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DDDDDDDD      EEEEEEEEEE      AAAAAA      CCCCCCCC      CCCCCCCC      SSSSSSSS
DDDDDDDD      EEEEEEEEEE      AAAAAA      CCCCCCCC      CCCCCCCC      SSSSSSSS
DD      DD      EE      AA      AA      CC      CC      SS
DD      DD      EE      AA      AA      CC      CC      SS
DD      DD      EE      AA      AA      CC      CC      SS
DD      DD      EE      AA      AA      CC      CC      SS
DD      DD      EEEEEEEE      AA      AA      CC      CC      SSSSSS
DD      DD      EEEEEEEE      AA      AA      CC      CC      SSSSSS
DD      DD      EE      AAAAAAAAAA      CC      CC      SS
DD      DD      EE      AAAAAAAAAA      CC      CC      SS
DD      DD      EE      AA      AA      CC      CC      SS
DD      DD      EE      AA      AA      CC      CC      SS
DDDDDDDD      EEEEEEEEEE      AA      AA      CCCCCCCC      SSSSSSSS
DDDDDDDD      EEEEEEEEEE      AA      AA      CCCCCCCC      SSSSSSSS

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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
LL      II      SS
LLLLLLLLLL      IIIIII      SSSSSSSS
LLLLLLLLLL      IIIIII      SSSSSSSS

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:001 CDS0009
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:001 CDS0009
:002 CDS0009
:003 CDS0009
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```

0001 0 MODULE DEACCS (
0002 0
0003 0     LANGUAGE (BLISS32),
0004 0     IDENT = 'V04-001'
0005 1 BEGIN
0006 1
0007 1
0008 1
0009 1
0010 1 *
0011 1 *  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY
0012 1 *  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.
0013 1 *
0014 1 *  ALL RIGHTS RESERVED.
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0025 1 *  CORPORATION.
0026 1 *
0027 1 *  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE OR RELIABILITY OF ITS
0028 1 *  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.
0029 1 *
0030 1 *****
0031 1 ++
0032 1
0033 1 FACILITY: F11ACP Structure Level 2
0034 1
0035 1 ABSTRACT:
0036 1
0037 1     This routine implements the DEACCESS function.
0038 1
0039 1 ENVIRONMENT:
0040 1
0041 1     STARLET operating system, including privileged system services
0042 1     and internal exec routines.
0043 1
0044 1 --
0045 1
0046 1
0047 1 AUTHOR: Andrew C. Goldstein, CREATION DATE: 6-Jan-1977 23:29
0048 1
0049 1 MODIFIED BY:
0050 1
0051 1     V04-001 CDS0009     Christian D. Saether     9-Nov-1984
0052 1     Mark FCB stale when deferring truncation.
0053 1
0054 1     V03-012 CDS0008     Christian D. Saether     21-Aug-1984
0055 1     Changes to handle stale fcbs.
0056 1
0057 1     V03-011 CDS0007     Christian D. Saether     19-Apr-1984

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55      0058 1
56      0059 1
57      0060 1
58      0061 1
59      0062 1
60      0063 1
61      0064 1
62      0065 1
63      0066 1
64      0067 1
65      0068 1
66      0069 1
67      0070 1
68      0071 1
69      0072 1
70      0073 1
71      0074 1
72      0075 1
73      0076 1
74      0077 1
75      0078 1
76      0079 1
77      0080 1
78      0081 1
79      0082 1
80      0083 1
81      0084 1
82      0085 1
83      0086 1
84      0087 1
85      0088 1
86      0089 1
87      0090 1
88      0091 1
89      0092 1
90      0093 1
91      0094 1
92      0095 1
93      0096 1
94      0097 1
95      0098 1
96      0099 1
97      0100 1
98      0101 1
99      0102 1
100     0103 1
101     0104 1
102     0105 1
103     0106 1
104     0107 1
105     0108 1
106     0109 1
107     0110 1
108     0111 1
109     1102 1
110     1103 1
111     1104 1

```

Many changes to reflect modified access lock handling.

V03-010 CDS0006 Christian D. Saether 29-Dec-1983
Use L_NORM linkage and BIND_COMMON macro.

V03-009 CDS0005 Christian D. Saether 23-Sep-1983
Manually merge in ACG0343, ACG59616, STJ3109.

V03-008 ACG0343 Andrew C. Goldstein, 19-Jul-1983 16:46
Inhibit revision date count if NORECORD is specified

V03-007 ACG59616 Andrew C. Goldstein, 21-Jun-1983 15:53
Create common subroutine for revision and expiration dates

V03-006 STJ3109 Steven T. Jeffreys, 06-Jun-1983
Copy FHWM from FCB to file header.

V03-005 CDS0004 Christian D. Saether 14-Sep-1983
Modify SERIAL_FILE interface.

V03-004 LMP0149 L. Mark Pilant, 13-Sep-1983 11:26
Correct a logic problem that caused problems during the
protection check of a write attribute operation.

V03-003 CDS0003 Christian D. Saether 4-May-1983
Synchronize processing by FID using SERIAL_FILE.

V03-002 CDS0002 Christian D. Saether 21-Apr-1983
Modify truncate access arbitration checks to permit
cluster operation. Possibly defer truncation or
perform a deferred truncate operation.

V03-001 CDS0001 Christian D. Saether 7-Apr-1983
Make mark-for-delete checks work in a cluster.

V02-006 ACG0258 Andrew C. Goldstein, 26-Jan-1982 16:56
Fix reference to RVN 1 in expiration date processing

V02-005 ACG0230 Andrew C. Goldstein, 23-Dec-1981 23:46
Add expiration date support

V02-004 ACG0247 Andrew C. Goldstein, 23-Dec-1981 20:49
Update revision count only if written

V02-003 ACG0245 Andrew C. Goldstein, 23-Dec-1981 20:48
Move queueing of spool file to cleanup

V02-002 ACG0167 Andrew C. Goldstein, 16-Apr-1980 19:25
Previous revision history moved to [F11B.SRC]F11B.REV

..

LIBRARY 'SYSSLIBRARY:LIB.L32';
REQUIRE 'SRCS:FCPDEF.B32';

FORWARD ROUTINE
SET_REVISION : L_NORM NOVALUE, ! set revision and expiration date

DEACCS
V04-001

: 112

1105 1

TRUNC_HANDLER;

N 8
8-Jan-1985 17:47:09 VAX-11 Bliss-32 V4.0-742
2-Oct-1984 12:43:27 [F11X.BUGSRC]DEACCS.B32;1

! handler for delayed truncate

Page 3
(1)

DEA
V04

