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LL      IIIIII  BBBB BBBB  GGGGGGGG  EEEEEEEEEEE  TTTTTTTTTTT  MM      MM      SSSSSSSSS  GGGGGGGG
LL      IIIIII  BBBB BBBB  GGGGGGGG  EEEEEEEEEEE  TTTTTTTTTTT  MM      MM      SSSSSSSSS  GGGGGGGG
LL      II      BB      BB  GG      EE      TT      MMMM  MMMM  SS      GG
LL      II      BB      BB  GG      EE      TT      MMMM  MMMM  SS      GG
LL      II      BB      BB  GG      EE      TT      MM  MM  MM  SS      GG
LL      II      BBBB BBBB  GG      EEEEEEEEE  TT      MM      MM  SS      GG
LL      II      BBBB BBBB  GG      EEEEEEEEE  TT      MM      MM  SSSSSSS  GG
LL      II      BB      BB  GG      EE      TT      MM      MM  SSSSSSS  GG
LL      II      BB      BB  GG      EE      TT      MM      MM  SS      GG
LL      II      BB      BB  GG      EE      TT      MM      MM  SS      GG
LL      II      BB      BB  GG      EE      TT      MM      MM  SS      GG
LLLLLLLLLLLL  IIIIII  BBBB BBBB  GGGGGG  EEEEEEEEEEE  TT      MM      MM  SSSSSSSSS  GGGGGG
LLLLLLLLLLLL  IIIIII  BBBB BBBB  GGGGGG  EEEEEEEEEEE  TT      MM      MM  SSSSSSSSS  GGGGGG

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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
LLLLLLLLLLLL  IIIIII  SSSSSSSS
LLLLLLLLLLLL  IIIIII  SSSSSSSS

```



```
1 0001 0 MODULE LIBSYS_GETMSG (
2 0002 0
3 0003 0 IDENT = '1-009' ! File: LIBGETMSG.B32 EDIT RKR1009
4 0004 0
5 0005 0 ) =
6 0006 1 BEGIN
7 0007 1
8 0008 1 *****
9 0009 1 *
10 0010 1 * COPYRIGHT (c) 1978, 1980, 1982, 1984 BY
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27 0027 1 *
28 0028 1 *
29 0029 1 *****
30 0030 1
31 0031 1
32 0032 1 ++
33 0033 1 FACILITY: General Library Support
34 0034 1
35 0035 1 ABSTRACT:
36 0036 1
37 0037 1 Calls $GETMSG with caller's input string, resultant string
38 0038 1 is returned using the semantics of the caller's string.
39 0039 1 Parameters MSGID and FLAGS are presented to this routine
40 0040 1 by-reference and are promoted to by-value for presentation to
41 0041 1 $GETMSG
42 0042 1
43 0043 1 ENVIRONMENT: VAX-11 User Mode
44 0044 1
45 0045 1 AUTHOR: R. Reichert, CREATION DATE: 20-SEPT-1979
46 0046 1
47 0047 1 MODIFIED BY:
48 0048 1
49 0049 1 1-001 - Original. RKR 20-SEPT-1979
50 0050 1 1-002 - Change name to LIBSYS_GETMSG. RKR 15-OCT-79
51 0051 1 1-003 - Change logic for status returned. Improve comments.
52 0052 1 RKR 20-OCT-79
53 0053 1 1-004 - Add logic to promote by-reference parameter to by-value.
54 0054 1 RKR 1-NOV-79
55 0055 1 1-005 - Change STR$ codes to LIB$ codes. RKR 22-JAN-80
56 0056 1 1-006 - Enhance to recognize additional classes of string descriptors
57 0057 1 on output by always getting data into internal buffer and
```

