


```

LL      NN      NN  KK      KK  EEEEEEEEE  LL      AAAAAA  PPPPPPP  SSSSSSS  TTTTTTTT
LL      NN      NN  KK      KK  EEEEEEEEE  LL      AAAAAA  PPPPPPP  SSSSSSS  TTTTTTTT
LL      NN      NN  KK      KK  EE          LL      AA      AA  PP      PP  SS      TT
LL      NN      NN  KK      KK  EE          LL      AA      AA  PP      PP  SS      TT
LL      NNNN    NN  KK      KK  EE          LL      AA      AA  PP      PP  SS      TT
LL      NNNN    NN  KK      KK  EE          LL      AA      AA  PP      PP  SS      TT
LL      NN  NN  NN  KKKKKK  EEEEEEE  LL      AA      AA  PPPPPPP  SSSSSS  TT
LL      NN  NN  NN  KKKKKK  EEEEEEE  LL      AA      AA  PPPPPPP  SSSSSS  TT
LL      NN      NNNN  KK      KK  EE          LL      AAAAAAAAAA  PP      SS      TT
LL      NN      NNNN  KK      KK  EE          LL      AAAAAAAAAA  PP      SS      TT
LL      NN      NN  KK      KK  EE          LL      AA      AA  PP      SS      TT
LL      NN      NN  KK      KK  EE          LL      AA      AA  PP      SS      TT
LLLLLLLL  NN      NN  KK      KK  EEEEEEEEE  LLLLLLLLL  AA      AA  PP      SSSSSSS  TT
LLLLLLLL  NN      NN  KK      KK  EEEEEEEEE  LLLLLLLLL  AA      AA  PP      SSSSSSS  TT

```

```

LL      IIIIII  SSSSSSS
LL      IIIIII  SSSSSSS
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
LLLLLLLL  IIIIII  SSSSSSS
LLLLLLLL  IIIIII  SSSSSSS

```

(2)	45	DECLARATIONS
(3)	67	LNK\$CALCELAPS

```
0000 1 .TITLE LNK_ELAPSTIMS
0000 2 .IDENT 'V04-000'
0000 3
0000 4
0000 5 *****
0000 6 *
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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 ++
0000 30 : FACILITY: LINKER
0000 31
0000 32 : ABSTRACT: COMPUTE AN ELAPSED TIME FROM TWO ABSOLUTE TIMES
0000 33
0000 34
0000 35 : ENVIRONMENT:
0000 36
0000 37 : AUTHOR: T.J. PORTER, CREATION DATE: 27-JUN-77
0000 38
0000 39 : MODIFIED BY:
0000 40
0000 41 : V02-001 BLS0035 Benn Schreiber 19-Jan-1981
0000 42 : Change to longword displacement
0000 43 :--
```

DECLARATIONS

```
0000 45      .SBTTL  DECLARATIONS
0000 46      :
0000 47      : INCLUDE FILES:
0000 48      :
0000 49      :
0000 50      :
0000 51      : MACROS:
0000 52      :
0000 53      :
0000 54      :
0000 55      : EQUATED SYMBOLS:
0000 56      :
00000004 0000 57 TIMEADDR1 = 4      ; FIRST ARGUMENT IS TIME 1 ADDRESS
00000008 0000 58 TIMEADDR2 = 8      ; SECOND IS ADDRESS OF TIME 2
0000 59      :
0000 60      : OWN STORAGE:
0000 61      :
00000000 62      .PSECT  $OWNS,NOEXE,QUAD
00000000 0000 63 ELAPSED:
00000000 0000 64      .QUAD  0      ; THE COMPUTED ELAPSED TIME
0008 65
```