```

: 114      1106 1 GLOBAL ROUTINE DEACCESS : L_NORM =
: 115      1107 1
: 116      1108 1 !++
: 117      1109 1
: 118      1110 1 FUNCTIONAL DESCRIPTION:
: 119      1111 1
: 120      1112 1     This routine implements the DEACCESS function.
: 121      1113 1     If an attribute list is present, attributes are written.
: 122      1114 1
: 123      1115 1 CALLING SEQUENCE:
: 124      1116 1     DEACCESS ()
: 125      1117 1
: 126      1118 1 INPUT PARAMETERS:
: 127      1119 1     NONE
: 128      1120 1
: 129      1121 1 IMPLICIT INPUTS:
: 130      1122 1     IO_PACKET: I/O packet in process
: 131      1123 1     CURRENT_WINDOW: window of file
: 132      1124 1     PRIMARY_FCB: FCB of file
: 133      1125 1
: 134      1126 1 OUTPUT PARAMETERS:
: 135      1127 1     NONE
: 136      1128 1
: 137      1129 1 IMPLICIT OUTPUTS:
: 138      1130 1     NONE
: 139      1131 1
: 140      1132 1 ROUTINE VALUE:
: 141      1133 1     NONE
: 142      1134 1
: 143      1135 1 SIDE EFFECTS:
: 144      1136 1     file deaccessed
: 145      1137 1     FCB may be deleted
: 146      1138 1     header may be modified
: 147      1139 1
: 148      1140 1 --
: 149      1141 1
: 150      1142 2 BEGIN
: 151      1143 2
: 152      1144 2 LABEL
: 153      1145 2     DELAY_TRUNC:                ! truncation delay block
: 154      1146 2
: 155      1147 2 LOCAL
: 156      1148 2     DO_EXPIRE,                ! flag indicating expiration to be updated
: 157      1149 2     MODIFIED,                ! flag indicating file has been modified
: 158      1150 2     K,                    ! local copy of truncate lock count
: 159      1151 2     ABD                    : REF BBLOCKVECTOR [ABD$C_LENGTH],
: 160      1152 2     FIB                    : REF BBLOCK,      ! FIB
: 161      1153 2     FCB                    : REF BBLOCK,      ! pointer to FCB
: 162      1154 2     HEADER                 : REF BBLOCK;     ! file header
: 163      1155 2
: 164      1156 2 BIND_COMMON;
: 165      1157 2
: 166      1158 2 EXTERNAL ROUTINE
: 001 !CDS0009 1159 2     MAKE_FCB_STALE : L_NORM NOVALUE, ! mark FCB as stale
: 167      1160 2     REBLD_PRIM_FCB : L_NORM NOVALUE, ! rebuild primary fcb from header
: 168      1161 2     BUILD_EXT_FCBS : L_NORM NOVALUE, ! build extension fcb chain
: 169      1162 2     CONV_ACCLOCK : L_NORM,      ! convert access lock.

```

```

: 170      1163      2          LOCK_COUNT      : L_NORM,      ! get count of granted locks.
: 171      1164      2          SERIAL_FILE   : L_NORM,      ! interlock file processing
: 172      1165      2          TRUNC_CHECKS   : L_JSB_2ARGS NOVALUE, ! parameter checks
: 173      1166      2          GET_FIB       : L_NORM,      ! get FIB of request
: 174      1167      2          READ_HEADER   : L_NORM,      ! read file header
: 175      1168      2          MARK_DIRTY    : L_NORM,      ! mark buffer for write-back
: 176      1169      2          WRITE_ATTRIB   : L_NORM,      ! write attributes routine
: 177      1170      2          TRUNCATE      : L_NORM,      ! truncate file
: 178      1171      2          UPDATE_FCB    : L_NORM,      ! update contents of FCB
: 179      1172      2          CHECKSUM      : L_NORM;      ! compute file header checksum
: 180      1173
: 181      1174      2          ! Set the cleanup flags to cause the deaccess to occur.
: 182      1175      2          ! Find the buffer descriptor and FIB.
: 183      1176
: 184      1177
: 185      1178      2          CLEANUP_FLAGS[CLF_ZCHANNEL] = 1;
: 186      1179      2          CLEANUP_FLAGS[CLF_DEACCESS] = 1;
: 187      1180      2          CLEANUP_FLAGS[CLF_DELWINDOW] = 1;
: 188      1181
: 189      1182      2          ! pointer to buffer descriptors
: 190      1183      2          ABD = .BBLOCK [.IO PACKET[IRPSL_SVAPTE], AIBSL_DESCRIPTOR];
: 191      1184      2          FIB = GET_FIB (.ABD);
: 192      1185      2          FCB = .PRIMARY_FCB;
: 193      1186
: 194      1187      2          ! Synchronize further file processing.
: 195      1188
: 196      1189
: 197      1190      2          PRIM_LCKINDX = SERIAL_FILE (FCB [FCBSW_FID]);
: 198      1191
: 199      1192      2          ! Make sure irrelevant parameters are not present.
: 200      1193
: 201      1194
: 202      1195      2          IF .FIB[FIBSV_EXTEND]
: 203      1196      2          THEN ERR_STATUS (SS$_BADPARAM);
: 204      1197
: 205      1198      2          ! If the access lock is held in NL mode, and this file is cluster
: 206      1199      2          ! accessible, then set the stale flag to force rebuild of the fcbs
: 207      1200      2          ! from the header(s).
: 208      1201
: 209      1202
: 210      1203      2          IF .FCB [FCBSB_ACCLKMODE] EQL LCK$K_NLMODE
: 211      1204      2          AND .FCB [FCBSL_ACCLKID] NEQ 0
: 212      1205      2          THEN
: 213      1206      2          FCB [FCBSV_STALE] = 1;
: 214      1207
: 215      1208      2          ! Determine if the expiration date is to be updated, and if the file has
: 216      1209      2          ! actually been modified.
: 217      1210
: 218      1211
: 219      1212      2          DO_EXPIRE = .CURRENT_WINDOW[WCB$V_EXPIRE]
: 220      1213      2          AND NOT .FIB[FIBSV_NORECORD]
: 221      1214      2          AND (.CURRENT_WINDOW[WCB$S_WRITES] NEQ 0
: 222      1215      2          OR .CURRENT_WINDOW[WCB$S_READS] NEQ 0
: 223      1216      2          OR .FCB[FCBSL_EFBLK] EQL 0);
: 224      1217      2          MODIFIED = .CURRENT_WINDOW[WCB$V_WRITE]
: 225      1218      2          AND NOT .FIB[FIBSV_NORECORD]
: 226      1219      2          AND (.CURRENT_WINDOW[WCB$S_WRITES] NEQ 0

```

