

ADDRESS LENGTH

0 231
231

BINARY CONTROL CARDS.

IDENT FRETRW
END

ENTRY POINTS.

FRW - 0 FILEADR - 7

EXTERNAL SYMBOLS.

OPERCL	TEMP1	ERRPACK	DBR	SHCLAIM	M.HFILE	M.OPCL	FR.WRIT
IPLIST	TEMP2	STKBUF	DBW	LOCK	M.FILCL	M.IOTR	FR.SIZE
COMMROF	TEMP3	SETPCNT	GETRESP	UNLOCK	M.EMPTY	M.TWAIT	FR.SHAP
COMMROL	TEMP4	DISKENT	TR.DRIV	UNLOCKW	M.RETRY	M.CLTIM	FR.FUND
COMMRWF	TEMP5	DISKERR	TR.LEVL	RELCLAM	M.CLOSE	M.I0SEC	FR.FLAG
COMMRWL	TEMP6	DISKINT	BLK.SIZ	RELEASE	M.TVRES	GF.LEN	FR.ROOT
HOLDBLK	TEMP7	FRWENT	BLK.DTY	MAKEMAP	M.HELP	GF.SUSF	FR.CLAM
LOCTAB	TEMP8	FRWERR	BLK.FLG	LOADBUF	M.SWAB	GF.SUSL	FR.MEMB
LOCTABF	TEMP9	FRWINT	SW.SW	AUDIT	M.ABFCH	GF.IOTF	FHRADDR
LOCTABL	TEMP10	ENTER	SW.DDS	NOQLOCK	M.ABFIL	GF.IOTL	LETFREE
LFT	TEMP11	CLKBUF	PG.PG	PROBE	M.ACREQ	GF.DDSF	LHADDR
FLDLEN	TEMPA	DSYSTIM	PG.DDS	RETCLK	M.ACRES	GF.DDSL	DARADDR
USERRWF	TEMPB	DSWPTIM	PG.DTY	SYSERR	M.USRCC	GF.DATF	PAGESW
USERRWL	TEMPC	DUSRTIM	PTR.PTR	FRETURN	M.FRWCC	GF.DATL	MAPBUF
DATMAP	TEMPO	MYSORE	PTR.DDS	RETURN	M.TRMCC	GF.APTF	SIZES
TERMRWL	TEMPE	MYCODE	PTR.CM	RETPAR	M.CLOCC	GF.APTL	SIZE
TERMROF	TEMPF	MYSUBP	PTR.DTY	ERRPAM	M.ACTCC	GF.HSHF	NUMRESP
TERMRWF	TEMPG	MYEVCH	PTR.NUM	ERRFILE	M.TRYCC	FHRHASH	CREATER
CLOSRWF	TEMPH	READCAP	CREATE	ERRALOC	M.DFILT	DARHASH	CREBLKR
CLOSRWL	TEMPV	WRITCAP	CREBLK	ERRMAP	M.DOBJS	GF.HSHL	DELBLKR
CLOSROF	TEMPW	SAVEREG	DELBLK	CALBEAD	NOBJS	GF.TRVF	OPENR
READRWF	TEMPX	RESTREG	OPEN	REGS	M.BFILE	FHB	ATTACHR
READRWL	TEMPY	MAINCL	ATTACH	D.ENTRY	M.DDREQ	FR.LEN	DETACHR
READONF	TEMPZ	FILCL	DETACH	D.FNAME	M.DDRSP	FR.NAME	ZROMAPR
READONL	MYIDENT	SLEEP	CONVERT	DBG1	M.RBUFS	FR.WD3	CHMAPR
HENTRY	MYDAR	MYRESP	SETUP	DSKLCK	M.WBUFS	FR.SHAP	CHMAPBT
DENTRY	MYUNIT	RESP	DECODE	DBG2	M.SLOTS	FR.FUND	SETUPR
ORGADDR	MYSWOCC	GFILE	CRELFH	M.AUTH	M.LOCKS	FHR	CREATBT
ORGCLST	DDSIPL	GFILE	OPENDAR	M.MKCAP	NLOCKS	FR.LEN	CLOSER
ORGMAP	IOTIPL	FILECAP	PRVOPEN	REDSP	M.DDSCT	FR.NAME	MOVBLKR
INTDAT	HASHIPL	CTEMP	MKPTR	GDSKHDR	M.FHRL	FR.WD1	CREPTRR
AP0	SUSPIPL	UDSKSCR	DSPTR	FDSKHDR	M.DARL	FR.WD2	DORSPR
AP1	DATIPL	BFILE	CLOSE	GDSKPTR	M.HASHL	FR.WD3	ERRNUM
AP2	APTIPL	DDRSP	ECLOSE	FDSKPTR	M.ADDS	FR.SUSP	ERRCLAS
AP3	RETPARM	RBUFS	DARSPA	GDSKDAT	M.ASUSP	FR.LOCK	TABADDR
AP4	RETERR	RETRY	ZEROMAP	FDSKDAT	M.ADISK	FR.DAR	EC:READ
AP5	PASSERR	SLOTS	CHMAP	GETDSK	M.SDISK	FR.OPEN	EC:WRIT
AP6	USRPACK	HBR	CLODAR	FREEDSK	M.FDISK	FR.CAPX	EC:DSCP
AP7	IOTBUF	HBW	HASH	BUSYDSK	M.FCLEV	FR.DBSZ	
AP8	PROCADR	PBR	DELHASH	L.MNCL	M.UNAME	FR.ONEL	

F-RETURN READ AND WRITE ACTION
STORAGE ALLOCATION.

