

```

FFFFFFFFFFFFFFFF    00000000    RRRRRRRRRR    RRRRRRRRRR    TTTTTTTTTTTTTT    LLL
FFFFFFFFFFFFFFFF    00000000    RRRRRRRRRR    RRRRRRRRRR    TTTTTTTTTTTTTT    LLL
FFFFFFFFFFFFFFFF    00000000    RRRRRRRRRR    RRRRRRRRRR    TTTTTTTTTTTTTT    LLL
FFF                000            000    RRR                RRR    RRR                RRR    TTT                TTT    LLL
FFF                000            000    RRR                RRR    RRR                RRR    TTT                TTT    LLL
FFF                000            000    RRR                RRR    RRR                RRR    TTT                TTT    LLL
FFF                000            000    RRR                RRR    RRR                RRR    TTT                TTT    LLL
FFF                000            000    RRR                RRR    RRR                RRR    TTT                TTT    LLL
FFF                000            000    RRR                RRR    RRR                RRR    TTT                TTT    LLL
FFFFFFFFFFFFFFF    000            000    RRRRRRRRRR    RRRRRRRRRR    RRR                RRR    TTT                TTT    LLL
FFFFFFFFFFFFFFF    000            000    RRRRRRRRRR    RRRRRRRRRR    RRR                RRR    TTT                TTT    LLL
FFFFFFFFFFFFFFF    000            000    RRRRRRRRRR    RRRRRRRRRR    RRR                RRR    TTT                TTT    LLL
FFF                000            000    RRR    RRR    RRR    RRR    RRR    RRR    TTT                TTT    LLL
FFF                000            000    RRR    RRR    RRR    RRR    RRR    RRR    TTT                TTT    LLL
FFF                000            000    RRR    RRR    RRR    RRR    RRR    RRR    TTT                TTT    LLL
FFF                000            000    RRR                RRR    RRR                RRR    TTT                TTT    LLL
FFF                000            000    RRR                RRR    RRR                RRR    TTT                TTT    LLL
FFF                000            000    RRR                RRR    RRR                RRR    TTT                TTT    LLL
FFF                000            000    RRR                RRR    RRR                RRR    TTT                TTT    LLL
FFF                00000000    000    RRR                RRR    RRR                RRR    TTT                TTT    LLLLLLLLLLLLLLLLL
FFF                00000000    000    RRR                RRR    RRR                RRR    TTT                TTT    LLLLLLLLLLLLLLLLL
FFF                00000000    000    RRR                RRR    RRR                RRR    TTT                TTT    LLLLLLLLLLLLLLLLL

```

```

FFFFFFFFF 000000 RRRRRRRR WW WW RRRRRRRR IIIIIII TTTTTTTTT IIIIII LL
FFFFFFFFF 000000 RRRRRRRR WW WW RRRRRRRR IIIIIII TTTTTTTTT IIIIII LL
FF 00 00 RR RR WW WW RR RR II TT II LL
FF 00 00 RR RR WW WW RR RR II TT II LL
FF 00 00 RR RR WW WW RR RR II TT II LL
FFFFFFFF 00 00 RRRRRRRR WW WW RRRRRRRR IIIIIII TTTTTTTTT IIIIII LL
FFFFFFFF 00 00 RRRRRRRR WW WW RRRRRRRR IIIIIII TTTTTTTTT IIIIII LL
FF 00 00 RR RR WW WW WW RR RR II TT II LL
FF 00 00 RR RR WW WW WW RR RR II TT II LL
FF 00 00 RR RR WWW WWW RR RR II TT II LL
FF 00 00 RR RR WWW WWW RR RR II TT II LL
FF 000000 RR RR WW WW RR RR IIIIIII TTTTTTTTT IIIIII LL
FF 000000 RR RR WW WW RR RR IIIIIII TTTTTTTTT IIIIII LL
LLLLLLLLLLL

```

```

LL IIIIIII SSSSSSSS
LL IIIIIII SSSSSSSS
LL II SS
LL II SS
LL II SS
LL II SS
LL II SSSSSS
LL II SSSSSS
LL II SS
LL II SS
LL II SS
LL IIIIIII SSSSSSSS
LL IIIIIII SSSSSSSS

