBALLY OPEN ONLY
FOR THIS PROCESS, EXCLUSIVE
OPEN SUCCEEDS.
- 4) OTHERWISE, EXCLUSIVE OPEN DOES
AN F-RETURN

ON ENTRY: API = INDEX OF DISK FILE CAP
AP2 = 0 IF READ ONLY OPEN
AP3 = 0 IF REGULAR OPEN
B7 = RETURN LINK

ON EXIT: CAPABILITY FOR FILE AT *FILECAP*

ROUTINES CALLED: *HASH*, *HBR*, *OPENDAR*,
DARSPAT, *UNLOCK*, *CRELFH*, *DELHASH*

REGISTERS USED: ALL

TEMPORARIES USED: *OPENR*, *TEMPB*

0	5116000000 X	OPEN	SA1 DISPCAP	API X1	INDEX OF DISK FILE CAP
5	10179		BX1	X7	UNIQUE NAME AND DISK ADDR
	76670		SX6	B7	SAVE RETURN LINK
6	5160000000 X		SA6	OPENR	
	6150000000 X		SB4	M_FHRL	
7	6160000011 *		SB5	FHRHASH	
	0200000000 X		SB6	OPEN1	HASH FOR UNIQUE NAME
10	0200000451 *	*	JP	OPEN32C	OUT OF DDS.. NO RECORD MADE
11	10655	OPEN1	BX6	X5	SAVE FHR ADDRESS IN DDS
	5160000000 X		SA6	FHRADDR	
12	0456000314 *		EQ	B5,B0,OPEN15	JP IF ALREADY GLOBALLY OPEN

ORIGINAL OPEN THIS TIME.....

7160000000 X
 21 7247777756
 6334000427 +
 22 7160000000 X
 31 7160000021
 20617
 32 5160000000 X

GETEVH (MAINCL,M,DDSCT)
 SX4 X7-17
 NG X4,OPEN32A
 SENDEV #,X4
 SX6 17
 LX6 15
 SA6 FR,DDS

RESERVE DDS SPACE FOR HEADER BLK
 LARGEST HEADER BLK = 17 DDS REC
 JP IF NO DDS
 SET AMOUNT IN FHR

7160000000 X
 41 73478
 0304000414 +
 42 7160000000 X
 50 7266776040
 0316000453 +
 51 73378
 7160000000 X
 63 5130000000 X
 12643
 54630
 64 5150000000 X
 7160000000 X

GETEVH (MAINCL,M,FCLEV)
 SX4 X7
 ZR X4,OPEN32
 DISPCAP (FILCL,X4)
 SX6 X6-T,CLSCD
 NZ X6,OPEN33
 SX3 X7
 SENDEV (MAINCL,M,FCLEV),X3
 SA3 FR,CAPX
 BX6 X4+X3
 SA6 A3
 SAS FHRADDR
 WRDDS X5+2,FR,CAPX,1

PTR TO FREE C-LIST SLOT
 JP IF FILCL= IF FULL
 CONSISTANCY CHECK
 C-LIST FREE LINK MUST BE CLSCD
 PTR TO NEXT FREE SLOT
 SET C-LIST INDEX IN FHR
 COPY FHR TO DDS (FR,CAPX=FR,DDS)

77 5140000000 X
 0304000401 +
 100 5140777775 X
 101 5044000002
 0304000377 +
 102 0324000101 +

SA4 LFTFREE
 ZR X4,OPEN21A
 OPEN1A
 SA4
 ZR
 PL

CHECK FOR FREE ABR
 LFT=2
 A4+2
 X4,OPEN21
 X4,OPEN1A

JP IF END OF TABLE (ERROR)
 LOOP UNTIL FREE SPOT

5150000000 X
 103 7160000000 X
 105 6170000116 +
 0260000000 X
 116 0336000403 +
 5120000000 X

SAS
 REDDS
 SB7
 JP
 OPEN2
 NG
 SA2
 REDDS

FHRADDR
 X5,FHR,2
 OPEN2
 HBR -
 X6,OPEN22
 FHRADDR
 X2,FHR,FR,LEN

FILE NOT GLOBALLY OPEN

READ BEGINNING OF FHR

CALL FOR HEADER BLK READ FROM DISK

OPEN DISK ALLOCATION RECORD (DAR)
 JP IF ERROR ON DISK READ

COMPUTE ACTUAL DDS ALLOCATION FOR FILE

OPEN / CLOSE DISK FILE
OPEN DISK FILE

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131 5150000000 X
66600

SAS
SB6
NG

FR.FLAG

B0
X5,OPEN2C

AND ALLOCATE THE DDS SPACE

132 0335000143 *

SKIP IF ONE LEVEL FILE

133 43712 5150000000 X

11675

20612

43771

SAS
MX7
BX6
LX6
MX7

FR.SHAP

10
X7*X5

10
60-3

S0

134 15767 21663

0307000136 *

BX7
AX6
ZR

-X7*X6
3
X7,OPEN2A

135 7266000001

136 6266000001

SX6
SB6

X6+1
X4+1

DOS SPACE FOR HEADER BLK

137 15657 43770

6276777774

OPEN2B
BX6
SB7

60-4

-X7*X5

X4-3

140 15657 21504

0306000143 *

AX5
BX6

4

-X7*X5

ZR

X6,OPEN2C

141 7160000001

22676

63666

SX6
LX6
SB6
SB6

1

X6,87

B6*X6

SIZE OF POINTER BLK

142 6166000001

0200060137 *

JP

B6+1

OPEN2B

PLUS 1 FOR PAGE SWITCH

143 7150000021

76760

OPEN2C
SX5
SX7

17

B6

(B6= STANDARD DDS ALLOC)

37557

144 7160000000 X

IX5

X5-X7

AMOUNT TO RETURN

152 36475

GETEVH

(MAINCL.M.DDSCT)

0334000440 *

IX4

X7*X5

153 7160000000 X

NG

X4,OPEN32B

JP IF OUT OF DDS

* ,X4

162 5140000000 X

20455

SENDEV
SA4

FR,DDS

60-15

CORRECT DDS TOTAL INFHR

163 15646 43655

13446

37665

12646

LX4
MX6

60-15

-X6*X4

BX4

X4-X6

IX6

X6-X5

BX6

X4*X6

LX6

15

164 20617

54640

SAS

A4

OPEN DAR

165 73115 5110000000 X

6160000171 *

SA1
SX1

FR,FUND

X1

SB6

OPEN3

166 0200000000 X

JP

OPENDAR

OPEN / CLOSE DISK FILE
OPEN DISK FILE

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PAGE 9

241 20559
63550
5140000000 X
242 63345
6140000001
243 6160000245 +
0200000000 X
244 0200000405 +

LX5
SB5
SA4
SB3
SB4
SB6
JP

60-18
X5
MYDAR
X4
R.FAECS
OPENS
DARSPA

INDICATE FIXED ECS

JP OPEN26 INSUFFICIENT FUNDS

245 5140000000 X
0304000250 +
246 5150000000 X
43601
20671
247 12665
54650

OPEN5
SA4
ZR
SAS
MX6
LX6
BX6
SA6

AP2
X4,OPEN6
FR.FLAG
1
60-FR,RWFG
X6+X5
A5

CHECK FOR OPEN WRITE

JP IF READ ONLY OPEN
SET OPEN WRITE

250 5150000000 X
6160000252 +
251 0200000000 X

OPEN6
SA5
SB6
JP

FHRADDR
OPEN7
UNLOCK

UNLOCK FILE

252 5140000000 X
43655
15446
253 7160000000 X
262 616000263 +
0200000000 X

OPEN7
SA4
MX6
BX4
CAPIN
SB6
JP

FR.CAPX
60-15
-X6*X4
FTLCL,X4,FILECAP
CONSTRUCT LOCAL FILE TABLE ENTRY
OPEN10
CRELPH
CONSTRUCT LFT ENTRY

263 5150000000 X
5140000312 +
264 0305000265 +
5140000313 +
265 14444
7160000000 X
274 5110000000 X
7160000000 X
361 10466
21472
7160000000 X