```
227 1220 3 OR .IO_PACKET[IRPSW_BCNT] GTRU ABDSC_ATTRIB
228 1221 3 OR .FIB[FIBSV_TRUNC]);
229 1222 3
230 1223 3 ! If the file is accessed for write, if we must update the expiration
231 1224 3 ! date, or if the file is marked for delete or is marked bad and this
232 1225 3 ! is the last access, read the header.
233 1226 3
234 1227 3
235 1228 3 IF .CURRENT_WINDOW[WCBSV_WRITE]
236 1229 3 OR .DO_EXPIRE
237 1230 3 OR ((.FCB[FCBSV_MARKDEL]
238 1231 3 OR .FCB[FCBSV_DELAYTRNC]
239 1232 3 OR .FCB[FCBSV_STALE]
240 1233 3 OR .FCB[FCBSV_BADBLK]
241 1234 3 OR .CLEANUP_FLAGS[CLF_SPOOLFILE])
242 1235 3 AND .FCB[FCBSV_REFCNT] EQ 1)
243 1236 3 THEN
244 1237 3 BEGIN
245 1238 3 HEADER = READ_HEADER (0, .FCB);
246 1239 3
247 1240 3 IF .FCB[FCBSV_STALE]
248 1241 3 THEN
249 1242 3 BEGIN
250 1243 3 REBLD_PRIM_FCB (.FCB, .HEADER);
251 1244 3 BUILD_EXT_FCBS (.HEADER);
252 1245 3 END;
253 1246 3 END;
254 1247 3
255 1248 3 ! If this the last deaccess from a file marked for delete, delete the file.
256 1249 3 ! If the file is a spool file, send it to the job controller.
257 1250 3
258 1251 3
259 1252 3 IF .FCB[FCBSV_REFCNT] EQL 1
260 1253 3 THEN
261 1254 3 BEGIN
262 1255 3 IF .FCB[FCBSV_MARKDEL]
263 1256 3 THEN
264 1257 3
265 1258 3 ! Make sure we are the only accessor left in the entire cluster.
266 1259 3
267 1260 3
268 1261 3 IF LOCK_COUNT (.FCB[FCBSV_ACCLKID]) EQL 1
269 1262 3 THEN
270 1263 3 CLEANUP_FLAGS [CLF_DELFIL] = 1;
271 1264 3
272 1265 3 IF .CLEANUP_FLAGS[CLF_SPOOLFILE]
273 1266 3 THEN CLEANUP_FLAGS[CLF_DOSPOOL] = 1;
274 1267 3
275 1268 3 ! If the FCB is marked bad, now set the bad block bit in the file header.
276 1269 3
277 1270 3
278 1271 3 IF .FCB[FCBSV_BADBLK]
279 1272 3 THEN
280 1273 3 BEGIN
281 1274 3 HEADER[FH2SV_BADBLOCK] = 1;
282 1275 3 MARK_DIRTY (.HEADER);
283 1276 3 END;
```

```
284      1277      END;
285      1278
286      1279      ! Update revision count, date, and expiration date as appropriate.
287      1280      !
288      1281
289      1282      IF .MODIFIED
290      1283      OR .DO_EXPIRE
291      1284      THEN SET_REVISION (.HEADER, .MODIFIED);
292      1285
293      1286      ! Do deaccess processing for a write accessed file. If a deaccess lock
294      1287      was requested on the file, set the lock bit. Then process the write
295      1288      attributes, if any. If attributes were written, then clear the
296      1289      lock bit.
297      1290      !
298      1291
299      1292      IF .CURRENT_WINDOW[WCBSV_WRITE]
300      1293      THEN
301      1294      BEGIN
302      1295      MARK_DIRTY (.HEADER);
303      1296
304      1297      ! Update the FHWM in the file header.
305      1298
306      1299      o If the FHWM is not supported in this header, do nothing.
307      1300
308      1301      o If the volume FHWM attribute is disabled, then set the FHWM
309      1302      to the file size + 1. This will protect the contents of the
310      1303      file should it be opened and modified some time in the future
311      1304      when the volume's FHWM attribute is enabled.
312      1305
313      1306      o If the FCB FHWM is 0, and the file header supports FHWM, then
314      1307      set the header's FHWM to the file size + 1. This will likewise
315      1308      protect the file contents.
316      1309
317      1310      o If the FCB FHWM is nonzero, and the file header supports FHWM, and
318      1311      the volume FHWM attribute is enabled, simply copy the FCB FHWM to
319      1312      the file header.
320      1313
321      1314      For FHWM to be supported, the 'highwater' field in the
322      1315      header must be present. All files created on version 4
323      1316      or later systems will have this characteristic.
324      1317
325      1318
326      1319      IF .HEADER[FH2$B_IDOFFSET] GEQU ($BYTEOFFSET(FH2$L_HIGHWATER)+4)/2
327      1320      THEN
328      1321      IF .CURRENT_VCB[VCBSV_NOHIGHWATER]
329      1322      OR .FCB[FCB$L_HIGHWATER] EQL 0
330      1323      THEN
331      1324      HEADER[FH2$L_HIGHWATER] = .FCB[FCB$L_FILESIZE] + 1
332      1325      ELSE
333      1326      HEADER[FH2$L_HIGHWATER] = .FCB[FCB$L_HIGHWATER];
334      1327
335      1328
336      1329      IF .CURRENT_WINDOW[WCBSV_DLOCK]
337      1330      THEN HEADER[FH2$V_LOCKED] = 1;
338      1331
339      1332      IF .IO_PACKET[IRPSW_BCNT] GTR ABDSC_ATTRIB
340      1333      AND .USER_STATUS[0]
```