COMPASS - VER 2.

06/08/71 20.38.57.

PAGE 2

TEMP0

ERRADDR

PBW

EXCLAIM

M.GFILE

M.USCTR

FR.FROZ

```

0  
0  
0  
  
0  
  
IDENT      FRETRW  
*  
*  
PARAMS     XTEXT  
MACROS     XTEXT  
SYSCALL    XTEXT  
*  
EXT        OPERCL,IPLIST  
MACSET     OPERCL,IPLIST,ECS  
ERRORS     XTEXT  
*  
*  
*  
*  
READ AND WRITE F-RETURN PROCESSING  
*  
PARAMS:    ↑FILE↑ = LOCAL C-LIST INDEX OF USER'S FILE CAP  
            ↑FILEADR↑ = STARTING FILE ADDRESS  
            ↑CMADDR↑ = STARTING CM ADDR (REL USER RA)  
            ↑WDCNT↑ = WORD COUNT  
            ↑ACTNUM↑ = 0 FOR READ; 1 FOR WRITE  
*  
ROUTINES CALLED: ↑CONVERT↑, ↑SETUP↑, ↑DECODE↑, ↑DARSPA↑, ↑DBR↑,  
                ↑DORESP↑, ↑UNLOCK↑, ↑COPYIT↑, ↑UNLOCKW↑,  
                ↑PBR↑  
*  
6   FILE      EQU      6  
7   FILEADR   EQU      7  
10  CMADDR    EQU      8  
11  WDCNT     EQU      9  
12  ACTNUM    EQU     10  
*  
*  
*  
*  
LOCATE AND LOCK FILE  
0  5110000006 FRW      SA1      FILE  
          7160000000 X      DISPCAP x1  
5  6170000007 + SB7      ERWI      X7 → ECS FILE UNIQUE NAME  
          0200000000 X      JP      CONVERT  
6  0200000000 X      JP      FRETURN      NO SUCH OPEN DISK FILE  
*  
*  
*  
SET UP FOR SEQUENTIAL FILE PROCESSING  
7  5110000007 FRWL     SA1      FILEADR  
          5120000011      SA2      WDCNT  
10 6170000015 +      SB7      FRW2  
          0200000000 X      JP      SETUP  
*  
*  
RETURN VECTOR FOR ↑SETUP↑
```

11 0100000000 X
 12 0100000000 X
 13 0200000076 +
 14 0200000076 +
 15

+
 +
 +
 +
 FRW2
 *
 *
 *
 *
 *

RJ SYSERR
 RJ SYSERR
 JP FRW20
 JP FRW20
 BSS 0

FILE ADDRESS ERROR
 ZERO LEVEL FILE
 LOCALLY FROZEN (FRETURN)
 GLOBALLY FROZEN (FRETURN)

ON EXIT FROM SETUP:

X7 = ↑TEMP2↑ = SCALED WORD COUNT
 X1 = FILE ADDRESS (BLOCK BITS CLEARED)
 X5 = 24/0.18/UM SECTORS, 18/NUM WDS

15 73650
 5160000000 X

SX6
 SA6

X5
 SIZE

DATA BLOCK SIZE

MAIN LOOP

16 5140000000 X
 63140
 17 6170000026 +
 0200000000 X

FRW3

SA4
 SB1
 SB7
 JP

FHRADDR
 X4
 FRW4
 DECODE

DECODE FILE ADDRESS

20 0200000077 +
 21 0200000053 +
 22 0200000066 +
 23 0200000055 +
 24 0200000066 +
 25 0200000027 +
 26 0200000052 +

+
 +
 +
 +
 +
 +
 FRW4

JP
 JP
 JP
 JP
 JP
 JP
 JP

FRW21
 FRW11
 FRW17
 FRW13
 FRW17
 FRW5
 FRW10

RETURN VECTOR FOR DECODE:

DISK I/O ERROR ON BLOCK
 BUSY POINTER
 NON-EXISTANT POINTER BLOCK
 POINTER BLOCK ON DISK
 NON-EXISTANT DATA BLOCK
 DATA BLOCK ON DISK
 DATA BLOCK IN ECS

```

*
*
*
*
*
27 5150000000 X
30 10644 5130000000 X
    66150
31 63550 5160000000 X
    66400 63330
32 6160000034 +
    0200000000 X
*
33 0200000070 +
*
34 5140000000 X
    76510
35 6150000001
    20404 43610
36 11664
    20470 0314000103 +
37 43601
    20661
    12446
40 6170000041 +
    0200000000 X
*
41 5150000000 X
    7265000001
42 54650
    7266777770
43 0336000045 +
    6170000045 +
44 0200000110 +
*
45 5120000000 X
    5130000000 X
46 73220
    36112 37632
    54630
47 0326000016 +

```

FRW5

FRW6

FRW7

FRW8

```

SA5
SA3
BX6
SB1
SA6
SB5
SB4
SB3
SB6
JP
JP
SA4
SX5
SB5
LX4
MX6
BX6
LX4
NZ
MX6
LX6
BX4
SB7
JP
SA5
SX6
SA6
SX6
NG
SB7
JP
SA2
SA3
SX2
IX1
IX6
SA6
PL

