


```

LL      IIIIII  NN      NN  KK      KK  EEEEEEEEE  RRRRRRRR
LL      IIIIII  NN      NN  KK      KK  EEEEEEEEE  RRRRRRRR
LL      II      NN      NN  KK      KK  EE          RR      RR
LL      II      NN      NN  KK      KK  EE          RR      RR
LL      II      NNNN     NN  KK      KK  EE          RR      RR
LL      II      NNNN     NN  KK      KK  EE          RR      RR
LL      II      NN  NN  NN  KKKKKK  EE          RRRRRRRR
LL      II      NN  NN  NN  KKKKKK  EE          RRRRRRRR
LL      II      NN      NNNN  KK      KK  EE          RR      RR
LL      II      NN      NNNN  KK      KK  EE          RR      RR
LL      II      NN      NN  KK      KK  EE          RR      RR
LL      II      NN      NN  KK      KK  EE          RR      RR
LLLLLLLLLLLL IIIIII  NN      NN  KK      KK  EEEEEEEEE  RR      RR
LLLLLLLLLLLL IIIIII  NN      NN  KK      KK  EEEEEEEEE  RR      RR

```

```

LL      IIIIII  SSSSSSSS
LL      IIIIII  SSSSSSSS
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
LLLLLLLLLLLL IIIIII  SSSSSSSS
LLLLLLLLLLLL IIIIII  SSSSSSSS

```

```
1 0001 0 MODULE LNK_MAIN
2 0002 0
3 0003 0 (IDENT = 'V04-000'
4 0004 0 ,MAIN = LNK$START
5 0005 0 ,ADDRESSING_MODE
6 0006 0 (EXTERNAL = GENERAL
7 0007 0 ) ,NONEXTERNAL = LONG_RELATIVE
8 0008 0
9 0009 1 BEGIN
10 0010 1
11 0011 1
12 0012 1 *****
13 0013 1 *
14 0014 1 * COPYRIGHT (c) 1978, 1980, 1982, 1984 BY
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31 0031 1 *
32 0032 1 *
33 0033 1 *****
34 0034 1
35 0035 1
36 0036 1
37 0037 1
38 0038 1
39 0039 1 **
40 0040 1
41 0041 1 MODULE: LNK_MAIN
42 0042 1
43 0043 1 FACILITY: LINKER
44 0044 1
45 0045 1 ABSTRACT: THIS IS THE MAINLINE CONTROL ROUTINE WHICH CALLS EVERYTHING ELSE
46 0046 1
47 0047 1 HISTORY:
48 0048 1
49 0049 1 VERSION: X01.00
50 0050 1
51 0051 1 AUTHOR: T.J. PORTER 03-JAN-77
52 0052 1
53 0053 1 MODIFIED BY:
54 0054 1
55 0055 1 V03-020 ADE0001 Alan D. Eldridge 08-Aug-1982
56 0056 1 Increment linker version to '04-00'
57 0057 1
```

58	0058	1	V03-019	JWT0074	Jim Teague	09-Dec-1982
59	0059	1			Increment linker minor id for Debugger image header changes.	
60	0060	1				
61	0061	1				
62	0062	1	V03-018	JWT0044	Jim Teague	30-Jul-1982
63	0063	1			Open file performance boost.	
64	0064	1				
65	0065	1	V03-017	JWT0040	Jim Teague	25-Jun-1982
66	0066	1			Version number to 3A.	
67	0067	1				
68	0068	1	V03-016	BLS0170	Benn Schreiber	15-Apr-1982
69	0069	1			Correct handling of library errors	
70	0070	1				
71	0071	1	V03-015	BLS0159	Benn Schreiber	17-Mar-1982
72	0072	1			Set inhib_msg when exiting.	
73	0073	1				
74	0074	1	V03-014	BLS0111	Benn Schreiber	22-Nov-1981
75	0075	1			Complete shareable image psect handling/migration	
76	0076	1				
77	0077	1	V03-013	BLS0101	Benn Schreiber	7-Nov-1981
78	0078	1			Multiple modifications...see other modules.	
79	0079	1				
80	0080	1	V03-012	BLS0090	Benn Schreiber	26-Oct-1981
81	0081	1			Module-local symbols	
82	0082	1				
83	0083	1	V03-011	BLS0078	Benn Schreiber	8-Sep-1981
84	0084	1			Several minor fixes.	
85	0085	1				
86	0086	1	V03-010	BLS0074	Benn Schreiber	29-Aug-1981
87	0087	1			More work on based shareable images	
88	0088	1				
89	0089	1	V03-009	BLS0072	Benn Schreiber	25-Aug-1981
90	0090	1			Enhance based image capabilities	
91	0091	1				
92	0092	1	V03-008	BLS0069	Benn Schreiber	15-Aug-1981
93	0093	1			Rework pass 2. Fix miscellaneous bugs	
94	0094	1				
95	0095	1	V03-007	(lost)		
96	0096	1				
97	0097	1	V03-006	BLS0049	Benn Schreiber	22-Mar-1981
98	0098	1			Allow positioning of pic shareable images in cluster= option	
99	0099	1				
100	0100	1	V03-005	BLS0046	Benn Schreiber	14-Mar-1981
101	0101	1			Random collection of bug fixes. Issue info message if creating PIC shareable image and non-pic data or non-pic shareable image input.	
102	0102	1				
103	0103	1				
104	0104	1				
105	0105	1	V03-004	BLS0040	Benn Schreiber	12-Feb-1981
106	0106	1			Force psects in collect= option to be global.	
107	0107	1				
108	0108	1	V03-003	BLS0035	Benn Schreiber	19-Jan-1981
109	0109	1			65K psects	
110	0110	1				
111	0111	1	V03-002	BLS0029	Benn Schreiber	21-Dec-1980
112	0112	1			Library of shareable images.	
113	0113	1				
114	0114	1	V03-001	BLS0007	Benn Schreiber,	3-Jun-1980