```

341 1334 3 THEN
342 1335 4 BEGIN
343 1336 4 WRITE ATTRIB (.HEADER, .ABD, 0);
344 1337 4 HEADER = .FILE_HEADER;
345 1338 4 HEADER[FH2$V_LOCKED] = 0;
346 1339 4 END;
347 1340 5
348 1341 5 ! If a truncate is requested, do it, if the file was write accessed and
349 1342 5 ! there are not other accessors now, else delay the truncation until
350 1343 5 ! the last reader deaccess.
351 1344 5
352 1345 5
353 1346 5 IF .FIB[FIB$V_TRUNC]
354 1347 5 AND NOT .FCB [FCB$V_MARKDEL]
355 1348 5 THEN
356 1349 5 BEGIN
357 1350 5 IF .CURRENT_VCB[VCB$V_NOALLOC]
358 1351 5 THEN ERR_EXIT (SS$WRITLCK);
359 1352 5
360 1353 5 IF .FCB [FCB$W_REFCNT] EQL 1
361 1354 5 AND LOCK_COUNT (.FCB [FCB$L_ACCLKID]) EQL 1
362 1355 5 THEN
363 1356 5 BEGIN
364 1357 5
365 1358 5 CHECKSUM (.HEADER);
366 1359 5 TRUNCATE (.FIB, .HEADER, .FIB [FIB$L_EXVBN]);
367 1360 5 CLEANUP_FLAGS[CLF_FIXFCB] = 0;
368 1361 5 UPDATE_FCB (.FILE_HEADER);
369 1362 5 END
370 1363 5 ELSE
371 1364 5 IF .FCB [FCB$W_WCNT] EQL 1 ! 1 is just us.
372 1365 5 AND (.FCB [FCB$V_EXCL] ! must be a NOLOCK somewhere
373 1366 5 OR .FCB [FCB$W_LCNT] NEQ 0 ! must be us
374 1367 5 OR CONV_ACCLOCK (LCK$K_PWMODE, .FCB))
375 1368 5 ! lock will be converted back
376 1369 5 ! in MAKE_DEACCESS
377 1370 5
378 1371 5 ! There are other readers, but no writers, accessing the file, so we will make
379 1372 5 ! checks to see if the truncation arguments make sense, and if so,
380 1373 5 ! store appropriate context in the FCB so that the last reader to deaccess
381 1374 5 ! the file will perform the truncation.
382 1375 5
383 1376 5
384 1377 5 THEN
385 1378 5 BEGIN
386 1379 5 LOCAL
387 1380 5 TRNVBN;
388 1381 5
389 1382 5 TRNVBN = .FIB [FIB$L_EXVBN];
390 1383 5 TRUNC_CHECKS (.FIB, .HEADER);
391 1384 5
392 1385 5 ! lock will be converted when new lock mode is calculated and lock
393 1386 5 ! converted in MAKE_DEACCESS. Even if it was not converted up to
394 1387 5 ! PW above (i.e., was already held in either), it will have to be
395 1388 5 ! lowered because this thread means the last writer on this node is
396 1389 5 ! going away.
397 1390 5

```

```

: 398 1391
: 399 1392
: 400 1393
: 401 1394
:001 CDS0009 1395
:002 CDS0009 1396
:003 CDS0009 1397
:004 CDS0009 1398
:005 CDS0009 1399
:006 CDS0009 1400
402 1401
403 1402
404 1403
405 1404
406 1405
407 1406
408 1407
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FCB [FCBSV_DELAYTRNC] = 1;
FCB [FCBSL_TRUNCVCBN] = .TRNVCBN;
FIB [FIBSL_EXVCBN] = .FCB [FCBSL_FILESIZE] + 1;

! Mark FCB as stale so that other nodes will pick up the fact that
! a deferred truncation remains to be done when the last access goes away.

MAKE_FCB_STALE (.FCB);
END
ELSE
ERR_EXIT (SSS_ACCONFLICT);

END; ! of wanted to do a truncation
END ! of was write accessed.

