



```

FFFFFFFFF  000000  RRRRRRRR  RRRRRRRR  EEEEEEEEE  AAAAAA  DDDDDDDD  KK  KK  000000
FFFFFFFFF  000000  RRRRRRRR  RRRRRRRR  EEEEEEEEE  AAAAAA  DDDDDDDD  KK  KK  000000
FF          00      00  RR      RR  RR      RR  EE          AA      AA  DD      DD  KK      KK  00      00
FF          00      00  RR      RR  RR      RR  EE          AA      AA  DD      DD  KK      KK  00      00
FF          00      00  RR      RR  RR      RR  EE          AA      AA  DD      DD  KK      KK  00      00
FF          00      00  RR      RR  RR      RR  EE          AA      AA  DD      DD  KK      KK  00      00
FFFFFFFFF  00      00  RRRRRRRR  RRRRRRRR  EEEEEEEEE  AA      AA  DD      DD  KK      KK  00      00
FFFFFFFFF  00      00  RRRRRRRR  RRRRRRRR  EEEEEEEEE  AA      AA  DD      DD  KKKKKK  KK  00      00
FF          00      00  RR  RR      RR  RR  EE          AA      AA  DD      DD  KK      KK  00      00
FF          00      00  RR  RR      RR  RR  EE          AA      AA  DD      DD  KK      KK  00      00
FF          00      00  RR      RR  RR      RR  EE          AA      AA  DD      DD  KK      KK  00      00
FF          00      00  RR      RR  RR      RR  EE          AA      AA  DD      DD  KK      KK  00      00
FF          00      00  RR      RR  RR      RR  EEEEEEEEE  AA      AA  DDDDDDDD  KK      KK  000000
FF          000000  RR      RR  RR      RR  EEEEEEEEE  AA      AA  DDDDDDDD  KK      KK  000000

```

```

....
....
....
....

```

```

LL          IIIIII  SSSSSSSS
LL          IIIIII  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          II      SS
LLLLLLLLLL IIIIII  SSSSSSSS
LLLLLLLLLL IIIIII  SSSSSSSS

```

(2)	56	HISTORY ; Detailed Current Edit History
(3)	85	DECLARATIONS
(4)	133	FORSREAD_KO - READ KEYED OBJECT-FORMATTED

