



```

MM      MM      AAAAAA      IIIIII      LL
MM      MM      AAAAAA      IIIIII      LL
MMMM    MMMM    AA          AA      II      LL
MMMM    MMMM    AA          AA      II      LL
MM      MM      AA          AA      II      LL
MM      MM      AA          AA      II      LL
MM      MM      AA          AA      II      LL
MM      MM      AA          AA      II      LL
MM      MM      AAAAAAAAAA      II      LL
MM      MM      AAAAAAAAAA      II      LL
MM      MM      AA          AA      II      LL
MM      MM      AA          AA      II      LL
MM      MM      AA          AA      IIIIII  LL
MM      MM      AA          AA      IIIIII  LLLLLLLLLL
MM      MM      AA          AA      IIIIII  LLLLLLLLLL
MM      MM      AA          AA      IIIIII  .....
MM      MM      AA          AA      IIIIII  .....
MM      MM      AA          AA      IIIIII  .....
MM      MM      AA          AA      IIIIII  .....

```

```

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
LL      IIIIII      SSSSSSSS
LLLLLLLLLLLL IIIIII  SSSSSSSS
LLLLLLLLLLLL IIIIII  SSSSSSSS

```

```
1 0001 0
2 0002 0 MODULE MAIL (LANGUAGE (BLISS32)
3 0003 0 IDENT = 'V04-000'
4 0004 0 ) =
5 0005 1 BEGIN
6 0006 1
7 0007 1 *****
8 0008 1 *
9 0009 1 * COPYRIGHT (c) 1978, 1980, 1982, 1984 BY *
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26 0026 1 *
27 0027 1 *
28 0028 1 *****
29 0029 1
30 0030 1 ++
31 0031 1
32 0032 1 FACILITY: MTAACP
33 0033 1
34 0034 1 ABSTRACT:
35 0035 1 This module handles reading from the mailbox and enabling mailbox ast's.
36 0036 1
37 0037 1
38 0038 1 ENVIRONMENT:
39 0039 1
40 0040 1 Starlet operating system, including privileged system services
41 0041 1 and internal exec routines.
42 0042 1
43 0043 1 --
44 0044 1
45 0045 1
46 0046 1
47 0047 1 AUTHOR: D. H. GILLESPIE, CREATION DATE: 31-OCT-77
48 0048 1
49 0049 1 MODIFIED BY:
50 0050 1
51 0051 1 V02-004 DMW00019 David Michael Walp 26-May-1981
52 0052 1 Calculate correct size of mailbox message. Change in
53 0053 1 message format from OPCOM.
54 0054 1
55 0055 1 V02-003 REFORMAT Maria del C. Nasr 30-Jun-1980
56 0056 1
57 0057 1 **
```