ELSE
DELAY_TRUNC:
BEGIN ! not write accessd

BUILTIN FP;

LOCAL SAVE_US1;

IF NOT .FCB [FCBSV_DELAYTRNC]
THEN LEAVE DELAY_TRUNC;

IF .FCB [FCBSV_REFCNT] NEQ 1
OR .FCB [FCBSV_MARKDEL]
OR .FCB [FCBSL_TRUNCVCBN] EQL 0
OR LOCK COUNT (.FCB [FCBSL_ACCLKID]) NEQ 1
THEN LEAVE DELAY_TRUNC;

SAVE_US1 = .USER_STATUS [1];
CHECKSUM (.HEADER);

.FP = TRUNC_HANDLER;
TRUNCATE (SECOND_FIB, .HEADER, .FCB [FCBSL_TRUNCVCBN]);
.FP = 0;

USER_STATUS [1] = .SAVE_US1;

END;

! Return failure to let the error cleanup do the actual deaccessing.
!
RETURN 0;

END; ! end of routine DEACCESS

```

```

.TITLE DEACCS
.IDENT \V04-001\

```

```

.EXTRN MAKE_FCB_STALE, REBLD PRIM_FCB
.EXTRN BUILD_EXT_FCBS, CONV_ACCLOCK
.EXTRN LOCK_COUNT, SERIAL_FILE
.EXTRN TRUNC_CHECKS, GET_FIB
.EXTRN READ_HEADER, MARK_DIRTY
.EXTRN WRITE_ATTRIB, TRUNCATE
.EXTRN UPDATE_FCB, CHECKSUM

```