```

DATA BLOCK ON THE DISK

X4 = DATA BLOCK POINTER
B5 = DDS POINTER ADDR

ACCOUNT SWAPED SPACE

SAVE DATA BLOCK POINTER
SAVE DDS ADDRESS

INSUFFICIENT FUNDS

DDS ADDR OF POINTER
INDICATE RESPONSE DESIRED

*CONSISTANCY CHECK
* (ZERO ATTACH COUNT)

SET ATTACH = 1

INCREMENT RESPONSE COUNT

PROCESS RESPONSES
IF QUEUE FULL

INCREMENT FILE ADDRESS

INCR FILE ADDRESS
DECR WORD COUNT

CONTINUE TO NEXT BLOCK

ALL DONE

50 0200000110 6170000051 +

SB7
JPERW9
DORESP

PROCESS RESPONSES

51 6160000000 X
0200000000 X

FRW9

SB6
JPRETURN
UNLOCK

UN-LOCK FILE AND RETURN

52 6160000045 +
0200000173 +

FRW10

SB6
JP

DATA BLOCK ALREADY IN ECS

FRW8
COPYITCOPY BLOCK TO / FROM USER CORE
AND PROCEED TO NEXT BLOCK

53 6170000054 +
0200000110 +

FRW11

SB7
JP

BUSY POINTER

FRW12
DORESP

PROCESS PENDING RESPONSES

54 6160000016 +
0200000000 X

FRW12

SB6
JPFRW3
UNLOCKWWAIT ON SLEEP CHAN AND TRY AGAIN
ON SAME BLOCK

POINTER BLOCK ON DISK

55 10644
76750
20722

FRW13

BX6
SX7X4
B5

X4 = DDS PTR BLOCK POINTER
B5 = DDS POINTER ADDRESS
X2 = LOG2(POINTER BLOCK SIZE)
SAVE POINTER
SAVE POINTER ADDRESS

56 5160000000 X
5170000000 X

FRW14

BX7
SA6
SA7

X7+X2
TEMP3
TEMP4

AND POINTER BLOCK SIZE

57 6170000060 +
0200000110 +

FRW14

SB7
JPFRW14
DORESP

PROCESS ANY PENDING RESPONSES

60 5140000000 X
5150000000 X

FRW14

SA4
SA5TEMP3
TEMP4

RECOVER POINTER

61 63550
21522

FRW14

SB5
AX5X5
B8

POINTER BLOCK SIZE

62 66400
6170000063 +

FRW14

SB7
SB4FRW16
R0DO POINTER BLOCK READ
B4 = 0 FOR ↑PBR↑

SA5
2R
NOMRESP
X5, FRW12

```

0200000000 X
63 0326000016 + *
FRW16 PL X6,FRW3 JP IF NO I/O ERROR
*
7276000001 SX7 X6+1 *CONSISTANCY (MEMBERSHIP)
64 0307000077 + ZR X7,FRW21 EMIT ERROR (I/O ERROR)
7276000003 SX7 X6+3
65 0307000104 + ZR X7,FRW24 JP ON OUT OF DDS
0100000000 X RJ SYSERR * (MEMBERSHIP CHECK)
*
```

```

*
*
* NON-EXISTANT BLOCK
*
66 6170000067 + FRW17 SB7 FRW17A PROCESS RESPONSES
0200000110 + JP OORESP
67 6160000000 X FRW17A SB6 FRETURN UN-LOCK AND DO F-RETURN
0200000000 X JP UNLOCK
*
```


*
*
* ASSORTED NON-STANDARD EXITS
*
**
* INSUFFICIENT FUNDS
*
*70 5150000000 X
0305000073 +

FRW18

SA5
ZRNUMRESP
X5,FRW19DO ERROR IF NO SPACE
AVAIL FOR RETURN
OTHERWISE COLLECT RESPONSES
TO GET SPACE BACK
AND TRY AGAIN71 6170000072 +
0200000110 +

