THE mini-tasker

DECUS RT-11 SIG NEWSLETTER

NOVEMBER 1975 VOL. 1 NO. 5

The following program was submitted as a solution to the RT-11 power fail problem. Any questions regarding this program should be directed to:

Vincent E. Perriello
CAM Systems, Inc.
17 Brown Street
Waterbury, CT 06702
(203) 757-8010

```
        .TITLE  PWRDWN  V01-02
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
;
;       PWRDWN - PROGRAM TO ALLOW AN RT-11 SYSTEM TO BE SHUT DOWN
;                AND SUBSEQUENTLY RESTORED ON POWER-UP. IT WILL
;                RESET THE CONSOLE KEYBOARD AND USUALLY WILL NOT
;                CAUSE HARM TO A RUNNING FOREGROUND JOB ( THE
;                EXCEPTION TO THE RULE IS NOTED BELOW ) .
;
;       THE CALLING SEQUENCE IS AS FOLLOWS:
;
;               1) IF YOU ARE RUNNING A FOREGROUND JOB:
;                       .SUSPEND
;
;               2) IF YOUR CURRENT TERMINAL IS THE VT11 (GT40, ET AL) :
;                       .GT OFF
;
;               3)      .R PWRDWN
;
;
;       THE PROGRAM WILL DISABLE THE LINE CLOCK IF IT EXISTS, AND WILL
;       STOP KEYBOARD INPUT; NO CTRL/C ESCAPES ARE POSSIBLE BEFORE
;       POWER-DOWN. IT WILL THEN TYPE:
;
;                       READY TO SHUT DOWN.
;
;       AND WILL WAIT FOR THE FATEFUL MOMENT. AT POWER-UP TIME IT
;       WILL RESTORE THE NECESSARY THINGS, AND WILL TYPE:
;
;                       RT-11 IS UP!
;
```

```
;       IF THERE IS A LINE CLOCK, IT WILL REMIND YOU TO RESET IT BY:
;
;                       (PLEASE RESET THE TIME)
;
;       AND IT WILL EXIT TO THE RT-11 MONITOR. TYPE:
;
;                       .RSUME
;
;       TO CONTINUE FOREGROUND PROCESSING IF THERE WAS ANY,
;
;                       .GT ON
;
;       TO RESTORE THE "GT" SERIES SCOPE AS YOUR TERMINAL.
;
;       NOTE:   IF THE FOREGROUND JOB IS DOING I/O TO THE LINE-
;               PRINTER WHEN THE ".SUSPEND" IS EXECUTED, PART OF
;               A LINE WILL PROBABLY BE LOST, SINCE THE I/O DONE
;               TO THE PRINTER IS BLOCK RATHER THAN LINE-ORIENTED,
;               AND THE PRINTER'S INTERNAL BUFFER WILL PROBABLY
;               BE LOST IN A POWER SHUTDOWN.
;
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;


;
; SOME IMPORTANT STUFF
;


        .MCALL  .TLOCK, .PRINT, .EXIT
        .MCALL  .REGDEF,..V2..



;
; MAINLINE CODE
;
        ..V2..                          ;GET V2 MACRO EXPANSIONS
        .REGDEF                         ;DEFINE R0-R5,SP,PC
PWRDWN: MOV     @#54,   R0              ;GET BASE RMON ADDRESS,
        MOV     304(R0),KBSTAT          ;THEN SAVE LOCATION OF CONSOLE;
        MOV     300(R0),CLKFLG          ;ANNEX MONITOR CONFIG WORD
        .TLOCK                          ;MAKE SURE USR ISN'T SWAPPING;
CLKDWN: TST     CLKFLG                  ;IS THERE A CLOCK?
        BPL     PDPDWN                  ;NO - JUST GET IT OVER WITH.
        CLR     @#177546                ;YES- STOP IT FOR OUR PURPOSES.
PDPDWN: .PRINT  #DWNMSG                 ;PRINT "ALL SET, SUH" MESSAGE,
        CLR     @KBSTAT                 ;MAKE KB INTERRUPT IMPOSSIBLE,
        MOV     #24,    R0              ;SET POWER-FAIL ADDRESS:
        MOV     #PWRINT,(R0)+           ;STORE ROUTINE VECTOR,
        MOV     #340,   @R0             ;ASSOCIATED PRIORITY;
        BR      .                       ;JUST SIT HERE AND WAIT NOW.
```

```
;
; POWER-FAIL/AUTO-RESTART CODE
;
PWRINT: TST     PWRFLG                  ;ARE WE POWERING DOWN OR UP?
        BNE     PWRUP                   ;'UP' - GO GET IT DONE.
PWROFF: MOV     R5,     -(SP)           ;
        MOV     R4,     -(SP)           ;MOVE GENERAL REG'S (THE
        MOV     R3,     -(SP)           ;LIFE AND BLOOD OF RT-11)
        MOV     R2,     -(SP)           ;ONTO THE STACK;
        MOV     R1,     -(SP)           ;
        MOV     SP,     PWRFLG          ;SAVE STACK POINTER,SETTING RESTART FLAG;
R.I.P.: HALT                            ;DIE QUIETLY.


PWRUP:  MOV     PWRFLG, SP              ;\
        MOV     (SP)+,  R1              ; \
        MOV     (SP)+,  R2              ;  \ BRING BACK
        MOV     (SP)+,  R3              ;  / REGISTERS 1-6,
        MOV     (SP)+,  R4              ; /
        MOV     (SP)+,  R5              ;/
        CLR     @#24                    ;KILL POWER-FAIL VECTOR,
        BIS     #100,   @KBSTAT         ;BRING BACK KEYBOARD CONTROL,
RT11UP: .PRINT  #UPMSG                  ;PRINT GENERAL MESSAGE;
        TST     CLKFLG                  ;HELPFUL HINT TIME?
        BPL     EXIT                    ;NO, LET HIM FIGURE THINGS OUT.
        BIS     #100,   @#177546        ;PLEASE KEEP COUNT,
        .PRINT  #CLKMSG                 ;TELL USER TO SET THE TIME,
EXIT:   .EXIT                           ;BACK TO MOMMA WE GO.
KBSTAT: .WORD   0                       ;ADDRESS OF CONSOLE KB STATUS
CLKFLG: .WORD   0                       ;KW11L FLAG
PWRFLG: .WORD   0                       ;STACK PROTECT AND UP/DOWN FLIPFLOP

DWNMSG: .ASCIZ  /READY TO SHUT DOWN./



UPMSG:  .ASCIZ  /RT-11 IS UP!/



CLKMSG: .ASCIZ  /(PLEASE RESET THE TIME)/



        .END    PWRDWN
```