LNK_MAIN
V04-000

E 16
16-Sep-1984 00:04:27
14-Sep-1984 12:40:27

VAX-11 Bliss-32 V4.0-742
[LINKER.SRC]LINKER.B32;1

Page 3
(1)

: 115 0115 1 !
: 116 0116 1 !--

Convert data structures to MDL.

```

118 0117 1
119 0118 1
120 0119 1 ++
121 0120 1
122 0121 1 FUNCTIONAL DESCRIPTION:
123 0122 1
124 0123 1
125 0124 1 THIS MODULE CONTAINS THE MAINLINE AND THE TERMINATION ROUTINE
126 0125 1 OF THE LINKER.
127 0126 1
128 0127 1 --
129 0128 1
130 0129 1 LIBRARY
131 0130 1 'LIBL32'; ! SYSTEM SERVICES MACROS
132 0131 1 REQUIRE ! VARIABLES, MACROS ETC.
133 0132 1 'PREFIX';
134 0247 1 LIBRARY 'DATBAS'; ! INTERNAL DATA BASE
135 0248 1
136 0249 1
137 0250 1 FORWARD ROUTINE
138 0251 1 LNK$EXIT : NOVALUE; ! TERMINATION ROUTINE
139 0252 1
140 0253 1 EXTERNAL ROUTINE
141 0254 1 LNK$CLOSEFILE . NOVALUE, ! CLOSE THE CURRENT OBJ FILE
142 0255 1 LNK$CLOSMAPFIL, ! CLOSE THE MAP FILE
143 0256 1 LNK$CLOSIMGFIL, ! CLOSE THE IMAGE FILE
144 0257 1 LNK$CLOSYMOUT, ! CLOSE SYMBOL TABLE OUTPUT
145 0258 1 LNK$IMGINIT, ! INITIALIZATION OF IMAGE IN MEMORY
146 0259 1 LNK$INIT, ! INITIALIZATION ROUTINE
147 0260 1 LNK$FLUSHIMG, ! WRITE AND COMPRESS THE IMAGE FILE
148 0261 1 LNK$HANDLER, ! ERROR HANDLER
149 0262 1 LNK$GETCMD, ! GET COMMAND PARAMETERS
150 0263 1 LNK$MAPINIT, ! INITILIZE THE MAP OUTPUT
151 0264 1 LNK$MAPADROMD, ! MAP OBJ MODULES WITH .ADDRESS
152 0265 1 LNK$MAPISCTS, ! MAP IMAGE SECTIONS
153 0266 1 LNK$MAPPSCTS, ! MAP THE P-SECTIONS
154 0267 1 LNK$MAPSTATS, ! OUTPUT THE STATISTICS
155 0268 1 LNK$MAPSYMS, ! MAP THE SYMBOL TABLE
156 0269 1 LNK$OBJPASS1, ! OBJECT MODULE PASS 1
157 0270 1 LNK$OBJPASS2, ! AND PASS 2
158 0271 1 LNK$SYMTBLOUT, ! OUTPUT SYMBOL TABLES
159 0272 1 LNK$VMALLO, ! VIRTUAL MEMORY ALLOCATION AND RELOCATION
160 0273 1 LNK$WRTIMGHDR; ! WRITE THE IMAGE HEADER BLOCK(S)
161 0274 1
162 0275 1 EXTERNAL
163 0276 1 LNK$GL_CURFIL, ! FOR CLOSING LAST FILE...
164 0277 1 LNK$GB_PASS : BYTE, ! PASS NUMBER
165 0278 1 LNK$GB_MAXERCODE : BYTE, ! RECORDED ERROR CODE
166 0279 1 LNK$GL_CTLMSK : BBLOCK; ! CONTROL MASK
167 0280 1
168 0281 1 EXTERNAL LITERAL
169 0282 1 LNK$FATALERRR, ! FATAL ERROR MESSAGE ISSUED.
170 0283 1 LNK$WARNISUE, ! WARNING MESSAGES ISSUED
171 0284 1 LNK$ERRORISUE; ! ERRORS ISSUED
172 0285 1
173 0286 1 GLOBAL
174 0287 1 LNK$AW_VERSION : BLOCK [LID$C_SIZE, BYTE] ! LINKER VERSION ARRAY