```

: 58      0058 1  | using LIBSSCOPY DXDX6 to deliver to caller's buffer.
: 59      0059 1  | LIB$ANALYZE_SDESC_R3 is used to compute the number of bytes
: 60      0060 1  | actually copied after the copy operation completes.
: 61      0061 1  | Change to use LIBSSCOPY_DXDX6 instead of STR$COPY_DX. This
: 62      0062 1  | avoids having to change STR$ statuses to LIB$ statuses and
: 63      0063 1  | eliminates need for a handler.
: 64      0064 1  | RKR 29-MAY-1981.
: 65      0065 1  | 1-007 - Add special-case code to process string descriptors that
: 66      0066 1  | "read" like fixed string descriptors. RKR 7-OCT-1981.
: 67      0067 1  | 1-008 - Redirect jsb's to LIB$ANALYZE_SDESC_R3 to
: 68      0068 1  | LIB$ANALYZE_SDESC_R2. Use LIBSSCOPY_R_DX6 to do copying.
: 69      0069 1  | RKR 18-NOV-1981.
: 70      0070 1  | 1-009 - Return non-success codes from $GETMSG as return codes from
: 71      0071 1  | this routine. RKR 11-AUG-1983.
: 72      0072 1  | --
: 73      0073 1  |
: 74      0074 1  | !<BLF/PAGE>
```

```

76 0075 1 |
77 0076 1 | SWITCHES:
78 0077 1 |
79 0078 1 |
80 0079 1 | SWITCHES ADDRESSING MODE
81 0080 1 | (EXTERNAL = GENERAL, NONEXTERNAL = WORD_RELATIVE);
82 0081 1 |
83 0082 1 |
84 0083 1 | LINKAGES:
85 0084 1 |
86 0085 1 | REQUIRE 'RTLIN:STRLNK';
87 0270 1 |
88 0271 1 | TABLE OF CONTENTS:
89 0272 1 |
90 0273 1 |
91 0274 1 | FORWARD ROUTINE
92 0275 1 | LIB$SYS_GETMSG; ! Convert date and time
93 0276 1 |
94 0277 1 |
95 0278 1 | INCLUDE FILES:
96 0279 1 |
97 0280 1 |
98 0281 1 | REQUIRE 'RTLIN:RTLPSECT'; ! Macros for defining psects
99 0376 1 |
100 0377 1 | LIBRARY 'RTLSTARLE'; ! System symbols and macros
101 0378 1 |
102 0379 1 |
103 0380 1 | MACROS:
104 0381 1 |
105 0382 1 | NONE
106 0383 1 |
107 0384 1 | EQUATED SYMBOLS:
108 0385 1 |
109 0386 1 | LITERAL
110 0387 1 | LOCAL_BUF_SIZE = 256 ;
111 0388 1 |
112 0389 1 | PSECTS:
113 0390 1 |
114 0391 1 | DECLARE_PSECTS (LIB); ! Declare psects for LIB$ facility
115 0392 1 |
116 0393 1 | OWN STORAGE:
117 0394 1 |
118 0395 1 | NONE
119 0396 1 |
120 0397 1 | EXTERNAL REFERENCES:
121 0398 1 |
122 0399 1 |
123 0400 1 | EXTERNAL ROUTINE
124 0401 1 | LIB$ANALYZE_SDESC_R2 : LIB$ANALYZE_SDESC_JSB_LINK, ! Extract length
125 0402 1 | ! and address of
126 0403 1 | ! 1st data byte
127 0404 1 | ! from descriptor
128 0405 1 | LIB$COPY_R_DX6 : STRING_JSB; ! Copy string
```



```
130 0406 1 GLOBAL ROUTINE LIBSYS_GETMSG (      ! Get system message
131 0407 1
132 0408 1
133 0409 1     MSGID,      ! identification of message to be retrieved
134 0410 1
135 0411 1     MSGLEN,    ! address of a word to receive length of string
136 0412 1             ! returned (optional)
137 0413 1
138 0414 1     BUFADR,    ! address of buffer descriptor of buffer to
139 0415 1             ! receive string
140 0416 1
141 0417 1     FLAGS,     ! flag bits for message content
142 0418 1
143 0419 1     OUTADR     ! addr of a 4-byte array to receive msg string
144 0420 1 ) : =
145 0421 1
146 0422 1 ++
147 0423 1 FUNCTIONAL DESCRIPTION:
148 0424 1
149 0425 1     Calls $GETMSG with caller's input string, resultant string
150 0426 1     is returned using the semantics of the caller's string.
151 0427 1     Parameters MSGID and FLAGS are presented to this routine
152 0428 1     by-reference and are promoted to by-value for presentation to
153 0429 1     $GETMSG
154 0430 1
155 0431 1 FORMAL PARAMETERS:
156 0432 1
157 0433 1     MSGID.rl.r      Address of
158 0434 1                 identification of message to be retrieved
159 0435 1
160 0436 1     MSGLEN.wv.r     address of a word to receive length of string
161 0437 1                 returned
162 0438 1
163 0439 1     BUFADR.wt.dx    address of buffer descriptor of buffer to
164 0440 1                 receive string
165 0441 1
166 0442 1     FLAGS.rl.r      Address of
167 0443 1                 flag bits for message content
168 0444 1                 (Optional parameter)
169 0445 1                 (macro default = 15)
170 0446 1
171 0447 1
172 0448 1     Bit      Value  Meaning
173 0449 1     ---      -
174 0450 1
175 0451 1     0        1      Include text
176 0452 1             0      Do not include tesxt
177 0453 1     1        1      Include identifier
178 0454 1             0      Do not include identifier
179 0455 1     2        1      Include severity
180 0456 1             0      Do not include severity
181 0457 1     3        1      Include component
182 0458 1             0      Do not include component
183 0459 1
184 0460 1     OUTADR.wa.ra    address of a 4-byte array to receive the msg
185 0461 1                 string
186 0462 1                 (Optional parameter)
```