INSTALLATIONS

THE JOHNS HOPKINS UNIVERSITY
SCHOOL OF MEDICINE
725 N. WOLFE STREET
BALTIMORE, MARYLAND 21205

Each of our three PDP11/20 systems provides on-line support to a laboratory of neurophysiology. These systems will be converted from DOS to RT-11 during the present academic year. The PPD11/10 system provides on-line support to three laboratory stations used for medical student training in neurophysiology; it is an RT-11 system.

PDP11/20 #1
16 K core, EAE, RF11 disk, dual DECtapes, Centronix 102A printer, Hazeltine 2000 CRT terminal(parallel interfacing); Calcomp 565 plotter, Tektronix 613 display, laboratory interface.

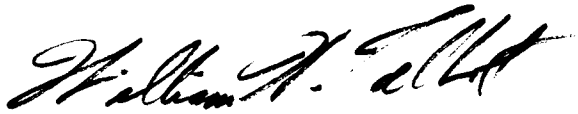
PDP11/20 #2
24 K core, EAE, RK05 disk, dual DECtapes, ASR-33 Teletype, Hazeltine 2000 CRT terminal(parallel interfacing), Calcomp 565 plotter, Tektronix 603 display, laboratory interface.

PDP11/20 #3
16 K core, EAE, RC11 & RK05 disks, dual DECtapes, DECwriter, TEC 2400 CRT terminal, laboratory interface.

PDP11/10
16 K core, EAE, RK05 disk, PC11 paper-tape reader/punch, DECwriter II, ASR-33 Teletype, Hazeltine 1000 CRT terminal, 2 AR-11 analog interface modules, 2 Tektronix 603 displays, laboratory interface.

The laboratory interfaces for these systems have been designed and built here. Each system has 48 bits of digital input and 48 bits of digital output. Each has four 16-bit programmable counters. The 11/20 interfaces include an 8-channel multiplexed A/D converter and four D/A converters. Analog interfacing for the 11/10 system is provided by the AR-11's.

The systems are used for automatic control of behavioral/neurophysiological experiments, for data acquisition, and for data analysis.