```

```

: 175 0288 1 INITIAL (WORD (%ASCII '04')) : CURRENT VERSION
: 176 0289 1 WORD (%ASCII '00') : AND ALTERATION NUMBER
: 177 0290 1
: 178 0291 1
: 179 0292 1
: 180 0293 1
: 181 0294 1 LNK$GQ_STARTIM : VECTOR [2], : START TIME
: 182 0295 1 LNK$GQ_PS1STIM : VECTOR [2], : PASS 1 START TIME
: 183 0296 1 LNK$GQ_ALOSTIM : VECTOR [2], : ALLOCATION PHASE START TIME
: 184 0297 1 LNK$GQ_PS2STIM : VECTOR [2], : PASS 2 START TIME
: 185 0298 1 LNK$GQ_MAPSTIM : VECTOR [2], : REMAINDER OF MAP BEGINS
: 186 0299 1 LNK$GQ_STBSTIM : VECTOR [2], : SYMBOL TABLE OUTPUT BEGINS
: 187 0300 1
: 188 0301 1 CPU TIMES:
: 189 0302 1
: 190 0303 1 LNK$GL_CPUSTIM, : CPU TIME AT THE START OF LINK
: 191 0304 1 LNK$GL_PS1CPUT, : PASS 1 CPU TIME (AT THE START)
: 192 0305 1 LNK$GL_ALOCPUT, : ALLOCATION PHASE CPU TIME
: 193 0306 1 LNK$GL_PS2CPUT, : PASS 2 CPU TIME
: 194 0307 1 LNK$GL_MAPCPUT, : MAP OUTPUT CPU TIME
: 195 0308 1 LNK$GL_STBCPUT, : SYMBOL TABLE OUTPUT CPU TIME
: 196 0309 1 LNK$GL_ENDCPUT, : END CPU TIME
: 197 0310 1
: 198 0311 1 PAGE FAULT COUNTS:
: 199 0312 1
: 200 0313 1 LNK$GL_SPAGFLTS, : PAGE FAULT COUNT AT START OF LINK
: 201 0314 1 LNK$GL_PS1FLTS, : PAGE FAULT COUNT AT START OF PASS 1
: 202 0315 1 LNK$GL_ALOFLTS, : DURING ALLOCATION/RELOCATION
: 203 0316 1 LNK$GL_PS2FLTS, : PASS 2 PAGE FAULTS
: 204 0317 1 LNK$GL_MAPFLTS, : MAP OUTPUT PAGE FAULTS
: 205 0318 1 LNK$GL_STBFLTS, : SYMBOL TABLE OUTPUT PAGE FAULT COUNT
: 206 0319 1 LNK$GL_ENDFLTS, : END PAGE FAULTS
```

```

208 0320 1 GLOBAL ROUTINE LNK$START (ARGLIST) : NOVALUE =
209 0321 1
210 0322 1     THIS IS THE MAIN ROUTINE OF THE LINKER, ITS PURPOSE
211 0323 1     BEING MERELY TO CALL THE ROUTINES THAT DO
212 0324 1     ALL THE WORK AND TO MONITOR THE PERFORMANCE OF EACH.
213 0325 1     ARGUMENT LIST PROVIDED ON ACTIVATION
214 0326 1     BY CLI. IT CONTAINS (AT OFFSET CLISA_UTILSERV)
215 0327 1     THE CLI RE-CALL ADDRESS REQUIRED FOR OBTAINING
216 0328 1     THE COMMAND PARAMETERS.
217 0329 1
218 0330 2 BEGIN
219 0331 2 OWN     CURCPUTIM,           ! CPU TIME BUFFER
220 0332 2     CURPAGEFLTS,         ! PAGE FAULT COUNT BUFFER
221 0333 2     DATALIST              ! ITEM DESCRIPTOR LIST
222 0334 2     : BLOCK [7]
223 0335 2     INITIAL (WORD (4), WORD (JPIS$ (CPUTIM) ! LONGWORD OF CPU TIME
224 0336 2     ,LONG (CURCPUTIM), LONG (0)
225 0337 2     ,WORD (4), WORD (JPIS$ PAGEFLTS) ! LONGWORD OF PAGE FAULTS
226 0338 2     ,LONG (CURPAGEFLTS), LONG (0)
227 0339 2     ,LONG (JPIS$ _LISTEND) ! END OF ITEM DESCRIPTOR LIST
228 0340 2     ) ;
229 0341 2 ENABLE LNK$HANDLER;           ! ENABLE CONDITION HANDLER
230 0342 2
231 0343 2 $GETTIM (TIMADR = LNK$GQ STARTIM); ! GET START VALUES
232 0344 2 $GETJPI (ITMLST = DATALIST);
233 0345 2 LNK$GL_CPUTIM = .CURCPUTIM;
234 0346 2 LNK$GL_SPAGFLTS = .CURPAGEFLTS;
235 0347 2 LNK$INIT (); ! PERFORM INITIALIZATION
236 0348 2 LNK$GETCMD (ARGLIST-4); ! GO GET THE COMMAND PARAMETERS
237 0349 2 ! WITH NO RETURN IF IN ERROR
238 0350 2 LNK$GB_PASS = 1; ! SET PASS NUMBER
239 0351 2
240 0352 2 $GETTIM (TIMADR = LNK$GQ PS1STIM); ! GET START VALUES FOR PASS 1
241 0353 2 $GETJPI (ITMLST = DATALIST);
242 0354 2 LNK$GL_PS1CPUT = .CURCPUTIM;
243 0355 2 LNK$GL_PS1FLTS = .CURPAGEFLTS;
244 0356 2 LNK$OBJPASS1 (ARGLIST-4); ! EXECUTE PASS1
245 0357 2
246 0358 2 $GETTIM (TIMADR = LNK$GQ ALOSTIM); ! GET THE START VALUES OF ALLOCATION/RELOCATION PHAS
247 0359 2 $GETJPI (ITMLST = DATALIST);
248 0360 2 LNK$GL_ALOCPUT = .CURCPUTIM;
249 0361 2 LNK$GL_ALOFLTS = .CURPAGEFLTS;
250 0362 2 LNK$VMALLO (); ! ALLOCATE VIRTUAL MEMORY
251 0363 2
252 0364 2 IF .LNK$GL CTLMSK [LNK$V_IMAGE] ! IF AN IMAGE IS REQUIRED
253 0365 2 THEN LNK$IMGINIT (); ! GO GET IT STARTED
254 0366 2 IF .LNK$GL CTLMSK [LNK$V_MAP] ! IF A MAP IS REQUIRED
255 0367 2 THEN LNK$MAPINIT (); ! START THE MAP
256 0368 2
257 0369 2 LNK$GB_PASS = 2; ! SET PASS 2
258 0370 2
259 0371 2 $GETTIM (TIMADR = LNK$GQ PS2STIM); ! GET START VALUES FOR PASS 2
260 0372 2 $GETJPI (ITMLST = DATALIST);
261 0373 2 LNK$GL_PS2CPUT = .CURCPUTIM;
262 0374 2 LNK$GL_PS2FLTS = .CURPAGEFLTS;
263 0375 2 LNK$OBJPASS2 (); ! EXECUTE PASS 2
264 0376 2

