



```

MM      MM      TTTTTTTTTT  HH      HH      IIIIII      NN      NN      IIIIII      NN      NN      TTTTTTTTTT
MM      MM      TTTTTTTTTT  HH      HH      IIIIII      NN      NN      IIIIII      NN      NN      TTTTTTTTTT
MMMM    MMMM      TT          HH      HH      II          NN      NN      II          NN      NN      TT
MMMM    MMMM      TT          HH      HH      II          NN      NN      II          NN      NN      TT
MM      MM      TT          HH      HH      II          NNNN     NN      II          NNNN     NN      TT
MM      MM      TT          HH      HH      II          NNNN     NN      II          NNNN     NN      TT
MM      MM      TT          HHHHHHHHHH  II          NN      NN      II          NN      NN      TT
MM      MM      TT          HHHHHHHHHH  II          NN      NN      II          NN      NN      TT
MM      MM      TT          HH      HH      II          NN      NNNN     II          NN      NNNN     TT
MM      MM      TT          HH      HH      II          NN      NNNN     II          NN      NNNN     TT
MM      MM      TT          HH      HH      II          NN      NN      II          NN      NN      TT
MM      MM      TT          HH      HH      IIIIII     NN      NN      IIIIII     NN      NN      TT
MM      MM      TT          HH      HH      IIIIII     NN      NN      IIIIII     NN      NN      TT

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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
LLLLLLLLLL  IIIIII  SSSSSSSS
LLLLLLLLLL  IIIIII  SSSSSSSS

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|     |    |              |                                       |
|-----|----|--------------|---------------------------------------|
| (2) | 49 | HISTORY      | ; Detailed Current Edit History       |
| (3) | 60 | DECLARATIONS |                                       |
| (4) | 86 | MTH\$ININT   | - return nearest integer as INTEGER*2 |

```

0000 1 .TITLE MTH$ININT - Nearest Integer
0000 2 .IDENT /2-001/ ; File: MTHININT.MAR
0000 3
0000 4
0000 5 *****
0000 6 *
0000 7 * COPYRIGHT (c) 1978, 1980, 1982, 1984 BY *
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0000 23 * SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL. *
0000 24 *
0000 25 *
0000 26 *****
0000 27
0000 28
0000 29 FACILITY: MATH LIBRARY
0000 30 ++
0000 31 ABSTRACT:
0000 32
0000 33
0000 34 --
0000 35
0000 36 VERSION: 1
0000 37
0000 38 HISTORY:
0000 39
0000 40 AUTHOR:
0000 41 Jonathan M. Taylor, 28-Jul-77: Version 0
0000 42
0000 43 MODIFIED BY:
0000 44
0000 45 Steven B. Lionel, 19-Feb-1979: Version 2
0000 46
0000 47

```



MTH\$ININT  
2-001

```
0000 49 .SBTTL HISTORY ; Detailed Current Edit History
0000 50
0000 51
0000 52 ; Edit History for Version 1 of MTH$ININT
0000 53 :
0000 54 : 0-2 - Remove MTH$FLAG_JACKET. TNH 5-July-78
0000 55 : 1-001 - Update version number and copyright notice. JBS 16-NOV-78
0000 56 : 1-002 - Add "" to the PSECT directive. JBS 22-DEC-78
0000 57 : 1-003 - Add I7 to entry mask. SBL 06-Feb-79
0000 58 : 2-001 - Use CVTRFL. SBL 19-Feb-79
```



```
0000 60 .SBTTL DECLARATIONS
0000 61
0000 62 :
0000 63 : INCLUDE FILES:
0000 64 :
0000 65 :
0000 66 :
0000 67 : EXTERNAL SYMBOLS:
0000 68 :
0000 69 :
0000 70 :
0000 71 : MACROS:
0000 72 :
0000 73 :
0000 74 :
0000 75 : PSECT DECLARATIONS:
00000000 76 .PSECT _MTH$CODE PIC, SHR, LONG, EXE, NOWRT
0000 77 :
0000 78 :
0000 79 : EQUATED SYMBOLS:
0000 80 :
0000 81 :
0000 82 :
0000 83 : OWN STORAGE:
0000 84 :
```