William H. Talbot, Ph.D.
Associate Professor of Physiology

☐ 1455 de Maisonneuve Blvd. West
Montreal, Quebec H3G 1M8

☒ 7141 Sherbrooke Street West
Montreal, Quebec H4B 1R6

Dr. E. Cerny

Tel. 482-0320 Ext.352

concordia university

The following is a description of the PDP-11 installation at the Dept. of E.E., Loyola Campus, Concordia University, 7141 Sherbrooke St. West, Montreal, H4B1R6, Quebec - Tel:(514) 482-0320.

It consists of:

PDP-11/20
16k of core memory
Programmable clock (kw.11-P)
Line clock (home made)
Dual DECtape
RK03 disk
Decwriter II
KSR-33 teletype with accoustic coupler
AD-11 A/D converters (8ch.)
AA-11A D/A converters (4 ch.)
Relay output (4 ch.)
DR-11A
Card reader
DR-11C + local interface for parallel communication with a PDP-11/45 in another dept.
Paper tape reader/punch

Tektronix 613 display with a home made controller (replacing AA 11-D) which allows for 8 levels of intensity control, 2 deflection speeds, storage/non-storage/cursor control.

Software:

RT-11 operating system with a Tek 613 driver for text display.
BASIC and FORTRAN both with routines supporting interactive graphics on Tek 613 and data acquisition.

Used for research in our and other departments, and for teaching computer programming and architecture.

Yours truly,

E. Cerny
Assist. Prof.
Dept. Electrical Engineering/
Loyola Campus,
Concordia University

EC/cc

CARLETON UNIVERSITY

Department of Systems Engineering

Hardware: GT44 system comprising 11/40 with EIS and floating-point options, 24k core, 2 x RK05, 2 x RX01, VT-11 (VT-17), DECwriter II, DL11E (2400 baud), KW11L, AR11, DR11C.

The DL11 is used for, among other things, interfacing to a Centronics line-printer in another laboratory.

We are currently running RT-11 V02B with Fortran V01B. We also have BASIC, but it is little used at present. The main use of our system is undergraduate (third year) teaching in computer science, with a small amount of research in computer animation and signal processing when we can throw the students off. Most of our research is performed at the moment on other systems.

Yours truly,

R. W. Burkill

RWB:mkc

R. W. Burkill.
(Tel. No. (613) 231-3860)

SPRS

20041

SOFTWARE PERFORMANCE REPORT

FIELD #:	SPR #:
FOR DEC USE ONLY	

Page ____ of ____

SYSTEM PROGRAM AND VERSION (OR DOCUMENT)	MONITOR AND VERSION	DATE
FORTRAN V01B-08	RT-11 V02B-05	30-SEP-75

NAME: William B. Fincke
FIRM: Marine Physical Lab
ADDRESS: MPL Bldg 106
NUC
San Diego, Ca. ZIP 92132
SUBMITTED BY: William B. Fincke PHONE: (714)-452-2310

LIST ATTACHMENTS: Program listing & printout

DEC OFFICE: San Diego

REPORT TYPE
- [X] LOGIC/CODING ERROR
- [ ] DOCUMENTATION ERROR
- [ ] SUGGESTION
- [ ] INQUIRY
- [ ] FOR YOUR INFORMATION

PRIORITY
- [ ] LOW
- [X] STANDARD
- [ ] HIGH

CAN THE PROBLEM BE REPRODUCED AT WILL?
- [X] YES
- [ ] NO

CPU TYPE	SERIAL NO.	SYSTEM DEVICE	MEMORY SIZE	DISTRIBUTION MEDIUM
PDP 11/20	483	RK05	28K	RK05

PROBLEM: 'ERR=s' specification does not cause a transfer of control on an error condition.