MAT  
Sym  
AOB  
FCB  
FMG  
MVL  
RVT  
VCB  
WCB  
PSE  
---  
\$CC  
Pha  
---  
Ini  
Com  
Pas  
Sym  
Pas  
Sym  
Pse  
Cro  
Ass  
The  
302  
The  
320  
7 p  
Mac  
---  
-\$2  
-\$2  
TOT  
O G  
The  
MAC

```
.. 58 0058 1
.. 59 0059 1 LIBRARY 'SYSS$LIBRARY:LIB.L32';
.. 60 0060 1
.. 61 0061 1 REQUIRE 'SRC$:MTADEF.B32';
.. 62 0445 1
.. 63 0446 1 FORWARD ROUTINE
.. 64 0447 1
.. 65 0448 1 CHECK_MAIL : COMMON_CALL NOVALUE, : Check mailbox for reply
.. 66 0449 1 : : from operator
.. 67 0450 1 ENABLE_MAIL_AST : COMMON_CALL NOVALUE; : enable ast's from mailbox
.. 68 0451 1
.. 69 0452 1 EXTERNAL ROUTINE
.. 70 0453 1 DO_CANCEL : COMMON_CALL, : cancel all outstanding IO
.. 71 0454 1 REQUEST_UNBLOCK : COMMON_CALL, : request unblock unless
.. 72 0455 1 : : cancel requested
.. 73 0456 1 SYSS$QIOW : ADDRESSING_MODE (ABSOLUTE);
.. 74 0457 1 : queue IO request and wait
.. 75 0458 1
.. 76 0459 1 EXTERNAL
.. 77 0460 1 MAIL_CHANNEL, : mailbox channel number
.. 78 0461 1 IO_STATUS, : status of IO
.. 79 0462 1 WORK_AREA; : work area defined in OPRCOM
.. 80 0463 1
.. 81 0464 1 BIND
.. 82 0465 1 MAIL = WORK_AREA : BBLOCK [MSGSIZE],
.. 83 0466 1 MAILSZ = WORK_AREA + MSGSIZE;
.. 84 0467 1
```

```

86 0468 1 GLOBAL ROUTINE CHECK_MAIL : COMMON_CALL NOVALUE =
87 0469 1
88 0470 1 !++
89 0471 1
90 0472 1 FUNCTIONAL DESCRIPTION:
91 0473 1 This routine checks for reply from operator in mailbox.
92 0474 1
93 0475 1 CALLING SEQUENCE:
94 0476 1 CHECK_MAIL(), called either as an AST routine or before hibernating
95 0477 1
96 0478 1 INPUT PARAMETERS:
97 0479 1 none
98 0480 1
99 0481 1 IMPLICIT INPUTS:
100 0482 1 mailbox input
101 0483 1
102 0484 1 OUTPUT PARAMETERS:
103 0485 1 none
104 0486 1
105 0487 1 IMPLICIT OUTPUTS:
106 0488 1 Depending on the reply, the blocked request is either canceled,
107 0489 1 aborted, or continued.
108 0490 1 mailsz - size of operator text
109 0491 1 mail - contains mailbox message with operator text
110 0492 1
111 0493 1 ROUTINE VALUE:
112 0494 1 none
113 0495 1
114 0496 1 SIDE EFFECTS:
115 0497 1 none
116 0498 1
117 0499 1 USER ERRORS:
118 0500 1 none
119 0501 1
120 0502 1 --
121 0503 1
122 0504 2 BEGIN
123 0505 2
124 0506 2 LITERAL
125 0507 2 CR = 13, ! carriage return
126 0508 2 LF = 10, ! linefeed
127 0509 2 CR_LF_LEN = 2; ! length of <CRLF>
128 0510 2
129 0511 2 BIND
130 0512 2 CR_LF = UPLIT BYTE ( CR, LF );
131 0513 2 ! <CRLF> string
132 0514 2
133 0515 2 EXTERNAL REGISTER
134 0516 2 COMMON_REG;
135 0517 2
136 0518 2 LOCAL
137 0519 2 STATUS : LONG, ! system service status
138 0520 2 VCB : REF BBLOCK, ! address of volume control block
139 0521 2 START_TEXT : LONG, ! pointer to start of oper reply text
140 0522 2 POINTER : LONG; ! pointer into the operator reply
141 0523 2
142 0524 2 ! Read the mailbox and if nothing there exit immediately

