


```

LL      IIIIII      BBBB8888      AAAAAA      SSSSSSSS      CCCCCCCC      TTTT888888      IIIIII      MM      MM
LL      IIIIII      BBBB8888      AAAAAA      SSSSSSSS      CCCCCCCC      TTTT888888      IIIIII      MM      MM
LL      II      BB      BB      AA      AA      SS      CC      TT      II      MMMM      MMMM
LL      II      BB      BB      AA      AA      SS      CC      TT      II      MMMM      MMMM
LL      II      BB      BB      AA      AA      SS      CC      TT      II      MM      MM
LL      II      BBBB8888      AA      AA      SSSSSS      CC      TT      II      MM      MM
LL      II      BBBB8888      AA      AA      SSSSSS      CC      TT      II      MM      MM
LL      II      BB      BB      AAAAAAAAAA      SS      CC      TT      II      MM      MM
LL      II      BB      BB      AAAAAAAAAA      SS      CC      TT      II      MM      MM
LL      II      BB      BB      AA      AA      SS      CC      TT      II      MM      MM
LL      II      BB      BB      AA      AA      SS      CC      TT      II      MM      MM
LLLLLLLLLLL      IIIIII      BBBB8888      AA      AA      SSSSSSSS      CCCCCCCC      TTTT888888      IIIIII      MM      MM
LLLLLLLLLLL      IIIIII      BBBB8888      AA      AA      SSSSSSSS      CCCCCCCC      TTTT888888      IIIIII      MM      MM

```

```

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
LLLLLLLLLLL      IIIIII      SSSSSSSS
LLLLLLLLLLL      IIIIII      SSSSSSSS