```

.PSECT $CODE$,NOWRT,2

```

				OBFC 00000	.ENTRY DEACCESS, Save R2,R3,R4,R5,R6,R7,R8,R9,R11	: 1106
	58	0000G	CF	9E 00002	MOVAB LOCK_COUNT, R11	
	56	80	AA	9E 00007	MOVAB -128(BASE), R6	: 1154
	58	0C	AA	9E 0000B	MOVAB 12(BASE), R8	
02	AA	0403	8F	A8 0000F	BISW2 #1027, 2(BASE)	: 1180
	50	90	AA	D0 00015	MOVL -112(BASE), R0	: 1183
	59	2C	B0	D0 00019	MOVL @44(R0), ABD	
			59	DD 0001D	PUSHL ABD	: 1184
0000G	CF		01	FB 0001F	CALLS #1, GET_FIB	
	54		50	D0 00024	MOVL R0, FIB	
	52		08	AA D0 00027	MOVL 8(BASE), FCB	: 1185
			24	A2 9F 0002B	PUSHAB 36(FCB)	: 1190
0000G	CF		01	FB 0002E	CALLS #1, SERIAL_FILE	
18	AA		50	D0 00033	MOVL R0, 24(BASE)	
			16	A4 95 00037	TSTB 22(FIB)	: 1195
			06	18 0003A	BGEQ 1\$	
	03		66	E9 0003C	BLBC (R4), 1\$: 1196
	66		14	B0 0003F	MOVW #20, (R6)	
			08	A2 95 00042	TSTB 11(FCB)	: 1203
			09	12 00045	BNEQ 2\$	
			48	A2 D5 00047	TSTL 72(FCB)	: 1204
			04	13 0004A	BEQL 2\$	
23	A2		01	88 0004C	BISB2 #1, 35(FCB)	: 1206
	50		68	D0 00050	MOVL (R8), R0	: 1212
55	OB	A0	01	07 EF 00053	EXTZV #7, #1, 11(R0), R5	: 1213
51		64	01	15 EF 00059	EXTZV #21, #1, (FIB), R1	
			55	51 CA 0005E	BICL2 R1, R5	
			53	D4 00061	CLRL R3	: 1214
			28	A0 D5 00063	TSTL 40(R0)	
			02	13 00066	BEQL 3\$	
			53	D6 00068	INCL R3	
			51	D4 0006A	CLRL R1	: 1215
			24	A0 D5 0006C	TSTL 36(R0)	
			02	13 0006F	BEQL 4\$	
			51	D6 00071	INCL R1	
	51		53	C8 00073	BISL2 R3, R1	
			50	D4 00076	CLRL R0	: 1216
			3C	A2 D5 00078	TSTL 60(FCB)	
			02	12 0007B	BNEQ 5\$	
			50	D6 0007D	INCL R0	
	50		51	C8 0007F	BISL2 R1, R0	
	57		55	D2 00082	MCOML R5, DO_EXPIRE	: 1214
	50	57	57	CB 00085	BICL3 DO_EXPIRE, R0, DO_EXPIRE	
	50		68	D0 00089	MOVL (R8), R0	: 1217
55	OB	A0	01	01 EF 0008C	EXTZV #1, #1, 11(R0), R5	: 1218
51		64	01	15 EF 00092	EXTZV #21, #1, (FIB), R1	
			55	51 CA 00097	BICL2 R1, R5	

				53	D4	0009A		CLRL	R3		1219		
				28	A0	D5	0009C	TSTL	40(R0)				
					02	13	0009F	BEQL	6\$				
					53	D6	000A1	INCL	R3				
			50	90	AA	D0	000A3	6\$:	MOVL	-112(BASE), R0	1220		
					51	D4	000A7	CLRL	R1				
			05	32	A0	B1	000A9	CMPW	50(R0), #5				
					02	1B	000AD	BLEQU	7\$				
					51	D6	000AF	INCL	R1				
50	17	A4			53	C8	000B1	7\$:	BISL2	R3, R1			
					00	EF	000B4	EXTZV	#0, #1, 23(FIB), R0		1221		
					51	C8	000BA	BISL2	R0, R1				
					53	D2	000BD	MCOML	R5, MODIFIED		1219		
			53		53	C8	000C0	BICL3	MODIFIED, R1, MODIFIED				
					50	D0	000C4	MOVL	(R8), R0		1228		
			0B		01	E0	000C7	BBS	#1, #1(R0), 9\$				
					1D	E8	000CC	BLBS	DO_EXPIRE, 9\$		1229		
					12	A2	000CF	BBS	#1, 34(FCB), 8\$		1230		
			0D		23	A2	000D4	BBS	#1, 35(FCB), 8\$		1231		
					09	A2	000D9	BLBS	35(FCB), 8\$		1232		
			04		22	A2	000DD	BBS	#2, 34(FCB), 8\$		1233		
					6A	95	000E2	TSTB	(BASE)		1234		
					24	18	000E4	BGEQ	10\$				
					01	A2	B1	000E6	8\$:	CMPW	24(FCB), #1	1235	
					1E	12	000EA	BNEQ	10\$				
					52	DD	000EC	9\$:	PUSHL	FCB	1238		
					7E	D4	000EE	CLRL	-(SP)				
			0000G		CF	02	FB	000F0	CALLS	#2, READ HEADER			
					55	D0	000F5	MOVL	R0, HEADER				
			0E		23	A2	E9	000F8	BLBC	35(FCB), 10\$	1240		
					24	BB	000FC	PUSHR	#*M<R2,R5>		1243		
			0000G		CF	02	FB	000FE	CALLS	#2, REBLD_PRIM_FCB			
					55	DD	00103	PUSHL	HEADER		1244		
			0000G		CF	01	FB	00105	CALLS	#1, BUILD_EXT_FCBS			
					01	A2	B1	0010A	10\$:	CMPW	24(FCB), #1	1252	
					2C	12	0010E	BNEQ	13\$				
			0F		22	A2	01	E1	00110	BBC	#1, 34(FCB), 11\$	1255	
					48	A2	DD	00115	PUSHL	72(FCB)	1261		
					01	FB	00118	CALLS	#1, LOCK_COUNT				
					50	D1	0011B	CMPL	R0, #1				
					04	12	0011E	BNEQ	11\$				
					02	AA	88	00120	BISB2	#32, 2(BASE)	1263		
					6A	95	00124	11\$:	TSTB	(BASE)	1265		
					03	18	00126	BGEQ	12\$				
					04	88	00128	BISB2	#4, (BASE)		1264		
			0C		22	A2	02	E1	0012B	12\$:	BBC	#2, 34(FCB), 13\$	1271
					35	A5	40	8F	88	00130	BISB2	#64, 53(HEADER)	1274
						55	DD	00135	PUSHL	HEADER		1275	
			0000G		CF	01	FB	00137	CALLS	#1, MARK_DIRTY			
					03	53	E8	0013C	13\$:	BLBS	MODIFIED, 14\$	1282	
					09	57	E9	0013F	BLBC	DO_EXPIRE, 15\$	1283		
						53	DD	00142	14\$:	PUSHL	MODIFIED	1284	
						55	DD	00144	PUSHL	HEADER			
			0000V		CF	02	FB	00146	CALLS	#2, SET REVISION			
					50	D0	0014B	15\$:	MOVL	(R8), R0	1292		
			03		0B	A0	01	E0	0014E	BBS	#1, #1(R0), 16\$		
						00DD	31	00153	BRW	27\$			

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			55	DD	00156	16\$:	PUSHL	HEADER	1295
	0000G	CF	01	FB	00158		CALLS	#1, MARK_DIRTY	1319
		28	65	91	0015D		CMPB	(HEADER), #40	1321
		50	1B	1F	00160		BLSSU	19\$	1322
	05	53	98	AA	D0	00162	MOVL	-104(BASE), R0	1324
		A0	44	04	E0	00166	BBS	#4, 83(R0), 17\$	1326
				A2	D5	0016B	TSTL	68(FCB)	1329
4C	A5	38	08	12	0016E		BNEQ	18\$	1330
			01	C1	00170	17\$:	ADDL3	#1, 56(FCB), 76(HEADER)	1332
		4C	05	11	00176		BRB	19\$	1333
		50	44	A2	D0	00178	MOVL	68(FCB), 76(HEADER)	1336
	05	14	68	D0	0017D	18\$:	MOVL	(R8), R0	1337
		34	01	E1	00180	19\$:	BBC	#1, 20(R0), 20\$	1338
			40	8F	88	00185	BISB2	#64, 52(HEADER)	1346
			90	AA	D0	0018A	MOVL	-112(BASE), R0	1347
			32	A0	B1	0018E	CMPW	50(R0), #5	1350
			17	1B	00192		BLEQU	21\$	1351
		14	66	E9	00194		BLBC	(R6), 21\$	1353
			7E	D4	00197		CLRL	-(SP)	1354
			0220	8F	BB	00199	PUSHR	#*M<R5,R9>	1358
	0000G	CF	03	FB	0019D		CALLS	#3, WRITE_ATTRIB	1359
		55	04	AA	D0	001A2	MOVL	4(BASE), HEADER	1360
		34	40	8F	8A	001A6	BICB2	#64, 52(HEADER)	1361
		7D	17	A4	E9	001AB	BLBC	23(FIB), 25\$	1362
78		22	01	E0	001AF	21\$:	BBS	#1, 34(FCB), 25\$	1364
		50	98	AA	D0	001B4	MOVL	-104(BASE), R0	1365
05		0B	04	E1	001B8		BBC	#4, 11(R0), 22\$	1366
			025C	8F	BF	001BD	CHMU	#604	1367
				04	001C1		RET		1368
			01	18	A2	B1	001C2	22\$:	1369
				29	12	001C6	CMPW	24(FCB), #1	1370
			48	A2	DD	001C8	BNEQ	23\$	1371
		6B	01	FB	001CB		PUSHL	72(FCB)	1372
		01	50	D1	001CE		CALLS	#1, LOCK_COUNT	1373
			1E	12	001D1		CMPL	R0, #1	1374
			55	DD	001D3		BNEQ	23\$	1375
	0000G	CF	01	FB	001D5		PUSHL	HEADER	1376
			1C	A4	DD	001DA	CALLS	#1, CHECKSUM	1377
				30	BB	001DD	PUSHL	28(FIB)	1378
	0000G	CF	03	FB	001DF		PUSHR	#*M<R4,R5>	1379
		6A	02	8A	001E4		CALLS	#3, TRUNCATE	1380
			04	AA	DD	001E7	BICB2	#2, (BASE)	1381
	0000G	CF	01	FB	001EA		PUSHL	4(BASE)	1382
			3B	11	001EF		CALLS	#1, UPDATE_FCB	1383
			01	1C	A2	B1	001F1	23\$:	1384
				37	12	001F5	BRB	25\$	1385
11		22	03	E0	001F7		CMPW	28(FCB), #1	1386
			1E	A2	B5	001FC	BNEQ	26\$	1387
				0C	12	001FF	BBS	#3, 34(FCB), 24\$	1388
			52	DD	00201		TSTW	30(FCB)	1389
			04	DD	00203		BNEQ	24\$	1390
	0000G	CF	02	FB	00205		PUSHL	FCB	1391
		21	50	E9	0020A		PUSHL	#4	1392
		53	1C	A4	D0	0020D	CALLS	#2, CONV_ACCLOCK	1393
		50	54	7D	00211	24\$:	BLBC	R0, 26\$	1394
			0000G	30	00214		MOVL	28(FIB), TRNVBN	1395
		23	02	88	00217		MOVQ	FIB, R0	1396
							BSBW	TRUNC_CHECKS	1397
							BISB2	#2, 35(FCB)	1398