```

(2) 58  
(3) 102

DECLARATIONS  
FORSWRITE\_IL - WRITE internal list-directed

```
0000 1 .TITLE FOR$WRITE_IL - FORTRAN WRITE internal List-directed
0000 2 .IDENT /1-001/ File: FORWRITEIF.MAR Edit: SBL1001
0000 3
0000 4 *****
0000 5 *
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0000 23 *
0000 24 *
0000 25 *****
0000 26
0000 27
0000 28 ++
0000 29 FACILITY: FORTRAN Support Library - user callable
0000 30
0000 31 ABSTRACT:
0000 32
0000 33 This module contains the entry point for the FORTRAN
0000 34 WRITE internal list-directed I/O statement. It is simply
0000 35 a call to FOR$$IO_BEG with bits in R0 which describe the
0000 36 parameter list. FOR$$IO_BEG interprets the parameters.
0000 37
0000 38 MAINTENANCE NOTE:
0000 39 The transfer vector (RTLVECTOR+ALLGBL) must have the following:
0000 40
0000 41 .TRANSFER FOR$WRITE_IL
0000 42 .MASK FOR$$IO_BEG
0000 43 JMP FOR$WRITE_IL+2
0000 44
0000 45 This puts the correct mask in entry vector, that is FOR$$IO_BEG entry mask.
0000 46 Furthermore this module must only use R0 and R1
0000 47 since any other register might not be in the entry mask for FOR$$IO_BEG.
0000 48
0000 49 ENVIRONMENT: User access mode; mixture of AST level or not
0000 50
0000 51 AUTHOR: Steven B. Lionel, CREATION DATE: 21-April-1983
0000 52
0000 53
0000 54 Edit History:
0000 55
0000 56 1-001 - Original. SBL 21-April-1983
```

```

0000 58      .SBTTL  DECLARATIONS
0000 59
0000 60  :
0000 61  : INCLUDE FILES:
0000 62  :
0000 63
0000 64      $FORPAR      ; Define inter-module FORTRAN symbols
0000 65      $ISBDEF      ; Define statement type symbols
0000 66
0000 67  :
0000 68  : EXTERNAL SYMBOLS:
0000 69  :
0000 70
0000 71      .DSABL  GBL      ; Declare all external symbols
0000 72      .EXTRN  FOR$$IO_BEG      ; common I/O statement processing
0000 73  :+
0000 74  : The following references are to make sure the necessary UDF and REC
0000 75  : modules are loaded. These are the routines which are called through
0000 76  : the dispatch tables in FOR$$DISPAT.
0000 77  :-
0000 78      .EXTRN  FOR$$UDF_WL0, FOR$$UDF_WL1, FOR$$UDF_WL9
0000 79      .EXTRN  FOR$$REC_WIL0, FOR$$REC_WIL1, FOR$$REC_WIL9
0000 80
0000 81  :
0000 82  : MACROS:
0000 83  :
0000 84      NONE
0000 85  :
0000 86  : PSECT DECLARATIONS:
0000 87  :
0000 88
00000000 89      .PSECT  _FOR$CODE PIC,USR,CON,REL,LCL,SHR,EXE,RD,NOWRT,LONG
0000 90
0000 91  :
0000 92  : EQUATED SYMBOLS:
0000 93  :
0000 94
0000 95
0000 96  :
0000 97  : OWN STORAGE:
0000 98  :
0000 99      NONE
0000 100  :

```

```

0000 102      .SBTTL FOR$WRITE_IL - WRITE internal list-directed
0000 103
0000 104      :++
0000 105      : FUNCTIONAL DESCRIPTION:
0000 106      :
0000 107      : Initialize the FORTRAN I/O system to perform
0000 108      : a WRITE internal list-directed I/O statement.
0000 109      :
0000 110      : CALLING SEQUENCE:
0000 111      :
0000 112      : CALL FOR$WRITE_IL (user_vbl.rt.dx [, err_adr.j.r [, end_adr.j.r]])
0000 113      :
0000 114      : INPUT PARAMETERS:
0000 115      :
0000 116      : user_vbl.rt.dx      User's string variable
0000 117      : [err_adr.j.r]      optional ERR= address
0000 118      : [end_adr.j.r]      optional END= address
0000 119      :
0000 120      : IMPLICIT INPUTS:
0000 121      :
0000 122      : NONE except those used by FOR$$IO_BEG.
0000 123      :
0000 124      : OUTPUT PARAMETERS:
0000 125      :
0000 126      : NONE
0000 127      :
0000 128      : IMPLICIT OUTPUTS:
0000 129      :
0000 130      : NONE except those left by FOR$$IO_BEG.
0000 131      :
0000 132      : COMPLETION CODES:
0000 133      :
0000 134      : NONE
0000 135      :
0000 136      : SIDE EFFECTS:
0000 137      :
0000 138      : NONE except those of FOR$$IO_BEG.
0000 139      :
0000 140      :--
0000 141
0000 142 FOR$WRITE_IL:: .MASK FOR$$IO_BEG
50 15 0000' 0002 143 MOVZBL #ISB$K ST_TY WIC, R0 ; Statement type
00000002'GF 17 0005 144 JMP G^FOR$$IO_BEG+2 ; branch past call mask
000B 145
000B 146
000B 147 .END
  