LNK\$CALCELAPS

```

0008 67      .SBTTL LNK$CALCELAPS
0008 68      :++
0008 69      FUNCTIONAL DESCRIPTION:
0008 70      :
0008 71      THIS ROUTINE IS CALLED TO CALCULATE THE ELAPSED TIME BETWEEN TWO
0008 72      ABSOLUTE TIME VALUES. THE ADDRESS OF THE RESULT IS RETURNED AS THE VALUE OF
0008 73      THE ELAPSED TIME IS IN THE 'DELTA TIME' FORMAT OF THE SYSTEM AND
0008 74      IS THEREFORE SUITABLE FOR DISPLAYING THROUGH SYSTEM SERVICES
0008 75      SUCH AS FAO %T.
0008 76      :
0008 77      CALLING SEQUENCE:
0008 78      :
0008 79      LNK$CALCELAPS(TIMEADDR1,TIMEADDR2)
0008 80      :
0008 81      WHERE: TIMEADDR1 = ADDRESS OF A QUADWORD CONTAINING THE
0008 82      START TIME
0008 83      TIMEADDR2 = ADDRESS OF A QUADWORD CONTAINING THE
0008 84      END TIME.
0008 85      :
0008 86      :
0008 87      INPUT PARAMETERS:
0008 88      :
0008 89      AS ABOVE
0008 90      :
0008 91      IMPLICIT INPUTS:
0008 92      :
0008 93      NONE
0008 94      :
0008 95      OUTPUT PARAMETERS:
0008 96      :
0008 97      THE ROUTINE HAS AS ITS VALUE (I.E. CONTENT RETURNED IN R0)
0008 98      THE ADDRESS OF AN OWN QUADWORD CONTAINING THE VALUE
0008 99      TIME1 - TIME2
0008 100     WHICH IS (PRESUMABLY) NEGATIVE.
0008 101     :
0008 102     :
0008 103     IMPLICIT OUTPUTS:
0008 104     :
0008 105     NONE
0008 106     :
0008 107     COMPLETION CODES:
0008 108     :
0008 109     NONE
0008 110     :
0008 111     SIDE EFFECTS:
0008 112     :
0008 113     NONE
0008 114     :
0008 115     :--
0008 116     :
00000000 117     .PSECT $CODE$,NOWRT, LONG
0000 118     LNK$CALCELAPS::
0000 119     .WORD 0
50 00000000'EF 9E 0002 120     MOVAB L^ELAPSED,R0 ; GET ADDRESS OF QUADWORD TO RECEIVE RESULT
   51 08 AC D0 0009 121     MOVL TIMEADDR2(AP),R1 ; GET ADDRESS OF TIME 2
   60 04 BC 7D 000D 122     MOVQ @TIMEADDR1(AP),(R0) ; INITIALIZE RESULT WITH TIME 1
   60 81 C2 0011 123     SUBL (R1)+,(R0) ; SUBTRACT LOW ORDER HALF OF

```

LNK_ELAPSTIMS
V04=000

LNK\$CALCELAPS

04	A0	61	D9	0014	124
			04	0018	125
				0019	126

SBWC
RET
.END

J 3
(R1),4(R0)

15-SEP-1984 23:55:28 VAX/VMS Macro V04-00 Page 4
5-SEP-1984 01:42:33 [LINKER.SRC]LNKELAPST.MAR;1 (3)

; TIME 2 THEN HIGH ORDER HALF WITH CARRY
; FROM CORRESPONDING HALVES OF TIME 1

LNK
V04

; R

...

.....

.....

..

.....
S
R
E
L
I
C

LNK ELAPSTIMS
Symbol table

K 3

15-SEP-1984 23:55:28 VAX/VMS Macro V04-00
5-SEP-1984 01:42:33 [LINKER.SRC]LNKELAPST.MAR;1

Page 5
(3)

ELAPSED 00000000 R 01
LNK\$CALCELAPS 00000000 RG 02
TIMEADDR1 = 00000004
TIMEADDR2 = 00000008

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

PSECT name	Allocation	PSECT No.	Attributes
. ABS .	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
\$OWNS	00000008 (8.)	01 (1.)	NOPIC USR CON REL LCL NOSHR NOEXE RD WRT NOVEC QUAD
\$CODE\$	00000019 (25.)	02 (2.)	NOPIC USR CON REL LCL NOSHR EXE RD NOWRT NOVEC LONG

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

Phase	Page faults	CPU Time	Elapsed Time
Initialization	33	00:00:00.06	00:00:01.11
Command processing	103	00:00:00.50	00:00:02.81
Pass 1	67	00:00:00.35	00:00:01.49
Symbol table sort	0	00:00:00.00	00:00:00.00
Pass 2	38	00:00:00.32	00:00:01.62
Symbol table output	2	00:00:00.01	00:00:00.02
Psect synopsis output	1	00:00:00.02	00:00:00.06
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	246	00:00:01.28	00:00:07.17

The working set limit was 900 pages.
1255 bytes (3 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 4 non-local and 0 local symbols.
126 source lines were read in Pass 1, producing 13 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/LIS=LIS\$:LNKELAPST/OBJ=OBJ\$:LNKELAPST MSRC\$:LNKELAPST/UPDATE=(ENH\$:LNKELAPST)

0216 AH-BT13A-SE
VAX/VMS V4.0

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