```

: 465      1462 1 GLOBAL ROUTINE SET_REVISION (HEADER, MODE) : L_NORM NOVALUE =
: 466      1463 1
: 467      1464 1  +-+
: 468      1465 1
: 469      1466 1  FUNCTIONAL DESCRIPTION:
: 470      1467 1
: 471      1468 1      This routine updates the revision count and date, and the
: 472      1469 1      expiration date in the file header as specified.
: 473      1470 1
: 474      1471 1  CALLING SEQUENCE:
: 475      1472 1      SET_REVISION (HEADER, MODE)
: 476      1473 1
: 477      1474 1  INPUT PARAMETERS:
: 478      1475 1      HEADER: address of file header to operate on
: 479      1476 1      MODE: 0 to just update expiration date
: 480      1477 1           1 to set revision and expiration date
: 481      1478 1           3 to do above and clear backup date
: 482      1479 1
: 483      1480 1  IMPLICIT INPUTS:
: 484      1481 1      NONE
: 485      1482 1
: 486      1483 1  OUTPUT PARAMETERS:
: 487      1484 1      NONE
: 488      1485 1
: 489      1486 1  IMPLICIT OUTPUTS:
: 490      1487 1      NONE
: 491      1488 1
: 492      1489 1  ROUTINE VALUE:
: 493      1490 1      NONE
: 494      1491 1
: 495      1492 1  SIDE EFFECTS:
: 496      1493 1      file header modified and marked dirty
: 497      1494 1
: 498      1495 1  --
: 499      1496 1
: 500      1497 2 BEGIN
: 501      1498 2
: 502      1499 2 LABEL
: 503      1500 2      CHECK_EXPIRE;                : check file expiration date
: 504      1501 2
: 505      1502 2 MAP
: 506      1503 2      HEADER                : REF BBLOCK,    : file header
: 507      1504 2      MODE                  : BITVECTOR;   : routine mode flags
: 508      1505 2
: 509      1506 2 LOCAL
: 510      1507 2      DAY_TIME              : VECTOR [2],  : time of day
: 511      1508 2      DAY_TIME2            : VECTOR [2],  : time of day
: 512      1509 2      UCB                  : REF BBLOCK,  : UCB of RVN 1
: 513      1510 2      PRIMARY_VCB          : REF BBLOCK,  : VCB of RVN 1
: 514      1511 2      IDENT_AREA           : REF BBLOCK;  : header ident area
: 515      1512 2
: 516      1513 2 BIND_COMMON;
: 517      1514 2
: 518      1515 2 EXTERNAL ROUTINE
: 519      1516 2      MARK_DIRTY                : L_NORM;      : mark buffer for write-back
: 520      1517 2
: 521      1518 2

```

