


```

FFFFFFFFF 000000 RRRRRRRR EEEEEEEEE NN NN DDDDDDDD FFFFFFFF IIIIII LL
FFFFFFFFF 000000 RRRRRRRR EEEEEEEEE NN NN DDDDDDDD FFFFFFFF IIIIII LL
FF 00 00 RR RR EE NN NN DD DD FF III III LL
FF 00 00 RR RR EE NN NN DD DD FF III III LL
FF 00 00 RR RR EE NN NN DD DD FF III III LL
FF 00 00 RR RR EE NN NN DD DD FF III III LL
FFFFFFFF 00 00 RRRRRRRR EEEEEEEEE NN NN DD DD FFFFFFFF III III LL
FFFFFFFF 00 00 RRRRRRRR EEEEEEEEE NN NN DD DD FFFFFFFF III III LL
FF 00 00 RR RR EE NN NN DD DD FF III III LL
FF 00 00 RR RR EE NN NN DD DD FF III III LL
FF 00 00 RR RR EE NN NN DD DD FF III III LL
FF 00 00 RR RR EE NN NN DD DD FF III III LL
FF 000000 RR RR EEEEEEEEE NN NN DDDDDDDD FFFFFFFF IIIIII LL
FF 000000 RR RR EEEEEEEEE NN NN DDDDDDDD FFFFFFFF IIIIII LL

```

```

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 IIIIII SSSSSSS
LLLLLLLLLL IIIIII SSSSSSS
LLLLLLLLLL IIIIII SSSSSSS

```

```

1 0001 0 MODULE FOR$ENDFILE ( ! FORTRAN ENDFILE statement
2 0002 0 IDENT = '1-006' ! File: FORENDFIL.B32 Edit: SBL1006
3 0003 0 ) =
4 0004 1 BEGIN
5 0005 1
6 0006 1
7 0007 1 *****
8 0008 1 *
9 0009 1 * COPYRIGHT (c) 1978, 1980, 1982, 1984 BY *
10 0010 1 * DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS. *
11 0011 1 * ALL RIGHTS RESERVED. *
12 0012 1 *
13 0013 1 * THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED *
14 0014 1 * ONLY IN ACCORDANCE WITH THE TERMS OF SUCH LICENSE AND WITH THE *
15 0015 1 * INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR ANY OTHER *
16 0016 1 * COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY *
17 0017 1 * OTHER PERSON. NO TITLE TO AND OWNERSHIP OF THE SOFTWARE IS HEREBY *
18 0018 1 * TRANSFERRED. *
19 0019 1 *
20 0020 1 * THE INFORMATION IN THIS SOFTWARE IS SUBJECT TO CHANGE WITHOUT NOTICE *
21 0021 1 * AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY DIGITAL EQUIPMENT *
22 0022 1 * CORPORATION. *
23 0023 1 *
24 0024 1 * DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE OR RELIABILITY OF ITS *
25 0025 1 * SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL. *
26 0026 1 *
27 0027 1 *
28 0028 1 *****
29 0029 1
30 0030 1
31 0031 1 ++
32 0032 1 FACILITY: FORTRAN Support Library
33 0033 1
34 0034 1 ABSTRACT:
35 0035 1
36 0036 1 Contains routine FOR$ENDFILE for support of FORTRAN endfile
37 0037 1 statement.
38 0038 1
39 0039 1 ENVIRONMENT: User Mode - AST re-entrant
40 0040 1
41 0041 1 AUTHOR: Jonathan M. Taylor, CREATION DATE: 24-Oct-1977
42 0042 1
43 0043 1 MODIFIED BY:
44 0044 1
45 0045 1 [Previous edit history deleted. SBL 15-July-1981]
46 0046 1 1-001 - Update version number and copyright notice. JBS 16-NOV-78
47 0047 1 1-002 - Change REQUIRE file names from FOR... to OTS... JBS 07-DEC-78
48 0048 1 1-003 - Change OTSOPN back to FOROPN, and change the prefix on LUN
49 0049 1 parameters from OPEN to LUB. JBS 13-DEC-78
50 0050 1 1-004 - Implement ERR= and iOSTAT=. SBL 1-May-1979
51 0051 1 1-005 - Correct module name. SBL 15-July-1981
52 0052 1 1-006 - Move ACTUALCOUNT declaration inside routine. Add SWITCHES
53 0053 1 declaration. SBL 16-Jun-1982
54 0054 1 --