```



```

: 265 0377 2 IF .LNK$GL_CTLMSK [LNK$V_IMAGE] ! IF IMAGE PRODUCTION STILL ENABLED
: 266 0378 2 THEN LNK$FCUSHIMG (); ! COMPRESS AND WRITE THE IMAGE FILE
: 267 0379 2
: 268 0380 2 $GETTIM (TIMADR = LNK$GQ_MAPSTIM); ! START VALUES FOR BULK OF MAP OUTPUT
: 269 0381 2 $GETJPI (ITMLST = DATALIST);
: 270 0382 2 LNK$GL_MAPCPUT = .CURCPUTIM;
: 271 0383 2 LNK$GL_MAPFLTS = .CURPAGEFLTS;
: 272 0384 2 IF .LNK$GL_CTLMSK [LNK$V_MAPOPN] ! IF THE MAP IS STILL OPEN
: 273 0385 2 THEN BEGIN
: 274 0386 2 LNK$MAPADROMD (); ! OUTPUT MODULES WITH .ADDRESS
: 275 0387 2 LNK$MAPISCTS (); ! OUTPUT IMAGE SECTION SYNOPSIS
: 276 0388 2 LNK$MAPPSCTS (); ! PRINT THE P-SECTION SYNOPSIS
: 277 0389 2 LNK$MAPSYMS (); ! OUTPUT THE SYMBOL TABLE
: 278 0390 2 END;
: 279 0391 2
: 280 0392 2 $GETTIM (TIMADR = LNK$GQ_STBSTIM); ! GET START VALUES FOR STB OUTPUT
: 281 0393 2 $GETJPI (ITMLST = DATALIST);
: 282 0394 2 LNK$GL_STBCPUT = .CURCPUTIM;
: 283 0395 2 LNK$GL_STBFLTS = .CURPAGEFLTS;
: 284 0396 2 LNK$SYMTBLOUT (); ! OUTPUT THE SYMBOL TABLE
: 285 0397 2
: 286 0398 2 IF .LNK$GL_CTLMSK [LNK$V_IMAGE] ! IF THE IMAGE IS STILL OPEN
: 287 0399 2 THEN LNK$WRTIMGHDR (); ! OUTPUT THE HEADER AND CLOSE IT
: 288 0400 2
: 289 0401 2 $GETJPI (ITMLST = DATALIST);
: 290 0402 2 LNK$GL_ENDCPUT = .CURCPUTIM;
: 291 0403 2 LNK$GL_ENDFLTS = .CURPAGEFLTS;
: 292 0404 2
: 293 0405 2 IF .LNK$GL_CTLMSK [LNK$V_MAPOPN] ! IF THE MAP IS STILL OPEN
: 294 0406 2 THEN BEGIN
: 295 0407 2 LNK$MAPSTATS (); ! THEN STATISTICS OF THIS RUN
: 296 0408 2 LNK$CLOSMAPFIL (); ! FINALLY CLOSE THE MAP FILE
: 297 0409 2 END;
: 298 0410 2
: 299 0411 2 LNK$EXIT ((IF .LNK$GB_MAXERCOD THEN SSS NORMAL
: 300 0412 2 ELSE IF .LNK$GB_MAXFRCOD EQ[ STSSK_WARNING
: 301 0413 2 THEN LINS_WARNISUE
: 302 0414 2 ELSE LINS_ERRORISUE
: 303 0415 2 ));
: 304 0416 1 END;