```

```
143 0525 2
144 0526 2
145 0527 2
146 0528 2
147 0529 2
148 0530 2
149 0531 2
150 0532 2
151 0533 2
152 0534 2
153 0535 2
154 0536 2
155 0537 2
156 0538 2
157 0539 2
158 0540 2
159 0541 2
160 0542 2
161 0543 2
162 0544 2
163 0545 2
164 0546 2
165 0547 2
166 0548 2
167 0549 3
168 0550 3
169 0551 4
170 0552 2
171 0553 2
172 0554 2
173 0555 2
174 0556 2
175 0557 2
176 0558 2
177 0559 2
178 0560 2
179 0561 2
180 0562 2
181 0563 2
182 0564 2
183 0565 2
184 0566 2
185 0567 2
186 0568 2
187 0569 2
188 0570 2
189 0571 2
190 0572 2
191 0573 2
192 0574 2
193 0575 2
194 0576 2
195 0577 2
196 0578 2
197 0579 2
198 0580 2
199 0581 2

!
STATUS = $QIOW( EFN = EFN,
                CHAN = .MAIL CHANNEL,
                FUNC = 'IOS READLBLK' OR IOSM_NOW,      ! don't wait for reply
                IOSB = IO_STATUS,
                P1 = MAIL,
                P2 = MSGSIZE );
IF NOT .STATUS THEN IO_STATUS = .STATUS;
IF .IO_STATUS EQL SS$_ENDOFFILE THEN RETURN;
! The other errors that can show up are programming problems:
! SS$_NOPRIV,SS$_ACCVIO,SS$_MBTOOSML
IF NOT .IO_STATUS THEN BUG_CHECK(ACPMBFAIL);
! Setup size of operator text. The operator's typed in text starts 8
! bytes ( request ID and other reply info ) from the start of the message.
! The operator text ends with a <CRLF>. The rest of the message is the
! XOPCOM line.
START_TEXT = MAIL + $BYTEOFFSET(OPC$_MS_TEXT);
POINTER    = CH$FIND_SUB ( .IO_STATUS<16,16> - $BYTEOFFSET(OPC$_MS_TEXT),
                          .START_TEXT, CR_LF_LEN, CR_LF );
MAILSZ     = ( IF CH$FAIL ( .POINTER )
                THEN 0
                ELSE ( .POINTER - .START_TEXT )
              );
! Now since all AST's are delivered at once upon receipt to one reply
! reenable AST's on this mailbox
ENABLE_MAIL_AST();
! The reply id is the VCB address, if not VCB block then ignore message
VCB = .MAIL[OPC$_MS_RPLYID];
IF .VCB[VCB$_TYPE] NEQ DYN$_VCB THEN RETURN;
! Now examine message to see what the reply contains if request is pending
! then ignore operator reply.
STATUS = OPC$_RQSTPEND;
IF .STATUS<0,16> EQL .MAIL[OPC$_MS_STATUS] THEN RETURN;
! If this volume is not waiting for volume mount then there is the
! possibility that a CANCEL_OP_REPLY failed and the cancel was completed
! before receipt of either a completion or cancel reply
IF NOT .VCB[VCB$_WAIMOUVOL] THEN RETURN;
! If the request was successful or canceled then unblock the process
! checking that the cancel of IO takes place if requested
IF .MAIL[OPC$_MS_STATUS] OR .VCB[VCB$_CANCELIO]
THEN
```

```

: 200 0582 3
: 201 0583 3
: 202 0584 3
: 203 0585 3
: 204 0586 3
: 205 0587 3
: 206 0588 3
: 207 0589 3
: 208 0590 3
: 209 0591 3
: 210 0592 1

```

```

BEGIN
REQUEST_UNBLOCK(.VCB);
RETURN;
END;
! returns only if cancel done

! The only case left is that the operator aborted the request

CURRENT_VCB = .VCB;
ERROR(SS$ ABORT);
KERNEL_CALL(DO_CANCEL);
END;
! end of routine

```

```

.TITLE MAIL
.IDENT \V04-000\

.PSECT $CODE$,NOWRT,2

OA OD 0000 P.AAA: .BYTE 13, 10
CR_LF= P.AAA
.EXTRN DO_CANCEL, REQUEST_UNBLOCK
.EXTRN SYSSQIOW, MAIL_CHANNEL
.EXTRN IO_STATUS, WORK_AREA
.EXTRN BUG$ACPMBFAIL, USER_STATUS
.EXTRN SYSSCMKRNL

.ENTRY CHECK_MAIL, Save R2,R3,R4,R5,R6,R7
57 0000G CF 9E 00002 MOVAB IO_STATUS, R7
56 0000G CF 9E 00007 MOVAB MAIL+2, R6
7E 7C 7E 7C 0000C CLRQ -(SP)
FE 8F 9A 00010 MOVZBL #124, -(SP)
7E 7E 7C 00017 PUSHAB MAIL
61 57 DD 00019 CLRQ -(SP)
0000G 8F 9A 0001B PUSHL R7
0000G CF DD 0001F MOVZBL #97, -(SP)
00000000G 00 01 DD 00023 PUSHL MAIL_CHANNEL
55 50 D0 0002C CALLS #12, SYSSQIOW
03 55 E8 0002F MOVL R0, STATUS
00000870 67 55 D0 00032 BLBS STATUS, 1$
8F 67 D1 00035 MOVL STATUS, IO_STATUS
04 74 13 0003C CMPL IO_STATUS, #2160
FEFF 67 E8 0003E BEQL 8$
0000* 00041 BLBS IO_STATUS, 2$
00043 BUGW
54 06 A6 9E 00045 .WORD <BUG$ ACPMBFAIL!4>
50 02 A7 3C 00049 MOVAB MAIL+8, START_TEXT
50 08 C2 0004D MOVZWL IO_STATUS+2, R0
64 50 02 39 00050 SUBL2 #8, R0
50 AA AF 03 13 00056 MATCHC #2, CR_LF, R0, (START_TEXT)
53 02 D0 00058 BEQL 3$
53 02 C2 0005B MOVL #2, R3
04 12 0005E SUBL2 #2, R3
53 04 12 0005E BNEQ 4$
04 53 D4 00060 CLRL R3