FRW18A

SB7
JPFRW18A
DORESP
FRW3

72 0200000016 +

FRW19

SX6

E.NOSWP

JUST NO SPACE AT ALL

73 7160000003
5160000000 X

FRW19

SA6

ERRNUM

74 6170000075 +
0200000110 +

FRW19A

SB7
JPFRW19A
DORESP

COLLECT RESPONSES

75 6160000000 X
0200000000 X

FRW19A

SB6
JPERRALOC
UNLOCK*
* FRETURN TIME (FROZEN FILE)
*
*76 6160000000 X
0200000000 X

FRW20

SB6
JPFRETURN
UNLOCK*
* DISK I/O ERROR
*
*77 7160000027
20122
12616

FRW21

SX6

E.DIGERR

100 5160000000 X
6170000102 +

FRW21A

LX1
BX618
X1+X6

101 0200000110 +

FRW21A

SA6
SB7ERRNUM
FRW21A102 6160000000 X
0200000000 X

FRW21A

JP
SB6
JPDORESP
ERRFILE
UNLOCK

103 0100000000 X

FRW22

RJ

SYSERR

ATTACH COUNT .NE. ZERO

104 7160000025
20122
12616

FRW24

SX6

E.NODDS

OUT OF DDS

105 5160000000 X
6170000107 +

FRW24

LX1
BX618
X1+X6

107 6160000000 X

FRW24

SA6
CALLXERRNUM
DORESP,B7

UNLOCK,B6,ERRALOC

PROCESS DATA BLOCK READ RESPONSES

ON ENTRY: FILE IS LOCKED

↑NUMRESP↑ = NUM PENDING RESPONSES

↑SIZE↑ = NUM WORDS PER DATA BLOCK

B7 = RETURN LINK

X1 = FILE ADDRESS

ROUTINES CALLED: GETRESP, DARSPA, COPYIT, DBW,

UNLOCKW

TEMPORARIES USED: TEMP5, TEMP7, TEMP8

110 10611 76770

111 5170000000 X 5160000000 X

DORESP

BX6

SX7

SA6

SA7

X1

B7

TEMP7
DORESPR

SAVE FILE ADDRESS

SAVE RETURN LINK

MAIN LOOP

112 5150000000 X 7265777776

113 0305000157 + 54650

DORESP0

SA5

SX6

ZR

SA6

NUMRESP

X5-1

X5,DORESP6

A5

DECR RESPONSE COUNT

JP IF DONE

114 6170000115 + 0200000000 X

SB7

JP

WAIT FOR RESPONSE FROM TERMINATOR

DORESP1

GETRESP

115 10566 10177 5160000000 X

DORESP1

BX5

BX1

SA6

X6

X7

TEMP8

DDS POINTER ADDR & RESPONSE CODE

FILE ADDRESS OF RESPONSE

116 0335000161 +

NG

X5,DORESP7

JP IF I/O ERROR

COPY DATE TO / FROM USER CORE

117 0200000173 + 6160000120 +

SB6

JP

DORESP2

COPYIT

FETCH GLOBAL PTR FOR CURRENT DATA BLOCK

120 5150000000 X 7160000000 X
133 5140000000 X

DORESP2

SA5

REDD5

SA4

TEMP8

X5,TEMP5,1

TEMP5

134 20401 0334000167 +
0334000156 + 20401

NG

LX4

NG

LX4

X4,DORESP8

1

X4,DORESP5

1

*CONSISTANCY (DATA BLOCK)

JP IF BUSY

135	0324000170 +	PL	X4,DORESP9	*CONSISTANCY(IN)
	20402	LX4	2	
	43610	MX6	8	
136	11764	BX7	X6*X4	
	0307000171 +	ZR	X7,DORESP10	*CONSISTANCY (ATTACH CNT)
	43701			
137	20765	MX7	1	DECR ATTACH COUNT
	37747	LX7	1+48+4	
	11667	IX7	X4-X7	
	20770	BX6	X6*X7	
140	0306000145 +	LX7	60-4	
	5170000000 X	ZR	X6,DORESP3	JP IF ATTACH COUNT EXHAUSTED
141	7160000000 X	SA7	TEMP5	RE-WRITE POINTER IN DDS
144	0200000150 +	WRDDS	*,*,*	
		JP	DORESP4A	PROCEED TO NEXT RESPONSE

ATTACH COUNT = ZERO
MUST START DATA BLOCK WRITE (IF DIRTY)

X7 = DATA BLOCK POINTER
X5 = DDS ADDR ON PTR
X1 = FILE ADDRESS

145	10477	DORESP3	BX4	X7	
	6170000147 +		SB7	DORESP4	(+DBW+ CHECK FOR DIRTY BLOCK)
146	0200000000 X		JP	DBW	
147	0326000150 +	DORESP4	PL	X6,DORESP4A	PROCEED TO NEXT RESPONSE
	0100000000 X		RJ	SYSERR	(UN-EXPECTED I/O ERROR)
150	5150000000 X	DORESP4A	SA5	REFUND SWAPPED ECS AND PROCEED	
	63350		SB5	SIZE	
	67505		SB6	X5	
151	5140000000 X		SA4	MYDAR	
	63340		SB3	X4	
152	6140000000		SB4	R-SWECS	
	6160000155 +		SB6	DORESP4B	
153	0200000000 X		JP	DARSPA	
154	0100000000 X		RJ	SYSERR	
155	0200000112 +	DORESP4B	JP	DORESP0	

BUSY POINTER

156	6160000120 +	DORESP5	SB6	DORESP2
	0200000000 X		JP	UNLOCKW

157 5110000000 X
5150000000 X
160 63750
0270000000

*
*
*

DORESP6

SA1
SA5
SB7
JP

TEMP7
DORESPR
X5
B7

ALL DONE

RECOVER FILE ADDRESS
GET RETURN LINK
EXIT

161 7265000001
0336000172 +
162 10611
20622
7170000027
163 12667
5160000000 X
164 7160000166 +
5160000000 X
165 0200000150 +

*
*
*

DORESP7

SX6
NG
BX6
LX6
SX7
BX6
SA6
SX6
SA6
JP

X5+1
X6,DORESP11
X1
18
E.DICERR
X6+X7
ERRNUM
DORESP7A
DORESP8
DORESP4A

I/O ERROR ON DATA BLOCK READ

JP IF REAL TROUBLE
FORM ERROR NUMBER

SET ERROR EXIT

PROCEED TO NEXT RESPONSE

166 6160000000 X
0200000000 X

*
*
*

DORESP7A

SB6
JP

ERRFILE
UNLOCK

UNLOCK AND DO ERROR

167 0100000000 X
170 0100000000 X
171 0100000000 X
172 0100000000 X

*
*
*

DORESP8

RJ
RJ
RJ
RJ

SYSERR
SYSERR
SYSERR
SYSERR

GOT POINTER BLOCK POINTER
DATA BLOCK NOT IN
ATTACH COUNT = 0
MEMBERSHIP ERROR

X1 = FILE ADDRESS OF BLOCK INVOLVED

COPYIT	SA5	FILEADR	STARTING FILE ADDRESS FROM USER
	SA4	WDCNT	WORD COUNT FROM USER
	SA3	SIZE	DATA BLOCK SIZE
	SX3	X3	

IX6	X1-X5	OP IF NOT 1ST BLOCK OF XFER REDUCE APPARENT BLOCK SIZE FILE ADDRESS
PL	X6, COPY IT	
IX3	X3+X6	
BX1	X5	
BX6	X6-X6	