```
187 0463 1 |
188 0464 1 |
189 0465 1 |
190 0466 1 |
191 0467 1 |
192 0468 1 |
193 0469 1 |
194 0470 1 |
195 0471 1 |
196 0472 1 | IMPLICIT INPUTS:
197 0473 1 |
198 0474 1 |     NONE
199 0475 1 |
200 0476 1 | IMPLICIT OUTPUTS:
201 0477 1 |
202 0478 1 |     NONE
203 0479 1 |
204 0480 1 | COMPLETION CODES:
205 0481 1 |
206 0482 1 |     SSS_NORMAL Procedure successfully completed
207 0483 1 | From LIB$COPY_R DX6
208 0484 1 |     LIB$STRTRD Success, but source string truncated
209 0485 1 |     LIB$INSVIRMEM Insufficient virtual memory
210 0486 1 |     LIB$INVSTRDES Invalid string descriptor
211 0487 1 |     LIB$INVARG Invalid argument ( usually unsupported class of
212 0488 1 | descriptor)
213 0489 1 | From $GETMSG
214 0490 1 |     SSS_BUFFEROVF Successfully completed but string returned
215 0491 1 | overflowed the buffer provided and has been
216 0492 1 | truncated
217 0493 1 |     SSS_MSGNOTFND Successfully completed, but message code does not
218 0494 1 | have an associated message in file.
219 0495 1 |
220 0496 1 |
221 0497 1 | SIDE EFFECTS:
222 0498 1 |
223 0499 1 |
224 0500 1 | --
225 0501 1 |
226 0502 2 | BEGIN
227 0503 2 | BUILTIN
228 0504 2 |     ACTUALCOUNT,
229 0505 2 |     NULLPARAMETER,
230 0506 2 |     ACTUALPARAMETER ;
231 0507 2 |
232 0508 2 | LOCAL
233 0509 2 |     COPY_STATUS, ! status from copy operation
234 0510 2 |     STR_STATUS, ! status from $GETMSG call
235 0511 2 |     LOCAL_BUFF : VECTOR [LOCAL_BUF_SIZE, BYTE] , ! Local buffer
236 0512 2 |     BUFFER_DESC : BLOCK [8, BYTE]; ! desc for local buffer
237 0513 2 |
238 0514 2 | MAP
239 0515 2 |     MSGLEN : REF VECTOR [,WORD] ,
240 0516 2 |     BUFADR : REF BLOCK[,BYTE] ;
241 0517 2 |
242 0518 2 |
243 0519 2 | !+
```