```

```

: 0468
: 0531
: 0532
: 0534
: 0539
: 0546
: 0547
: 0549

```

		53		03	11	00062		BRB	5\$			
		A6		54	C2	00064	4\$:	SUBL2	START TEXT, R3			0551
	7A	CF		53	D0	00067	5\$:	MOVL	R3, MAILSZ			0549
	0000V	52		00	FB	0006B		CALLS	#0, ENABLE_MAIL_AST			0557
		11		A6	D0	00070		MOVL	MAIL+4, VCB			0561
			02	A2	91	00074		CMPB	10(VCB), #17			0562
			0A	38	12	00078		BNEQ	8\$			
		55	00058021	8F	D0	0007A		MOVL	#360481, STATUS			0567
		66		55	B1	00081		CMPW	STATUS, MAIL+2			0569
				2C	13	00084		BEQL	8\$			
27	0B	A2		02	E1	00086		BBC	#2, 11(VCB), 8\$			0575
		05		66	E8	0008B		BLBS	MAIL+2, 6\$			0580
08	0B	A2		05	E1	0008E		BBC	#5, 11(VCB), 7\$			
		CF		52	DD	00093	6\$:	PUSHL	VCB			0583
	0000G			01	FB	00095		CALLS	#1, REQUEST_UNBLOCK			
		5B			04	0009A		RET				0582
		CF		52	D0	0009B	7\$:	MOVL	VCB, CURRENT_VCB			0589
	0000G			2C	B0	0009E		MOVW	#44, USER_STATUS			0590
				7E	D4	000A3		CLRL	-(SP)			0591
				5E	DD	000A5		PUSHL	SP			
			0000G	CF	9F	000A7		PUSHAB	DO_CANCEL			
	00000000G	9F		03	FB	000AB		CALLS	#3, @#SYSS\$CMKRNL			
				04	000B2		8\$:	RET				0592

: Routine Size: 179 bytes, Routine Base: \$CODE\$ + 0002



```

212 0593 1 GLOBAL ROUTINE ENABLE_MAIL_AST : COMMON_CALL NOVALUE =
213 0594 1
214 0595 1 ++
215 0596 1
216 0597 1 FUNCTIONAL DESCRIPTION:
217 0598 1 This routine enables AST's on the mailbox channel
218 0599 1
219 0600 1 CALLING SEQUENCE:
220 0601 1 ENABLE_MAIL_AST()
221 0602 1
222 0603 1 INPUT PARAMETERS:
223 0604 1 none
224 0605 1
225 0606 1 IMPLICIT INPUTS:
226 0607 1 none
227 0608 1
228 0609 1 OUTPUT PARAMETERS:
229 0610 1 none
230 0611 1
231 0612 1 IMPLICIT OUTPUTS:
232 0613 1 AST declaration for mailbox enabled
233 0614 1
234 0615 1 ROUTINE VALUE:
235 0616 1 none
236 0617 1
237 0618 1 SIDE EFFECTS:
238 0619 1 none
239 0620 1
240 0621 1 USER ERRORS:
241 0622 1 none
242 0623 1
243 0624 1 --
244 0625 1
245 0626 2 BEGIN
246 0627 2
247 0628 2 EXTERNAL REGISTER
248 0629 2 COMMON_REG;
249 0630 2
250 0631 2 BIND
251 0632 2 SECONDS = UPLIT (-70000000, -1);
252 0633 2
253 0634 2 LOCAL
254 0635 2 STATUS;
255 0636 2
256 0637 2 ! This enables an AST when mail is placed in the operator communication
257 0638 2 ! mailbox
258 0639 2 !
259 0640 2 WHILE 1 DO
260 0641 2 BEGIN
261 0642 2
262 P 0643 2 STATUS = $QIOW( CHAN = .MAIL_CHANNEL,
263 PP 0644 2 FUNC = IOS_SETMODE,
264 PP 0645 2 IOSB = IO_STATUS,
265 P 0646 2 P1 = CHECK_MAIL,
266 0647 2 P3 = EXEC_MODE );
267 0648 2
268 0649 2 IF NOT .STATUS THEN IO_STATUS = .STATUS;