```

```

.TITLE LNK_MAIN
.IDENT \V04-000\
.PSECT $OWNS,NOEXE,2
0000 CURCPUTIM:
      .BLKB 4
0004 CURPAGEFLTS:
      .BLKB 4
0004 0008 DATALIST:
      .WORD 4
      0407 0000A .WORD 1031
00000000' 0000C .ADDRESS CURCPUTIM
00000000 00010 .LONG 0
0004 00014 .WORD 4

```

040A 00016 .WORD 1034
00000000 00018 .ADDRESS CURPAGEFLTS
00000000 0001C .LONG 0
00000000 00020 .LONG 0

.PSECT \$GLOBAL\$,NOEXE,2

34 30 0000 LNK\$AW_VERSION::
 .ASCII \04\
30 30 0002 .ASCII \00\
00004 LNK\$GQ_STARTIM::
 .BLKB 8
0000C LNK\$GQ_PS1STIM::
 .BLKB 8
00014 LNK\$GQ_ALOSTIM::
 .BLKB 8
0001C LNK\$GQ_PS2STIM::
 .BLKB 8
00024 LNK\$GQ_MAPSTIM::
 .BLKB 8
0002C LNK\$GQ_STBSTIM::
 .BLKB 8
00034 LNK\$GL_CPUSTIM::
 .BLKB 4
00038 LNK\$GL_PS1CPUT::
 .BLKB 4
0003C LNK\$GL_ALOCPUT::
 .BLKB 4
00040 LNK\$GL_PS2CPUT::
 .BLKB 4
00044 LNK\$GL_MAPCPUT::
 .BLKB 4
00048 LNK\$GL_STBCPUT::
 .BLKB 4
0004C LNK\$GL_ENDCPUT::
 .BLKB 4
00050 LNK\$GL_SPAGFLTS::
 .BLKB 4
00054 LNK\$GL_PS1FLTS::
 .BLKB 4
00058 LNK\$GL_ALOFLTS::
 .BLKB 4
0005C LNK\$GL_PS2FLTS::
 .BLKB 4
00060 LNK\$GL_MAPFLTS::
 .BLKB 4
00064 LNK\$GL_STBFLTS::
 .BLKB 4
00068 LNK\$GL_ENDFLTS::
 .BLKB 4

