```
RRRRRRRRRRR      MMM          MMM      SSSSSSSSSSS
RRRRRRRRRRRR     MMM          MMM      SSSSSSSSSSSS
RRRRRRRRRRRR     MMM          MMM      SSSSSSSSSSSS
RRR          RRR MMMMMMM    MMMMMMM   SSS
RRR          RRR MMMMMMM    MMMMMMM   SSS
RRR          RRR MMMMMMM    MMMMMMM   SSS
RRR          RRR MMM   MMM   MMM   MMM SSS
RRR          RRR MMM   MMM   MMM   MMM SSS
RRR          RRR MMM   MMM   MMM   MMM SSS
RRRRRRRRRRR      MMM          MMM      SSSSSSSSS
RRRRRRRRRRRR     MMM          MMM      SSSSSSSSS
RRRRRRRRRRRR     MMM          MMM      SSSSSSSSS
RRR    RRR       MMM          MMM               SSS
RRR    RRR       MMM          MMM               SSS
RRR    RRR       MMM          MMM               SSS
RRR       RRR    MMM          MMM               SSS
RRR       RRR    MMM          MMM               SSS
RRR       RRR    MMM          MMM               SSS
RRR          RRR MMM          MMM  SSSSSSSSSSS
RRR       RRR    MMM          MMM               SSS
RRR          RRR MMM          MMM  SSSSSSSSSSS
RRR          RRR MMM          MMM  SSSSSSSSSSS
RRR          RRR MMM          MMM  SSSSSSSSSSS
```

```
RRRRRRRR    MM      MM      11        IIIIII    NN      NN  PPPPPPPP      SSSSSSSS    CCCCCCCC  NN      NN
RRRRRRRR    MM      MM      11        IIIIII    NN      NN  PPPPPPPP      SSSSSSSS    CCCCCCCC  NN      NN
RR      RR  MMMM  MMMM    1111          II      NN      NN  PP      PP    SS          CC        NN      NN
RR      RR  MMMM  MMMM    1111          II      NN      NN  PP      PP    SS          CC        NN      NN
RR      RR  MM  MM  MM      11          II      NNNN    NN  PP      PP    SS          CC        NNNN    NN
RR      RR  MM  MM  MM      11          II      NNNN    NN  PP      PP    SS          CC        NNNN    NN
RRRRRRRR    MM      MM      11          II      NN  NN  NN  PPPPPPPP      SSSSSS      CC        NN  NN  NN
RRRRRRR     MM      MM      11          II      NN  NN  NN  PPPPPPPP        SSSSSS    CC        NN  NN  NN
RR  RR      MM      MM      11          II      NN    NNNN  PP                  SS    CC        NN    NNNN
RR  RR      MM      MM      11          II      NN    NNNN  PP                  SS    CC        NN    NNNN
RR    RR    MM      MM      11          II      NN      NN  PP                  SS    CC        NN      NN      ....
RR    RR    MM      MM      11          II      NN      NN  PP                  SS    CC        NN      NN      ....
RR      RR  MM      MM    111111      IIIIII    NN      NN  PP          SSSSSSSS      CCCCCCCC  NN      NN      ....
RR      RR  MM      MM    111111      IIIIII    NN      NN  PP          SSSSSSSS      CCCCCCCC  NN      NN      ....

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
LLLLLLLLLL      IIIIII    SSSSSSSS
LLLLLLLLLL      IIIIII    SSSSSSSS
```