COPYITI	SAS	CMADDR	
	SAR	ORGADDR	ORIG OF USER ADDR SPACE
	IX5	X5+X2	
	IX6	X5+X6	RELOCATED CM ADDR FOR XFER

IX4	X4-X6	NUM WDS TO XFER = MIN(BLOCK SIZE,
IX7	X4-X3	REMAINING WDS IN WORD COUNT)
PL	X7,COPYIT2	
BX3	X4	

COPYIT2 SA4 ACTNUM 0 = READ
ZR X4,COPYIT3

WRITE FILECAP, (, XI), XS, X3, COPYITS
CD COPYIT4

COPYIT5 READ FILECAP,(X1),X5,X3,COPYIT5

COPYIT4 SA5 SIZE CLEAR POSSIBLE BITS ADDED TO X1

CAC
 BXI
 JP

X5-1
 -X5*X1
 B6

RETURN

COPYITA RJ SYSEB UNEXPECTED F-RETURN

SYMBOLS	XTEXT
1	
2	
3	
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5	
6	
7	
8	
9	
10	
11	
12	
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99	
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END

F-RETURN READ AND WRITE ACTION
COPY TO/FROM USER CORE

COMPASS - VER 2.

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43365

STORAGE USED
6600 ASSEMBLY

2475 STATEMENTS
18.080 SECONDS

623 SYMBOLS
249 REFERENCES

000004 INVENTED SYMBOLS

F-RETURN READ AND WRITE ACTION
SYMBOLIC REFERENCE TABLE.

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ACTNUM	12		3/32 D	13/30	
APTIPL	0	EXTERNAL*			
AP0	0	EXTERNAL*			
AP1	0	EXTERNAL*			
AP2	0	EXTERNAL*			
AP3	0	EXTERNAL*			
AP4	0	EXTERNAL*			
AP5	0	EXTERNAL*			
AP6	0	EXTERNAL*			
AP7	0	EXTERNAL*			
AP8	0	EXTERNAL*			
ATTACH	0	EXTERNAL*			
ATTACHR	0	EXTERNAL*			
AUDIT	0	EXTERNAL*			
BFILE	0	EXTERNAL*			
BLK.DTY	0	EXTERNAL*			
BLK.FLG	0	EXTERNAL*			
BLK.SIZ	0	EXTERNAL*			
BUSYDSK	0	EXTERNAL*			
CALBEAD	0	EXTERNAL*			
CHMAP	0	EXTERNAL*			
CHMAPB1	0	EXTERNAL*			
CHMAPR	0	EXTERNAL*			
CLKBUF	0	EXTERNAL*			
CLODAR	0	EXTERNAL*			
CLOSE	0	EXTERNAL*			
CLOSER	0	EXTERNAL*			
CLOSROF	0	EXTERNAL*			
CLOSRWF	0	EXTERNAL*			
CLOSRWL	0	EXTERNAL*			
CMADDR	10		3/30 D	13/20	
COMMROF	0	EXTERNAL*			
COMMROL	0	EXTERNAL*			
COMMRWF	0	EXTERNAL*			
COMMRWL	0	EXTERNAL*			
CONVERT	0	EXTERNAL*	3/33		
COPYIT	173	PROGRAM*	7/06	10/42	13/09 L
COPYIT1	177	PROGRAM*	13/15	13/20 L	
COPYIT2	202	PROGRAM*	13/27	13/30 L	
COPYIT3	215	PROGRAM*	13/31	13/36 L	
COPYIT4	226	PROGRAM*	13/34	13/38 L	
COPYIT5	230	PROGRAM*	13/34	13/37	13/44 L
CREATB1	0	EXTERNAL*			
CREATE	0	EXTERNAL*			
CREATER	0	EXTERNAL*			
CREBLK	0	EXTERNAL*			
CREBLKR	0	EXTERNAL*			
CRELFH	0	EXTERNAL*			
CREPTRR	0	EXTERNAL*			
CTEMP	0	EXTERNAL*			
DARADDR	0	EXTERNAL*			
DARHASH	0	EXTERNAL*			
DARSPA	0	EXTERNAL*	5/16	11/40	

F-RETURN READ AND WRITE ACTION
SYMBOLIC REFERENCE TABLE.