```

: 522 1519 2 ! Locate the ident area and check that the date fields are present.
: 523 1520 2 !
: 524 1521 2
: 525 1522 2 IDENT AREA = .HEADER + .HEADER[FH2$B IDOFFSET]*2;
: 526 1523 2 IF .HEADER[FH2$B MPOFFSET] - .HEADER[FH2$B IDOFFSET] LSSU
: 527 1524 2 ($BYTEOFFSET - (F12$Q_EXPDATE) + F12$S_EXPDATE) / 2
: 528 1525 2 THEN RETURN;
: 529 1526 2
: 530 1527 2 ! Update the expiration date of the file.
: 531 1528 2 !
: 532 1529 2
: 533 1530 2 MARK DIRTY (.HEADER);
: 534 1531 2 CHECK_EXPIRE: BEGIN
: 535 1532 2 PRIMARY_VCB = .CURRENT_VCB;
: 536 1533 2 IF .PRIMARY_VCB[VCB$W_RVN] NEQ 0
: 537 1534 2 THEN
: 538 1535 4 BEGIN
: 539 1536 4 UCB = .VECTOR [CURRENT_RVT[RVTS$L_UCBLST], 0];
: 540 1537 4 IF .UCB EQL 0
: 541 1538 4 THEN LEAVE CHECK_EXPIRE;
: 542 1539 4 PRIMARY_VCB = .UCB[UCB$L_VCB];
: 543 1540 2 END;
: 544 1541 2
: 545 1542 2 $GETTIM (TIMADR = DAY TIME);
: 546 1543 2 IF .(PRIMARY_VCB[VCB$Q_RETAINMAX]+4) NEQ 0
: 547 1544 2 THEN
: 548 1545 4 BEGIN
: 549 1546 4 SUBQ (PRIMARY_VCB[VCB$Q_RETAINMAX], DAY_TIME, DAY_TIME2);
: 550 1547 4 IF CMPQ (IDENT_AREA[F12$Q_EXPDATE], GEQ, DAY_TIME2)
: 551 1548 4 THEN LEAVE CHECK_EXPIRE;
: 552 1549 4 CH$MOVE (8, DAY_TIME2, IDENT_AREA[F12$Q_EXPDATE]);
: 553 1550 2 END;
: 554 1551 2 END; ! end of block CHECK_EXPIRE
: 555 1552 2
: 556 1553 2 ! Increment the revision count of the file if specified.
: 557 1554 2 !
: 558 1555 2
: 559 1556 2 IF .MODE[0]
: 560 1557 2 THEN
: 561 1558 2 BEGIN
: 562 1559 2 IDENT_AREA[F12$W_REVISION] = .IDENT_AREA[F12$W_REVISION] + 1;
: 563 1560 2 CH$MOVE (8, DAY_TIME, IDENT_AREA[F12$Q_REVDATE]);
: 564 1561 2 END;
: 565 1562 2
: 566 1563 2 ! Clear the backup date if requested.
: 567 1564 2 !
: 568 1565 2
: 569 1566 2 IF .MODE[1]
: 570 1567 2 THEN
: 571 1568 2 BEGIN
: 572 1569 2 (IDENT_AREA[F12$Q_BAKDATE]) = 0;
: 573 1570 2 (IDENT_AREA[F12$Q_BAKDATE])+4 = 0;
: 574 1571 2 END;
: 575 1572 2
: 576 1573 1 END; ! end of routine SET_REVISION

```

				.EXTRN SYS\$GETTIM		
				007C	00000	.ENTRY SET_REVISION, Save R2,R3,R4,R5,R6 : 1462
	5E			10	C2 00002	SUBL2 #16, SP : 1522
	51	04		AC	D0 00005	MOVL HEADER, R1
	50			61	9A 00009	MOVZBL (R1), R0
	56			6140	3E 0000C	MOVAW (R1)[R0], IDENT_AREA
	50	01		A1	9A 00010	MOVZBL 1(R1), R0 : 1523
	52			61	9A 00014	MOVZBL (R1), R2
	50			52	C2 00017	SUBL2 R2, R0
	17			50	D1 0001A	CMLP R0, #23 : 1524
				7D	1F 0001D	BLSSU 9\$
				51	DD 0001F	PUSHL R1 : 1530
	0000G	CF		01	FB 00021	CALLS #1, MARK_DIRTY
		52		98	AA D0 00026	MOVL -104(BASE), PRIMARY_VCB : 1532
				0E	A2 B5 0002A	TSTW 14(PRIMARY_VCB) : 1533
				0E	13 0002D	BEQL 1\$
		50		9C	AA D0 0002F	MOVL -100(BASE), R0 : 1536
		50		44	A0 D0 00033	MOVL 68(R0), UCB
				4E	13 00037	BEQL 7\$: 1537
		52		34	A0 D0 00039	MOVL 52(UCB), PRIMARY_VCB : 1539
	00000000G	00		08	AE 9F 0003D 1\$:	PUSHAB DAY_TIME : 1542
				01	FB 00040	CALLS #1, SYS\$GETTIM
				78	A2 D5 00047	TSTL 120(PRIMARY_VCB) : 1543
				3B	13 0004A	BEQL 7\$
6E	08	AE		74	A2 C3 0004C	SUBL3 116(PRIMARY_VCB), DAY_TIME, DAY_TIME2 : 1546
	04	AE		0C	AE D0 00052	MOVL DAY_TIME, DAY_TIME2
	04	AE		78	A2 D9 00057	SBWC 120(PRIMARY_VCB), DAY_TIME2
	50			01	CE 0005C	MNEGL #1, R0 : 1547
	04	AE		2A	A6 D1 0005F	CMLP 42(IDENT_AREA), DAY_TIME2
				0E	19 00064	BLSS 4\$
				08	14 00066	BGTR 2\$
		6E		26	A6 D1 00068	CMLP 38(IDENT_AREA), DAY_TIME2
				04	13 0006C	BEQL 3\$
				04	1F 0006E	BLSSU 4\$
				50	D6 00070 2\$:	INCL R0
				50	D6 00072 3\$:	INCL R0
	02 FFFFFFFF	8F		50	CF 00074 4\$:	CASEL R0, #-1, #2
000B		000B		0006	0007C 5\$:	.WORD 6\$-5\$,-
						7\$-5\$,-
						7\$-5\$
26	A6		6E	08	28 00082 6\$:	MOV3 #8, DAY_TIME2, 38(IDENT_AREA) : 1549
			09	08	AC E9 00087 7\$:	BLBC MODE, 8\$: 1556
				14	A6 B6 0008B	INCW 20(IDENT_AREA) : 1550
1E	A6	08	AE	08	28 0008E	MOV3 #8, DAY_TIME, 30(IDENT_AREA) : 1560
	03	08	AC	01	E1 00094 8\$:	BBC #1, MODE, 9\$: 1566
				2E	A6 7C 00099	CLRQ 46(IDENT_AREA) : 1569
				04	0009C 9\$:	RET : 1573

; Routine Size: 157 bytes, Routine Base: \$CODE\$ + 029E

; 577 1574 1
; 578 1575 1 END
; 579 1576 0 ELUDOM

PSECT SUMMARY

```
:  
: Name Bytes Attributes  
: $CODE$ 827 NOVEC,NOWRT, RD , EXE,NOSHR, LCL, REL, CON,NOPIC,ALIGN(2)
```

Library Statistics

```
:  
: File Total Symbols Loaded Percent Pages Mapped Processing Time  
: _$255$DUA18:[SYSLIB]LIB.L32;1 18619 76 0 1000 00:02.0
```

COMMAND QUALIFIERS

```
:  
: BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS$:DEACCS/OBJ=OBJ$:DEACCS MSRC$:DEACCS/UPDATE=(BUG$:DEACCS)
```

```
: Size: 827 code + 0 data bytes  
: Run Time: 00:37.1  
: Elapsed Time: 00:53.9  
: Lines/CPU Min: 2551  
: Lexemes/CPU-Min: 45464  
: Memory Used: 345 pages  
: Compilation Complete
```