DIAGNOSIS: Unknown

CURE: Unknown

```
.R FORTRA
*ERRTST,TT=ERRTST
ERRTST,TT:=ERRTST
```

```
RT-11 FORTRAN IV        V01B-08    TUE 30-SEP-75                PAGE 001

0001          WRITE (1) J
0002          REWIND 1
0003          READ (1,END=10,ERR=20) I,J
0004          TYPE 101
0005          STOP
0006    10    TYPE 103
0007          STOP
0008    20    TYPE 104
0009          STOP
0010    101   FORMAT (' READ SUCCESS')
0011    103   FORMAT (' END OF FILE ON READ')
0012    104   FORMAT (' ERROR ON READ')
0013          END

RT-11 FORTRAN IV          STORAGE MAP

NAME     OFFSET  ATTRIBUTES

J        000102  INTEGER*2 VARIABLE
I        000104  INTEGER*2 VARIABLE
*^C

.R LINK
*ERRTST=ERRTST/F


*^C

.R ERRTST

?ERR 33 ATTEMPT TO READ PAST END OF RECORD
IN   ROUTINE ".MAIN."  LINE 3
```

SHOULD HAVE TRANSFERRED TO STATEMENT 20.
THIS PROBLEM IS NOT LIMITED TO ANY PARTICULAR ERROR. NO I/O ERROR CAUSES TRANSFER.

06373

SPR # _____

Field # _____

Page ____ of _____

SOFTWARE PERFORMANCE REPORT

Name: William B. Fincke	Software Specialist:
Company: Marine Physical Lab	Office: San Diego — Cost Center:
Address: MPL Bldg 106, NUC	Report type: ☒ Logic/coding error ☐ Documentation error ☐ Suggestion ☐ Inquiry
San Diego, Cal. — Zip: 92132	
Phone: (714)-452-2310 — Date sent: 30-SEP-75	
Computer: PDP 11/20 — System device: RK05 — Memory: 28K	Other hardware:
System program & version: FORTRAN V01B-08 — Monitor & version: RT-11 V02B-05	Document — Page
Attachments: ☒ terminal printout ☐ object tape ☐ source tape ☐ listing ☐ example	

PROBLEM: Under some circumstances modifying a random-access record will corrupt the preceding record, if the preceding record straddles a physical block boundary.

DIAGNOSIS: Random-access I/O module fails to fetch the block from the disc before updating the block in core.

CURE: Patching word 336(8) of the random-access I/O module seems to cure the problem. No errors have occurred in programs running under this patch. KNOWN

(SEE aTTACHED PROGRAM)

FOR SOFTWARE SPECIALIST USE ONLY — DATE RCVD — TO S.C.

FOR SOFTWARE COMMUNICATIONS USE ONLY — DATE RECD

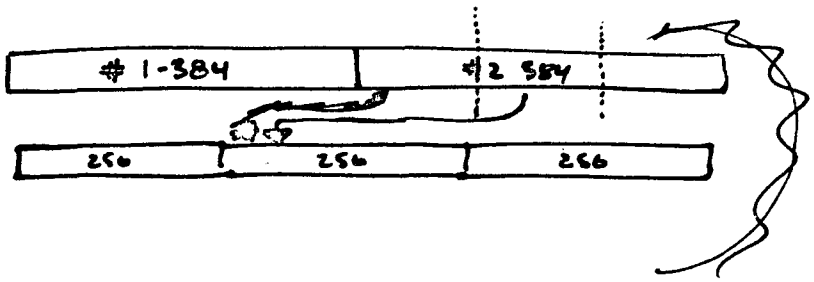
```
 R FORTRA
*RATEST^U
RATEST,TT:/L:1=RATEST/E

RT-11 FORTRAN IV          V01B-08     TUE 30-SEP-75                    PAGE 001

      C      PROGRAM TO TEST RANDOM ACCESS I/O
      C
0001          INTEGER IDATA(384)
      C
0002          DEFINE FILE 1(2,384,U,IVAR)
0003          DO 20 IREC=1,2
0004           DO 10 J=1,384
0005   10        IDATA(J) = (IREC-1)*384+J
0006           WRITE (1'IREC) IDATA
0007   20      CONTINUE
0008          READ (1'1) IDATA              !READ 1ST RECORD TO VERIFY IT
0009          TYPE 100,IDATA
0010          DO 30 J=1,384
0011   30      IDATA(J) = -J
0012          WRITE (1'2) IDATA             !REWRITE 2ND RECORD
0013          WRITE (1'2) IDATA             !REWRITE 2ND RECORD
0014          READ (1'1) IDATA              !CHECK 1ST AGAIN
0015          TYPE 100,IDATA
0016   100    FORMAT (' ',18I4)
0017          END
*^C

.R LINK
*RATEST,RATEST=RATEST/F


*^C

.RA^U
R RATEST

   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18
  19  20  21  22  23  24  25  26  27  28  29  30  31  32  33  34  35  36
  37  38  39  40  41  42  43  44  45  46  47  48  49  50  51  52  53  54
  55  56  57  58  59  60  61  62  63  64  65  66  67  68  69  70  71  72
  73  74  75  76  77  78  79  80  81  82  83  84  85  86  87  88  89  90
  91  92  93  94  95  96  97  98  99 100 101 102 103 104 105 106 107 108
 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126
 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144
 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162
 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180
 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198
 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216
 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234
 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252
 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270
 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288
 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306
 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324
 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342
 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360
 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378
```

```
 379  380  381  382  383  384
   1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18
  19   20   21   22   23   24   25   26   27   28   29   30   31   32   33   34   35   36
  37   38   39   40   41   42   43   44   45   46   47   48   49   50   51   52   53   54
  55   56   57   58   59   60   61   62   63   64   65   66   67   68   69   70   71   72
  73   74   75   76   77   78   79   80   81   82   83   84   85   86   87   88   89   90
  91   92   93   94   95   96   97   98   99  100  101  102  103  104  105  106  107  108
 109  110  111  112  113  114  115  116  117  118  119  120  121  122  123  124  125  126
 127  128  129  130  131  132  133  134  135  136  137  138  139  140  141  142  143  144
 145  146  147  148  149  150  151  152  153  154  155  156  157  158  159  160  161  162
 163  164  165  166  167  168  169  170  171  172  173  174  175  176  177  178  179  180
 181  182  183  184  185  186  187  188  189  190  191  192  193  194  195  196  197  198
 199  200  201  202  203  204  205  206  207  208  209  210  211  212  213  214  215  216
 217  218  219  220  221  222  223  224  225  226  227  228  229  230  231  232  233  234
 235  236  237  238  239  240  241  242  243  244  245  246  247  248  249  250  251  252
 253  254  255  256-129-130-131-132-133-134-135-136-137-138-139-140-141-142
-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160
-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178
-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196
-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214
-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232
-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250
-251-252-253-254-255-256
STOP --
```

