

```

SSSSSSSSSSSS 00000000 RRRRRRRRRR TTTTTTTTTTTTTT 33333333 22222222
SSSSSSSSSSSS 00000000 RRRRRRRRRR TTTTTTTTTTTTTT 33333333 22222222
SSSSSSSSSSSS 00000000 RRRRRRRRRR TTTTTTTTTTTTTT 33333333 22222222
SSS          000      000  RRR          RRR  TTT          333  222          222
SSS          000      000  RRR          RRR  TTT          333  222          222
SSS          000      000  RRR          RRR  TTT          333  222          222
SSS          000      000  RRR          RRR  TTT          333  222          222
SSS          000      000  RRR          RRR  TTT          333  222          222
SSS          000      000  RRR          RRR  TTT          333  222          222
SSS          000      000  RRR          RRR  TTT          333  222          222
SSSSSSSSSS 000      000  RRRRRRRRRR TTT          333          222
SSSSSSSSSS 000      000  RRRRRRRRRR TTT          333          222
SSSSSSSSSS 000      000  RRRRRRRRRR TTT          333          222
SSS          000      000  RRR  RRR  TTT          333          222
SSS          000      000  RRR  RRR  TTT          333          222
SSS          000      000  RRR  RRR  TTT          333          222
SSS          000      000  RRR  RRR  TTT          333          222
SSS          000      000  RRR  RRR  TTT          333          222
SSS          000      000  RRR  RRR  TTT          333          222
SSS          000      000  RRR  RRR  TTT          333          222
SSSSSSSSSS 00000000 RRR          RRR  TTT          33333333 22222222222222
SSSSSSSSSS 00000000 RRR          RRR  TTT          33333333 22222222222222
SSSSSSSSSS 00000000 RRR          RRR  TTT          33333333 22222222222222

```

```

SSSSSSSS 000000 RRRRRRRR TTTTTTTTTT RRRRRRRR NN NN VV VV EEEEEEEEE EEEEEEEEE CCCCCCCC
SSSSSSSS 000000 RRRRRRRR TTTTTTTTTT RRRRRRRR NN NN VV VV EEEEEEEEE CCCCCCCC
SS 00 00 RR RR TT RR RR NN NN VV VV EEEEEEEEE CC CCCCCC
SS 00 00 RR RR TT RR RR NN NN VV VV EEEEEEEEE CC CCCCCC
SS 00 00 RR RR TT RR RR NN NN VV VV EEEEEEEEE CC CCCCCC
SSSSSS 00 00 RRRRRRRR TT RRRRRRRR NN NN VV VV EEEEEEEEE CC CCCCCC
SSSSSS 00 00 RRRRRRRR TT RRRRRRRR NN NN VV VV EEEEEEEEE CC CCCCCC
SS 00 00 RR RR TT RR RR NN NN VV VV EEEEEEEEE CC CCCCCC
SS 00 00 RR RR TT RR RR NN NN VV VV EEEEEEEEE CC CCCCCC
SS 00 00 RR RR TT RR RR NN NN VV VV EEEEEEEEE CC CCCCCC
SSSSSSSS 000000 RRR RR RR TT RR RR NN NN VV VV EEEEEEEEE CCCCCCCC
SSSSSSSS 000000 RRR RR RR TT RR RR NN NN VV VV EEEEEEEEE CCCCCCCC

```

```

LL 111111 SSSSSSSS
LL 111111 SSSSSSSS
LL 11 SS
LL 11 SS
LL 11 SS
LL 11 SS
LL 11 SSSSSS
LL 11 SSSSSS
LL 11 SS
LL 11 SS
LL 11 SS
LL 11 SS
LLLLLLLLLL 111111 SSSSSSSS
LLLLLLLLLL 111111 SSSSSSSS