Table of contents

```
0000     1          $BEGIN  RM1INPSCN,000,RM$RMS1,<SYS$INPUT $, $EOD, & $DECK ROUTINES>
0000     2
0000     3 ;
0000     4 ;*****************************************************************************
0000     5 ;*                                                                           *
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0000    22 ;*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                  *
0000    23 ;*                                                                           *
0000    24 ;*                                                                           *
0000    25 ;*****************************************************************************
0000    26 ;
0000    27 ;++
0000    28 ; Facility: rms32
0000    29 ;
0000    30 ; Abstract:
0000    31 ;                this module performs end of file checking, as well as
0000    32 ;                $deck processing for $get /$find on sys$input
0000    33 ;                processing for the sequential file organization.
0000    34 ;
0000    35 ;
0000    36 ; Environment:
0000    37 ;                star processor running starlet exec.
0000    38 ;
0000    39 ; Author:        L F Laverdure,   creation date: 29-JAN-1978
0000    40 ;
0000    41 ; Modified By:
0000    42 ;
0000    43 ;       V03-002 KBT0140         Keith B. Thompson       20-Aug-1982
0000    44 ;               Reorganize psects
0000    45 ;
0000    46 ;       V03-001 KBT0085         Keith B. Thompson       13-Jul-1982
0000    47 ;               Clean up some of the psect nonsence
0000    48 ;
0000    49 ;       V02-006 RAS0017         Ron Schaefer    21-Jul-1981
0000    50 ;               Change buffer management so it can work with stream files.
0000    51 ;               In particular, this routine only scans the current buffer,
0000    52 ;               the caller must provide an adequate buffer size.
0000    53 ;
0000    54 ;       V005    REFORMAT        Ken Henderson   30-JUL-1980     6:24
0000    55 ;               the code was reformatted
0000    56 ;
0000    57 ; Revision History:
```

```
0000     58 ;
0000     59 ;
0000     60 ; 01     L F Laverdure,   17-JUN-1978  20:57
0000     61 ;--
0000     62 ;
0000     63
```

```
                     0000     65          .SBTTL  DECLARATIONS
                     0000     66
                     0000     67 ;
                     0000     68 ; Include Files:
                     0000     69 ;
                     0000     70
                     0000     71 ;
                     0000     72 ; Macros:
                     0000     73 ;
                     0000     74
                     0000     75          $IRBDEF
                     0000     76          $IFBDEF
                     0000     77          $DEVDEF
                     0000     78          $BDBDEF
                     0000     79          $PIODEF
                     0000     80          $RMSDEF
                     0000     81
                     0000     82 ;
                     0000     83 ;  macro to call dcl_scan subroutine, setting up in-line argument list
                     0000     84 ;  of match string and equality branch offset
                     0000     85 ;
                     0000     86
                     0000     87          .MACRO  DCL_SCAN STR=,EQUAL=,DISP=W,?L
                     0000     88          BSB'DISP        DCL_SCAN
                     0000     89          .ASCIC  %STR%
                     0000     90 L:       .BYTE   EQUAL-L                 ; offset to "equals" routine
                     0000     91          .ENDM   DCL_SCAN
                     0000     92
                     0000     93 ;
                     0000     94 ; Equated Symbols:
                     0000     95 ;
                     0000     96
00000009             0000     97          TAB     = 9                     ; horizontal tab
00000061             0000     98          LOWERCASE_A     = 97            ; lower case a
0000007A             0000     99          LOWERCASE_Z     = 122           ; lower case z
                     0000    100
0000000F             0000    101          EODSTR_MAXLEN   = 15            ; max. len. of end-of-data scan string
                     0000    102
                     0000    103 ;
                     0000    104 ;
                     0000    105 ; Own Storage:
                     0000    106 ;
                     0000    107
```

```
0000    109          .SBTTL  RM$INPUT_SCAN - CHECK SYS$INPUT FOR $, $EOD, OR $DECK RECORD
0000    110
0000    111 ;++
0000    112 ; RM$INPUT_SCAN
0000    113 ;
0000    114 ;  rm$input_scan routine to check the current (non-terminal) record for
0000    115 ;  matching the current sys$input end-of-data scan string.  this will be
0000    116 ;  either a single '$' or some user-defined string.  if the record matches
0000    117 ;  a user-defined string, cause this record to be skipped and return a
0000    118 ;  single rms$_eof error (i.e., do not latch), allowing further reads to
0000    119 ;  access subsequent records.
0000    120 ;
0000    121 ;  if matching a single '$', check if the pio$v_eod flag is on, specifying
0000    122 ;  that only a match of '$eod' is to be scanned for.  if so, then proceed as
0000    123 ;  for a match of a user-defined string above if the record contains $eod.
0000    124 ;
0000    125 ;  if not matching $eod, try for a match on $deck, and if so perform appropriate
0000    126 ;  processing.  if the record is not $deck, (i.e., it is some other record
0000    127 ;  beginning with a '$'), return rms$_eof  error and do not skip this record
0000    128 ;  so that subsequent $gets or $finds by the user will also encounter this
0000    129 ;  eof record.
0000    130 ;
0000    131 ;  if the record matches none of the above cases, simply return.  the record
0000    132 ;  will be processed normally, that is, it will be gotten or found for the user.
0000    133 ;
0000    134 ; Input Parameters:
0000    135 ;
0000    136 ;       r11     impure area addr
0000    137 ;       r10     ifab addr
0000    138 ;       r9      irab addr
0000    139 ;       r8      rab addr
0000    140 ;       r7      addr of end of buffer+1
0000    141 ;       r6      size of record in bytes
0000    142 ;       r1      addr of record in the buffer
0000    143 ;
0000    144 ; Implicit Inputs:
0000    145 ;
0000    146 ;       the contents of the various structures.
0000    147 ;       pio$gt_endstr   the current end-of-data scan string
0000    148 ;       pio$v_eod       $eod flag
0000    149 ;       note: if sys$input is from a disk file and records are allowed to
0000    150 ;             cross block boundaries, irb$b_mbc must be greater than 0,