OPEN10
SA5
SAA
ZR
SA4
BX4
COPYCAP
SA1
DISPCAP
BX4
AX4
COPYCAP

AP2
OPEN12
X5,OPEN11
OPEN13
-X4
FILECAP,FILECAP,(+X4)
API
X1
X6
18
FILECAP,FILECAP,(+X4)

TRIM OPTIONS AND RETURN CAPABILITY

CHECK FOR OPEN WRITE
READ ONLY OPTION MASK
JP IF NOT OPEN WRITE
OPEN WRITE OPTION MASK

USER SUPPLIED OPTIONS MASK

370 5150000000 X

SA5

EXIT
OPENR
RECOVER RETURN LINK

~~OPEN / CLOSE DISK FILE~~
~~OPEN DISK FILE~~

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66600
63750
311 0270600000

SR6 B0
SR7 X5
JP B7

INDICATE FILE OPENED

RETURN

312 0000600000002006357 OPEN12 VFD 60/08.DSTRY+08.CHNAM+08.CREBL+08.DELBL+08.PLMAP+08.F
,DAE+08,WFILE+08,DCRBL+08,DDLBL+08,TRDB
313 0000600000002000317 OPEN13 VFD 60/08.DSTRY+08.CHNAM+08.CREBL+08.DELBL+08.PLMAP+08.F
,DAE+08,TRDB

OPEN READ WRITE OPTIONS

*PAGE

OPEN / CLOSE DISK FILE
OPEN DISK FILE

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FILE ALREADY GLOBALLY OPEN

(FHR IS LOCKED)

314	7160000000 X	OPEN15	REDDS	X5,FHR,FR.LEN	CHECK FOR LOCALLY OPEN
326	5140000000 X		SA4	FR,OPEN	IF GLOBAL OPEN COUNT EQUALS
	20436		LX4	60-30	ZERO THEN THE FILE IS IN
	43655		MX6	60-15	THE PROCESS OF BEING CLOSED
327	15444		BX4	=X6*X4	
	0314000334 +		NZ	X4,OPEN15B	UNLOCK FILE AND START OVER
330	5150000000 X		SA5	OPENR	IF FILE BEING CLOSED(OPEN COUNT
	63750		SR7	X5	=0)
331	6160000333 +		SR6	OPEN15A	WAIT ON SUSP. QUEUE
	0200000000 X		JP	SUSPLST	
			EXT	SUSPLST	

332	0200000000 +	*	JP	OPEN	FILE WAS CLOSED
333	0200000000 +	OPEN15A	JP	OPEN	TRY AGAIN IN ANY CASE

334	5140000000 X	OPEN15B	SA4	FR.FLAG	CHECK FOR EXCLUSIVE OPEN ON THE FILE ALREADY
	20405		LX4	FR,XOPP	
335	0334600457 +		NG	X4,OPEN37	DO F-RETURN IF XCLU OPEN

336	43655	5140000000 X	SA4	FR,CAPX	
	15446		MX6	60-15	
	7160000000 X		BX4	=X6*X4	INDEX OF FILE CAP
345	7160000000 X		CAPIN	FILCL,X4,FILECAP	
			DISPCAP	FILECAP	

352	5130777775 X		SAB	LFT=2	SEARCH LFT FOR FILE UNIQUE NA
	43447		MX4	39	
353	5033600002	OPEN16	SAB	A3+2	
	0303000372 +		ZR	X3,OPEN18	JP IF FILE NOT LOCALLY OPEN
354	13637		BX6	X3-X7	
	11646		BX6	X4&X6	
	0316000353 +		NZ	X6,OPEN16	

355	74637		SX6	A3	
	5150000000 X		SA6	LFHADDR	

FILE IS LOCALLY OPEN ALREADY

356	5140000000 X		SA4	AP3	CHECK FOR EXCLUSIVE OPEN REQUEST HERE
	0304000363 +		ZR	X4,OPEN16A	SKIP IF REGULAR OPEN
357	5140000000 X		SA4	FR,OPEN	
	20436		LX4	60-30	CHECK FOR GLOBAL OPEN CNT = 1
	43655		MX6	60-15	
368	15444		BX4	=X6*X4	
	7244777776		SX4	X4-1	

OPEN / CLOSE DISK FILE
OPEN DISK FILE

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361 0314000457 +
5140000000 X
362 43607
20667
12664
54640

NZ
SA4
MX6
LX6
BX6
SA6

X4,OPEN37

FR.FLAG

1

60-FR,XOPEN

X6+X4

A4

F-RETURN IF OTHERS HAVE OPEN

SET EXCLUSIVE OPEN FLAG

363 5130000000 X
5233000001

OPEN16A

SA3

LFHADDR

X3+1

59

60-18

X3-X6

X6

X7,OPEN31A

INCREMENT LOCAL OPEN COUNT

JP ON OPENCOUNT OVERFLOW

364 43672
20352
37636
73760
365 0337000451 +
20622
54630

LX6

SA6

18

A3

366 5140000000 X
0304000371 +
367 5130000000 X
43601
20671
370 12664
54640

SA4

ZR

SA3

AP2

X4,OPEN17

FR.FLAG

1

60-FR,RWFG

X6+X3

A3

TEST FOR OPEN WRITE
JP IF READ ONLY OPEN

371 6160000263 +
0200000000 X

OPEN17

JP

OPEN10

UNLOCK

UNLOCK FILE

NOTE FUNNY RETURN FOR UNLOCK

372 5130000000 X
0313000457 +

OPEN18

SA3

CHECK FOR ATTEMPTED EXCLUSIVE OPEN

AP3

X3,OPEN37

F-RETURN..FILE OPEN BY OTHERS

373 5130000000 X
0303000410 +

SA3

ZR

LFTFREE

X3,OPEN31D

CHECK FOR FREE ABR

374 5130777775 X
375 5033000002
0303000407 +
376 0323000375 +

OPEN19

SA3

ZR

LFT=2

A3+2

X3,OPEN31C

X3,OPEN19

END OF LFT (ERROR)

