



```

FFFFFFFFF 000000 RRRRRRRR RRRRRRRR EEEEEEEEE AAAAAA DDDDDDD DD KK KK UU UU
FFFFFFFFF 000000 RRRRRRRR RRRRRRRR EEEEEEEEE AAAAAA DDDDDDD DD KK KK UU UU
FF 00 00 RR RR RR RR EE AA AA DD DD KK KK UU UU
FF 00 00 RR RR RR RR EE AA AA DD DD KK KK UU UU
FF 00 00 RR RR RR RR EE AA AA DD DD KK KK UU UU
FF 00 00 RR RR RR RR EE AA AA DD DD KK KK UU UU
FFFFFFFFF 00 00 RRRRRRRR RRRRRRRR EEEEEEEEE AA AA DD DD KKKKKK UU UU
FFFFFFFFF 00 00 RRRRRRRR RRRRRRRR EEEEEEEEE AA AA DD DD KKKKKK UU UU
FF 00 00 RR RR RR RR EE AAAAAAAAAA DD DD KK KK UU UU
FF 00 00 RR RR RR RR EE AAAAAAAAAA DD DD KK KK UU UU
FF 00 00 RR RR RR RR EE AA AA DD DD KK KK UU UU
FF 00 00 RR RR RR RR EE AA AA DD DD KK KK UU UU
FF 000000 RR RR RR RR EEEEEEEEE AA AA DDDDDDD KK KK UUUUUUUUU
FF 00G000 RR RR RR RR EEEEEEEEE AA AA DDDDDDD KK KK UUUUUUUUU

```

```

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 IIIIII SSSSSSSS
LLLLLLLLLL IIIIII SSSSSSSS
LLLLLLLLLL IIIIII SSSSSSSS

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MA

FOR\$READ\_KU  
Table of contents

- entry point for FORTRAN READ KEYED UN<sup>N 4</sup> 15-SEP-1984 23:58:26 VAX/VMS Macro V04-00

Page 0

(2) 56  
(3) 85  
(4) 129

HISTORY ; Detailed Current Edit History  
DECLARATIONS  
FOR\$READ\_KU - READ KEYED UNFORMATTED

```
0000 1 .TITLE FOR$READ_KU - entry point for FORTRAN READ KEYED UNFORMATTED
0000 2 .IDENT /1-011/ File: FORREADKU.MAR Edit: JAW1011
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 READ KEYED UNFORMATTED 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_KU
0000 42 .MASK FOR$$IO_BEG
0000 43 BRW FOR$READ_KU+2
0000 44
0000 45 This puts the correct mask in entry vector, that is FOR$$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 ROR, 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$$IO_BEG, to see how much I/O initiation time
0000 77 : improves.  JBS 02-JUL-1979
0000 78 : 1-008 - Do likewise for FOR$READ_DU and FOR$WRITE DU.  JBS 03-JUL-1979
0000 79 : 1-009 - Remove all entry points except FOR$READ_KO; each of the
0000 80 : others gets its own module so we can selectively load
0000 81 : the necessary UDF and REC modules.  JBS 09-JUL-1979
0000 82 : 1-010 - New parameter format for FOR$$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$$UDF_RU0, FOR$$UDF_RU1, FOR$$UDF_RU9
0000 106     .EXTRN  FOR$$REC_RKU0, FOR$$REC_RKU1, FOR$$REC_RKU9
0000 107
0000 108     :
0000 109     : MACROS:
0000 110     :
0000 111     : NONE
0000 112     :
0000 113     : PSECT DECLARATIONS:
0000 114     :
0000 115
0000 116     .PSECT  _FOR$CODE PIC,USR,CON,REL,LCL,SHR,EXE,RD,NOWRT,LONG
0000 117
0000 118     :
0000 119     : EQUATED SYMBOLS:
0000 120     :
0000 121     :
0000 122     :
0000 123     :
0000 124     : OWN STORAGE:
0000 125     :
0000 126     : NONE
0000 127     :
  
```