THIS IS THE MIDDLE PART OF RECORD #2 OVERWRITTEN ON END OF RECORD #1.

```
?M-SWAP ERR
?M-SWAP ERR
?M-SWAP ERR
?M-SWAP ERR
?M-SWAP ERR
?M-SWAP ERR
?M-SWAP ERR
?M-SWAP ERR
?M-SWAP ERR
?M-SWAP ERR
?M-SWAP ERR
?M-SWAP ERR
?M-SWAP ERR
?M-SWAP ERR
?M-SWAP ERR
?M-SWAP ERR
```

NOT YOUR PROBLEM




```
.THIS PROBLEM WE CAN PATCH -
^U
R EDIT
*ERRATEST.MAP          \                \$$
*RGIRR$V$$
        006674  000562  IRR$    006674  IRW$    006714  $GETIN  007252
*^C

.R PATCH

PATCH V01-02

FILE NAME--
*RATEST.SAV
?FIL NOT FND?
*RATEST.SAV
*6674:0R
*0,330/ 22763
0,332/  1000
0,334/  134
0,336/  3484
0,340/  4767
```

RIO MODULE

WHO KNOWS WHY THIS IS DONE ANYWAY?

SUCCESSFUL RUN:

```
.R RATEST

  1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18
 19  20  21  22  23  24  25  26  27  28  29  30  31  32  33  34  35  36
 37  38  39  40  41  42  43  44  45  46  47  48  49  50  51  52  53  54
 55  56  57  58  59  60  61  62  63  64  65  66  67  68  69  70  71  72
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 91  92  93  94  95  96  97  98  99 100 101 102 103 104 105 106 107 108
109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126
127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144
145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162
163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180
181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198
199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216
217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234
235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252
253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270
271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288
289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306
307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324
325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342
343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360
361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378
379 380 381 382 383 384
  1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18
 19  20  21  22  23  24  25  26  27  28  29  30  31  32  33  34  35  36
 37  38  39  40  41  42  43  44  45  46  47  48  49  50  51  52  53  54
 55  56  57  58  59  60  61  62  63  64  65  66  67  68  69  70  71  72
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109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126
127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144
145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162
163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180
181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198
199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216
217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234
235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252
253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270
271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288
289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306
307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324
325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342
343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360
361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378
379 380 381 382 383 384
STOP --
```