LOOP IF OCCUPIED

0200000231 +

JP

OPEN4

ALL OK...DO LOCAL OPEN STUF

*** ERRORS ***

377	7160000041	OPEN21	SX6	E.NOLFH	NO FREE LOCAL FILE HEADERS
	5160000000 X		SA6	ERRNUM	
400	6170000000 X		SB7	ERRFILE	
	0200000512 *		JP	OPEN42	
401	7160000026	OPEN21A	SX6	E.NABR	NO ABR+S ON OPEN
	5160000000 X		SA6	ERRNUM	
402	6170000000 X		SB7	ERRFILE	
	0200000512 *		JP	OPEN42	
403	7160000025	OPEN22	SX6	E.NODFIL	ERROR ON HEADER BLOCK READ
	5160000000 X		SA6	ERRNUM	
404	6170000000 X		SB7	ERRFILE	
	0200000512 *		JP	OPEN42	FILE DOES NOT EXIST ON DISK
405	7170000001	OPEN26	SX7	E.NOECS	INSUFFICIENT FIXED ECS SPACE
	5170000000 X		SA7	ERRNUM	SET ERROR NUMBER
406	6170000000 X		SB7	ERRALOC	
	0200000460 *		JP	OPEN40	ERROR EXIT
407	7160000041	OPEN31C	SX6	E.NOLFH	NO LOCAL FILE HEADERS
	0200000412 *		JP	OPEN31B	
408	7160000026	OPEN31D	SX6	E.NABR	NO ATTACH BLOCK RECORDS
	0200000412 *		JP	OPEN31B	
411	7160000034	OPEN31A	SX6	E.TMOPN	TOO MANY OPENS (OPEN COUNT
412	5160000000 X	OPEN31B	SA6	ERRNUM	
413	6160000000 X		SB6	ERRFILE	UNLOCK AND EXIT
414	7160000000 X	OPEN32	SENDEV	(MAINL,M.FCLEV),0 FILES CLIST IS FULL	
425	7160000043		SX6	E.FULL	
	5160000000 X		SA6	ERRNUM	
426	6170000000 X		SB7	ERRFILE	
	0200000557 *		JP	OPEN43	NO DDS FOR HEADER BLK

~~OPEN / CLOSE DISK FILE~~
OPEN DISK FILE

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OPEN / CLOSE DISK FILE
OPEN DISK FILE

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	7160000001	SX6 IX6 LX6 SA6	1 X6-X6 30 A6	DEC R OPEN COUNT
463 37656 20636 54650	*	CALLX	UNLOCK,B6,B7	UNLOCK AND EXIT
	66670	*		
		*		CLOSE DAR
465 5110000000 X 6160000467 *	OPEN40A	SA1 CALLX	DARADDR CLODAR,B6,OPEN41	
		*		
		*		DESTROY ECS FILE AND RELEASE ROOT PTRS
467 5150000000 X 5140000000 X	OPEN41	SAS SA4 MX6 BX4	FR,FLAG FR,CAPX 60-15 -X6*X4	
470 43656 15446	0325000501 *	PL	X5,OPEN41A	SKIP IF NOT ONE LEVEL
471 7160000000 X	DSBLK		(FILCL,X4),B6,OPEN34	
501 7160000000 X	OPEN41A	DSFILE	(FILCL,X4)	
		*		
507 5140000000 X 0324000512 *	SA4 PL	FR,ROOT X4,OPEN42		SKIP IF ONE LEVEL
510 20444 73540	LX4 SX5	60-24 X4		
	6160000512 *	CALLX	DSPTR,B6,OPEN42	
		*		
512 7160000000 X	OPEN42	CAPIN	RETURN *FILCL* SLOT	
521 7160000000 X		GETEVH	FILCL,B6,FILECAP	
527 5140000000 X 43655 15446		SA4 MX6 BX4 BX5	(MAINCL,M,FCLEV) FR,CAPX 60-15 -X6*X4 X7	
530 1057*	SETEMP	FILECAP,FILECAP,X6		
	7160000000 X			
537 7160000000 X	CAPOUT			
546 7160000000 X	SENDEV		FILCL,X4,FILECAP	
		*		
557 5140000000 X 21417 43655	OPEN43	SA4 AX4 MX6	FR,DDS	RETURN DDS SPACE
560 15446 7160000000 X		BX4	15	
567 36447 7160000000 X	GETEVH		60-15 -X6*X4	
		IX4	(MAINCL,M,DDSCFT)	
		SENDEV	X4+X7	
		*		
576 5140000000 X 5140000000 X	OPEN44	SA4 SA4 SB5	FR,NAME M,FHRL	DELETE FHR IN DDS
577 6150000000 X 6160000601 *	CALLX		FHRHASH DELHASH,B6,OPEN45	
		*		

~~OPEN / CLOSE DISK FILE~~
~~OPEN DISK FILE~~

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601 027000000

OPEN45

JP

B7

EXIT

*

**** CLOSE DISK FILE ****

X3 = (ECLOSE) INDEX OF DISK FILE CAP
 (ECLOSE) ECS FILE UNIQUE NAME
 B7 = RETURN LINK

- NOTES:
- A) AFTER CONFIRMING THAT THE FILE IS LOCALLY OPEN THE LOCAL OPEN COUNT IS DECREMENTED.
 - B) IF THE LOCAL OPEN COUNT BECOMES ZERO, ALL LOCALLY ATTACHED BLOCKS ARE DETACHED (A BLOCK IN A MAP WILL RESULT IN AN ERROR)
 - C) IF THE FILE IS LOCALLY FROZEN, THEN THE GLOBAL FROZEN COUNT IS DECREMENTED (WITH THE POSSIBILITY OF CAUSING THE FILE TO BE THAWED)
 - D) AFTER RELEASING THE LOCAL FILE HEADER, THE GLOBAL OPEN COUNT IS DECREMENTED AND IF IT IS EXHAUSTED, THE CLOSER PROCESS IS CALLED (THE FHR IS LEFT LOCKED)

TEMPORARIES: CLOSER, TEMP1, TEMP3, TEMP4, TEMPS
 (PLUS OTHERS I THINK)

ROUTINES CALLED: CONVERT, UNLOCK, DBW, DARSPA
 RELEASE, DELHASH, UNLOCKW

**** CLOSE FILE FROM USER SUPPLIED ECS FILE CAPABILITY

	ECLOSE	SXT	B7	SAVE RETURN LINK
602 7677 : 5170000000 X		SA7	CLOSER	
603 6170000606 + 10733		SB7	ECLOSE1	
604 0200000000 X		BX7	X3	
		JP	CONVERT	X7 → ECS FILE UNIQUE NAME
605 0200000724 +		JP	CLOSE13	
606 56325 0200000612 +	ECLOSE1	SA3	B2	NOT LOCALLY OPEN FILE
		JP	CLOSEIT	LFH ADDR