0000    151 ;             otherwise the processing of a record crossing a block boundary
0000    152 ;             will cause rms to loop.  it is assumed that rm$connect1 has
0000    153 ;             forced mbc > 0.
0000    154 ;
0000    155 ;  (note: it has already been determined externally to this routine that
0000    156 ;   this is the sys$input stream, indirectly accessed, on a non-terminal device.
0000    157 ;
0000    158 ; outputs:
0000    159 ;
0000    160 ;       r2-r5,ap        destroyed
0000    161 ;       r0              status code
0000    162 ;
0000    163 ; Implicit Outputs:
0000    164 ;
0000    165 ;       irb$l_curbdb    may be cleared
```

```
0000   166 ;       irb$v_find      set if record is to be skipped ($eod, user-defined
0000   167 ;                       eod, or $deck)
0000   168 ;       irb$v_ppf_eof   set if $eod or user-defined eod.  after record is
0000   169 ;                       skipped, flags return of rms$_eof status.  in this
0000   170 ;                       case return status from rm$input_scan is rms$_suc.
0000   171 ;       irb$v_ppf_skip  set if record is $deck.  causes next record to be
0000   172 ;                       processed after $deck record is skipped.
0000   173 ;       irb$v_ppf_fndsv saves original state of irb$v_find when irb$v_ppf_skip
0000   174 ;                       is set
0000   175 ;
0000   176 ; completion code:
0000   177 ;
0000   178 ;       standard rms (suc or eof), except that a special code of hex 10000 will be
0000   179 ;        returned in r0 to indicate that record to be matched was not entirely
0000   180 ;        contained within the buffer.  in this case the current bdb has been
0000   181 ;        released and the buffer need merely be refilled.
0000   182 ;
0000   183 ; Side Effects:
0000   184 ;
0000   185 ;       matching the eod string resets the eod string to a single '$'.
0000   186 ;       $deck may set this to something else.
0000   187 ;       invalid syntax on '$' records will cause a hard eof, which will cause
0000   188 ;       the cli to process the offending record.
0000   189 ;
0000   190 ;--
0000   191
```

```
                              0000   193 RMS$INPUT_SCAN::
                              0000   194
                              0000   195 ;
                              0000   196 ;  Assume entire record is contained in the buffer.
                              0000   197 ;
                    51   DD   0000   198         PUSHL   R1                      ; save the current record offset
                              0002   199
                              0002   200 ;++
                              0002   201 ;
                              0002   202 ;  now try to match against end of data string
                              0002   203 ;
                              0002   204 ;--
                              0002   205
          53  00000000'9F     9E   0002   206         MOVAB   @#PIO$GT_ENDSTR,R3      ; get addr of end of data string
                   52   83     9A   0009   207         MOVZBL  (R3)+,R2                ; get string length
                   52   56     B1   000C   208         CMPW    R6,R2                   ; is record at least this long?
                        06     1F   000F   209         BLSSU   SUCXIT                  ; no = no match
              63   61   52     29   0011   210         CMPC3   R2,(R1),(R3)            ; eod string match?
                        06     13   0015   211         BEQL    EOD_MATCH               ; branch if yes
                              0017   212
                              0017   213 ;
                              0017   214 ; no - simply return
                              0017   215 ;
                              0017   216
                              0017   217 SUCXIT: RMSSUC
                    02   BA   001A   218 SCNXIT: POPR    #^M<R1>                 ; restore record address
                         05   001C   219 SCNRSB: RSB
```

```
                                001D   221
                                001D   222 ;++
                                001D   223 ;
                                001D   224 ;  have matched the current end-of-data string
                                001D   225 ;
                                001D   226 ;  if matching a single '$', must check for $eod and $deck, else have
                                001D   227 ;  matched a user-defined (via $deck) string and must skip it, giving
                                001D   228 ;  a single eof error.
                                001D   229 ;
                                001D   230 ;--
                                001D   231
                                001D   232 EOD_MATCH:
      2401 8F   00000000'9F   B1   001D   233          CMPW    @#PIO$GT_ENDSTR,#1+<^A/$/@8>    ; are we matching single '$'?
                          29   12   0026   234          BNEQ    END_OF_DATA                     ; branch if not
                50   56   01   C3   0028   235          SUBL3   #1,R6,R0                        ; set remaining byte count
                                002C   236          DCL_SCAN        <EOD>,EQUAL=END_OF_DATA1 ; scan for 'eod'
                                0034   237
                                0034   238 ;
                                0034   239 ; record not $eod
                                0034   240 ;
                                0034   241
        DB 00000000'9F   01   E0   0034   242          BBS     #PIO$V_EOD,@#PIO$GW_STATUS,SUCXIT ; branch if only matching '$eod'
                                003C   243          DCL_SCAN        <DECK>,EQUAL=GOT_DECK   ; scan for 'deck'
                                0045   244
                                0045   245 ;++
                                0045   246 ;
                                0045   247 ;  have found a '$' record that is neither $eod nor $deck.
                                0045   248 ;
                                0045   249 ;  return rms$_eof and reset the nrp to find this record again.
                                0045   250 ;
                                0045   251 ;--
                                0045   252
                                0045   253 SETEOF: RMSERR  EOF
      40 A9   48 A9   7D   004A   254          MOVQ    IRB$L_RP_VBN(R9),IRB$L_NRP_VBN(R9)
                   C9   11   004F   255          BRB     SCNXIT
```

```
                     0051   257
                     0051   258 ;++
                     0051   259 ;
                     0051   260 ;  have encounter user-defined end-of-data string
                     0051   261 ;