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DAT IPL	0	EXTERNAL*							
DATMAP	0	EXTERNAL*							
DBR	0	EXTERNAL*	5/32						
DEBUG1	0	EXTERNAL*							
DEBUG2	0	EXTERNAL*							
DBW	0	EXTERNAL*	11/27						
DDRSP	0	EXTERNAL*							
DDSIPL	0	EXTERNAL*	10/48 S	10/48 S	10/48 S	10/48 S	10/48	11/16 S	11/16
DECODE	0	EXTERNAL*	4/23						
DELBLK	0	EXTERNAL*							
DELBLKR	0	EXTERNAL*							
DELHASH	0	EXTERNAL*							
DENTRY	0	EXTERNAL*							
DETACH	0	EXTERNAL*							
DETACHR	0	EXTERNAL*							
DISKENT	0	EXTERNAL*							
DISKERR	0	EXTERNAL*							
DISKINT	0	EXTERNAL*							
DORESP	110	PROGRAM*	5/41	7/19	8/21	9/17	9/45		
			6/03	7/45	9/11	9/32	10/17 L		
DORESPR	0	EXTERNAL*	10/20 S	12/05	12/24 S				
DORESP0	112	PROGRAM*	10/24 L	11/43					
DORESP1	115	PROGRAM*	10/30	10/33 L					
DORESP10	171	PROGRAM*	11/05	12/32 L					
DORESP11	172	PROGRAM*	12/17	12/33 L					
DORESP2	120	PROGRAM*	10/41	10/46 L	11/52				
DORESP3	145	PROGRAM*	11/12	11/25 L					
DORESP4	147	PROGRAM*	11/26	11/29 L					
DORESP4A	150	PROGRAM*	11/16	11/29	11/33 L	12/25			
DORESP4B	155	PROGRAM*	11/39	11/43 L					
DORESP5	156	PROGRAM*	10/52	11/52 L					
DORESP6	157	PROGRAM*	10/26	12/04 L					
DORESP7	161	PROGRAM*	10/37	12/16 L					
DORESP7A	166	PROGRAM*	12/23	12/27 L					
DORESP8	167	PROGRAM*	10/50	12/30 L					
DORESP9	170	PROGRAM*	11/01	12/31 L					
DSKLCK	0	EXTERNAL*							
DSPTR	0	EXTERNAL*							
DSWPTIM	0	EXTERNAL*							
DSYSTIM	0	EXTERNAL*							
DUSRTIM	0	EXTERNAL*							
D.ENTRY	0	EXTERNAL*							
D.FNAME	0	EXTERNAL*							
ECLOSE	0	EXTERNAL*							
ECIDSCP	0	EXTERNAL*	3/42						
EC:READ	0	EXTERNAL*	13/37						
EC:WRIT	0	EXTERNAL*	13/34						
ENTER	0	EXTERNAL*							
ERRADDR	0	EXTERNAL*							
ERRALOC	0	EXTERNAL*	9/18	9/45					
ERRCLAS	0	EXTERNAL*							
ERRFILE	0	EXTERNAL*	9/33	12/27					
ERRMAP	0	EXTERNAL*							

F-RETURN READ AND WRITE ACTION
SYMBOLIC REFERENCE TABLE.

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ERRNUM	0	EXTERNAL*	9/15 S	9/30 S	9/43 S	12/22 S
ERRPACK	0	EXTERNAL*				
ERRPARM	0	EXTERNAL*				
EVCHSZ	10		5/38			
EXCLAIM	0	EXTERNAL*				
E.DIOERR	27		9/27	12/20		
E.NODDS	25		9/40			
E.NOSWP	3		9/14			
FB.FUND	0	EXTERNAL*				
FB.LEN	0	EXTERNAL*				
FB.NAME	0	EXTERNAL*				
FB.SHAP	0	EXTERNAL*				
FB.WD3	0	EXTERNAL*				
FDSKDAT	0	EXTERNAL*				
FDSKHDR	0	EXTERNAL*				
FDSKPTR	0	EXTERNAL*				
FHB	0	EXTERNAL*				
FHR	0	EXTERNAL*				
FHRADDR	0	EXTERNAL*	4/20			
FHRHASH	0	EXTERNAL*				
FILCL	0	EXTERNAL*				
FILE	6		3/28 D	3/40		
FILEADR	7		3/29 D	3/48	13/09	
FILECAP	0	EXTERNAL*	13/34	13/37		
FLDLN	0	EXTERNAL*				
FREEDSK	0	EXTERNAL*				
FRETURN	0	EXTERNAL*	3/44	8/22	9/22	
FRW	0	PROGRAM*	3/40 L			
FRWENT	0	EXTERNAL*				
FRWERR	0	EXTERNAL*				
FRWINT	0	EXTERNAL*				
FRW1	7	PROGRAM*	3/42	3/48 L		
FRW10	52	PROGRAM*	4/32	7/05 L		
FRW11	53	PROGRAM*	4/27	7/18 L		
FRW12	54	PROGRAM*	7/18	7/21 L		
FRW13	55	PROGRAM*	4/29	7/37 L		
FRW14	60	PROGRAM*	7/44	7/47 L		
FRW16	63	PROGRAM*	7/52	8/03 L		
FRW17	66	PROGRAM*	4/28	4/30	8/20 L	
FRW17A	67	PROGRAM*	8/20	8/22 L		
FRW18	70	PROGRAM*	5/18	9/07 L		
FRW18A	72	PROGRAM*	9/10	9/12 L		
FRW19	73	PROGRAM*	9/08	9/14 L		
FRW19A	75	PROGRAM*	9/16	9/18 L		
FRW2	15	PROGRAM*	3/50	4/05 L		
FRW20	76	PROGRAM*	4/03	4/04	9/22 L	
FRW21	77	PROGRAM*	4/26	8/06	9/27 L	
FRW21A	102	PROGRAM*	9/31	9/33 L		
FRW22	103	PROGRAM*	5/27	9/37 L		
FRW24	104	PROGRAM*	8/08	9/40 L		
FRW3	16	PROGRAM*	4/20 L	5/50	7/21	8/03 9/12
FRW4	26	PROGRAM*	4/22	4/32 L		
FRW5	27	PROGRAM*	4/31	5/07 L		