**** CLOSE FILE FROM USER SUPPLIED DISK FILE CAPABILITY

OPEN / CLOSE DISK FILE
CLOSE FILE

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607 7677*	5170000000 X	CLOSE	SX7 SA7	B7 CLOSER	SAVE RETURN LINK
610 6170600612 *	0200000000 X	*	SB7 JP	CLOSEIT DSKFIND	LOCATE AND LOCK DISK FILE USING DISK FILE NAME
	*	EXT		DSKFIND	
611 0200600724 *	*	*	JP	CLOSE13	FILE NOT LOCALLY OPEN
	*	*			FILE LOCALLY OPEN
612 7463*	5160000000 X	CLOSEIT	SX6 SA6	A3 LFHADDR	(A3 = LFT ADDR) SAVE LFA ADDRESS
613 5140600000 X	20405	*	SA4	FR.FLAG	CHECK FOR EXCLUSIVE OPEN SET
614 0324600616 *	43601	LX4	LX4	FR.XOPF	
	15546	PL	X4,CLOSE2	X4	SKIP IF NOT EXCLUSIVE
615 20667	54640	MX6	1	-X6&X4	CLEAR XCLU OPEN
	*	BX6			
616 5043600001	20452	LX6	6*-FR.XOPF		
	43673	SA6	A4		
617 36664	73740	*			
	0367000622 *	CLOSE?	SA4	A3+1	
620 20629	54640	LX4	LX4	60-18	
	*	MX6	MX6		
621 63657	5150000000 X	IX6	IX6	59	
	0200000000 X	SX7	X4*X6		DECR LOCAL OPEN COUNT
	*	ZR	ZR	X6	
	*	LX6	X7,CLOSE3	X7	JP IF LOCAL COUNT EXAUSTED
	*	SA6	18		
	*				
622 5140600000 X	5244000001	SA5	CLOSER		UNLOCK FILE AND EXIT
623 0334600633 *	*	SB6	X5		
	*	JP	UNLOCK		
	*				LOCAL OPEN COUNT EXAUSTED
624 0334600727 *	20404	CLOSE3	SA4	LFHADDR	
	*		SA4	X4+1	
	*	NG	X4,CLOSE8		JP IF LOCALLY FROZEN
625 0200601026 *	617000627 *	LX4	LW.IFRZ		
	*	NG	X4,CLOSE15		JP IF I FROZ FILE
	*				
	*	SB7	CLOSE7A		DETACH ALL LOCALLY ATTACHED BLOCKS
	*	JP	DETALL		DETACH ALL ATTACHED BLOCKS
	*				,REFUND SWAPPED ECS, AND
					RELEASE ABR#S

OPEN / CLOSE DISK FILE
CLOSE FILE

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626 616000000 X	*	SB6	ERRFILE	BLOCK IN MAP (↑ERRNUM↑ SET
020000000 X		JP	UNLOCK	ALREADY)
627 514000000 X	CLOSE7A	SA4	FR.SIZE	REFUND FIXED ECS FOR FILE
21422		AX4	18	
630 67505		SR5	X4	
514000000 X		SB5	-BS	
631 614000001		SA4	MYDAR	
63340		SB4	1	
632 616000041 *	020000000 X	SB3	X4	FIXED ECS
		SB6	CLOSE9	
		JP	DARSPA	

*
*
*
*

FILE LOCALLY FROZEN
(NO ATTACH BLK RECORDS)

633 515000000 X	CLOSER	SAS	FR.OPEN	
20517		LX5	60-45	
43673		MX6	59	
634 36665		IX6	X6+X5	
43755		MX7	60-15	DECR FROZEN OPEN COUNT
15267		BX7	-X7+X6	
635 5665:		LX6	45	
0317000641 *		SA6	A5	
		NZ	X7,CLOSE9	JP IF COUNT NOT EXAUDED.
636 515000000 X		SAS	FR.FLAG	CHECK GLOBAL FROZEN FLAG
20506		LX5	FR.FRZE	
637 0335600641 *		NG	X5,CLOSE9	JP IF STILL GLOBALLY FROZEN
010000000 X		RJ	SYSERR	FROZEN OPEN SHOULD NOT RUN OUT

~~OPEN / CLOSE DISK FILE~~
~~CLOSE FILE~~

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640	0100000000 X	*	RJ	SYSERR	*CONSISTANCY FOR ↑DARSPAT
641	5150000000 X	CLOSE9	SA5	LFHADDR	
	5245000001		SA4	X5+1	RELEASE ANY LOCAL CLAIM ON FILE
642	43629		MX6	18	*CONSISTANCY CHECK
	20666		LX6	60-6	* NUM ATTACHED BLKS = 0
	11664		BX6	X6#X4	*
643	0316000726 *		NZ	X6,CLOSE14	
	20401		LX4	1	FILE
	43602		MX6	2	
644	11664		BX6	X6#X4	
	0306000646 *		ZR	X6,CLOSE9A	SKIP IF NO LOCAL CLAIM
645	6170000646 *		SB7	CLOSE9A	
	0203000000 X		JP	RELEASE	

646 5150600000 X
43601
53650 CLOSEQA SA5 LEHADDR
MX6 :
SA6 X5

DEC R GLOBAL OPEN COUNT

647	5150000000 X 20536	SAS LX5 MX6 IX6 MX7 BX7 LX6 SAS ZR	FR,OPEN 60-30 59 X6+X5 60-15 -X7*X6 30 A5 X7,CLOSE10	JP IF GLOBAL COUNT EXHAUSTED
650	36665 43755 15767 20636			UNLOCK AND EXIT
651	54657 0307000654 +			
652	5150000000 X 63650	SAS SS6 JP	CLOSER X5 UNLOCK	
653	0200000000 X			

GLOBAL OPEN COUNT EXHAUSTED...GLOBAL CLOSE TIME

CALL CLOSER PROCESS

654	5140000000 X	CLOSE10	SA4	FHRADDR		
	7160000000 X		WRDOS	X4,2,FHR+2,FR,LEN-2		
667	7160000000 X		GETEVF	(MAINCL,M.HELP),CLOSE10A		
676	10577		BX5	X7	GOT EVENT FIRST TRY	
	0200000711 +		JP	CLOSE10B		
677	6160000700 +	*	CLOSE10A	CALLX	UNLOCK,B6	UNLOCK FILE TO PREVENT
700	7160000000 X		GETEVH	(MAINCL,M.HELP)		LOCKUP
706	5170000000 X		SA7	TEMPX		

OPEN / CLOSE DISK FILE
CLOSE FILE

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④ *Dave*

5150000000 X	S6	FHRADDR	
707 6160000710 +	CALLX	LOCK,B6	RE-LOCK FILE
710 5150000000 X	SA5	TEMPX	
5140000000 X	SA4	FHRADDR	
711 7160000000 X	*	CLOSE10B SENDEV	(SLEEP,X5),X4 SEND FHRADDR TO CLOSER
	*		
722 5150000000 X	SA5	CLOSER	EXIT WITHOUT UNLOCKING FILE
63650	SB6	X5	
723 0260000000	JP	B6	
	*		
	*		

ERRORS

724 716000025	CLOSE13	SX6	E,NODFIL
5160000000 X	SA6		ERRNUM
725 0200000000 X	JP		ERRFILE
726 0100000000 X	CLOSE14	RJ	SYSERR ATTACH BLK CNT .NE. 0
	*		
727 716000046	CLOSE15	SX6	I.FROZ THE FILE...CAN'T CLOSE IT OUT
5160000000 X	SA6		ERRNUM
728 6160000000 X	CALLX		UNLOCK,B6,ERRFILE

PSEUDO - CLOSE DISK FILE

API: DISK FILE CAPABILITY FOR AN OPEN DISK FILE

	ENTRY	PSEUDO		ECS FILE CAP INDEX
	EXT	DSKFIND		
731 5130000000 X 6170000743 *	PSEUDO	SA3 SB7 JP	API PSEUDO1 DSKFIND	
732 0200000000 X				

PSEUDO-CLOSE DISK FILE (ECS FILE CAP)

API: ECS FILE CAP FOR OPEN DISK FILE

	ENTRY	EPSEUDO	
733 5130000000 X 6170000743 *	EPSEUDO	SA3 SB7 DISPCAP JP	API PSEUDO1 X3 CONVERT
734 7160000000 X 741 0200000000 X			

	ENTRY	PSEUDO		
742 0200001024 *		JP	PSEUDO03	FILE NOT LOCALLY OPEN
743 7140000006 5150000000 X	PSEUDO1	SX4 SAS SX6	HELPF MYIDENT XE-ACCTF X6,PSEUDO1B	INDEX OF ACCTPS SLAVE INDEX OF THIS PROCESS IS THIS PROCESS ACCTP..
744 7265777764 0306000767 *		ZR		YES.. USE SLAVE HELPER NO... MUST RESERVE A HELPER