.EXTRN LNK\$CLOSEFILE, LNK\$CLOSMAPFIL
.EXTRN LNK\$CLOSIMGFIL, LNK\$CLOSYMOUT
.EXTRN LNK\$IMGINIT, LNK\$INIT
.EXTRN LNK\$FLUSHIMG, LNK\$HANDLER
.EXTRN LNK\$GETCMD, LNK\$MAPINIT
.EXTRN LNK\$MAPADROMD, LNK\$MAPISCTS

```
.EXTRN LNK$MAPPCTS, LNK$MAPSTATS
.EXTRN LNK$MAPSYMS, LNK$OBJPASS1
.EXTRN LNK$OBJPASS2, LNK$SYMTBLOUT
.EXTRN LNK$VMALLO, LNK$WRTIMGHDR
.EXTRN LNK$GL_CURFIL, LNK$GB_PASS
.EXTRN LNK$GB_MAXERCOD
.EXTRN LNK$GL_CTLMSK, LNK$FATALERROR
.EXTRN LNK$WARNISUE, LNK$ERRORISUE
.EXTRN SYSSGETTIM, SYSSGETJPI

.PSECT $CODE$,NOWRT,2

.ENTRY LNK$START, Save R2,R3,R4,R5,R6,R7 : 0320
MOVAB LNK$GB_PASS, R7
MOVAB LNK$GL_CTLMSK, R6
MOVAB SYSSGETTIM, R5
MOVAB SYSSGETJPI, R4
MOVAB LNK$GO_STARTIM, R3
MOVAB DATALIST, R2
MOVAL 11$, (FP) : 0330
PUSHL R3 : 0343
CALLS #1, SYSSGETTIM
CLRQ -(SP) : 0344
CLRL -(SP)
PUSHL R2
CLRQ -(SP)
CLRL -(SP)
CALLS #7, SYSSGETJPI
MOVL CURCPUTIM, LNK$GL_CPUTIM : 0345
MOVL CURPAGEFLTS, LNK$GL_SPAGFLTS : 0346
CALLS #0, LNK$INIT : 0347
PUSHL AP : 0348
CALLS #1, LNK$GETCMD
MOVB #1, LNK$GB_PASS : 0350
PUSHAB LNK$GO_PS1STIM : 0352
CALLS #1, SYSSGETTIM
CLRQ -(SP) : 0353
CLRL -(SP)
PUSHL R2
CLRQ -(SP)
CLRL -(SP)
CALLS #7, SYSSGETJPI
MOVL CURCPUTIM, LNK$GL_PS1CPUT : 0354
MOVL CURPAGEFLTS, LNK$GL_PS1FLTS : 0355
PUSHL AP : 0356
CALLS #1, LNK$OBJPASS1
PUSHAB LNK$GO_ALOSTIM : 0358
CALLS #1, SYSSGETTIM
CLRQ -(SP) : 0359
CLRL -(SP)
PUSHL R2
CLRQ -(SP)
CLRL -(SP)
CALLS #7, SYSSGETJPI
MOVL CURCPUTIM, LNK$GL_ALOCPUT : 0360
MOVL CURPAGEFLTS, LNK$GL_ALOFLTS : 0361
CALLS #0, LNK$VMALLO : 0362
```

57	00000000G	00	9E	00002
56	00000000G	00	9E	00009
55	00000000G	00	9E	00010
54	00000000G	00	9E	00017
53	00000000'	EF	9E	0001E
52	00000000'	EF	9E	00025
6D	017E	CF	DE	0002C
		53	DD	00031
65		01	FB	00033
		7E	7C	00036
		7E	D4	00038
		52	DD	0003A
		7E	7C	0003C
		7E	D4	0003E
	64	07	FB	00040
	30 A3	FB	A2	D0 00043
	4C A3	FC	A2	D0 00048
00000000G	00	00	FB	0004D
		5C	DD	00054
00000000G	00	01	FB	00056
	67	01	90	0005D
		08	A3	9F 00060
	65	01	FB	00063
		7E	7C	00066
		7E	D4	00068
		52	DD	0006A
		7E	7C	0006C
		7E	D4	0006E
	64	07	FB	00070
	34 A3	FB	A2	D0 00073
	50 A3	FC	A2	D0 00078
00000000G	00	5C	DD	0007D
		01	FB	0007F
		10	A3	9F 00086
	65	01	FB	00089
		7E	7C	0008C
		7E	D4	0008E
		52	DD	00090
		7E	7C	00092
		7E	D4	00094
	64	07	FB	00096
	38 A3	FB	A2	D0 00099
	54 A3	FC	A2	D0 0009E
00000000G	00	00	FB	000A3