```

0000 86      .SBTTL MTH$ININT - return nearest integer as INTEGER*2
0000 87
0000 88      :++
0000 89      : FUNCTIONAL DESCRIPTION:
0000 90      :
0000 91      : MTH$ININT returns as its function value the nearest INTEGER*2
0000 92      : integer to its REAL*4 argument, rounded away from zero.
0000 93      :
0000 94      : CALLING SEQUENCE:
0000 95      : nearest_integer.wv.v = MTH$ININT (arg.rf.r)
0000 96      :
0000 97      :
0000 98      : INPUT PARAMETERS:
0000 99      : arg      - REAL*4 argument
0000 100     :
0000 101     : IMPLICIT INPUTS:
0000 102     : NONE
0000 103     :
0000 104     : OUTPUT PARAMETERS:
0000 105     : NONE
0000 106     :
0000 107     : IMPLICIT OUTPUTS:
0000 108     : NONE
0000 109     :
0000 110     : FUNCTION VALUE:
0000 111     : nearest_integer - trunc(arg + .5*sign(arg))
0000 112     :
0000 113     : SIDE EFFECTS:
0000 114     : Reserved operand, integer overflow exceptions possible.
0000 115     :
0000 116     :--
0000 117
0000 118
0000 119     .ENTRY MTH$ININT,      ^M<IV>
0000 120     CVTRFL @4(AP), R0      ; R0 gets rounded argument
0000 121     CVTLW  R0, R0          ; convert to INTEGER*2
0000 122     RET
000A 123
000A 124
000A 125     .END

```

```

50 04 BC 4000
50 50 50 4B
    F7
    04

```



MTH\$ININT  
Symbol table

- Nearest Integer

E 2

16-SEP-1984 01:43:56  
6-SEP-1984 11:26:18

VAX/VMS Macro V04-00  
[MTHRTL.SRC]MTHININT.MAR;1

Page 5  
(4)

MTH\$ININT 00000000 RG 01

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

| PSECT name | Allocation      | PSECT No. | Attributes |     |     |     |     |       |       |      |       |       |      |  |  |  |  |
|------------|-----------------|-----------|------------|-----|-----|-----|-----|-------|-------|------|-------|-------|------|--|--|--|--|
| ABS        | 00000000 ( 0.)  | 00 ( 0.)  | NOPIC      | USR | CON | ABS | LCL | NOSHR | NOEXE | NORD | NOWRT | NOVEC | BYTE |  |  |  |  |
| MTH\$CODE  | 0000000A ( 10.) | 01 ( 1.)  | PIC        | USR | CON | REL | LCL | SHR   | EXE   | RD   | NOWRT | NOVEC | LONG |  |  |  |  |

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

| Phase                  | Page faults | CPU Time    | Elapsed Time |
|------------------------|-------------|-------------|--------------|
| Initialization         | 29          | 00:00:00.08 | 00:00:01.22  |
| Command processing     | 114         | 00:00:00.46 | 00:00:03.60  |
| Pass 1                 | 63          | 00:00:00.38 | 00:00:02.26  |
| Symbol table sort      | 0           | 00:00:00.00 | 00:00:00.00  |
| Pass 2                 | 37          | 00:00:00.28 | 00:00:01.17  |
| Symbol table output    | 1           | 00:00:00.01 | 00:00:00.01  |
| 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   | 248         | 00:00:01.24 | 00:00:08.29  |

The working set limit was 750 pages.  
1191 bytes (3 pages) of virtual memory were used to buffer the intermediate code.  
There were 10 pages of symbol table space allocated to hold 1 non-local and 0 local symbols.  
125 source lines were read in Pass 1, producing 10 object records in Pass 2.  
0 pages of virtual memory were used to define 0 macros.

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

| Macro library name                  | Macros defined |
|-------------------------------------|----------------|
| _\$255\$DUA28:[SYSLIB]STARLET.MLB;2 | 0              |

0 GETS were required to define 0 macros.

There were no errors, warnings or information messages.

MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LISS:MTHININT/OBJ=OBJ\$:MTHININT MSRC\$:MTHININT/UPDATE=(ENH\$:MTHININT)



A grid of 100 terminal windows, each displaying a different VAX/VMS utility program. The programs are arranged in a 10x10 grid. The visible program names include:

- MTHMIN0 LIS
- MTHMIN1 LIS
- MTHMIN2 LIS
- MTHMIN3 LIS
- MTHMIN4 LIS
- MTHMIN5 LIS
- MTHMIN6 LIS
- MTHMIN7 LIS
- MTHMIN8 LIS
- MTHMIN9 LIS
- MTHMIN10 LIS
- MTHMIN11 LIS
- MTHMIN12 LIS
- MTHMIN13 LIS
- MTHMIN14 LIS
- MTHMIN15 LIS
- MTHMIN16 LIS
- MTHMIN17 LIS
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- MTHMIN97 LIS
- MTHMIN98 LIS
- MTHMIN99 LIS