```

FOR\$WRITE\_IL  
Symbol table

J 8  
- FORTRAN WRITE internal list-directed

16-SEP-1984 00:05:04  
6-SEP-1984 11:02:01

VAX/VMS Macro V04-00  
[FORRTL.SRC]FORWRITIL.MAR;1

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(3)

FOR\$\$IO_BEG	*****	X	00
FOR\$\$REC_WILO	*****	X	00
FOR\$\$REC_WIL1	*****	X	00
FOR\$\$REC_WIL9	*****	X	00
FOR\$\$UDF_WLO	*****	X	00
FOR\$\$UDF_WL1	*****	X	00
FOR\$\$UDF_WL9	*****	X	00
FOR\$WRITE_IL	00000000	RG	01
ISB&K_ST_TY_WIL	= 00000015		

-----  
! Psect synopsis !  
-----

PSECT name	Allocation	PSECT No.	Attributes												
ABS	00000000 ( 0.)	00 ( 0.)	NOPIC	USR	CON	ABS	LCL	NOSHR	NOEXE	NORD	NOWRT	NOVEC	BYTE		
_FOR\$CODE	0000000B ( 11.)	01 ( 1.)	PIC	USR	CON	REL	LCL	SHR	EXE	RD	NOWRT	NOVEC	LONG		

-----  
! Performance indicators !  
-----

Phase	Page faults	CPU Time	Elapsed Time
Initialization	29	00:00:00.09	00:00:01.09
Command processing	132	00:00:00.65	00:00:04.36
Pass 1	126	00:00:01.21	00:00:04.87
Symbol table sort	0	00:00:00.19	00:00:00.39
Pass 2	39	00:00:00.42	00:00:01.79
Symbol table output	2	00:00:00.03	00:00:00.32
Psect synopsis output	3	00:00:00.01	00:00:00.09
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	333	00:00:02.60	00:00:13.03

The working set limit was 1050 pages.  
6398 bytes (13 pages) of virtual memory were used to buffer the intermediate code.  
There were 20 pages of symbol table space allocated to hold 187 non-local and 0 local symbols.  
147 source lines were read in Pass 1, producing 8 object records in Pass 2.  
9 pages of virtual memory were used to define 2 macros.

-----  
! Macro library statistics !  
-----

Macro library name	Macros defined
_\$255\$DUA28:[FORRTL.OBJ]FORRTL.MLB;1	2
-\$255\$DUA28:[SYSLIB]STARLET.MLB;2	0
TOTALS (all libraries)	2

183 GETS were required to define 2 macros.

There were no errors, warnings or information messages.

MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LIS\$:FORWRITIL/OBJ=OBJ\$:FORWRITIL MSRC\$:FORWRITIL/UPDATE=(ENH\$:FORWRITIL)+LI

The image displays a grid of 15 columns and 13 rows of terminal window thumbnails. Each thumbnail represents a different VAX/VMS utility or help page. The visible titles and content include:

- FORLDFW LIS**: FOR LINKER WITH VOLUME
- FORLINDER LIS**: FOR LINKER WITH INDEX
- FORUNLOCK LIS**: FOR UNLOCKING FILES
- FORVECTOR LIS**: FOR VECTORING
- FORUM LIS**: FOR UNIFORM
- FORWRITDF LIS**: FOR WRITING WITH DYNAMIC
- FORWRITDU LIS**: FOR WRITING WITH DYNAMIC
- FORWRITIL LIS**: FOR WRITING WITH INDEX
- FORWRITSF LIS**: FOR WRITING WITH SAVED
- FORWRITSN LIS**: FOR WRITING WITH SAVED
- FORWRITSU LIS**: FOR WRITING WITH SAVED
- FORWRITTO LIS**: FOR WRITING WITH TO
- FORWRITIF LIS**: FOR WRITING WITH INDEX
- FORWRITIO LIS**: FOR WRITING WITH INDEX
- FORWRITSL LIS**: FOR WRITING WITH SAVED
- FORWRITSD LIS**: FOR WRITING WITH SAVED
- HELP LIS**: HELP FOR LIS
- VMHELP MAP**: VM HELP MAP
- HLD MOL**: HELP FOR MOL
- HLD MACROS MAR**: HELP FOR MACROS MAR
- HLD MAP**: HELP FOR MAP
- RSXDEFS MAR**: RSX DEFINITIONS MAR
- HLD CSTA LIS**: HELP FOR CSTA LIS