```

PSE

FO

Pha

Ini

Com

Pas

Sym

Pas

Sym

Pse

Cro

Ass

The

287

The

126

3 p

Mac

\$2

\$2

TOT

63

The

MAC

```
56 0055 1 |
57 0056 1 | SWITCHES:
58 0057 1 |
59 0058 1 |
60 0059 1 | SWITCHES ADDRESSING_MODE (EXTERNAL = GENERAL, NONEXTERNAL = WORD_RELATIVE);
61 0060 1 |
62 0061 1 |
63 0062 1 | LINKAGES:
64 0063 1 |
65 0064 1 | REQUIRE 'RTLIN:OTSLNK';           ! define all linkages
66 0403 1 |
67 04 1 |
68 0495 1 | TABLE OF CONTENTS:
69 0496 1 |
70 0497 1 |
71 0498 1 | FORWARD ROUTINE
72 0499 1 |     FOR$ENDFILE;
73 0500 1 |
74 0501 1 |
75 0502 1 | INCLUDE FILES:
76 0503 1 |
77 0504 1 | REQUIRE 'RTLML:FCRERR';           ! FORTRAN error number definitions
78 0572 1 | REQUIRE 'RTLIN:OTSMAC';           ! Define macros
79 0766 1 | REQUIRE 'RTLIN:RTLPSECT';         ! Define DECLARE_PSECTS macro
80 0861 1 | LIBRARY 'RTLSTARLE';             ! STARLET library for symbols and macros
81 0862 1 | REQUIRE 'RTLIN:FOROPN';           ! FORTRAN OPEN parameters
82 1125 1 | REQUIRE 'RTLML:FORPAR';           ! inter-module constants
83 1148 1 | REQUIRE 'RTLML:OTSLUB';           ! LUB offset definitions
84 1288 1 | REQUIRE 'RTLML:OTSISB';           ! to get ISB length only
85 1456 1 |
86 1457 1 | MACROS:
87 1458 1 |     NONE
88 1459 1 |
89 1460 1 |
90 1461 1 | EQUATED SYMBOLS:
91 1462 1 |     NONE
92 1463 1 |
93 1464 1 |
94 1465 1 | PSECT DECLARATIONS:
95 1466 1 |
96 1467 1 |
97 1468 1 |     DECLARE_PSECTS (FOR);         ! declare PSECTs for FOR$ facility
98 1469 1 |
99 1470 1 |
100 1471 1 | OWN STORAGE:
101 1472 1 |     NONE
102 1473 1 |
103 1474 1 |
104 1475 1 | EXTERNAL REFERENCES:
105 1476 1 |
106 1477 1 |
107 1478 1 | EXTERNAL ROUTINE
108 1479 1 |     FOR$$IOSTAT_HND,              ! error handler
109 1480 1 |     FOR$$CB_PUSH: JSB_CB_PUSH NOVALUE, ! Get a LUB/ISB/RAB
110 1481 1 |     FOR$$CB_POP: JSB_CB_POP NOVALUE, ! Return the I/O system
111 1482 1 |     FOR$$SIGNAL_STO: NOVALUE,      ! convert error number and signal_stop
112 1483 1 |     FOR$$OPEN_DEFLT: CALL_CCB NOVALUE; ! default OPEN routine
```

```
114 1484 1 GLOBAL ROUTINE FORSENDFILE ( ! FORTRAN ENDFILE statement support
115 1485 1     UNIT
116 1486 1     ERR_EQL)
117 1487 1     =
118 1488 1     ++
119 1489 1     FUNCTIONAL DESCRIPTION:
120 1490 1
121 1491 1     Perform FORTRAN ENDFILE semantics. Check file and record type
122 1492 1     for legality of the ENDFILE.
123 1493 1     Open the file if not already open and set flag to finish defaults later.
124 1494 1     Write a one byte ^Z record.
125 1495 1
126 1496 1     FORMAL PARAMETERS:
127 1497 1
128 1498 1     UNIT.rl.v          logical unit number
129 1499 1     ERR_EQL.rl.v       If 0 or omitted, all errors are signalled.
130 1500 1                    If non-zero, errors unwind to caller.
131 1501 1
132 1502 1     IMPLICIT INPUTS:
133 1503 1
134 1504 1     LUBSV_NOTSEQORG    1 if ORGANIZATION is not 'SEQUENTIAL'
135 1505 1     LUBSV_DIRECT       1 if ACCESS = 'DIRECT' or define file done
136 1506 1     LUBSV_FIXED        1 if fixed length records specified in open
137 1507 1     LUBSV_UNFORMAT    1 if FORMAT = 'UNFORMATTED' or define
138 1508 1                    file done
139 1509 1     LUBSV_SEGMENTED   1 if SEGMENTED RECORDTYPE in OPEN statement