```

....
....
....
....



```

1 0001 0 MODULE LIBSYS_ASCTIM (
2 0002 0
3 0003 0 IDENT = '1-008' ! File: LIBASCTIM.B32 EDIT: RKR1008
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 This routine calls $ASCTIM to convert binary date and time
38 0038 1 to an ASCII string, returning the resultant string using the
39 0039 1 semantics of the caller's string
40 0040 1 Parameter CONVFLG is presented to this routine by-reference
41 0041 1 and promoted to by-value for presentation to $ASCTIM.
42 0042 1
43 0043 1 ENVIRONMENT: VAX-11 User Mode
44 0044 1
45 0045 1 AUTHOR: R. Reichert, CREATION DATE: 20-SEPT-1979
46 0046 1
47 0047 1 MODIFIED BY:
48 0048 1
49 0049 1 1-001 - Original. RKR 20-SEPT-1979
50 0050 1 1-002 - Change name to LIBSYS_ASCTIM. RKR 15-OCT-79
51 0051 1 1-003 - Change logic for status returned. Improve comments.
52 0052 1 RKR 20-OCT-79
53 0053 1 1-004 - Add code to promote by-reference arguments to by-value.
54 0054 1 RKR 1-NOV-79
55 0055 1 1-005 - Change STR$ 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

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```
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 speed up performance for strings that  
66 0066 1 | "read" like fixed strings. RKR 7-OCT-1981.  
67 0067 1 | 1-008 - Redirect jsb's from LIB$ANALYZE_SDESC_R3 to  
68 0068 1 | LIB$ANALYZE_SDESC_R2. Redirect job from LIBSSCOPY_DXDX6 to  
69 0069 1 | LIBSSCOPY_R_DX6 to gain a little more speed.  
70 0070 1 | RKR 18-NOV-1981.  
71 0071 1 | --  
72 0072 1 |  
73 0073 1 | <BLF/PAGE>
```

```
75 0074 1 |
76 0075 1 | SWITCHES:
77 0076 1 |
78 0077 1 |
79 0078 1 | SWITCHES ADDRESSING MODE
80 0079 1 | (EXTERNAL = GENERAL, NONEXTERNAL = WORD_RELATIVE);
81 0080 1 |
82 0081 1 |
83 0082 1 | LINKAGES:
84 0083 1 |
85 0084 1 | REQUIRE 'RTLIN:STRLNK'; ! Linkage for LIB$ANALYZE_SDESC_R2
86 0269 1 |
87 0270 1 | TABLE OF CONTENTS:
88 0271 1 |
89 0272 1 |
90 0273 1 | FORWARD ROUTINE
91 0274 1 | LIBSSYS_ASCTIM; ! Convert date and time
92 0275 1 |
93 0276 1 |
94 0277 1 | INCLUDE FILES:
95 0278 1 |
96 0279 1 |
97 0280 1 | REQUIRE 'RTLIN:RTLPSECT'; ! Macros for defining psects
98 0375 1 |
99 0376 1 | LIBRARY 'RTLSTARLE'; ! System symbols and macros
100 0377 1 |
101 0378 1 |
102 0379 1 | MACROS:
103 0380 1 |
104 0381 1 | NONE
105 0382 1 |
106 0383 1 | EQUATED SYMBOLS:
107 0384 1 |
108 0385 1 | LITERAL
109 0386 1 | LOCAL_BUF_SIZE = 42 ; ! The maximum number of characters that
110 0387 1 | ! can be returned by a call to $ASCTIM
111 0388 1 |
112 0389 1 | PSECTS:
113 0390 1 |
114 0391 1 | DECLARE_PSECTS (LIB); ! Declare psects for LIB$ 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 LIBSSYS_ASCTIM (           ! Convert date and time
131 0407 1
132 0408 1     LENGTH,           ! Length returned
133 0409 1     RESULT_ADDR,    ! Descriptor of user's string
134 0410 1     TIMEADR,       ! Time value to convert
135 0411 1     CONVFLG        ! Flags
136 0412 1
137 0413 1           ) : =
138 0414 1
139 0415 1 ++
140 0416 1 | FUNCTIONAL DESCRIPTION:
141 0417 1 |     This routine calls $ASCTIM to convert binary date and time
142 0418 1 |     to an ASCII string, returning the resultant string using the
143 0419 1 |     semantics of the caller's string
144 0420 1 |     Parameter CONVFLG is presented to this routine by-reference
145 0421 1 |     and promoted to by-value for presentation to $ASCTIM.
146 0422 1
147 0423 1
148 0424 1 | FORMAL PARAMETERS:
149 0425 1
150 0426 1 |     LENGTH.ww.r       Address of a word to receive the length
151 0427 1 |                       of the output string returned.
152 0428 1 |                       (Optional parameter)
153 0429 1
154 0430 1 |     RESULT_ADDR.wt.dx Address of the descriptor into which
155 0431 1 |                       the resulting date and time is written.
156 0432 1
157 0433 1 |     TIMEADR.rqu.r     Address of the 64-bit time value to be
158 0434 1 |                       converted. If no address is specified,
159 0435 1 |                       or is specified as zero (the default),
160 0436 1 |                       the current system date and time are
161 0437 1 |                       returned. A positive time value
162 0438 1 |                       represents an absolute time. A Negative
163 0439 1 |                       time value represents a delta time. If
164 0440 1 |                       a delta time is specified, it must be
165 0441 1 |                       less than 10,000 days.
166 0442 1 |                       (Optional parameter)
167 0443 1
168 0444 1 |     CONVFLG.rlu.r     Address of a
169 0445 1 |                       Conversion indicator. A value of 1
170 0446 1 |                       causes only the hour, minute, second,
171 0447 1 |                       and hundredths of a second to be
172 0448 1 |                       returned, depending on the length of the
173 0449 1 |                       buffer. A value of 0 (the default)
174 0450 1 |                       causes the full date and time to be
175 0451 1 |                       returned, depending on the length of the
176 0452 1 |                       buffer.
177 0453 1 |                       (Optional parameter)
178 0454 1
179 0455 1 | IMPLICIT INPUTS:
180 0456 1 |     NONE
181 0457 1
182 0458 1 | IMPLICIT OUTPUTS:
183 0459 1 |     NONE
184 0460 1
185 0461 1
186 0462 1
```

```
187 0463 1 | COMPLETION CODES:
188 0464 1 |
189 0465 1 |     SSS_NORMAL      Procedure successfully completed
190 0466 1 | From LIBSSCOPY R DX6
191 0467 1 |     LIBS_STRTRD     Success, but source string truncated
192 0468 1 |     LIBS_INSVIRMEM  Insufficient virtual memory
193 0469 1 |     LIBS_INVSTRDES  Invalid string descriptor
194 0470 1 | From $ASCTIM
195 0471 1 |     SSS_IVTIME     The specified delta time is greater than or
196 0472 1 |                   equal to 10,000 days.
197 0473 1 |
198 0474 1 |
199 0475 1 | SIDE EFFECTS:
200 0476 1 |
201 0477 1 |     May request the current date and time from VAX/VMS.
202 0478 1 |
203 0479 1 | --
204 0480 1 |
205 0481 2 | BEGIN
206 0482 2 | BUILTIN
207 0483 2 |     NULLPARAMETER,
208 0484 2 |     ACTUALPARAMETER ;
209 0485 2 |
210 0486 2 | LOCAL
211 0487 2 |                   ! output buffer
212 0488 2 |     COPY_STATUS,  ! Status from LIBSSCOPY R DX6 call
213 0489 2 |     STR_STATUS,  ! Status from $ASCTIM call
214 0490 2 |     DATE_TIME_BUF : VECTOR [LOCAL_BUF_SIZE, BYTE], ! Local buffer
215 0491 2 |     BUFFER_DESC  : BLOCK [8, BYTE];             ! Descr for local
216 0492 2 |                                               ! buffer
217 0493 2 |
218 0494 2 | MAP
219 0495 2 |     RESULT_ADDR : REF BLOCK [,BYTE] ,
220 0496 2 |     LENGTH: REF VECTOR [,WORD] ;
221 0497 2 |
222 0498 2 | +
223 0499 2 | Construct a static descriptor to receive the date and time from
224 0500 2 | VAX/VMS
225 0501 2 | -
226 0502 2 |     BUFFER_DESC [DSC$W_LENGTH] = LOCAL_BUF_SIZE;
227 0503 2 |     BUFFER_DESC [DSC$B_DTYPE] = DSC$K_DTYPE_T;
228 0504 2 |     BUFFER_DESC [DSC$B_CLASS] = DSC$K_CLASS_S;
229 0505 2 |     BUFFER_DESC [DSC$A_POINTER] = DATE_TIME_BUF;
230 0506 2 |
231 0507 2 | +
232 0508 2 | Call $ASCTIM using the appropriate combination of caller's
233 0509 2 | parameters, default parameters and internal variables.
234 0510 2 | -
235 0511 2 |
236 P 0512 2 | STR_STATUS = $ASCTIM (
237 P 0513 2 |     TIMLEN = BUFFER_DESC, ! NOTE: length will get rewritten with
238 P 0514 2 |     TIMBUF = BUFFER_DESC, ! actual length returned
239 P 0515 2 |     TIMADR = ( IF NULLPARAMETER(3)
240 P 0516 2 |         THEN 0
241 P 0517 2 |         ELSE ACTUALPARAMETER(3) ),
242 P 0518 2 |     CVTFLG = ( IF NULLPARAMETER(4)
243 P 0519 2 |         THEN 0
```

```
244 P 0520 2 ELSE .ACTUALPARAMETER(4) )
245 0521 2 ) ;
246 0522 2
247 0523 2
248 0524 2 + Copy internal buffer to caller's buffer, letting LIB$SCOPY_R_DX6
249 0525 2 worry about its semantics.
250 0526 2 -
251 0527 2 COPY_STATUS = LIB$SCOPY_R_DX6 (.BUFFER_DESC [DSC$W_LENGTH],
252 0528 2 .BUFFER_DESC [DSC$A_POINTER],
253 0529 2 .RESULT_ADDR ) ;
254 0530 2
255 0531 2 +
256 0532 2 If caller supplied optional length parameter, update it.
257 0533 2 To do this accurately, we need to inspect the resulting descriptor
258 0534 2 as it appears after the copy. Get LIB$ANALYZE_SDESC_R2 to do it.
259 0535 2 No need to check LIB$ANALYZE_SDESC_R2 status. If RESULT_ADDR descr
260 0536 2 was bad, LIB$SCOPY_R_DX6 would have told us about it.
261 0537 2 -
262 0538 2 IF (NOT NULLPARAMETER(1))
263 0539 2 THEN
264 0540 2 BEGIN
265 0541 2 LOCAL
266 0542 2 RESULT_LEN, ! No. of bytes delivered to caller
267 0543 2 RESULT_ADDRESS; ! Address of 1st data byte of callers
268 0544 2 ! buffer
269 0545 2 IF .RESULT_ADDR [ DSC$B_CLASS] GTRU DSC$K_CLASS_D
270 0546 2 THEN ! Must use general extraction
271 0547 2 BEGIN
272 0548 2 LIB$ANALYZE_SDESC_R2 ( .RESULT_ADDR ;
273 0549 2 RESULT_LEN, RESULT_ADDRESS );
274 0550 2 END
275 0551 2
276 0552 2 ELSE ! Can fetch length directly
277 0553 2
278 0554 2 RESULT_LEN = .RESULT_ADDR [DSC$W_LENGTH] ;
279 0555 2
280 0556 2 LENGTH [0] = MIN (.BUFFER_DESC [DSC$W_LENGTH], .RESULT_LEN) ;
281 0557 2 END;
282 0558 2 +
283 0559 2 At this point we have 2 statuses that we could return to caller.
284 0560 2 Determine which one is the "most meaningful".
285 0561 2 -
286 0562 2 +
287 0563 2 If original $ASCTIM call failed, tell him about that
288 0564 2 else give him the copy status.
289 0565 2 -
290 0566 2 IF NOT .STR_STATUS THEN RETURN (.STR_STATUS)
291 0567 2 ELSE RETURN (.COPY_STATUS) ;
292 0568 2
293 0569 2 END; ! end of LIBSYS_ASCTIM
```

```
.TITLE LIBSYS_ASCTIM
.IDENT \1-008\
.EXTRN LIB$ANALYZE_SDESC_R2
.EXTRN LIB$SCOPY_R_DX6
```