```

0000 129      .SBTTL  FOR$READ_KU - READ KEYED UNFORMATTED
0000 130
0000 131      :++
0000 132      : FUNCTIONAL DESCRIPTION:
0000 133      :
0000 134      : Initialize the FORTRAN I/O system to perform
0000 135      : a READ KEYED UNFORMATTED I/O statement.
0000 136      :
0000 137      : CALLING SEQUENCE:
0000 138      :
0000 139      : CALL FOR$READ_KU (unit.rl.v,
0000 140      : key.rx.dx, keyid.rl.v, match.rl.v
0000 141      : [, err_adr.j.r [, end_adr.j.r]])
0000 142      :
0000 143      : INPUT PARAMETERS:
0000 144      :
0000 145      : unit.rl.v          logical unit number
0000 146      : key.rx.dx           the key of the record to be read
0000 147      : keyid.rl.v        the number of the key
0000 148      : match.rl.v       code for how to match (EQL, GEQ, GTR)
0000 149      : [err_adr.j.r]    optional ERR= address
0000 150      : [end_adr.j.r]    optional END= address
0000 151      :
0000 152      : IMPLICIT INPUTS:
0000 153      :
0000 154      : NONE except those used by FOR$$IO_BEG.
0000 155      :
0000 156      : OUTPUT PARAMETERS:
0000 157      :
0000 158      : NONE
0000 159      :
0000 160      : IMPLICIT OUTPUTS:
0000 161      :
0000 162      : NONE except those left by FOR$$IO_BEG.
0000 163      :
0000 164      : COMPLETION CODES:
0000 165      :
0000 166      : NONE
0000 167      :
0000 168      : SIDE EFFECTS:
0000 169      :
0000 170      : NONE except those of FOR$$IO_BEG.
0000 171      :
0000 172      :--
0000 173
0000 174 FOR$READ_KU:: .MASK  FOR$$IO_BEG
0002 175 MOVZBL #ISBSK_ST_TY_RK0, R0 ; Statement type
0005 176 JMP G*FOR$$IO_BEG+2 ; branch past call mask
000B 177
000B 178
000B 179 .END

```

50 10 0000' 9A  
 00000002'GF 17

FOR\$READ\_KU  
Symbol table

- entry point for FORTRAN READ KEYED UNF 15-SEP-1984 23:58:26 VAX/VMS Macro V04-00 Page 5  
6-SEP-1984 10:59:20 [FORRTL.SRC]FORREADKU.MAR;1 (4)

FO  
1-

```
FOR$$IO_BEG          ***** X 00
FOR$$REC_RKU0        ***** X 00
FOR$$REC_RKU1        ***** X 00
FOR$$REC_RKU9        ***** X 00
FOR$$SUDF_RU0        ***** X 00
FOR$$SUDF_RU1        ***** X 00
FOR$$SUDF_RU9        ***** X 00
FOR$READ_KU          00000000 RG 01
ISB$K_ST_TY_RKU     = 00000010
```

-----  
! 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	32	00:00:00.09	00:00:01.00
Command processing	137	00:00:00.66	00:00:04.48
Pass 1	124	00:00:01.24	00:00:04.78
Symbol table sort	0	00:00:00.17	00:00:00.70
Pass 2	47	00:00:00.46	00:00:01.55
Symbol table output	3	00:00:00.02	00:00:00.02
Psect synopsis output	2	00:00:00.02	00:00:00.02
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	347	00:00:02.68	00:00:12.57

The working set limit was 900 pages.  
6691 bytes (14 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.  
179 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\$:FORREADKU/OBJ=OBJ\$:FORREADKU MSRC\$:FORREADKU/UPDATE=(ENHS:FORREADKU)+L1



The image displays a grid of 144 small, faint screenshots of VAX/VMS system output, arranged in 12 rows and 12 columns. Each screenshot shows various system messages, status indicators, and data tables. Some screenshots are more legible than others, showing text like 'FORREADIF LIS', 'FORREC PRO LIS', 'FORREADDU LIS', 'FORREADDL LIS', 'FORREADDK LIS', 'FORREADDU LIS', 'FORREADDL LIS', 'FORREADDK LIS', 'FORREADDU LIS', 'FORREADDL LIS', 'FORREADDK LIS', and 'FORREADDU LIS'. The overall appearance is that of a technical manual or a collection of diagnostic logs.