                     0051   262 ;  reset end-of-data scan string to match a single '$'
                     0051   263 ;
                     0051   264 ;--
                     0051   265
                     0051   266 END_OF_DATA:
00000000'9F    2401  8F  B0  0051   267         MOVW    #1+<^A/$/@8>,@#PIO$GT_ENDSTR
                       0B  11  005A   268         BRB     EOD1
                     005C   269
                     005C   270 ;++
                     005C   271 ;
                     005C   272 ;  have encounter $eod
                     005C   273 ;
                     005C   274 ;  clear irb$v_ppf_eod so that any '$' record will give eof error, and
                     005C   275 ;  set irb$v_ppf_eof to cause eof to be returned after record has been skipped.
                     005C   276 ;
                     005C   277 ;--
                     005C   278
                     005C   279 END_OF_DATA1:
00000000'9F      02  8A  005C   280         BICB2   #1@PIO$V_EOD,@#PIO$GW_STATUS; clear eod flag
                       50  D5  0063   281         TSTL    R0                      ; any other tokens seen?
                       DE  12  0065   282         BNEQ    SETEOF                  ; branch if yes (error)
                     0067   283 EOD1:   SSB     #IRB$V_PPF_EOF,(R9)     ; cause eof to be returned
                     006B   284 SET_FIND:
                     006B   285         SSB     #IRB$V_FIND,(R9)        ; set find bit to skip record
                       A6  11  006F   286 SUC_BR: BRB     SUCXIT
```

```
                                0071   288
                                0071   289 ;++
                                0071   290 ;
                                0071   291 ;  have found $deck
                                0071   292 ;
                                0071   293 ;  scan for /dollars qualifier
                                0071   294 ;
                                0071   295 ;--
                                0071   296
                                0071   297 GOT_DECK:
                                0071   298         DCL_SCAN  </DOLL>,EQUAL=GOT_DOLLARS     ; scan for '/doll'
                      C8   12   007B   299         BNEQ    SETEOF                          ; branch if something other than
                                007D   300
                                007D   301 ;
                                007D   302 ; '/doll' seen (error)
                                007D   303 ;++
                                007D   304 ;
                                007D   305 ;  saw $deck, either with no qualifier or with /dollars and either a null or
                                007D   306 ;  no argument.
                                007D   307 ;
                                007D   308 ;  in any case, set pio$v_eod to indicate '$eod' is the locical end-of-data string
                                007D   309 ;
                                007D   310 ;--
                                007D   311 ;
                                007D   312
          00000000'9F   02   88 007D   313 SETEOD: BISB2   #1@PIO$V_EOD,@#PIO$GW_STATUS
                                0084   314 SET_SKIP:
                                0084   315         SSB     #IRB$V_PPF_SKIP,(R9)    ; set flag to skip $deck record
                                0088   316
                                0088   317 ;
                                0088   318 ; and read the next
                                0088   319 ;
                                0088   320
                DF 69   29   E1 0088   321         BBC     #IRB$V_FIND,(R9),SET_FIND; branch if doing $get
                DF 69   30   E3 008C   322         BBCS    #IRB$V_PPF_FNDSV,(R9),SUC_BR; save find bit and branch
```

```
                     0090   324
                     0090   325 ;++
                     0090   326 ;
                     0090   327 ;  have found $deck /dollars
                     0090   328 ;
                     0090   329 ;  scan for end-of-data string value indicator ('=' or ':')
                     0090   330 ;
                     0090   331 ;--
                     0090   332
                     0090   333 GOT_DOLLARS:
                     0090   334         DCL_SCAN        <:>,EQUAL=GOT_ARG       ; scan for ':'
                     0096   335
E5   13              0096   336         BEQL    SETEOD                          ; branch if nothing else in record
                     0098   337         DCL_SCAN        <=>,EQUAL=GOT_ARG       ; scan for '='
                     009E   338
A5   11              009E   339         BRB     SETEOF                          ; bad syntax - give eof error
                     00A0   340
                     00A0   341 ;++
                     00A0   342 ;
                     00A0   343 ;  have found $deck /dollars :
                     00A0   344 ;
                     00A0   345 ;  scan for end-of-data string value
                     00A0   346 ;
                     00A0   347 ;--
                     00A0   348
                     00A0   349 GOT_ARG:
                     00A0   350         DCL_SCAN        <'>,EQUAL=GOT_QUOTE     ; scan for quoted string
D5   13              00A6   351         BEQL    SETEOD                          ; branch if nothing else
                     00A8   352
                     00A8   353 ;++
                     00A8   354 ;
                     00A8   355 ;  have an unquoted, non-null end-of-data string value described by r0,r1
                     00A8   356 ;
                     00A8   357 ;  copy characters to end of data string up to first blank, tab or "!",
                     00A8   358 ;  converting them to upper case.
                     00A8   359 ;
                     00A8   360 ;--
                     00A8   361
      52   01   D0    00A8   362         MOVL    #1,R2                           ; flag unquoted string value
           02   11    00AB   363         BRB     UNQUOTED
                     00AD   364
                     00AD   365 ;++
                     00AD   366 ;
                     00AD   367 ;  have found $deck /dollars : ''
                     00AD   368 ;
                     00AD   369 ;  scan for closing quote, moving characters to end of data string.
                     00AD   370 ;  process such that successive double quotes cause a single double quote
                     00AD   371 ;  to be entered into the end of data string.
                     00AD   372 ;
                     00AD   373 ;--
                     00AD   374
                     00AD   375 GOT_QUOTE:
      52   D4        00AD   376         CLRL    R2                              ; flag quoted string