```



| | |
|-----|----|
| (1) | 3 |
| (1) | 29 |
| (2) | 57 |

| |
|---------------------|
| Copyright Notice |
| Program description |
| Transfer Vector |

```
0000 1 .TITLE SORSTRN_VEC Transfer Vector for Sort/Merge
0000 2 .IDENT 'V04-000' ; File: SORTRNVEC.MAR Edit: PDG3042
0000 3 .SBTTL Copyright Notice
0000 4 :
0000 5 :*****
0000 6 :*
0000 7 :* COPYRIGHT (c) 1978, 1980, 1982, 1984 BY *
0000 8 :* DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS. *
0000 9 :* ALL RIGHTS RESERVED. *
0000 10 :*
0000 11 :* THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED *
0000 12 :* ONLY IN ACCORDANCE WITH THE TERMS OF SUCH LICENSE AND WITH THE *
0000 13 :* INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR ANY OTHER *
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0000 15 :* OTHER PERSON. NO TITLE TO AND OWNERSHIP OF THE SOFTWARE IS HEREBY *
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0000 17 :*
0000 18 :* THE INFORMATION IN THIS SOFTWARE IS SUBJECT TO CHANGE WITHOUT NOTICE *
0000 19 :* AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY DIGITAL EQUIPMENT *
0000 20 :* CORPORATION. *
0000 21 :*
0000 22 :* DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE OR RELIABILITY OF ITS *
0000 23 :* SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL. *
0000 24 :*
0000 25 :*
0000 26 :*****
0000 27 :
```

```
0000 29 .SBTTL Program description
0000 30 :++
0000 31 :
0000 32 : FACILITY:
0000 33 :
0000 34 : Transfer vector for VAX-11 Sort/Merge
0000 35 :
0000 36 : ABSTRACT:
0000 37 :
0000 38 : NONE
0000 39 :
0000 40 : ENVIRONMENT:
0000 41 :
0000 42 : Native mode, User mode, AST reentrant
0000 43 :
0000 44 : AUTHOR:
0000 45 :
0000 46 : Peter D Gilbert, May 1982
0000 47 :
0000 48 : MODIFIED BY:
0000 49 :
0000 50 : T03-015 Original
0000 51 : T03-016 Added the SOR$DO MERGE entry point. PDG 9-Dec-1982
0000 52 : T03-017 Don't bother padding to a full page. PDG 7-Jan-1983
0000 53 : T03-018 Changed the name of SOR$STAT. PDG 3-Mar-1983
0000 54 : V03-042 Change Ident. PDG 28-Apr-1983
0000 55 :--
```

```
0000 57 .SBTTL Transfer Vector
0000 58
0000 59 ; This macro expands into a transfer vector item for each entry point
0000 60 ;
0000 61 .MACRO TRNVEC A
0000 62 : .ALIGN QUAD
0000 63 .EXTERNAL A
0000 64 .TRANSFER A
0000 65 .MASK A
0000 66 JMP A+2
0000 67 .ENDM TRNVEC
0000 68
0000 69 .DSABL GBL ; Globals must be explicitly declared
0000 70
0000 71 .PSECT SOR$RO_CODE NOVEC,NOWRT,RD,EXE,SHR,LCL,REL,CON,PIC,LONG
0000 72
0000 73 SOR_TRANSFER:
0000 74 TRNVEC SOR$BEGIN_MERGE
0008 75 TRNVEC SOR$BEGIN_SORT
0010 76 TRNVEC SOR$END_SORT
0018 77 TRNVEC SOR$PASS_FILES
0020 78 TRNVEC SOR$RELEASE_REC
0028 79 TRNVEC SOR$RETURN_REC
0030 80 TRNVEC SOR$SORT_MERGE
0038 81 TRNVEC SOR$SPEC_FILE
0040 82 TRNVEC SOR$INIT_SORT
0048 83 TRNVEC SOR$INIT_MERGE
0050 84 TRNVEC SOR$STAT
0058 85 TRNVEC SOR$DO_MERGE
0060 86 : .BLKB 512-<.=SOR_TRANSFER> ; Pad to full page
0060 87
0060 88 .END
```

SOR\$TRN_VEC
Symbol Table

Transfer Vector for Sort/Merge

K 12

16-SEP-1984 01:18:27
5-SEP-1984 03:37:42

VAX/VMS Macro V04-00
[SORT32.SRC]SORTRNVEC.MAR;1

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(2)

| | | | |
|------------------|----------|---|----|
| SOR\$BEGIN_MERGE | ***** | X | 01 |
| SOR\$BEGIN_SORT | ***** | X | 01 |
| SOR\$DO_MERGE | ***** | X | 01 |
| SOR\$END_SORT | ***** | X | 01 |
| SOR\$INIT_MERGE | ***** | X | 01 |
| SOR\$INIT_SORT | ***** | X | 01 |
| SOR\$PASS_FILES | ***** | X | 01 |
| SOR\$RELEASE_REC | ***** | X | 01 |
| SOR\$RETURN_REC | ***** | X | 01 |
| SOR\$SORT_MERGE | ***** | X | 01 |
| SOR\$SPEC_FILE | ***** | X | 01 |
| SOR\$STAT | ***** | X | 01 |
| SOR_TRANSFER | 00000000 | R | 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 | |
| SOR\$RO_CODE | 00000060 (96.) | 01 (1.) | PIC USR | CON | REL | LCL | SHR | EXE | RD | NOWRT | NOVEC | LONG | |