	ENTRY	GETEVF	(MAINCL,M,HELP),PSEUDO1A	TRY TO GET A HELPER
745 7160000000 X 754 10477 0200000767 *		BX4 JP	X7 PSEUDO1B	JUMP IF GOT HELPER RIGHT AWAY

* MUST WAIT FOR HELPER ... UNLOCK FILE TO PREVENT DEADLY EMBRACE

	ENTRY	CALLX	UNLOCK,B6	UNLOCK THE FILE
		GETEVH	(MAINCL,M,HELP)	WAIT FOR A HELPER
		SAT	TEMPX	SAVE HELPER INDEX
755 6160000756 *	PSEUDO1A			
756 7160000000 X				
756 5170000000 X				

OPEN / CLOSE DISK FILE
PSEUDO-CLOSE FILE

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5150000000 X
765 6160000766 +
766 5140000000 X

767 5130000000 X
5150000000 X

770 7160000001

20644

12663

771 20625

12565

43601

12565

772 7160000000 X

* PSEUDO01B

SA5 CALLX
SA4
FHRADDR
LOCK,B6
TEMPX
SA3
SAS
SX6
LX6
BX6
LX6
BX5
MX6
BX5
SENDEV
GETEVH
MYRESP
SA4
REDDS
SB6
JP
SX6
SA6
JP
E.NODFILE
ERRNUM
ERRFILE

FHRADDR
LOCK,B6
TEMPX

MYIDENT
FHRADDR
R,PCLOS

36

X6+X3

18

X6+X5

1

X6+X5

(SLEEP,X4),(,X5)

1003 7160000000 X

*

1010 5140000000 X

7160000000 X

*

FHRADDR

X4,FHR,FR.LEN

1023 6160000000 X

0200000000 X

*

RETURN

UNLOCK AND EXIT

UNLOCK

1024 7160000025

5160000000 X

*

PSEUDO03

E.NODFILE

FILE NOT LOCALLY OPEN

1025 0200000000 X

*

ERRNUM

*

ERRFILE

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RELOCK THE FILE
RESTORE HELPER INDEX

PSEUDO-CLOSE REQ CODE

REQUEST RESPONSE

Done?

OPEN / CLOSE DISK FILE
DETACH ALL BLOCKS

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DETACH ALL BLOCKS

NOTES:
A) ALL BLOCK ATTACHED TO THE PROCESS
ARE DETACHED
B) SWAPPED ECS SPACE IS REFUNDED
C) ABR'S ARE RELEASED AS BLOCKS ARE
DETACHED
D) A BLOCK IN A MAP CAUSES A SPECIAL
RETURN FROM DETALL+ AND TERMINATES
THE DETACHING

ON ENTRY: B7= RETURN LINK (NORMAL RETURN)
** FILE IS LOCKED **

ON EXIT: ALL BLOCKS ARE DETACHED
IF BLOCK IN MAP.. EXIT IS TO B7-1 AND
ERRNUM+ CONTAINS ERROR NUMBER AND
FILE ADDRESS

TEMPORARIES: DETALLR, TEMP1, TEMP3, TEMP5

ROUTINES CALLED: DBW, UNLOCKW, DARSQA

		ENTRY	DETALL	
T026	514000000 X	DETALL	SA4	LFHADDR
	5244000001		SA4	X4+1
T027	7667 ²		SX6	B7
	516000000 X		SA6	**DETALLR
	63140		SB1	X4
T030	13666		BX6	X6-X6
	5160000000 X		SA6	TEMP3
T031	5150000000 X		SAS	FR.FLAG
	6335001077 *		NG	X6:DETALL5
T032	20502		LX5	FR,SZFG+2
	43672		MX6	60-2
	15556		BX5	-X6*X5
T033	5255000000 X		SAS	SIZES*X5
	73650		SX6	X5
T034	516000000 X		SA6	TEMP1
				DATA BLOCK SIZE

DETACH NEXT BLOCK

		DETALL	EQ	B1,B0,DETALL6	JP IF DONE
T035	041001103 +	DETALL	SA4	B1	1ST WD OF ABR
	56410		MX6	12	CHECK FOR BLOCK IN MAP

OPEN / CLOSE DISK FILE
DETACH ALL BLOCKS

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T036	11664	BX6	X6*X4	
	0316001115 *	NZ	X6,DETALL10	ERROR..BLOCK IN MAP
T037	5150000000 X	SAS	TEMP3	INCR SPACE TO REFUND
	5130000000 X	SA3	TEMP1	
T040	36652	IX6	X5+X3	
	54650	SA6	A5	
	5130000000 X	SA3	LFTFREE	RELEASE ABR
T041	10633	BX6	X3	PUT CURRENT ABR ON FREE LIST
	56670	SA6	B1	
	76710	SX7	B1	
T042	73545	SAT	A3	(X5 = DDS POINTER ADDR)
	21422	SX5	X4	
	63140	AX4	18	
T043	5130000000 X	SB1	X4	ADDR OF NEXT ABR
	5233000001	SA3	LFHADDR	PATCH UP LOCAL FILE HEADER
T044	73635	SA3	X3+1	
	13336	SX6	X3	
	76610	BX3	X3-X6	SET NEW HEAD OF ABR LIST
	12363	SX6	B1	
	*	BX3	X6+X3	
T045	7160000001	SX6	I	DECR NUMBER OF ATTACHED BLKS
	20644	LX6	36	
	37636	IX6	X3-X6	
T046	54635	SAS	A3	
	*			(A4 = ADDR OF CURRENT ABR)
	*			(B1 = ADDR OF NEXT ABR)
T047	7160000000 X	DETALL2	REDDS	READ POINTER FROM DDS
T061	5130000000 X		X5,TEMPS,1	
	>0333001122 *	SA3	TEMPS	
T062	20307	NG	X3,DETALL11	CONSISTANCY (DATA BLOCK)
	0333001112 *	LX3	1	
		NG	X3,DETALL8	JP ON BUSY POINTER
T063	0323001123 *	LX3	1	
	20301	PL	X3,DETALL12	CONSISTANCY (IN)
	20302	LX3	2	
	43610	MX6	8	
T064	11762	BX7	X6*X3	
	0307001125 *	ZR	X7,DETALL13	CONSISTANCY (ATTACH CNT)
	43701	MX7	I	
T065	20755	LX7	I+48+4	
	37737	IX7	X3-X7	
	11667	BX6	X6*X7	
	20770	LX7	60-4	
T066	0305001073 *	ZR	X6,DETALL3	JP IF GLOBAL ATTACH EXAUSTED
	54730	SA7	A3	
T067	7160000000 X	WRDDS	*,*,*	WRITE POINTER BACK
T072	0200001035 *	JP	DETALL1	PROCEDE TO NEXT BLOCK
	*			
	*			
	*			

GLOBAL ATTACH COUNT EXAUSTED

OPEN / CLOSE DISK FILE
DETACH ALL BLOCKS

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T073 10477	DETALL3	BX4	X7	(X5 = DDS ADDR OF POINTER)
5014000001		SA1	A4+1	DATA BLOCK POINTER
43630		MX6	60-36	FILE ADDR FROM ABR
T074 15114		BX1	-X6*X1	
6170001076 +		SB7	DETALL4	CALL FOR DATA BLOCK WRITE
T075 0200000000 X		JP	DRW	
T076 0200001035 +	DETALL4	JP	DETALL1	IGNORE PREVIOUS I/O ERROR ON BLOCK