```
244 0520 2 | Construct a static descriptor to receive the message text from
245 0521 2 | VAX/VMS
246 0522 2 |
247 0523 2 | BUFFER_DESC [DSC$W_LENGTH] = LOCAL_BUF_SIZE;
248 0524 2 | BUFFER_DESC [DSC$B_DTYPE] = DSC$K_DTYPE_T;
249 0525 2 | BUFFER_DESC [DSC$B_CLASS] = DSC$K_CLASS_S;
250 0526 2 | BUFFER_DESC [DSC$A_POINTER] = LOCAL_BUF;
251 0527 2 |
252 0528 2 |
253 0529 2 | + Call $GETMSG with the appropriate combination of caller's
254 0530 2 | parameters, default parameters and local variables.
255 0531 2 |
256 0532 2 |
257 0533 2 | STR_STATUS = $GETMSG (
258 0534 2 |     MSGID = .ACTUALPARAMETER(1),
259 0535 2 |     MSGLEN = BUFFER_DESC,
260 0536 2 |     BUFADR = BUFFER_DESC,
261 0537 2 |     FLAGS = (IF NULLPARAMETER(4)
262 0538 2 |         THEN 15
263 0539 2 |         ELSE .ACTUALPARAMETER(4) ) ,
264 0540 2 |     OUTADR = (IF NULLPARAMETER(5)
265 0541 2 |         THEN 0
266 0542 2 |         ELSE ACTUALPARAMETER(5)) ) ;
267 0543 2 |
268 0544 2 |
269 0545 2 | +
270 0546 2 | Copy internal buffer to caller's buffer, letting LIB$SCOPY_R_DX6
271 0547 2 | worry about its semantics.
272 0548 2 |
273 0549 2 | COPY_STATUS = LIB$SCOPY_R_DX6 (.BUFFER_DESC [DSC$W_LENGTH],
274 0550 2 |     .BUFFER_DESC [DSC$A_POINTER],
275 0551 2 |     .BUFADR ) ;
276 0552 2 |
277 0553 2 | +
278 0554 2 | If caller supplied optional length parameter, update it.
279 0555 2 | To do this accurately, we need to inspect the resulting descriptor
280 0556 2 | as it appears after the copy. Get LIB$ANALYZE_SDESC_R2 to do it.
281 0557 2 | No need to check LIB$ANALYZE_SDESC_R2 status. If RESULT_ADDR descr
282 0558 2 | was bad, LIB$SCOPY_DXDX6 would have told us about it.
283 0559 2 |
284 0560 2 | IF (NOT NULLPARAMETER(2))
285 0561 2 | THEN
286 0562 2 | BEGIN
287 0563 2 |     LOCAL
288 0564 2 |         RESULT_LEN,          ! No. of bytes delivered to caller
289 0565 2 |         RESULT_ADDRESS;      ! Address of 1st data byte of callers
290 0566 2 |                               ! buffer
291 0567 2 | IF .BUFADR [DSC$B_CLASS] GTRU DSC$K_CLASS_D
292 0568 2 | THEN !-Use generalized length extract
293 0569 2 | BEGIN
294 0570 2 |     LIB$ANALYZE_SDESC_R2 ( .BUFADR ;
295 0571 2 |         RESULT_LEN, RESULT_ADDRESS );
296 0572 2 | END
297 0573 2 |
298 0574 2 | ELSE          ! Fetch length directly
299 0575 2 |
300 0576 2 |     RESULT_LEN = .BUFADR [DSC$W_LENGTH] ;
```



```
301 0577 MSGLEN [0] = MIN (.BUFFER_DESC [DSC$W_LENGTH], .RESULT_LEN) ;
302 0578 END;
303 0579
304 0580
305 0581
306 0582 At this point we have 2 statuses that we could return to caller.
307 0583 Determine which one is the "most meaningful".
308 0584
309 0585
310 0586 If original $GETMSG call failed, tell him about that
311 0587 else give him the copy status.
312 0588
313 0589 IF .STR_STATUS NEQ SSS NORMAL
314 0590 THEN ! Return $GETMSG status
315 0591 RETURN (.STR_STATUS)
316 0592
317 0593 ELSE ! Return copy status
318 0594 RETURN (.COPY_STATUS) ;
319 0595 END; ! end of LIBSYS_GETMSG
```