                     00AF   377 UNQUOTED:
      55   D4        00AF   378         CLRL    R5                              ; build string count here
54    00000000'9F    9E    00B1   379         MOVAB   @#PIO$GT_ENDSTR,R4      ; addr of eod string length
 53   01 A4         9E    00B8   380         MOVAB   1(R4),R3                ; addr of eod string text
```

```
                03   11   00BC    381          BRB     20$                     ; go process characters
             83 81   90   00BE    382 10$:     MOVB    (R1)+,(R3)+             ; copy char to eoo string
                50   D7   00C1    383 20$:     DECL    R0                      ; any more characters?
                4C   19   00C3    384          BLSS    60$                     ; branch if not
              10 52   E8   00C5    385          BLBS    R2,45$                  ; branch if unquoted string
             22 61   91   00C8    386          CMPB    (R1),#^A/"/             ; matching quote?
                32   13   00CB    387          BEQL    50$                     ; branch if yes
          ED 55 0F   F3   00CD    388 30$:     AOBLEQ  #EODSTR_MAXLEN,R5,10$   ; count char. and branch if ok
                               00D1    389
                               00D1    390 ;++
                               00D1    391 ;
                               00D1    392 ;  exceeded max character count.  reset eod match string to single '$'.
                               00D1    393 ;
                               00D1    394 ;--
                               00D1    395
          01 A4   24   90   00D1    396 40$:     MOVB    #^A/$/,1(R4)            ; restore match string
                FF6D   31   00D5    397          BRW     SETEOF                  ; go give error
                               00D8    398
                               00D8    399 ;++
                               00D8    400 ;
                               00D8    401 ;  unquoted string
                               00D8    402 ;
                               00D8    403 ;  move character to e-o-d string unless it's blank, tab, or "!"
                               00D8    404 ;  and convert to upper case.
                               00D8    405 ;
                               00D8    406 ;--
                               00D8    407
             20 61   91   00D8    408 45$:     CMPB    (R1),#^A/ /             ; space?
                2D   13   00DB    409          BEQL    55$                     ; branch if yes
             09 61   91   00DD    410          CMPB    (R1),#TAB               ; tab?
                28   13   00E0    411          BEQL    55$                     ; branch if yes
             21 61   91   00E2    412          CMPB    (R1),#^A/!/             ; "!"?
                23   13   00E5    413          BEQL    55$                     ; branch if yes
          61 8F 61   91   00E7    414          CMPB    (R1),#LOWERCASE_A       ; lower case char?
                E0   1F   00EB    415          BLSSU   30$                     ; branch if not
          7A 8F 61   91   00ED    416          CMPB    (R1),#LOWERCASE_Z       ; well, is it?
                DA   1A   00F1    417          BGTRU   30$                     ; branch if not
          02 55 0F   F3   00F3    418          AOBLEQ  #EODSTR_MAXLEN,R5,48$   ; count char. & branch if ok
                D8   11   00F7    419          BRB     40$                     ; go process eod length error
       83 81 20   83   00F9    420 48$:     SUBB3   #LOWERCASE_A-^A/A/,(R1)+,(R3)+; convert to upper case
                C2   11   00FD    421          BRB     20$                     ; go get next char.
```

```
                     00FF    423
                     00FF    424 ;++
                     00FF    425 ;
                     00FF    426 ;  found a double quote character while processing quoted string
                     00FF    427 ;
                     00FF    428 ;  check next char. for double quote and include only one if found
                     00FF    429 ;
                     00FF    430 ;--
                     00FF    431
     50    D7        00FF    432 50$:    DECL    R0                      ; any more characters?
     0E    19        0101    433         BLSS    60$                     ; branch if not
     51    D6        0103    434         INCL    R1                      ; point to next char
22   61    91        0105    435         CMPB    (R1),#^A/"/             ; is it another " ?
     C3    13        0108    436         BEQL    30$                     ; branch if yes
                     010A    437
                     010A    438 ;++
                     010A    439 ;
                     010A    440 ;  have completed string value, but remaining string is non-null.
                     010A    441 ;
                     010A    442 ;  give an error if anything other than blanks, tabs, or comment.
                     010A    443 ;
                     010A    444 ;--
                     010A    445
     50    D6        010A    446 55$:    INCL    R0                      ; restore character count
   0077    30        010C    447         BSBW    BLNK_SKIP               ; skip blanks and tabs
     C0    12        010F    448         BNEQ    40$                     ; branch if other than comment
                     0111    449
                     0111    450 ;++
                     0111    451 ;
                     0111    452 ;  end of data string set up o.k.
                     0111    453 ;
                     0111    454 ;  store length and go skip record.
                     0111    455 ;
                     0111    456 ;--
                     0111    457
     55    95        0111    458 60$:    TSTB    R5                      ; any chars processed?
     03    12        0113    459         BNEQ    70$
   FF65    31        0115    460         BRW     SETEOD                  ; branch if none
64   55    90        0118    461 70$:    MOVB    R5,(R4)                 ; store count
   FF66    31        011B    462         BRW     SET_SKIP                ; go skip record
                     011E    463
```

```
                                        .SBTTL  DCL_SCAN SUBROUTINE

                                ;++
                                ;
                                ;  dcl_scan subroutine to scan for next token and compare it to one
                                ;  being searched for.  case is not significant for the compare.
                                ;  any initial blanks or tabs are skipped over.
                                ;
                                ;  if the strings match, the return is made to the address specified in the