				.EXTRN SYSSASCTIM				
				.PSECT _LIB\$CODE,NOWRT, SHR, PIC,2				
				01FC	00000	.ENTRY	LIBSSYS_ASCTIM, Save R2,R3,R4,R5,R6,R7,R8	: 0406
	SE		30	C2	00002	SUBL2	#48, SP	: 0502
		010E002A	8F	DD	00005	PUSHL	#17694762	: 0505
04	AE	08	AE	9E	0000B	MOVAB	DATE_TIME_BUF, BUFFER_DESC+4	: 0521
	04		6C	91	00010	CMPB	(AP), #4	: 0521
			05	1F	00013	BLSSU	1\$	
			10	AC	D5	TSTL	16(AP)	
			04	12	00018	BNEQ	2\$	
			7E	D4	0001A	CLRL	-(SP)	
			03	11	0001C	BRB	3\$	
			10	BC	DD	PUSHL	@16(AP)	
	03		6C	91	00021	CMPB	(AP), #3	
			05	1F	00024	BLSSU	4\$	
			0C	AC	D5	TSTL	12(AP)	
			04	12	00029	BNEQ	5\$	
			7E	D4	0002B	CLRL	-(SP)	
			03	11	0002D	BRB	6\$	
			0C	AC	DD	PUSHL	12(AP)	
			08	AE	9F	PUSHAB	BUFFER_DESC	
			0C	AE	9F	PUSHAB	BUFFER_DESC	
00000000G	00		04	FB	00038	CALLS	#4, SYSSASCTIM	
	58		50	D0	0003F	MOVL	R0, STR_STATUS	
	57		08	AC	D0	MOVL	RESULT_ADDR, R7	: 0529
	52		57	D0	00046	MOVL	R7, R2	: 0527
	51		04	AE	D0	MOVL	BUFFER_DESC+4, R1	
	50		6E	3C	0004D	MOVZWL	BUFFER_DESC, R0	
		00000000G	00	16	00050	JSB	LIB\$COPY_R_DX6	
	53		50	D0	00056	MOVL	R0, COPY_STATUS	
			6C	95	00059	TSTB	(AP)	: 0538
			28	13	0005B	BEQL	10\$	
			04	AC	D5	TSTL	4(AP)	
			23	13	00060	BEQL	10\$	
	02		03	A7	91	CMPB	3(R7), #2	: 0545
			0B	1B	00066	BLEQU	7\$	
	50		57	D0	00068	MOVL	R7, R0	: 0548
		00000000G	00	16	0006B	JSB	LIB\$ANALYZE_SDESC_R2	
			03	11	00071	BRB	8\$: 0545
	51		67	3C	00073	MOVZWL	(R7), RESULT_LEN	: 0554
	50		6E	3C	00076	MOVZWL	BUFFER_DESC, R0	: 0556
	51		50	D1	00079	CPL	R0, RESULT_LEN	
			03	15	0007C	BLEQ	9\$	
	50		51	D0	0007E	MOVL	RESULT_LEN, R0	
04	BC		50	B0	00081	MOVW	R0, @LENGTH	
	04		58	E8	00085	BLBS	STR_STATUS, 11\$: 0566
	50		58	D0	00088	MOVL	STR_STATUS, R0	: 0567
				04	0008B	RET		
	50		53	D0	0008C	MOVL	COPY_STATUS, R0	
			04	0008F	RET			: 0569