FO  
Sy  
FO  
FO  
FO  
FO  
FO  
FO  
FO  
IS  
PS  
-  
-  
Ph  
-  
In  
Co  
Pa  
Sy  
Pa  
Sy  
Ps  
Cr  
As  
Th  
66  
Th  
17  
9  
Ma  
-  
-  
TO  
18  
Th  
MA

```
0000 1 .TITLE FOR$READ_KO - entry point for FORTRAN READ KEYED OBJECT-FORMATTED
0000 2 .IDENT /1-011/ File: FORREADKO.MAR Edit: JAW1011
0000 3 :
0000 4 :*****
0000 5 :*
0000 6 :* COPYRIGHT (c) 1978, 1980, 1982, 1984 BY
0000 7 :* DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.
0000 8 :* ALL RIGHTS RESERVED.
0000 9 :*
0000 10 :* THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED
0000 11 :* ONLY IN ACCORDANCE WITH THE TERMS OF SUCH LICENSE AND WITH THE
0000 12 :* INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR ANY OTHER
0000 13 :* COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY
0000 14 :* OTHER PERSON. NO TITLE TO AND OWNERSHIP OF THE SOFTWARE IS HEREBY
0000 15 :* TRANSFERRED.
0000 16 :*
0000 17 :* THE INFORMATION IN THIS SOFTWARE IS SUBJECT TO CHANGE WITHOUT NOTICE
0000 18 :* AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY DIGITAL EQUIPMENT
0000 19 :* CORPORATION.
0000 20 :*
0000 21 :* DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE OR RELIABILITY OF ITS
0000 22 :* SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.
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 : READ KEYED OBJECT-FORMATTED 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$READ_KO
0000 42 : .MASK FOR$$IO_BEG
0000 43 : BRW FOR$READ_KO+2
0000 44 :
0000 45 : This puts the correct mask in entry vector, that is FOR$$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: Richard B. Grove, CREATION DATE: 28-May-78
0000 52 :
0000 53 : MODIFIED BY:
0000 54 : T. Hastings, 29-July-78
```

```
0000 56      .SBTTL HISTORY      ; Detailed Current Edit History
0000 57
0000 58
0000 59 : Edit History for Version 1
0000 60 :
0000 61 : 0-10 - Add comment about vectors. TNH 23-June-78
0000 62 : 0-12 - Pass arg in R0, not R0R, add comments. TNH 29-July-78
0000 63 : 1-001 - Update version number and copyright notice. JBS 16-NOV-78
0000 64 : 1-002 - Change statement type symbols to be LUB$K... JBS 07-DEC-78
0000 65 : 1-003 - Change statement type symbols to be ISB$K... JBS 11-DEC-78
0000 66 : 1-004 - Add " " to the PSECT directive. JBS 22-DEC-78
0000 67 : 1-005 - Add FOR$READ_KF, FOR$READ_KO, FOR$REWRITE_SF, FOR$REWRITE_SO,
0000 68 : FOR$READ_IF, FOR$READ_IO, FOR$WRITE_IF, FOR$WRITE_IO,
0000 69 : FOR$READ_KU, FOR$REWRITE_SU,
0000 70 : SBL 2-May-1979
0000 71 : 1-006 - Remove all entry points that need object time formatting,
0000 72 : putting them in FOR$ENTRY_OBJ so that we can arrange to
0000 73 : load the format compiler only when it is needed.
0000 74 : JBS 26-JUN-1979
0000 75 : 1-007 - Remove entry point FOR$ENCODE_MF; we will code a new module
0000 76 : for it and FOR$$IO_BEG, to see how much I/O initiation time
0000 77 : improves. JBS 02-JUL-1979
0000 78 : 1-008 - Do likewise for FOR$READ_DU and FOR$WRITE DU. JBS 03-JUL-1979
0000 79 : 1-009 - Remove all entry points and add FOR$READ_R0; each entry
0000 80 : point gets its own module so we can selectively load
0000 81 : the necessary UDF and REC modules. JBS 09-JUL-1979
0000 82 : 1-010 - New parameter format for FOR$$IO_BEG. SBL 5-Dec-1979
0000 83 : 1-011 - Change BRW FOR$$IO_BEG+2 to JMP G^FOR$$IO_BEG+2. JAW 21-Feb-1981
```

```

0000 85      .SBTTL  DECLARATIONS
0000 86
0000 87      :
0000 88      : INCLUDE FILES:
0000 89      :
0000 90
0000 91      $FORPAR      ; Define inter-module FORTRAN symbols
0000 92      $ISBDEF      ; Define statement type symbols
0000 93
0000 94      :
0000 95      : EXTERNAL SYMBOLS:
0000 96      :
0000 97
0000 98      .DSABL  GBL      ; Declare all external symbols
0000 99      .EXTRN  FOR$$IO_BEG      ; common I/O statement processing
0000 100     :+
0000 101     : The following references are to make sure the necessary UDF and REC
0000 102     : modules are loaded. These are the routines which are called through
0000 103     : the dispatch tables in FOR$$DISPAT.
0000 104     :-
0000 105     .EXTRN  FOR$$UDF_RF0, FOR$$UDF_RF1, FOR$$UDF_RF9
0000 106     .EXTRN  FOR$$REC_RKF0, FOR$$REC_RKF1, FOR$$REC_RKF9
0000 107     :+
0000 108     : The following reference makes sure the format compiler is loaded.
0000 109     :-
0000 110     .EXTRN  FOR$$FMT_COMPIL
0000 111
0000 112     :
0000 113     : MACROS:
0000 114     :
0000 115     : NONE
0000 116     :
0000 117     : PSECT DECLARATIONS:
0000 118     :
0000 119
0000 120     .PSECT  _FOR$CODE PIC,USR,CON,REL,LCL,SHR,EXE,RD,NOWRT,LONG
0000 121
0000 122     :
0000 123     : EQUATED SYMBOLS:
0000 124     :
0000 125
0000 126
0000 127     :
0000 128     : OWN STORAGE:
0000 129     :
0000 130     : NONE
0000 131     :
  