SPR # _____

Field # _____

Page _____ of _____

SOFTWARE PERFORMANCE REPORT

Name: William B. Fincke			Software Specialist:
Company: Marine Physical Lab			Office: San Diego — Cost Center:
Address: MPL Bldg 106, NUC			Report type: [X] Logic/coding error; [ ] Documentation error; [ ] Suggestion; [ ] Inquiry
San Diego, Cal.		Zip: 92132	
Phone: (714)-452-2310	Date sent: 30-SEP-75		
Computer: PDP 11/20	System device: RK05	Memory: 28K	Other hardware:
System program & version: FORTRAN V01B-08	Monitor & version: RT-11 V02B-05		Document: — Page:
Attachments: [X] terminal printout	[ ] object tape	[ ] source tape	[ ] listing [ ] example

PROBLEM: Missing comma in I/O list crashes compiler.

DIAGNOSIS: Unknown

CURE: Unknown

```
*^C

.R FRTR^U
R FORTRA
*FORTST,TT:/L:1=FORTST



RT-11 FORTRAN IV          V01B-08     TUE 30-SEP-75          PAGE 001

0001          INTEGER I(2)
0002          TYPE 100,(I(J),J=1,2)K
0003          STOP
0004   100    FORMAT (' ',2I4)
0005          END
FATAL ERROR Z
*
```

NOTE MISSING COMMA HERE.

digital

SPR # _____

Field # _____

Page _____ of _____

SOFTWARE PERFORMANCE REPORT

Name: William B. Fincke			Software Specialist:
Company: ~~Marine~~// Marine Physical Lab			Office: San Diego — Cost Center:
Address: MPL Bldg 106, NUC			Report type: ☐ Logic/coding error ☒ Documentation error ☐ Suggestion ☐ Inquiry
San Diego, Ca.		Zip: 92132	
Phone: (714)-452-2310	Date sent: 30-SEP-75		
Computer: PDP 11/20	System device: RK05	Memory: 28K	Other hardware:
System program & version: FORTRAN V01B-08	Monitor & version: RT-11 V02B-05		Document: DEC-11-LRFPA-A-D Page B-6 FORTRAN Compiler & OTS Manual
Attachments: ☒ terminal printout	☐ object tape	☐ source tape	☐ listing ☐ example

PROBLEM: Interpretation of SETERR argument "number" is described incorrectly. The meanings of values '0' and '255' are reversed.

DIAGNOSIS: Documentation error.

CURE: Edit document.

```
.DAT
30-SEP-75

.R FORTRA
*SETEST,TT:=SETEST

RT-11 FORTRAN IV          V01B-08     TUE 30-SEP-75                PAGE 001

0001          CALL SETERR(2,0)     !SHOULD IGNORE INTEGER DIVIDE BY ZERO
0002          I = 1/0
0003          CALL SETERR(2,255)   !SHOULD IGNORE AFTER LOGGING
0004          I = 1/0
0005          END

RT-11 FORTRAN IV          STORAGE MAP

NAME     OFFSET  ATTRIBUTES

SETERR   000000  REAL*4     PROCEDURE
I        000014  INTEGER*2  VARIABLE
*^C

.R LINK
*SETEST=SETEST/F

*^C

.R SETEST

?ERR 2 INTEGER ZERO DIVIDE
IN   ROUTINE ".MAIN."  LINE 2

STOP --
```

↩ LOGS THE FIRST, NOT THE SECOND.

SPR # _____

Field # _____

Page _____ of _____

SOFTWARE PERFORMANCE REPORT

Name: William B. Fincke			Software Specialist:
Company: Marine Physical Lab			Office: San Diego / Cost Center:
Address: MPL Bldg 106, NUC			Report type: ☒ Logic/coding error ☐ Documentation error ☐ Suggestion ☐ Inquiry
San Diego, Ca.		Zip: 92132	
Phone: (714)-452-2310		Date sent: 30-SEP-75	
Computer: PDP 11/20	System device: RK05	Memory: 28K	Other hardware:
System program & version: Fortran V01B-08		Monitor & version: RT-11 V02B-05	Document: / Page:

Attachments: ☒ terminal printout ☐ object tape ☐ source tape ☐ listing ☐ example

PROBLEM: 'END FILE' statement corrupts TRAP vector at address 34. This causes a program crash if an OTS error trap occurs in the program following the 'END FIKE' statement.

DIAGNOSIS: The EOF module contains a destructive reference to absolute address 34.

CURE: Correct EOF code.