```
.TITLE LIBSYS_GETMSG
.IDENT \1-009\

.EXTRN LIB$ANALYZE_SDESC_R2
.EXTRN LIB$COPY_R_DX6
.EXTRN SYSS$GETMSG

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

.ENTRY LIBSYS_GETMSG, Save R2,R3,R4,R5,R6,R7,R8 ; 0406
MOVAB -260(SP), SP
PUSHL #17694976
MOVAB LOCAL_BUFF, BUFFER_DESC+4
CMPB (AP), #5
BLSSU 1$
TSTL 20(AP)
BNEQ 2$
CLRL -(SP)
BRB 3$
PUSHL 20(AP)
CMPB (AP), #4
BLSSU 4$
TSTL 16(AP)
BNEQ 5$
PUSHL #15
BRB 6$
PUSHL @16(AP)
PUSHAB BUFFER_DESC
PUSHAB BUFFER_DESC
PUSHL @4(AP)
CALLS #5, SYSS$GETMSG
MOVL R0, STR_STATUS
MOVL BUFADR, R7
MOVL R7, R2
MOVL BUFFER_DESC+4, R1
MOVZWL BUFFER_DESC, R0 ; 0523
; 0526
; 0542
; 0551
; 0549
```

04	SE	FEFC	CE	9E	00002	
		010E0100	8F	DD	00007	
	AE	08	AE	9E	0000D	
	05		6C	91	00012	
			05	1F	00015	
		14	AC	D5	00017	
			04	12	0001A	
			7E	D4	0001C	1\$:
			03	11	0001E	
		14	AC	DD	00020	2\$:
	04		6C	91	00023	3\$:
			05	1F	00026	
		10	AC	D5	00028	
			04	12	0002B	
			0F	DD	0002D	4\$:
			03	11	0002F	
		10	BC	DD	00031	5\$:
		08	AE	9F	00034	6\$:
		0C	AE	9F	00037	
		04	BC	DD	0003A	
00000000G	00		05	FB	0003D	
	58		50	D0	00044	
	57	0C	AC	D0	00047	
	52		57	D0	0004B	
	51	04	AE	D0	0004E	
	50		6E	3C	00052	

53	00000000G	00	16	00055	JSB	LIB\$SCOPY_R_DX6	:
02		50	D0	0005B	MOVL	R0, COPY_STATUS	:
		6C	91	0005E	CMPB	(AP), #2	0560
	08	28	1F	00061	BLSSU	10\$	:
		AC	D5	00063	TSTL	8(AP)	:
		23	13	00066	BEQL	10\$	:
02	03	A7	91	00068	CMPB	3(R7), #2	0567
		0B	1B	0006C	BLEQU	7\$	:
50		57	D0	0006E	MOVL	R7, R0	0570
	00000000G	00	16	00071	JSB	LIB\$ANALYZE_SDESC_R2	:
		03	11	00077	BRB	8\$	0567
51		67	3C	00079	MOVZWL	(R7), RESULT_LEN	0576
50		6E	3C	0007C	MOVZWL	BUFFER_DESC, R0	0578
51		50	D1	0007F	CMPB	R0, RESULT_LEN	:
		03	15	00082	BLEQ	9\$	:
50		51	D0	00084	MOVL	RESULT_LEN, R0	:
08	BC	50	B0	00087	MOVW	R0, @MSGLEN	:
	01	58	D1	0008B	CMPB	STR_STATUS, #1	0588
		04	13	0008E	BEQL	11\$	:
50		58	D0	00090	MOVL	STR_STATUS, R0	0593
		04	00	00093	RET		:
50		53	D0	00094	MOVW	COPY_STATUS, R0	:
		04	00	00097	RET		0595

; Routine Size: 152 bytes, Routine Base: _LIB\$CODE + 0000

: 320	0596	1	
: 321	0597	1	END
: 322	0598	1	
: 323	0599	0	ELUDOM

! end of module LIB\$SYS_GETMSG

PSECT SUMMARY

Name	Bytes	Attributes
_LIB\$CODE	152	NOVEC, NOWRT, RD, EXE, SHR, LCL, REL, CON, PIC, ALIGN(2)

Library Statistics

File	Total	Symbols Loaded	Percent	Pages Mapped	Processing Time
_\$255\$DUA28:[SYSLIB]STARLET.L32;1	9776	11	0	581	00:00.8

COMMAND QUALIFIERS

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

: Size: 152 code + 0 data bytes
: Run Time: 00:04.8
: Elapsed Time: 00:28.8
: Lines/CPU Min: 7456
: Lexemes/CPU-Min: 31456
: Memory Used: 82 pages
: Compilation Complete

0207 AH-BT13A-SE
VAX/VMS V4.0

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