                                ;  "equal" input argument, otherwise return is made in line.
                                ;  note that the dcl_scan macro is used to set up the in-line argument list
                                ;
                                ;  in the case of strings other than length 1, any characters following
                                ;  the matched characters and before the next terminator are considered
                                ;  to be part or the token and are also skipped in setting the remaining
                                ;  string descriptor, as are any trailing blanks or tabs.
                                ;
                                ;  inputs:
                                ;
                                ;       r0              remaining string length
                                ;       r1              remaining string start address
                                ;       (sp)            counted, upper-case string to match
                                ;       (sp)+count      branch byte offset for equal compare
                                ;
                                ;  outputs:
                                ;
                                ;       r0              length of remaining string (past token and possible
                                ;                       trailing blanks if matched)
                                ;       r1              address of remaining string
                                ;       r2-r5,ap        destroyed
                                ;
                                ;  notes:
                                ;
                                ;       1. if no match, r0 & r1 will be updated to point past any initial
                                ;          spaces and or tabs
                                ;       2. r0 will be set to 0 on return if no string or only a comment remains
                                ;       3. z-bit will be set based on r0
                                ;
                                ;--

09 2F 3A 3D 21 20               TRMLST: .ASCII  \ !=:/\<TAB>
         00000006                       TLSTSZ=.-TRMLST

                                DCL_SCAN:
      55    6E    D0                          MOVL    (SP),R5                 ; get addr of counted ascii

                                ;
                                ;  match string
                                ;

      54    85    9A                          MOVZBL  (R5)+,R4                ; get length of string

                                ;
                                ;  (r5 now points to string)
                                ;

      6E    54    C0                          ADDL2   R4,(SP)                 ; bump return address ...
```

```
                 6E   D6  012D    522          INCL    (SP)                    ; ... to point past ascii string
                          012F    523
                          012F    524 ;++
                          012F    525 ;
                          012F    526 ;  skip initial spaces and tabs
                          012F    527 ;
                          012F    528 ;--
                          012F    529
                 55   10  012F    530          BSBB    BLNK_SKIP               ; skip tabs and blanks
                 4E   13  0131    531          BEQL    NULL_STRING             ; branch if nothing left
                          0133    532
                          0133    533 ;++
                          0133    534 ;
                          0133    535 ;  the string desribed by r0, r1 is of non-zero length and does not begin
                          0133    536 ;  with tab, space, or "!"
                          0133    537 ;
                          0133    538 ;  see if it matches the scan string (described by r4 & r5)
                          0133    539 ;
                          0133    540 ;--
                          0133    541
              52   50   7D  0133    542          MOVQ    R0,R2                   ; save remaining len and addr
              50   54   C2  0136    543          SUBL2   R4,R0                   ; at least match count long?
                   43   19  0139    544          BLSS    NOMATCH                 ; branch if not
                   54   DD  013B    545          PUSHL   R4                      ; save match string count
              5C   81   90  013D    546 10$:     MOVB    (R1)+,AP                ; get next byte
           61 8F   5C   91  0140    547          CMPB    AP,#LOWERCASE_A         ; lower case?
                   09   1F  0144    548          BLSSU   20$                     ; branch if not
           7A 8F   5C   91  0146    549          CMPB    AP,#LOWERCASE_Z         ; well, is it?
                   03   1A  014A    550          BGTRU   20$                     ; branch if not
              5C   20   82  014C    551          SUBB2   #LOWERCASE_A - <^A/A/>,AP; convert to upper case
              85   5C   91  014F    552 20$:     CMPB    AP,(R5)+                ; match?
                   28   12  0152    553          BNEQ    UNEQUAL                 ; branch if not
                E6 54   F5  0154    554          SOBGTR  R4,10$                  ; loop
```

```
                         0157   556
                         0157   557 ;++
                         0157   558 ;
                         0157   559 ;  strings are equal
                         0157   560 ;
                         0157   561 ;  if match count is not = 1, scan to end of token and then to start of next token
                         0157   562 ;  (end of token is indicated by space, tab, !, /, =, or :)
                         0157   563 ;
                         0157   564 ;  in any case, take the "equal=" exit
                         0157   565 ;
                         0157   566 ;++
                         0157   567 ;--
                         0157   568
                      8E 0157   569          DECL    (SP)+                           ; was match count = 1?
                      18 0159   570          BEQL    60$                             ; branch if yes
                   52 50 7D 015B   571          MOVQ    R0,R2                           ; save remaining descriptor
                      07 015E   572          BRB     40$
             B9 AF 06 83 0160   573 30$:     LOCC    (R3)+,#TLSTSZ,TRMLST            ; is character a delimiter?
                      03 0165   574          BNEQ    50$                             ; branch if yes
                   F6 52 F4 0167   575 40$:     SOBGEQ  R2,30$                          ; loop if more characters