*
*
* ONE LEVEL FILE .. JUST CHECK FOR BLOCK IN MAP

T077 56417	DETALL5	SA4	B1	1ST WD OF ABR
43674		MX6	12	
11664		BK6	X6*X4	
T100 0316001115 +		NZ	X6,DETALL10	JP IF BLOCK IN A MAP
5130000000 X		SA3	LFTFREE	RELEASE ABR
T101 10632		BX6	X3	
56670		SA6	B1	
76710		SX7	B1	
54730		SA7	A3	
T102 0200001163 +		JP	DETALL6	GO AHEAD AND EXIT

*
*
*
*
* DONE WITH DETACHES.....
REFUND SWAPPED ECS AND FIXED ECS

T103 5150000000 X	DETALL6	SA5	TEMP3	SWAPPED TO REFUND
0305001110 +		ZR	X5,DETALL7	
T104 63552		SB5	X5	
67536		SB6	-RE	
T105 63342		SA4	MYDAR	
5140000000 X		SB3	X4	
66400		SB4	BN	
6160001110 +		SB6	DETALL7	
T106 0200000000 X		JP	DARSPA	REFUND SWAPPED ECS

*
*
*
*
*
T107 0100000000 X
T108 5150000000 X
63750
T109 0270000000

RJ	SYSERR	DARSPA FUCK UP
DETALL7	=XDETALLR	RECOVER RETURN LINK AND EXIT
SA5		
SB7	X5	
JP	R7	

*
*
*
*
* BUSY POINTER

T112 6160001114 +	DETALL8	SB6	DETALL9	
10355		BX3	X5	DDS PTR ADDR
74240		SX2	A4	ABR ADDRESS
T113 0200000000 X		JP	UNLOCKW	WAIT ON SUSPENSE LIST
T114 10533	DETALL9	BX5	X3	

OPEN / CLOSE DISK FILE
DETACH ALL BLOCKS

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53420

0200001047 *

SA4

JP

X2

DETALL2

BLOCK IS IN A MAP

1115 5044600001

43630

DETALL10

SA4

A4+1

MX6

60-36

BX4

=X6*X4

LX4

18

FORM ERROR NUMBER

1116 20422

7166000002

12664

DETALL10

SX6

E.INMAPS

BX6

X6*X4

SA6

ERRNUM

SA4

=DETALLR

1117 5160600000 X

5140000000 X

DETALL10

SX6

X4-1

SAS

A4

1120 726477776

54640

DETALL10

JP

DETALL6

DO ERROR RETURN

1121 0200601103 *

*

*

1122 0100600000 X

DETALL11

RJ

SYSERR

ABR DOESN'T POINT TO DATA BLK

1123 20307

DETALL12

LX3

1

ABR POINTS TO BLK NOT IN ECS

0333001625 *

DETALL12

NG

X3,DETALL1

CHECK FOR I/O ERR., CONTINUE IF

1124 0100600000 X

DETALL13

RJ

SYSERR

SO (ABR DELETED)

1125 0100600000 X

RJ

SYSERR

ATTACH CNT IS ZERO

1125

SYMBOLS XTEXT

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1126

END

44042 STORAGE USED
6600 ASSEMBLY

4909 STATEMENTS
29.564 SECONDS

913 SYMBOLS
799 REFERENCES

000036 INVENTED SYMBOLS

OPEN / CLOSE DISK FILE
SYMBOLIC REFERENCE TABLE.

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ACCTF	13		22/40					
APTIPL	0	EXTERNAL*						
APP	0	EXTERNAL*						
APT	0	EXTERNAL*	5/31	9/45	22/12	22/29		
APP2	0	EXTERNAL*	9/14	9/39	12/21			
APP3	0	EXTERNAL*	8/17	11/47	12/38			
APP4	0	EXTERNAL*						
APP5	0	EXTERNAL*						
APP6	0	EXTERNAL*						
APP7	0	EXTERNAL*						
APP8	0	EXTERNAL*						
ATTACH	0	EXTERNAL*						
ATTACHR	0	EXTERNAL*						
AUDIT	0	EXTERNAL*						
RFILE	0	EXTERNAL*						
BLK.DTY	0	EXTERNAL*						
BLK.FLG	0	EXTERNAL*						
BLK.SIZ	0	EXTERNAL*						
BUSYDSK	0	EXTERNAL*						
CALREAD	0	EXTERNAL*						
CHMAP	0	EXTERNAL*						
CHMAPB1	0	EXTERNAL*						
CHMAPR	0	EXTERNAL*						
CLKBUF	0	EXTERNAL*						
CLODAR	0	EXTERNAL*	15/11					
CLOSE	607	PROGRAM*	18/02 L					
CLOSEFIT	612	PROGRAM*	17/42	18/05	18/15 L			
CLOSER	0	EXTERNAL*	17/34 S	18/03 S	18/36	20/35	21/08	
CLOSE10	654	PROGRAM*	20/33	20/45	L			
CLOSE10A	677	PROGRAM*	20/48	20/51	L			
CLOSE10B	711	PROGRAM*	20/49	21/06	L			
CLOSE13	724	PROGRAM*	17/40	18/10		21/31 L		
CLOSE14	726	PROGRAM*	20/10	21/35	L			
CLOSE15	727	PROGRAM*	18/48	21/38	L			
CLOSE2	616	PROGRAM*	18/20	18/27	L			
CLOSE3	622	PROGRAM*	18/32	18/43	L			
CLOSE7A	627	PROGRAM*	18/51	19/04	L			
CLOSE8	633	PROGRAM*	18/45	19/23	L			
CLOSE9	641	PROGRAM*	19/11	19/31	19/35	20/65 L		
CLOSE9A	646	PROGRAM*	20/14	20/15	20/19 L			
CLOSROF	0	EXTERNAL*						
CLOSRWF	0	EXTERNAL*						
CLOSRWL	0	EXTERNAL*						
COMMROF	0	EXTERNAL*						
COMMROL	0	EXTERNAL*						
COMMRF	0	EXTERNAL*						
COMMRL	0	EXTERNAL*						
CONVERT	0	EXTERNAL*	17/38	22/32				
CREATEB1	0	EXTERNAL*						
CREATE	0	EXTERNAL*						
CREATER	0	EXTERNAL*						
CREBLK	0	EXTERNAL*						
CREBLKR	0	EXTERNAL*						

OPEN / CLOSE DISK FILE
SYMBOLIC REFERENCE TABLE.