```

```

0000 133      .SBTTL  FOR$READ_KO - READ KEYED OBJECT-FORMATTED
0000 134
0000 135      :++
0000 136      : FUNCTIONAL DESCRIPTION:
0000 137      :
0000 138      :     Initialize the FORTRAN I/O system to perform
0000 139      :     a READ KEYED OBJECT-FORMATTED I/O statement.
0000 140      :
0000 141      : CALLING SEQUENCE:
0000 142      :
0000 143      :     CALL FOR$READ_KO (unit.rl.v, format_adr.rt.r,
0000 144      :     key.rx.dx, keyid.rl.v, match.rl.v
0000 145      :     [, err_adr.j.r [, end_adr.j.r]])
0000 146      :
0000 147      : INPUT PARAMETERS:
0000 148      :
0000 149      :     unit.rl.v           logical unit number
0000 150      :     format_adr.rt.r    format string (needs compilation)
0000 151      :     key.rx.dx          the key of the record to be read
0000 152      :     keyid.rl.v         the number of the key
0000 153      :     match.rl.v         code for how to match (EQL, GEQ, GTR)
0000 154      :     [err_adr.j.r]     optional ERR= address
0000 155      :     [end_adr.j.r]     optional END= address
0000 156      :
0000 157      : IMPLICIT INPUTS:
0000 158      :
0000 159      :     NONE except those used by FOR$$IO_BEG.
0000 160      :
0000 161      : OUTPUT PARAMETERS:
0000 162      :
0000 163      :     NONE
0000 164      :
0000 165      : IMPLICIT OUTPUTS:
0000 166      :
0000 167      :     NONE except those left by FOR$$IO_BEG.
0000 168      :
0000 169      : COMPLETION CODES:
0000 170      :
0000 171      :     NONE
0000 172      :
0000 173      : SIDE EFFECTS:
0000 174      :
0000 175      :     NONE except those of FOR$$IO_BEG.
0000 176      :
0000 177      : --
0000 178
0000 179      FOR$READ_KO:: .MASK  FOR$$IO_BEG
50  010E 8F 0000' 0002 180      MOVZWL  #ISB$K ST TY_RKF+ -
0000 181      <1@FOR$V OBJ_FMT>, R0 ; Statement type
0000 182      JMP  G^FOR$$IO_BEG+2 ; branch past call mask
000D 183
000D 184
000D 185      .END
  
```

FOR\$READ\_KO  
Symbol table

```

FOR$$FMT_COMPIL      ***** X 00
FOR$$IO_BEG          ***** X 00
FOR$$REC_RKFO        ***** X 00
FOR$$REC_RKF1        ***** X 00
FOR$$REC_RKF9        ***** X 00
FOR$$UDF_RF0         ***** X 00
FOR$$UDF_RF1         ***** X 00
FOR$$UDF_RF9         ***** X 00
FOR$READ_KO          00000000 RG 01
FOR$V_OBJ_FMT        = 00000008
ISB$K_ST_TY_RKF     = 0000000E
  
```

-----  
! 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	0000000D ( 13.)	01 ( 1.)	PIC USR CON REL LCL SHR EXE RD NOWRT NOVEC LONG

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

Phase	Page faults	CPU Time	Elapsed Time
Initialization	31	00:00:00.09	00:00:01.43
Command processing	121	00:00:00.65	00:00:05.46
Pass 1	131	00:00:01.28	00:00:04.80
Symbol table sort	0	00:00:00.19	00:00:00.22
Pass 2	49	00:00:00.50	00:00:01.32
Symbol table output	3	00:00:00.02	00:00:00.03
Psect synopsis output	2	00:00:00.02	00:00:00.21
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	339	00:00:02.75	00:00:13.56

The working set limit was 1050 pages.  
6735 bytes (14 pages) of virtual memory were used to buffer the intermediate code.  
There were 20 pages of symbol table space allocated to hold 188 non-local and 0 local symbols.  
185 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.



FOR\$READ\_KO  
VAX-11 Macro Run Statistics

- entry point for FORTRAN READ KEYED <sup>L 4</sup> OBJ 15-SEP-1984 23:58:03 VAX/VMS Macro V04-00 Page 6  
6-SEP-1984 10:59:17 [FORRTL.SRC]FORREADKO.MAR;1 (4)

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

FO  
1-