140 1510 1                    or defaulted that way
141 1511 1     LUBSV_OPENED      1 if file already open on this unit
142 1512 1
143 1513 1     IMPLICIT OUTPUTS:
144 1514 1
145 1515 1     LUBSL_LOG_RECNO   Incremented if ^Z record written
146 1516 1
147 1517 1     ROUTINE VALUE:
148 1518 1
149 1519 1     An IOSTAT value.
150 1520 1
151 1521 1     SIDE EFFECTS:
152 1522 1
153 1523 1     File is opened if closed previous to ENDFILE
154 1524 1     SIGNAL_STOPs error FOR$ ENDFILERR if ENDFILE ignored for this type file
155 1525 1     SIGNAL_STOPs FOR$ ENDFICERR if RMS $PUT error.
156 1526 1
157 1527 1     --
158 1528 1
159 1529 2     BEGIN
160 1530 2
161 1531 2     GLOBAL REGISTER
162 1532 2     CCB = 11: REF BLOCK[, BYTE];
163 1533 2
164 1534 2     LOCAL
165 1535 2     L_UNWIND_ACTION: VOLATILE,
166 1536 2     L_ERR_EQL PRES: VOLATILE,
167 1537 2     L_EOF_CHAR: BYTE;
168 1538 2
169 1539 2     BUILTIN
170 1540 2     ACTUALCOUNT;
```

```
171 1541 2
172 1542 2
173 1543 2
174 1544 2
175 1545 2
176 1546 2
177 1547 2
178 1548 2
179 1549 2
180 1550 2
181 1551 2
182 1552 2
183 1553 2
184 1554 2
185 1555 2
186 1556 2
187 1557 2
188 1558 2
189 1559 2
190 1560 2
191 1561 2
192 1562 2
193 1563 2
194 1564 2
195 1565 2
196 1566 2
197 1567 2
198 1568 2
199 1569 2
200 1570 2
201 1571 2
202 1572 2
203 1573 2
204 1574 2
205 1575 2
206 1576 2
207 1577 2
208 1578 2
209 1579 2
210 1580 2
211 1581 2
212 1582 2
213 1583 2
214 1584 2
215 1585 2
216 1586 2
217 1587 2
218 1588 2
219 1589 2
220 1590 2
221 1591 2
222 1592 2
223 1593 2
224 1594 2
225 1595 2
226 1596 2
227 1597 2

ENABLE
FOR$$IOSTAT_HND (L_UNWIND_ACTION, L_ERR_EQL_PRES);

!+
! Determine if ERR= is present.
!-

IF ACTUALCOUNT ( ) GTR 1
THEN
L_ERR_EQL_PRES = .ERR_EQL
ELSE
L_ERR_EQL_PRES = 0;

!+
! Action on error is not to pop a LUB.
!-

L_UNWIND_ACTION = FOR$K_UNWINDNOP;

!+
! Allocate a LUB/ISB/RAB for this logical unit.
! ON return, CCB points to the current control block.
!-

FOR$$CB_PUSH (.UNIT, LUB$K_LUN_MIN);

!+
! Unwind action is now to pop the LUB.
!-

L_UNWIND_ACTION = FOR$K_UNWINDPOP;

!+
! Check various file attributes. File must be:
! Sequential organization
! Sequential access
! Variable length records
! Must have segmented records if unformatted
!-

IF .CCB[LUB$V_NOTSEQORG] OR
.CCB[LUB$V_DIRECT] OR
.CCB[LUB$V_FIXED] OR
(.CCB[LUB$V_UNFORMAT] AND .CCB[LUB$V_SEGMENTED] EQL 0)
THEN
FOR$$SIGNAL_STO (FOR$K_ENDFILERR)
ELSE
BEGIN

!+
! If the file is not open, default open it.
! But do not specify whether formatted or unformatted.
! That will depend on the next I/O statement executed
! so just set LUB$V_ENDFILOPN to be tested on every I/O statement.
! When set, it will be cleared and the remaining defaults will be specified.
```

```

: 228 1598 3
: 229 1599 3
: 230 1600 3
: 231 1601 3
: 232 1602 4
: 233 1603 4
: 234 1604 4
: 235 1605 4
: 236 1606 4
: 237 1607 3
: 238 1608 3
: 239 1609 3
: 240 1610 3
: 241 1611 3
: 242 1612 3
: 243 1613 3
: 244 1614 3
: 245 1615 3
: 246 1616 3
: 247 1617 4
: 248 1618 3
: 249 1619 3
: 250 1620 3
: 251 1621 3
: 252 1622 3
: 253 1623 3
: 254 1624 3
: 255 1625 3
: 256 1626 3
: 257 1627 2
: 258 1628 2
: 259 1629 2
: 260 1630 2
: 261 1631 2
: 262 1632 2
: 263 1633 2
: 264 1634 2
: 265 1635 2
: 266 1636 1