(SEE ATTACHED PROGRAM)

FOR SOFTWARE SPECIALIST USE ONLY		FOR SOFTWARE COMMUNICATIONS USE ONLY	
DATE REC'D	TO S.C.	DATE REC'D	TO MAINTAINER
DATE ANS'D	TO CUSTOMER	DATE ANS'D	TO SPECIALIST

```
 R FORTRA
*EOFTST,TT:=EOFTST



RT-11 FORTRAN IV        V01B-08    TUE 30-SEP-75                PAGE 001

      C     PROGRAM TO TEST EFFECT OF FORTRAN 'END FILE' STATEMENT
      C     ON THE TRAP VECTOR
      C
0001        TYPE 200,IPEEK("34)          !REPORT CONTENTS OF TRAP VECTOR
0002        WRITE (1,100) I                      !DO SOME FORMATTED I/O
0003        END FILE 1                   !END THE FILE
0004        TYPE 201,IPEEK("34)          !SAME THING IN THE TRAP VECTOR?
0005        CALL EXIT
0006  100   FORMAT (I3)
0007  200   FORMAT (' TRAP HANDLER ADDRESS - ',O6)
0008  201   FORMAT (' TRAP HANDLER ADDRESS AFTER ''END FILE'' - ',O6)
0009        END



RT-11 FORTRAN IV        STORAGE MAP

NAME    OFFSET  ATTRIBUTES

IPEEK   000000  INTEGER*2 PROCEDURE
I       000132  INTEGER*2 VARIABLE
EXIT    000000  REAL*4    PROCEDURE
*^C

 R LINK
*EOFTST=EOFTST/F
UNDEF GLBLS


*EOFTST=EOFTST,SYSLIB?F
?ILL CMD?
*EOFTST=EOFTST,SYSLIB/F


*^C

 R EFOTST
?FIL NOT FND?

 E EOFTST
040000
 R EOFTST

TRAP HANDLER ADDRESS -  10244
TRAP HANDLER ADDRESS AFTER 'END FILE' - 141554
```

SEE BACK FOR DIRECTIONS

digital

SOFTWARE PERFORMANCE REPORT

FIELD #: | SPR #:

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02674

SYSTEM PROGRAM AND VERSION (OR DOCUMENT)	MONITOR AND VERSION	DATE
RT-11 MACRO VM02-09	RT-11, V02	14 October 75

NAME: William H. Talbot, Ph.D.
FIRM: Department of Physiology
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REPORT TYPE
- [X] LOGIC/CODING ERROR
- [ ] DOCUMENTATION ERROR
- [ ] SUGGESTION
- [ ] INQUIRY
- [ ] FOR YOUR INFORMATION

PRIORITY
- [ ] LOW
- [X] STANDARD
- [ ] HIGH

SUBMITTED BY: William H. Talbot PHONE: (301)955-3881

LIST ATTACHMENTS: Minimal example of problem

CAN THE PROBLEM BE REPRODUCED AT WILL? [X] YES [ ] NO

CPU TYPE	SERIAL NO.	SYSTEM DEVICE	MEMORY SIZE	DISTRIBUTION MEDIUM
11/10	10680	RK05	16K	Diskpack

PROBLEM: Automatic generation of local symbols during macro expansion goes awry when the generated symbols occur in a part of the expansion that follows a line labelled with a user-defined conventional (non-local) symbol...

EXAMPLE:

```
.MACRO ONE LABEL1,?LABEL2,?LABEL3
LABEL1:    BR   .+2
LABEL2:    BR   .+2
LABEL3:    BR   .+2
.ENDM  ONE

.MACRO TWO ?LABEL
LABEL:     BR   .+2
.ENDM  TWO

.LIST     ME

START:     ONE  A
           A:   BR   .
         64$:   BR   .
         65$:   BR   .
           TWO
P        64$:   BR   .
```

EXPLANATION: A phase error occurs in the expansion of TWO because MACRO 11 updated the wrong local symbol block in expanding ONE. The symbols 64$ and 65$ generated during the expansion of ONE were considered to belong to the LSB that begins with START and ends with A whereas in fact they belong to the LSB that begins with A. Obviously the first automatically generated symbol that should have been available for use in the expansion of TWO was 66$.

TEMPORARY SOLUTION: End the local symbol block by force before expanding the second macro.

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DO NOT PUBLISH [ ]

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TO MAINTAINER	DATE CLOSED	LOGGED OFF

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