F-RETURN READ AND WRITE ACTION
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FRW6	34	PROGRAM*	5/15	5/20 L		
FRW7	41	PROGRAM*	5/31	5/35 L		
FRW8	45	PROGRAM*	5/39	5/40	5/44 L	7/05
FRW9	51	PROGRAM*	6/02	6/05 L		
FR.CAPX	0	EXTERNAL*				
FR.CLAM	0	EXTERNAL*				
FR.DAR	0	EXTERNAL*				
FR.DBSZ	0	EXTERNAL*				
FR.FLAG	0	EXTERNAL*				
FR.FROZ	0	EXTERNAL*				
FR.FUND	0	EXTERNAL*				
FR.LEN	0	EXTERNAL*				
FR.LOCK	0	EXTERNAL*				
FR.MEMB	0	EXTERNAL*				
FR.NAME	0	EXTERNAL*				
FR.ONEL	0	EXTERNAL*				
FR.OPEN	0	EXTERNAL*				
FR.ROOT	0	EXTERNAL*				
FR.SHAP	0	EXTERNAL*				
FR.SIZE	0	EXTERNAL*				
FR.SUSP	0	EXTERNAL*				
FR.WD1	0	EXTERNAL*				
FR.WD2	0	EXTERNAL*				
FR.WD3	0	EXTERNAL*				
FR.WRIT	0	EXTERNAL*				
GDSKDAT	0	EXTERNAL*				
GDSKHDR	0	EXTERNAL*				
GDSKPTR	0	EXTERNAL*				
GETDSK	0	EXTERNAL*				
GETRESP	0	EXTERNAL*	10/31			
GFILE	0	EXTERNAL*				
GF.APTF	0	EXTERNAL*				
GF.APTL	0	EXTERNAL*				
GF.DATF	0	EXTERNAL*				
GF.DATL	0	EXTERNAL*				
GF.DDSF	0	EXTERNAL*	10/68			
GF.DDSL	0	EXTERNAL*	10/68			
GF.HSHF	0	EXTERNAL*				
GF.HSHL	0	EXTERNAL*				
GF.IOTF	0	EXTERNAL*				
GF.IOTL	0	EXTERNAL*				
GF.LEN	0	EXTERNAL*				
GF.SUSF	0	EXTERNAL*				
GF.SUSL	0	EXTERNAL*				
GF.TRVF	0	EXTERNAL*				
HASH	0	EXTERNAL*				
HASHIPL	0	EXTERNAL*				
HBR	0	EXTERNAL*				
HBW	0	EXTERNAL*				
HENTRY	0	EXTERNAL*				
HFILE	0	EXTERNAL*				
HOLDBLK	0	EXTERNAL*				
INTDAT	0	EXTERNAL*				

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SYMBOLIC REFERENCE TABLE.

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IOTBUF	0	EXTERNAL*								
IOTIPL	0	EXTERNAL*								
IPLIST	0	EXTERNAL*	3/09							
IP:ILIST	0	EXTERNAL*	3/09 D	3/42 S	13/34 S	13/34 S	13/34 S	13/37 S	13/37 S	13/37 S
			3/42 S	3/42	13/34 S	13/34 S	13/34	13/37 S	13/37 S	13/37
LFHADDR	0	EXTERNAL*								
LFT	0	EXTERNAL*								
LFTFREE	0	EXTERNAL*								
LOADBUF	0	EXTERNAL*								
LOCK	0	EXTERNAL*								
LOCTAB	0	EXTERNAL*								
LOCTABF	0	EXTERNAL*								
LOCTABL	0	EXTERNAL*								
L.MNCL	0	EXTERNAL*								
MAINCL	0	EXTERNAL*								
MAKEMAP	0	EXTERNAL*								
MAPBUF	0	EXTERNAL*								
MKPTR	0	EXTERNAL*								
MOVBLKR	0	EXTERNAL*								
MYCODF	0	EXTERNAL*								
MYDAR	0	EXTERNAL*	5/08	11/36						
MYEVCH	0	EXTERNAL*								
MYIDENT	0	EXTERNAL*								
MYRESP	0	EXTERNAL*								
MYSCRF	0	EXTERNAL*								
MYSUBP	0	EXTERNAL*								
MYSWOCC	0	EXTERNAL*								
MYUNIT	0	EXTERNAL*								
M.ABFCH	0	EXTERNAL*								
M.ABFIL	0	EXTERNAL*								
M.ACREQ	0	EXTERNAL*								
M.ACRES	0	EXTERNAL*								
M.ACTCC	0	EXTERNAL*								
M.ADDS	0	EXTERNAL*								
M.ADISK	0	EXTERNAL*								
M.ASUSP	0	EXTERNAL*								
M.AUTH	0	EXTERNAL*								
M.BFILE	0	EXTERNAL*								
M.CLOCC	0	EXTERNAL*								
M.CLOSE	0	EXTERNAL*								
M.CLTIM	0	EXTERNAL*								
M.DARL	0	EXTERNAL*								
M.DDREQ	0	EXTERNAL*								
M.DDRSP	0	EXTERNAL*								
M.DDSCT	0	EXTERNAL*								
M.DFILT	0	EXTERNAL*								
M.DOBJS	0	EXTERNAL*								
M.EMPTY	0	EXTERNAL*								
M.FCLEV	0	EXTERNAL*								
M.FDISK	0	EXTERNAL*								
M.FHRL	0	EXTERNAL*								
M.FILCL	0	EXTERNAL*								
M.FRWCC	0	EXTERNAL*								

F-RETURN READ AND WRITE ACTION
SYMBOLIC REFERENCE TABLE.