! Performance indicators !

| Phase | Page faults | CPU Time | Elapsed Time |
|------------------------|-------------|-------------|--------------|
| Initialization | 32 | 00:00:00.03 | 00:00:00.98 |
| Command processing | 119 | 00:00:00.45 | 00:00:04.67 |
| Pass 1 | 77 | 00:00:00.45 | 00:00:02.92 |
| Symbol table sort | 0 | 00:00:00.00 | 00:00:00.00 |
| Pass 2 | 33 | 00:00:00.22 | 00:00:01.19 |
| Symbol table output | 2 | 00:00:00.01 | 00:00:00.01 |
| Psect synopsis output | 3 | 00:00:00.03 | 00:00:00.14 |
| Cross-reference output | 0 | 00:00:00.00 | 00:00:00.00 |
| Assembler run totals | 268 | 00:00:01.20 | 00:00:09.92 |

The working set limit was 900 pages.
1791 bytes (4 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 13 non-local and 0 local symbols.
88 source lines were read in Pass 1, producing 9 object records in Pass 2.
1 page of virtual memory was used to define 1 macro.

! 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.

SORSTRN VEC
VAX-11 Macro Run Statistics

Transfer Vector for Sort/Merge

L 12

16-SEP-1984 01:18:27 VAX/VMS Macro V04-00
5-SEP-1984 03:37:42 [SORT32.SRC]SORTRNVEC.MAR;1

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(2)

MACRO/DISABLE=TRACE/LIS=LIS\$:SORTRNVEC/OBJ=OBJ\$:SORTRNVEC MSRCS\$:SORTRNVEC/UPDATE=(ENH\$:SORTRNVEC)

| | | | | | | | | | | | |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Terminal 1 | Terminal 2 | Terminal 3 | Terminal 4 | Terminal 5 | Terminal 6 | Terminal 7 | Terminal 8 | Terminal 9 | Terminal 10 | Terminal 11 | Terminal 12 |
| Terminal 13 | Terminal 14 | Terminal 15 | Terminal 16 | Terminal 17 | Terminal 18 | Terminal 19 | Terminal 20 | Terminal 21 | Terminal 22 | Terminal 23 | Terminal 24 |
| Terminal 25 | Terminal 26 | Terminal 27 | Terminal 28 | Terminal 29 | Terminal 30 | Terminal 31 | Terminal 32 | Terminal 33 | Terminal 34 | Terminal 35 | Terminal 36 |
| Terminal 37 | Terminal 38 | Terminal 39 | Terminal 40 | Terminal 41 | Terminal 42 | Terminal 43 | Terminal 44 | Terminal 45 | Terminal 46 | Terminal 47 | Terminal 48 |
| Terminal 49 | Terminal 50 | Terminal 51 | Terminal 52 | Terminal 53 | Terminal 54 | Terminal 55 | Terminal 56 | Terminal 57 | Terminal 58 | Terminal 59 | Terminal 60 |
| Terminal 61 | Terminal 62 | Terminal 63 | Terminal 64 | Terminal 65 | Terminal 66 | Terminal 67 | Terminal 68 | Terminal 69 | Terminal 70 | Terminal 71 | Terminal 72 |
| Terminal 73 | Terminal 74 | Terminal 75 | Terminal 76 | Terminal 77 | Terminal 78 | Terminal 79 | Terminal 80 | Terminal 81 | Terminal 82 | Terminal 83 | Terminal 84 |
| Terminal 85 | Terminal 86 | Terminal 87 | Terminal 88 | Terminal 89 | Terminal 90 | Terminal 91 | Terminal 92 | Terminal 93 | Terminal 94 | Terminal 95 | Terminal 96 |
| Terminal 97 | Terminal 98 | Terminal 99 | Terminal 100 | Terminal 101 | Terminal 102 | Terminal 103 | Terminal 104 | Terminal 105 | Terminal 106 | Terminal 107 | Terminal 108 |
| Terminal 109 | Terminal 110 | Terminal 111 | Terminal 112 | Terminal 113 | Terminal 114 | Terminal 115 | Terminal 116 | Terminal 117 | Terminal 118 | Terminal 119 | Terminal 120 |
| Terminal 121 | Terminal 122 | Terminal 123 | Terminal 124 | Terminal 125 | Terminal 126 | Terminal 127 | Terminal 128 | Terminal 129 | Terminal 130 | Terminal 131 | Terminal 132 |