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FCLOSE	42	PROGRAM*	17/33 L						
FCLOSE1	406	PROGRAM*	17/36	17/41 L					
FCTCIN	0	EXTERNAL*	9/33	11/31	15/29				
FCICOUT	0	EXTERNAL*	15/36						
FCIDBLK	0	EXTERNAL*	15/19						
FCEDFIL	0	EXTERNAL*	15/20						
FCIDSCP	0	EXTERNAL*	5/33	6/18	9/47	11/32	22/32		
FCIGEVF	0	EXTERNAL*	20/48	22/45					
FCIGEVH	0	EXTERNAL*	6/64	7/34	15/30	20/53	23/17		
			6/15	8/06	15/44	22/52			
FCINCAP	0	EXTERNAL*	9/45	9/50					
			6/07	7/37	13/48	14/72	15/46	23/15	
			6/22	8/15	14/03	15/37	21/07		
FCISTMP	0	EXTERNAL*	15/35						
FNTER	0	EXTERNAL*							
FPSEUDO	733	PROGRAM*	22/27 E	22/29 L					
ERRADDR	0	EXTERNAL*							
ERRALLOC	0	EXTERNAL*	13/30	14/05	14/14	14/20	14/28		
ERRCLAS	0	EXTERNAL*							
ERRFILE	0	EXTERNAL*	13/09	13/21	13/50	21/33	23/27		
			13/15	13/44	19/02	21/40			
ERRMAP	0	EXTERNAL*							
ERRNUM	0	EXTERNAL*	13/08 S	13/20 S	13/43 S	14/64 S	14/19 S	21/32 S	23/26 S
			13/14 S	13/29 S	13/49 S	14/13 S	14/27 S	21/39 S	27/13 S
ERRPACK	0	EXTERNAL*							
ERRPARM	0	EXTERNAL*							
EXCLAIM	0	EXTERNAL*							
EFILL	43		13/46						
EFTROZ	46		21/38						
EINMAPS	2		27/11						
ENARR	26		13/13	13/38					
ENODDS	25		14/53	14/12	14/18	14/26			
ENODFIL	25		13/19	21/31	23/25				
ENOECS	1		13/28						
ENOLFH	41		13/07	13/35					
ETMOPN	34		13/42						
FB, FUND	0	EXTERNAL*							
FB, LEN	0	EXTERNAL*							
FB, NAME	0	EXTERNAL*							
FB, SHAP	0	EXTERNAL*							
FB, WO3	0	EXTERNAL*							
FDOKDAT	0	EXTERNAL*							
FDISKHDR	0	EXTERNAL*							
FDISKPTR	0	EXTERNAL*							
FHs	0	EXTERNAL*							
FHo	0	EXTERNAL*	6/43	6/52	8/08	11/07	20/47	23/20	
			5/45 S	6/41	8/06	20/45	21/04	23/06	
			6/25	6/50	9/24	21/01	23/01	23/18	
FHASH	0	EXTERNAL*	5/38	15/50					
FILCL	0	EXTERNAL*	6/18	9/33	11/31	15/19	15/20	15/29	15/36
FILEADR	0	EXTERNAL*							
FILECAP	0	EXTERNAL*	9/33	9/45	9/50	11/32	15/35	15/36	
			9/45	9/50	11/31	15/29	15/35		

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FLDLEN	0	EXTERNAL*						
FREEDSK	0	EXTERNAL*						
FRETURN	0	EXTERNAL*	14/32					
FRW	0	EXTERNAL*						
FRWENT	0	EXTERNAL*						
FRWERR	0	EXTERNAL*						
FRWINT	0	EXTERNAL*						
FR.CAPX	0	EXTERNAL*	6/22	6/27	9/29	17/27	15/14	15/30
FR.CLAM	0	EXTERNAL*						
FR.DAR	0	EXTERNAL*	8/08					
FR.DRSZ	0	EXTERNAL*						
FR.DDS	0	EXTERNAL*	6/09 S	7/38	15/39			
FR.FLAG	0	EXTERNAL*	7/02	8/30	9/16	12/02	15/13	19/33
			8/19	8/49	11/23	12/23	18/18	24/40
FR.FROZ	0	EXTERNAL*						
FR.FRZE	4		8/31	8/50	19/34			
FR.FUND	0	EXTERNAL*	7/50					
FR.LEN	0	EXTERNAL*	6/52	11/07	20/47	26/20		
FR.LOCK	0	EXTERNAL*						
FR.MEMB	0	EXTERNAL*						
FR.NAME	0	EXTERNAL*	15/48					
FR.ONEL	0	EXTERNAL*						
FR.OPEN	0	EXTERNAL*	8/37	11/07	11/49	12/47	19/23	20/25
FR.ROOT	0	EXTERNAL*	15/21					
FR.RWFG	0		9/18	12/25				
FR.SHAD	0	EXTERNAL*	7/06					
FR.SIZE	0	EXTERNAL*	8/53	19/04				
FR.SUSE	0	EXTERNAL*						
FR.SZFG	0		24/42					
FR.WDC1	0	EXTERNAL*						
FR.WDC2	0	EXTERNAL*						
FR.WDC3	0	EXTERNAL*						
FR.WRIT	0	EXTERNAL*						
FR.XQBF	0		8/21	11/24	12/04	18/19	18/23	
GDSKDAT	0	EXTERNAL*						
GDSKHDR	0	EXTERNAL*						
GDSKPTR	0	EXTERNAL*						
GETDSK	0	EXTERNAL*						
GETRESP	0	EXTERNAL*						
GEFILE	0	EXTERNAL*						
GF.APTF	0	EXTERNAL*						
GF.APTL	0	EXTERNAL*						
GF.DATE	0	EXTERNAL*						
GF.DATL	0	EXTERNAL*						
GF.DDSF	0	EXTERNAL*	6/27	6/43	6/52	8/58	11/07	20/47
GF.DDSL	0	EXTERNAL*	6/27	6/43	6/52	8/58	11/07	20/47
GF.HSHF	0	EXTERNAL*						
GF.HSHL	0	EXTERNAL*						
GF.IOTF	0	EXTERNAL*						
GF.IOTL	0	EXTERNAL*						
GF.LEN	0	EXTERNAL*						
GF.SUSE	0	EXTERNAL*						
GF.SUSL	0	EXTERNAL*						

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MYSWOCC		EXTERNAL*
MYUNIT		EXTERNAL*
M_ABFCB		EXTERNAL*
M_ABFILE		EXTERNAL*
M_ACREQ		EXTERNAL*
M_ACRES		EXTERNAL*
M_ACTCC		EXTERNAL*
M_ADDS		EXTERNAL*
M_ADISK		EXTERNAL*
M_ASUSP		EXTERNAL*
M_AUTH		EXTERNAL*
M_RFILE		EXTERNAL*
M_GLOCO		EXTERNAL*
M_CLOSE		EXTERNAL*
M_CLTIM		EXTERNAL*
M_DARL		EXTERNAL*
M_BDREQ		EXTERNAL*
M_BDRSP		EXTERNAL*
M_BDSCT		EXTERNAL*
M_BFILT		EXTERNAL*
M_BORJS		EXTERNAL*
M_EMTRY		EXTERNAL*
M_ECLEV		EXTERNAL*
M_EFDISK		EXTERNAL*
M_EFHRL		EXTERNAL*
M_EFLCL		EXTERNAL*
M_ERWCC		EXTERNAL*
M_EFILE		EXTERNAL*
M_HASHL		EXTERNAL*
M_HELP		EXTERNAL*
M_HFILE		EXTERNAL*
M_FCTR		EXTERNAL*
M_LOCKS		EXTERNAL*
M_MKCAB		EXTERNAL*
M_OPCL		EXTERNAL*
M_RBUFS		EXTERNAL*
M_RETRY		EXTERNAL*
M_SDISK		EXTERNAL*
M_SLOT		EXTERNAL*
M_SHAB		EXTERNAL*
M_TRMCC		EXTERNAL*
M_TRYCC		EXTERNAL*
M_TVRES		EXTERNAL*
M_TWAIT		EXTERNAL*
M_UNAME		EXTERNAL*
M_USCIR		EXTERNAL*
MUSRCC		EXTERNAL*
M_WBUFS		EXTERNAL*
M_TSEC		EXTERNAL*
MLOCKS		EXTERNAL*
NORJS		EXTERNAL*
NOGLOCK		EXTERNAL*
NUMRFP	0	EXTERNAL*