		07		66	E9	000AA	BLBC	LNK\$GL CTLMSK, 1\$	0364
		00		00	FB	000AD	CALLS	#0, LNR\$IMGINIT	0365
07	00000000G	66		04	E1	000B4	BBC	#4, LNK\$GL CTLMSK, 2\$	0366
		00		00	FB	000B8	CALLS	#0, LNK\$MAPINIT	0367
	00000000G	67		02	90	000BF	MOVB	#2, LNK\$GB PASS	0369
			18	A3	9F	000C2	PUSHAB	LNK\$GQ PS2STIM	0371
		65		01	FB	000C5	CALLS	#1, SYSS\$GETTIM	
				7E	7C	000C8	CLRQ	-(SP)	0372
				7E	D4	000CA	CLRL	-(SP)	
				52	DD	000CC	PUSHL	R2	
				7E	7C	000CE	CLRQ	-(SP)	
				7E	D4	000D0	CLRL	-(SP)	
		64		07	FB	000D2	CALLS	#7, SYSS\$GETJPI	
	3C	A3	F8	A2	D0	000D5	MOVL	CURCPUTIM, LNK\$GL PS2CPUT	0373
	58	A3	FC	A2	D0	000DA	MOVL	CURPAGEFLTS, LNK\$GL_PS2FLTS	0374
	00000000G	00		00	FB	000DF	CALLS	#0, LNK\$OBJPASS2	0375
		07		66	E9	000E6	BLBC	LNK\$GL CTLMSK, 3\$	0377
	00000000G	00		00	FB	000E9	CALLS	#0, LNR\$FLUSHIMG	0378
			20	A3	9F	000F0	PUSHAB	LNK\$GQ MAPSTIM	0380
		65		01	FB	000F3	CALLS	#1, SYSS\$GETTIM	
				7E	7C	000F6	CLRQ	-(SP)	0381
				7E	D4	000F8	CLRL	-(SP)	
				52	DD	000FA	PUSHL	R2	
				7E	7C	000FC	CLRQ	-(SP)	
				7E	D4	000FE	CLRL	-(SP)	
		64		07	FB	00100	CALLS	#7, SYSS\$GETJPI	
	40	A3	F8	A2	D0	00103	MOVL	CURCPUTIM, LNK\$GL MAPCPUT	0382
	5C	A3	FC	A2	D0	00108	MOVL	CURPAGEFLTS, LNK\$GL MAPFLTS	0383
1C		66		05	E1	0010D	BBC	#5, LNK\$GL CTLMSK, 4\$	0384
	00000000G	00		00	FB	00111	CALLS	#0, LNK\$MAPADROMD	0386
	00000000G	00		00	FB	00118	CALLS	#0, LNK\$MAPISCTS	0387
	00000000G	00		00	FB	0011F	CALLS	#0, LNK\$MAPPSCTS	0388
	00000000G	00		00	FB	00126	CALLS	#0, LNK\$MAPSYMS	0389
			28	A3	9F	0012D	PUSHAB	LNK\$GQ STBSTIM	0392
		65		01	FB	00130	CALLS	#1, SYSS\$GETTIM	
				7E	7C	00133	CLRQ	-(SP)	0393
				7E	D4	00135	CLRL	-(SP)	
				52	DD	00137	PUSHL	R2	
				7E	7C	00139	CLRQ	-(SP)	
				7E	D4	0013B	CLRL	-(SP)	
		64		07	FB	0013D	CALLS	#7, SYSS\$GETJPI	
	44	A3	F8	A2	D0	00140	MOVL	CURCPUTIM, LNK\$GL STBCPUT	0394
	60	A3	FC	A2	D0	00145	MOVL	CURPAGEFLTS, LNK\$GL_STBFLTS	0395
	00000000G	00		00	FB	0014A	CALLS	#0, LNK\$SYMIBLOUT	0396
		07		66	E9	00151	BLBC	LNK\$GL CTLMSK, 5\$	0398
	00000000G	00		00	FB	00154	CALLS	#0, LNR\$WRTIMGHDR	0399
				7E	7C	0015B	CLRQ	-(SP)	0401
				7E	D4	0015D	CLRL	-(SP)	
				52	DD	0015F	PUSHL	R2	
				7E	7C	00161	CLRQ	-(SP)	
				7E	D4	00163	CLRL	-(SP)	
		64		07	FB	00165	CALLS	#7, SYSS\$GETJPI	
	48	A3	F8	A2	D0	00168	MOVL	CURCPUTIM, LNK\$GL ENDCPUT	0402
	64	A3	FC	A2	D0	0016D	MOVL	CURPAGEFLTS, LNK\$GL ENDFLTS	0403
OE		66		05	E1	00172	BBC	#5, LNK\$GL CTLMSK, 6\$	0405
	00000000G	00		00	FB	00176	CALLS	#0, LNK\$MAPSTATS	0407
	00000000G	00		00	FB	0017D	CALLS	#0, LNK\$CLOSMAPFIL	0408

LNK_MAIN
V04=000

M 16
16-Sep-1984 00:04:27 VAX-11 Bliss-32 V4.0-742
14-Sep-1984 12:40:27 [LINKER.SRC]LINKER.B32;1

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(3)