: Routine Size: 144 bytes, Routine Base: _LIB\$CODE + 0000

: 294 0570 1

: 295 0571 1 END
: 296 0572 1
: 297 0573 0 ELUDOM

. end of module LIB\$SYS_ASCTIM

PSECT SUMMARY

Name	Bytes	Attributes
_LIB\$CODE	144	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	10 0	581	00:00.7

COMMAND QUALIFIERS

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

: Size: 144 code + 0 data bytes
: Run Time: 00:04.6
: Elapsed Time: 00:21.2
: Lines/CPU Min: 7539
: Lexemes/CPU-Min: 31184
: Memory Used: 80 pages
: Compilation Complete

RTLMACB32 REQ	STRMACROS REQ	RTLOOBBG REQ	RTLPSECT REQ	STRLNK REQ	RTLMACMAR MAR	LIBASCEBC LIS	LIBASTINP LIS	LIBBINTRE LIS	LIBCHAR LIS
					LIBDEF FOR	LIBANASTR LIS	LIBASNMBX LIS	LIBBBCCI LIS	
					LIBABUPCA LIS	LIBADDP LIS			
					SIGDEF FOR	LIBASCTIM LIS			
					LIBTABMAC MAR	LIBATTACH LIS			
					LIBAZEREV LIS	LIBBBSST LIS		LIBCALLG LIS	LIBCLICAL LIS
					LIBADDP LIS				