                      52 D6 016A   576 50$:     INCL    R2                              ; don't count terminator
                      53 D7 016C   577          DECL    R3                              ; or point past it
                   50 52 7D 016E   578          MOVQ    R2,R0                           ; descriptor to right regs
                      13 10 0171   579          BSBB    BLNK_SKIP                       ; go skip tabs and blanks
                52 00 BE 98 0173   580 60$:     CVTBL   @(SP),R2                        ; pick up "equal" branch offset
                   6E 52 C0 0177   581          ADDL2   R2,(SP)                         ; add in offset to return pc
                      07 11 017A   582          BRB     SCAN_XIT
                         017C   583
                         017C   584 ;++
                         017C   585 ;
                         017C   586 ;  the input string didn't contain the match string
                         017C   587 ;
                         017C   588 ;  leave r0,r1 describing any remaining string and take in-line (non-equal) return
                         017C   589 ;
                         017C   590 ;--
                         017C   591
                         017C   592 UNEQUAL:
                      8E D5 017C   593          TSTL    (SP)+                           ; pop saved match count
                         017E   594 NOMATCH:
                50 52 7D 017E   595          MOVQ    R2,R0                           ; restore save descriptor
                         0181   596 NULL_STRING:
                      6E D6 0181   597          INCL    (SP)                            ; skip past "equal" return offset
                         0183   598 SCAN_XIT:
                      50 D5 0183   599          TSTL    R0                              ; set z bit according to r0
                         05 0185   600          RSB
```

```
                     0186   602
                     0186   603 ;++
                     0186   604 ;
                     0186   605 ;  blnk_skip subroutine to skip past blanks and tabs, up to possible comment
                     0186   606 ;  or end of input string
                     0186   607 ;
                     0186   608 ;  inputs:
                     0186   609 ;
                     0186   610 ;       r0      input string length
                     0186   611 ;       r1      input string address
                     0186   612 ;
                     0186   613 ;  outputs:
                     0186   614 ;
                     0186   615 ;       r0      remaining string length after blanks and tabs skipped
                     0186   616 ;               (if only a comment left, r0 will be set to zero)
                     0186   617 ;       r1      remaining string address
                     0186   618 ;       z-bit   set if no more input (other than comment), else clear
                     0186   619 ;
                     0186   620 ;--
                     0186   621
                     0186   622 BLNK_SKIP:
    61    50   20    3B  0186   623 10$:     SKPC    #^A/ /,R0,(R1)          ; skip spaces
                12    13  018A   624         BEQL    30$                     ; branch if nothing but spaces
          61    09    91  018C   625         CMPB    #TAB,(R1)               ; is char tab?
                06    12  018F   626         BNEQ    20$                     ; branch if not (done)
                50    D7  0191   627         DECL    R0                      ; yes - decrement count
                51    D6  0193   628         INCL    R1                      ; skip tab
                EF    11  0195   629         BRB     10$                     ; and continue skipping
          61    21    91  0197   630 20$:     CMPB    #^A/!/,(R1)             ; do we have a comment?
                02    12  019A   631         BNEQ    30$                     ; branch if not
                50    D4  019C   632         CLRL    R0                      ; yes - say end of input
                05    00  019E   633 30$:     RSB                             ; return with z-bit set if no
                          019F   634
                          019F   635 ;
                          019F   636 ; more input
                          019F   637 ;
                          019F   638
                          019F   639
                          019F   640         .END
```

```
$$.PSECT_EP                     = 00000000
$$RMSTEST                       = 0000001A
$$RMS_PBUGCHK                   = 00000010
$$RMS_TBUGCHK                   = 00000008
$$RMS_UMODE                     = 00000004
BLNK_SKIP                         00000186 R      01
DCL_SCAN                          00000124 R      01
END_OF_DATA                       00000051 R      01
END_OF_DATA1                      0000005C R      01
EOD1                              00000067 R      01
EODSTR_MAXLEN                   = 0000000F
EOD_MATCH                         0000001D R      01
GOT_ARG                           000000A0 R      01
GOT_DECK                          00000071 R      01
GOT_DOLLARS                       00000090 R      01
GOT_QUOTE                         000000AD R      01
IRB$L_NRP_VBN                   = 00000040
IRB$L_RP_VBN                    = 00000048
IRB$V_FIND                      = 00000029
IRB$V_PPF_EOF                   = 0000002E
IRB$V_PPF_FNDSV                 = 00000030
IRB$V_PPF_SKIP                  = 0000002F
LOWERCASE_A                     = 00000061
LOWERCASE_Z                     = 0000007A
NOMATCH                           0000017E R      01
NULL_STRING                       00000181 R      01
PIO$GT_ENDSTR                     ********   X    01
PIO$GW_STATUS                     ********   X    01
PIO$V_EOD                       = 00000001
RM$INPUT_SCAN                     00000000 RG     01
RMS$_EOF                        = 0001827A
SCAN_XIT                          00000183 R      01
SCNRSB                            0000001C R      01
SCNXIT                            0000001A R      01
SETEOD                            0000007D R      01
SETEOF                            00000045 R      01
SET_FIND                          0000006B R      01
SET_SKIP                          00000084 R      01
SUCXIT                            00000017 R      01
SUC_BR                            0000006F R      01
TAB                             = 00000009
TLSTSZ                          = 00000006
TRMLST                            0000011E R      01
UNEQUAL                           0000017C R      01
UNQUOTED                          000000AF R      01
```