```

```

!-
IF .CCB[LUB$V_OPENED] EQL 0
THEN
  BEGIN
    FOR$$OPEN_DEFLT (OPENS$K_ACC_SEQ,
                     OPENS$K_TYP_NEW,
                     OPENS$K_FOR_UN$);
    CCB[LUB$V_ENDFILEOPN] = T;
  END;

!+
!- Manually write a one byte control Z record to the file.
!-
L_EOF_CHAR = FOR$K_CONTROL_Z;
CCB[RAB$L_RBF] = L_EOF_CHAR;
CCB[RAB$W_RSZ] = 1;

IF NOT $PUT (RAB = .CCB)
THEN
  FOR$$SIGNAL_STO (FOR$K_ENDFILEERR);

!+
!- Increment the logical record number for backspace.
!-
CCB[LUB$L_LOG_RECNO] = .CCB[LUB$L_LOG_RECNO] + 1;

END;

!+
!- Return the I/O system to its former state.
!-
FOR$$CB_POP ();

RETURN 0;          ! Success IOSTAT value
END;

```

```

.TITLE FOR$ENDFILE
.IDENT \1-006\

.EXTRN FOR$$IOSTAT_HND
.EXTRN FOR$$CB_PUSH, FOR$$CB_POP
.EXTRN FOR$$SIGNAL_STO
.EXTRN FOR$$OPEN_DEFLT
.EXTRN SY$SPUT

.PSECT _FOR$CODE, NOWRT, SHR, PIC, 2

.ENTRY FOR$ENDFILE, Save R2, R3, R11
MOVAB FOR$$SIGNAL_STO, R3
SUBL2 #12, SP
CLRQ L_ERR EQL PRES
MOVAL 8$, (FP)

```

```

080C 0000
53 0000000G 00 9E 00002
5E          0C C2 00009
          04 AE 7C 0000C
6D 0081 CF DE 0000F

```

```

: 1484
:
: 1529
:

```

| | | | | | | | | | | |
|----|-----------|----|-----------|------|-------|-------|------|--------|-------------------------|------|
| | | 01 | | 6C | 91 | 00014 | | CMPB | (AP), #1 | 1549 |
| | | | | 07 | 1B | 00017 | | BLEQU | 1\$ | |
| | U4 | AE | 08 | AC | D0 | 00019 | | MOVL | ERR_EQL, L_ERR_EQL_PRES | 1551 |
| | | | | 03 | 11 | 0001E | | BRB | 2\$ | |
| | | | 04 | AE | D4 | 00020 | 1\$: | CLRL | L_ERR_EQL_PRES | 1553 |
| | 08 | AE | | 01 | D0 | 00023 | 2\$: | MOVL | #T, L_UNWIND_ACTION | 1559 |
| | | | | 50 | D4 | 00027 | | CLRL | R0 | 1566 |
| | | 52 | 04 | AC | D0 | 00029 | | MOVL | UNIT, R2 | |
| | | | 00000000G | 00 | 16 | 0002D | | JSB | FOR\$\$CB_PUSH | |
| | | | | 08 | AE | 00033 | | CLRL | L_UNWIND_ACTION | 1572 |
| 14 | A1 | AB | | 03 | E0 | 00036 | | BBS | #3, -95(CCB), 3\$ | 1582 |
| OF | FC | AB | | 04 | E0 | 00038 | | BBS | #4, -4(CCB), 3\$ | 1583 |
| OA | FD | AB | | 02 | E0 | 00040 | | BBS | #2, -3(CCB), 3\$ | 1584 |
| OC | FD | AB | | 01 | E1 | 00045 | | BBC | #1, -3(CCB), 4\$ | 1585 |
| 07 | FD | AB | | 03 | E0 | 0004A | | BBS | #3, -3(CCB), 4\$ | |
| | | | | 21 | DD | 0004F | 3\$: | PUSHL | #3\$ | 1587 |
| | | 63 | | 01 | FB | 00051 | | CALLS | #1, FOR\$\$SIGNAL_STO | |
| | | | | 35 | 11 | 00054 | | BRB | 7\$ | |
| | | 12 | FC | AB | E8 | 00056 | 4\$: | BLBS | -4(CCB), 5\$ | 1600 |
| | | 7E | | 01 | CE | 0005A | | MNEGL | #1, -(SP) | 1603 |
| | | | | 02 | DD | 0005D | | PUSHL | #2 | |
| | | | | 02 | DD | 0005F | | PUSHL | #2 | |
| | 00000000G | 00 | | 03 | FB | 00061 | | CALLS | #3, FOR\$\$OPEN_DEFLT | |
| | | FE | | 02 | 88 | 00068 | | BISB2 | #2, -2(CCB) | 1606 |
| | | 6E | | 1A | 90 | 0006C | 5\$: | MOVB | #26, L_EOF_CHAR | 1613 |
| | | 28 | | 6E | 9E | 0006F | | MOVAB | L_EOF_CHAR, 40(CCB) | 1614 |
| | | 22 | | 01 | B0 | 00073 | | MOVW | #T, 34(CCB) | 1615 |
| | | | | 5B | DD | 00077 | | PUSHL | CCB | 1617 |
| | 00000000G | 00 | | 01 | FB | 00079 | | CALLS | #1, SYS\$PUT | |
| | | 05 | | 50 | E8 | 00080 | | BLBS | R0, 6\$ | |
| | | | | 21 | DD | 00083 | | PUSHL | #3\$ | 1619 |
| | | 63 | | 01 | FB | 00085 | | CALLS | #1, FOR\$\$SIGNAL_STO | |
| | | | E0 | AB | D6 | 00088 | 6\$: | INCL | -32(CCB) | 1625 |
| | | | 00000000G | 00 | 16 | 00088 | 7\$: | JSB | FOR\$\$CB_POP | 1633 |
| | | | | 50 | D4 | 00091 | | CLRL | R0 | 1635 |
| | | | | | 04 | 00093 | | RET | | 1636 |
| | | | | 0000 | 00094 | | 8\$: | .WORD | Save nothing | 1529 |
| | | 50 | 08 | AC | D0 | 00096 | | MOVL | 8(AP), R0 | |
| | | 50 | 04 | A0 | D0 | 0009A | | MOVL | 4(R0), R0 | |
| | | | F8 | A0 | 9F | 0009E | | PUSHAB | L_ERR_EQL_PRES | |
| | | | FC | A0 | 9F | 000A1 | | PUSHAB | L_UNWIND_ACTION | |
| | | | | 02 | DD | 000A4 | | PUSHL | #2 | |
| | | | | 5E | DD | 000A6 | | PUSHL | SP | |
| | | 7E | 04 | AC | 7D | 000A8 | | MOVQ | 4(AP), -(SP) | |
| | 00000000G | 00 | | 03 | FB | 000AC | | CALLS | #3, FOR\$\$IOSTAT_HND | |
| | | | | 04 | 000B3 | | | RET | | |

; Routine Size: 180 bytes, Routine Base: _FOR\$CODE + 0000

: 267 1637 1
: 268 1638 1 END
: 269 1639 0 ELUDOM

PSECT SUMMARY

| Name | Bytes | Attributes |
|------------|-------|---|
| _FOR\$CODE | 180 | NOVEC,NOWRT, RD , EXE, SHR, LCL, REL, CON, PIC,ALIGN(2) |

Library Statistics

| File | Symbols | | Pages Mapped | Processing Time |
|-------------------------------------|---------|----------------|--------------|-----------------|
| | Total | Loaded Percent | | |
| _\$255\$DUA28:[SYSLIB]STARLET.L32;1 | 9776 | 7 0 | 581 | 00:01.1 |

COMMAND QUALIFIERS

BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/NOTRACE/LIS=LIS\$:FORENDFIL/OBJ=OBJ\$:FORENDFIL MSRC\$:FORENDFIL/UPDATE=(ENHS:FORENDFIL)

: Size: 180 code + 0 data bytes
: Run Time: 00:12.9
: Elapsed Time: 00:47.2
: Lines/CPU Min: 7652
: Lexemes/CPU-Min: 39646
: Memory Used: 168 pages
: Compilation Complete