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OB.CHNAM	2		10/06	10/08		
OB.CREBL	4		10/06	10/08		
OB.DCRBL	2500		10/06			
OB.DDLBL	4500		10/06			
OB.DELBL	10		10/06	10/08		
OB.DSTRY	1		10/06	10/08		
OB.FDAE	500		10/06	10/08		
OB.PLMAP	100		10/06	10/08		
OB.TRDR	2000000		10/06	10/08		
OB.WFILE	40		10/06			
OPEN	0	PROGRAM*	5/31 L	11/18	11/19	
OPENDAR	0	EXTERNAL*	7/53			
OPENR	0	EXTERNAL*	5/36 S	9/53	11/12	
OPEN1	11	PROGRAM*	5/39	5/44 L		
OPEN1A	101	PROGRAM*	6/34 L	6/36		
OPEN10	263	PROGRAM*	9/34	9/39 L	12/32	
OPEN11	265	PROGRAM*	9/41	9/43 L		
OPEN12	212	PROGRAM*	9/40	10/06 L		
OPEN13	213	PROGRAM*	9/42	10/08 L		
OPEN15	214	PROGRAM*	5/46	11/06 L		
OPEN15A	233	PROGRAM*	11/14	11/19 L		
OPEN15B	334	PROGRAM*	11/11	11/23 L		
OPEN16	253	PROGRAM*	11/35 L	11/39		
OPEN16A	263	PROGRAM*	11/48	12/10 L		
OPEN17	271	PROGRAM*	12/22	12/32 L		
OPEN18	272	PROGRAM*	11/36	12/38 L		
OPEN19	275	PROGRAM*	12/47 L	12/49		
OPEN2	116	PROGRAM*	6/43	6/48 L		
OPEN24	136	PROGRAM*	7/13	7/15 L		
OPEN28	137	PROGRAM*	7/18 L	7/27		
OPEN2C	143	PROGRAM*	7/64	7/22	7/30 L	
OPEN21	277	PROGRAM*	6/35	13/07 L		
OPEN21A	401	PROGRAM*	6/29	13/13 L		
OPEN22	403	PROGRAM*	6/48	13/19 L		
OPEN26	405	PROGRAM*	6/09	13/28 L		
OPEN3	171	PROGRAM*	7/52	8/05 L		
OPEN31A	411	PROGRAM*	8/44	12/16	13/42 L	
OPEN31B	412	PROGRAM*	13/36	13/39	13/43 L	
OPEN31C	407	PROGRAM*	12/48	13/35 L		
OPEN31D	410	PROGRAM*	12/44	13/38 L		
OPEN32	414	PROGRAM*	6/16	13/47 L		
OPEN32A	427	PROGRAM*	6/08	14/01 L		
OPEN32B	440	PROGRAM*	7/35	14/10 L		
OPEN32C	451	PROGRAM*	5/42	14/18 L		
OPEN33	453	PROGRAM*	6/19	14/22 L		
OPEN34	454	PROGRAM*	14/23 L	15/19		
OPEN35	455	PROGRAM*	8/03	14/26 L		
OPEN37	457	PROGRAM*	11/25	12/01	12/39	14/32 L
OPEN4	231	PROGRAM*	8/18	8/30 L	12/52	
OPEN4A	234	PROGRAM*	8/33	8/37 L		
OPEN40	460	PROGRAM*	13/31	14/47 L		
OPEN40A	465	PROGRAM*	14/52	15/09 L		
OPEN41	467	PROGRAM*	14/15	14/29	15/10	15/13 L

~~OPEN / CLOSE DISK FILE SYMBOLIC REFERENCE TABLE~~

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RELEASE	0	EXTERNAL*	20/16					
RESP	0	EXTERNAL*						
RESTREG	0	EXTERNAL*						
RETCLK	0	EXTERNAL*						
RETERR	0	EXTERNAL*						
RETPAR	0	EXTERNAL*						
RETPARM	0	EXTERNAL*						
RETRY	0	EXTERNAL*						
RETURN	0	EXTERNAL*						
R_EXFCS	1	EXTERNAL*	23/21 9/05					
R_PCLOS	1		23/07					
SAVEREG	0	EXTERNAL*						
SETPCNT	0	EXTERNAL*						
SETUP	0	EXTERNAL*						
SETUPR	0	EXTERNAL*						
SHCLAIM	0	EXTERNAL*						
SIZE	0	EXTERNAL*						
SIZES	0	EXTERNAL*	24/45					
SLEEP	0	EXTERNAL*	21/67	23/15				
SLOTS	0	EXTERNAL*						
STKBUF	0	EXTERNAL*						
SUSIPL	0	EXTERNAL*						
SUSPLST	0	EXTERNAL*	11/15					
SW_DDS	0	EXTERNAL*						
SW_SW	0	EXTERNAL*						
SYSERR	0	EXTERNAL*						
			6/07	6/43	8/04	11/07	14/22	20/47
			6/22	6/43	8/08	11/07	14/23	20/47
			6/27	6/52	8/08	11/07	15/37	20/47
			6/27	6/52	8/08	13/48	15/46	21/07
			6/27	6/52	8/14	14/03	19/37	21/35
			6/43	7/37	8/15	14/12	20/04	23/15
								25/32
TABADDR	0	EXTERNAL*						
TEMPA	0	EXTERNAL*						
TEMPB	0	EXTERNAL*						
TEMPC	0	EXTERNAL*						
TEMPO	0	EXTERNAL*						
TEMPE	0	EXTERNAL*						
TEMPE	0	EXTERNAL*						
TEMPG	0	EXTERNAL*						
TEMPH	0	EXTERNAL*						
TEMPV	0	EXTERNAL*						
TEMPW	0	EXTERNAL*						
TEMPX	0	EXTERNAL*	20/53 S	21/03	22/52 S	23/63		
TEMPY	0	EXTERNAL*						
TEMPZ	0	EXTERNAL*						
TEMPO	0	EXTERNAL*						
TEMP1	0	EXTERNAL*	24/47 S	25/05				
TEMP10	0	EXTERNAL*						
TEMP11	0	EXTERNAL*						
TEMP2	0	EXTERNAL*						
TEMP3	0	EXTERNAL*	24/39 S	25/04	26/28			
TEMP4	0	EXTERNAL*						
TEMP5	0	EXTERNAL*	25/32	25/32				

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TEMP6	0	EXTERNAL*
TEMP7	0	EXTERNAL*
TEMP8	0	EXTERNAL*
TEMP9	0	EXTERNAL*
TERMROF	0	EXTERNAL*
TERMRWF	0	EXTERNAL*
TERMRWL	0	EXTERNAL*
TR.DRIV	0	EXTERNAL*
TR.LEVL	0	EXTERNAL*
T-CLSCD	1737	6/18
UDSKSCR	0	EXTERNAL*
UNLOCK	0	EXTERNAL*
		9/26 13/45 15/07 19/63 20/52 22/51
		12/33 14/33 18/38 26/37 21/41 23/22
UNLOCKW	0	EXTERNAL*
USERRW	0	EXTERNAL*
USERRWL	0	EXTERNAL*
USRPACK	0	EXTERNAL*
WRITCAP	0	EXTERNAL*
ZEROMAP	0	EXTERNAL*
ZROMAPR	0	EXTERNAL*