COMPASS - VER 2.

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M.GFILE	0	EXTERNAL*			
M.HASHL	0	EXTERNAL*			
M.HELP	0	EXTERNAL*			
M.HFILE	0	EXTERNAL*			
M.IOCTR	0	EXTERNAL*			
M.LOCKS	0	EXTERNAL*			
M.MKCAP	0	EXTERNAL*			
M.OPCL	0	EXTERNAL*			
M.RBUFS	0	EXTERNAL*			
M.RETRY	0	EXTERNAL*			
M.SDISK	0	EXTERNAL*			
M.SLOTS	0	EXTERNAL*			
M.SWAB	0	EXTERNAL*			
M.TRMCC	0	EXTERNAL*			
M.TRYCC	0	EXTERNAL*			
M.TVRES	0	EXTERNAL*			
M.TWAIT	0	EXTERNAL*			
M.UNAME	0	EXTERNAL*			
M.USCTR	0	EXTERNAL*			
M.USRCC	0	EXTERNAL*			
M.WBUFS	0	EXTERNAL*			
M.10SEC	0	EXTERNAL*			
NLOCKS	0	EXTERNAL*			
NOBJS	0	EXTERNAL*			
NOQLOCK	0	EXTERNAL*			
NUMRESP	0	EXTERNAL*	5/35	9/07	10/24
OPEN	0	EXTERNAL*			
OPENDAR	0	EXTERNAL*			
OPENR	0	EXTERNAL*			
OPERCL	0	EXTERNAL*	3/09		
OP:::ICL	0	EXTERNAL*	3/09 D	3/41	13/33 13/36
ORGADDR	0	EXTERNAL*	13/21		
ORGCLST	0	EXTERNAL*			
ORGMAP	0	EXTERNAL*			
PAGESW	0	EXTERNAL*			
PASSERR	0	EXTERNAL*			
PBR	0	EXTERNAL*	8/01		
PBW	0	EXTERNAL*			
PG.DDS	0	EXTERNAL*			
PG.DTY	0	EXTERNAL*			
PG.PG	0	EXTERNAL*			
PROBE	0	EXTERNAL*			
PROCADR	0	EXTERNAL*			
PRVOPEN	0	EXTERNAL*			
PTR.CM	0	EXTERNAL*			
PTR.DDS	0	EXTERNAL*			
PTR.DTY	0	EXTERNAL*			
PTR.NUM	0	EXTERNAL*			
PTR.PTR	0	EXTERNAL*			
RBUFS	0	EXTERNAL*			
READCAP	0	EXTERNAL*	10/47		
READONF	0	EXTERNAL*			
READONL	0	EXTERNAL*			

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[illegible]

F-RETURN READ AND WRITE ACTION
SYMBOLIC REFERENCE TABLE.

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TEMP7	0	EXTERNAL*	10/19 S	12/04					
TEMP8	0	EXTERNAL*	10/35 S	10/46					
TEMP9	0	EXTERNAL*							
TERMROF	0	EXTERNAL*							
TERMRWF	0	EXTERNAL*							
TERMRWL	0	EXTERNAL*							
TR.DRIV	0	EXTERNAL*							
TR.LEVL	0	EXTERNAL*							
UDSKSCR	0	EXTERNAL*							
UNLOCK	0	EXTERNAL*	6/06	8/23	9/19	9/23	9/34	9/46	12/28
UNLOCKW	0	EXTERNAL*	7/22	11/53					
USERRWF	0	EXTERNAL*							
USERRWL	0	EXTERNAL*							
USRPACK	0	EXTERNAL*							
WDCNT	11		3/31 D	3/49	13/10				
WRITCAP	0	EXTERNAL*	11/15						
ZEROMAP	0	EXTERNAL*							
ZROMAPR	0	EXTERNAL*							

20.38.16.06/08/71 TSS SCOPE 3.0
20.38.18.CPU = 000 SEC ; CM = 014000
20.38.22.FILE,XTEXGET,FRETRW,DISKSYS
20.38.23.
20.38.26.FILE,XTEXT
20.38.26.RFL,50000
20.38.26.CPU = 000 SEC ; CM = 050000
20.38.26.TEXT,OUTPUT
20.38.27.GET,SYSSUBP,MACROS,,RO
20.38.27.GET,MACROS,DISKSYS,,RO
20.38.27.GET,SYMBOLS,DISKSYS,,RO
20.38.27.GET,PARAMS,DISKSYS,,RO
20.38.27.GET,DSKOPS,OPERS,,RO
20.38.27.GET,OBBITS,DISKSYS,,RO
20.38.27.GET,TYPES,DISKSYS,,RO
20.38.28.GET,ERRORS,DISKSYS,,RO
20.38.28.GET,DSKOPR,DISKSYS,,RO
20.38.28.GET,SYSCALL,MACROS,,RO
20.38.30.GET,FRETRW,DISKSYS
20.38.37.NOMPASS,S=0,I=FRETRW
20.38.38.ASSEMBLING FRETRW
20.38.58.ASSEMBLING FRETRW
20.39.04. ASSEMBLY COMPLETE.
20.39.06.END
20.39.25.FIN
20.39.25.CPU TIME: 019.926 SECONDS
20.39.25.SYS TIME: 005.408 SECONDS
20.39.25.SYSTEXT : 1002 LINES

END OF FILE

FRETRW
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