```

```

: 269 0650 3
: 270 0651 3
: 271 0652 4
: 272 0653 4
: 273 0654 4
: 274 0655 4
: 275 0656 4
: 276 0657 4
: 277 0658 4
: 278 0659 1

```

IF .IO\_STATUS NEQ SSS\_INSMEM THEN EXITLOOP;

IF \$SETIMR(EFN = TIMEFN, DAYTIM = SECONDS)

THEN  
SWAITFR(EFN = TIMEFN);

END;

END;

! end of routine

```

          FFFFFFFF FBD3E280 000B5 .BLKB 3
          000B8 P.AAB: .LONG -70000000, -1
          SECONDS= P.AAB
                  .EXTRN SYSS$SETIMR, SYSS$WAITFR
          000C 00000 .ENTRY ENABLE_MAIL_AST, Save R2,R3
53 0000G CF 9E 00002 MOVAB IO_STATUS, R3 ; 0593
7E 7E 7C 00007 1$: CLRQ -(SP) ; 0647
01 7D 00009 MOVQ #1, -(SP)
7E D4 0000C CLRQ -(SP)
FF30 CF 9F 0000E PUSHAB CHECK_MAIL
7E 7C 00012 CLRQ -(SP)
53 DD 00014 PUSHL R3
23 DD 00016 PUSHL #35
0000G CF DD 00018 PUSHL MAIL_CHANNEL
7E D4 0001C CLRQ -(SP)
00000000G 00 0C FB 0001E CALLS #12, SYSS$QIOW
52 50 D0 00025 MOVL R0, STATUS
03 52 E8 00028 BLBS STATUS, 2$ ; 0649
00000124 63 52 D0 0002B MOVL STATUS, IO_STATUS
8F 63 D1 0002E 2$: CMPL IO_STATUS, #292 ; 0651
1C 12 00035 BNEQ 3$ ; 0653
7E 7C 00037 CLRQ -(SP)
BC AF 9F 00039 PUSHAB SECONDS
03 DD 0003C PUSHL #3
00000000G 00 04 FB 0003E CALLS #4, SYSS$SETIMR
BF 50 E9 00045 BLBC R0, 1$ ; 0655
03 DD 00048 PUSHL #3 ; 0655
00000000G 00 01 FB 0004A CALLS #1, SYSS$WAITFR ; 0640
B4 11 00051 BRB 1$ ; 0659
04 00053 3$: RET

```

; Routine Size: 84 bytes, Routine Base: \$CODE\$ + 00C0

```

: 279 0660 1
: 280 0661 1 END
: 281 0662 1
: 282 0663 0 ELUDOM

```

PSECT SUMMARY

```
Name          Bytes          Attributes
$CODES        276 NOVEC,NOWRT, RD , EXE,NOSHR, LCL, REL, CON,NOPIC,ALIGN(2)
```

Library Statistics

```
File          Total  Symbols  Percent  Pages  Processing
              -----  Loaded  -----  Mapped  Time
_$255$DUA28:[SYSLIB]LIB.L32;1  18619      23      0      1000    00:01.9
```

COMMAND QUALIFIERS

BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LISS:MAIL/OBJ=OBJ\$:MAIL MSRCS:MAIL/UPDATE=(ENHS:MAIL)

```
: Size:          263 code + 13 data bytes
: Run Time:      00:09.6
: Elapsed Time: 00:25.3
: Lines/CPU Min: 4152
: Lexemes/CPU-Min: 21651
: Memory Used:  111 pages
: Compilation Complete
```