+----------------+
! Psect synopsis !
+----------------+

PSECT name	Allocation	PSECT No.	Attributes
. ABS .	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
RM$RMS1	0000019F (415.)	01 (1.)	PIC USR CON REL GBL NOSHR EXE RD NOWRT NOVEC BYTE
ABS	00000000 (0.)	02 (2.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE

Performance indicators

Phase	Page faults	CPU Time	Elapsed Time
Initialization	35	00:00:00.09	00:00:00.93
Command processing	132	00:00:00.70	00:00:05.80
Pass 1	271	00:00:07.54	00:00:22.25
Symbol table sort	0	00:00:00.93	00:00:02.03
Pass 2	122	00:00:02.08	00:00:08.15
Symbol table output	7	00:00:00.06	00:00:00.55
Psect synopsis output	2	00:00:00.02	00:00:00.02
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	571	00:00:11.42	00:00:39.74

The working set limit was 1200 pages.
42967 bytes (84 pages) of virtual memory were used to buffer the intermediate code.
There were 40 pages of symbol table space allocated to hold 747 non-local and 28 local symbols.
640 source lines were read in Pass 1, producing 14 object records in Pass 2.
20 pages of virtual memory were used to define 19 macros.

Macro library statistics

Macro library name	Macros defined
_255DUA28:[RMS.OBJ]RMS.MLB;1	10
_255DUA28:[SYS.OBJ]LIB.MLB;1	0
_255DUA28:[SYSLIB]STARLET.MLB;2	4
TOTALS (all libraries)	14

832 GETS were required to define 14 macros.

There were no errors, warnings or information messages.

```
MACRO/LIS=LIS$:RM1INPSCN/OBJ=OBJ$:RM1INPSCN MSRC$:RM1INPSCN/UPDATE=(ENH$:RM1INPSCN)+EXECML$/LIB+LIB$:RMS/LIB
```

RM1CONN
LIS

RM1GET
LIS

RM1INPSCN
LIS

RM1DISCON
LIS

RM1GETNT
LIS

RM1CREATE
LIS

RM1JOURNL
LIS