50	00000000G	00	9A	00184	6\$:	MOVZBL	LNK\$GB_MAXERCOD, R0	0411
04		50	E9	0018B		BLBC	R0, 7\$	
		01	DD	0018E		PUSHL	#1	
		14	11	00190		BRG	10\$	
		09	12	00192	7\$:	BNLQ	8\$	0412
50	00000000G	8F	D0	00194		MOVL	#LINS_WARNISUE, R0	
		07	11	0019B		BRB	9\$	
50	00000000G	8F	D0	0019D	8\$:	MOVL	#LINS_ERRORISUE, R0	
		50	DD	001A4	9\$:	PUSHL	R0	
00000000V	EF	01	FB	001A6	10\$:	CALLS	#1, LNK\$EXIT	0411
			04	001AD		RET		0416
			0000	001AE	11\$:	.WORD	Save nothing	0330
		7E	D4	001B0		CLRL	-(SP)	
		5E	DD	001B2		PUSHL	SP	
00000000G	7E	04	AC	7D	001B4	MOVQ	4(AP), -(SP)	
	00		03	FB	001B8	CALLS	#3, LNK\$HANDLER	
			04	001BF		RET		

; Routine Size: 448 bytes, Routine Base: \$CODE\$ + 0000

```

: 306      0417 1 GLOBAL ROUTINE LNK$EXIT (EXITCODE) : NOVALUE=
: 307      0418 1
: 308      0419 1 LINKER TERMINATION ROUTINE
: 309      0420 1
: 310      0421 2 BEGIN
: 311      0422 2 IF .EXITCODE NEQ $$$_NORMAL
: 312      0423 3 THEN BEGIN
: 313      0424 3     LNK$CLOSYMOUT ();           ! CLOSE ANY SYMBOL TABLE OUTPUT
: 314      0425 3     LNK$CLOSIMGFIL ();        ! CLOSE THE IMAGE FILE
: 315      0426 3     LNK$CLOSMAPFIL ();       ! CLOSE THE MAP FILE
: 316      0427 2     END;
: 317      0428 2
: 318      0429 2 $EXIT (CODE = .EXITCODE OR STSSM_INHIB_MSG);
: 319      0430 1 END;

```

```

                                .EXTRN  SYS$EXIT
                                .ENTRY  LNK$EXIT, Save nothing           : 0417
                                CMPL    EXITCODE, #1                       : 0422
                                BEQL    1$
                                CLRL    -(SP)                             : 0424
                                CALLS   #1, LNK$CLOSYMOUT
                                CALLS   #0, LNK$CLOSIMGFIL                 : 0425
                                CALLS   #0, LNK$CLOSMAPFIL                 : 0426
                                BISL3   #268435456, EXITCODE, -(SP)      : 0429
                                CALLS   #1, SYS$EXIT
                                RET

```

: Routine Size: 48 bytes, Routine Base: \$CODE\$ + 01C0

```

: 320      0431 1
: 321      0432 0 END ELUDOM

```

PSECT SUMMARY

Name	Bytes	Attributes
\$GLOBAL\$	108 NOVEC, WRT, RD	,NOEXE,NOSHR, LCL, REL, CON,NOPI,ALIGN(2)
\$OWNS\$	36 NOVEC, WRT, RD	,NOEXE,NOSHR, LCL, REL, CON,NOPI,ALIGN(2)
\$CODE\$	496 NOVEC,NOWRT, RD	, EXE,NOSHR, LCL, REL, CON,NOPI,ALIGN(2)

Library Statistics

File	----- Symbols -----			Pages Mapped	Processing Time
	Total	Loaded	Percent		

LNK MAIN
704=000

C 1
16-Sep-1984 00:04:27
14-Sep-1984 12:40:27

VAX-11 Bliss-32 V4.0-742
[LINKER.SRC]LINKER.B32;1

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:	_\$255\$DUA28:[SYSLIB]LIB.L32;1	18619	17	0	1000	00:02.0
:	_\$255\$DUA28:[LINKER.OBJ]DATBAS.L32;1	538	4	0	28	00:00.8

COMMAND QUALIFIERS

BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=L,SS:LINKER/OBJ=OBJ\$:LINKER MSRCS:LINKER/UPDATE=(ENHS:LINKER)

: Size: 496 code + 144 data bytes
: Run Time: 00:12.3
: Elapsed Time: 00:39.2
: Lines/CPU Min: 2110
: Lexemes/CPU-Min: 15771
: Memory Used: 149 pages
: Compilation Complete

A grid of 100 small program listings, each with a title and content. The titles are as follows:

- LINKER LIS
- STRUNDEQ LIS
- STRPOSIT LIS
- STRTRIM LIS
- STRREPLAC LIS
- STRSRCHM LIS
- STRPOSEXT LIS
- STRRIGHT LIS
- LINKER
- LINK MAP
- PREFIX REQ
- ISO SORT LIS
- STRUPCASE LIS
- DATBAS MDL
- STRTRANSL LIS
- TIRAU REQ
- ISGENC REQ
- STRPREFIX LIS
- DATBAS LIS

Each listing contains a header with the program name and a series of lines of code or data, often including comments and control characters like carriage returns and line feeds.

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

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