


```
TTTTTTTTT11 PPPPPPPP AAAAAA MM MM AAAAAA RRRRRRRR
TTTTTTTTTT PPPPPPPP AAAAAA MM MM AAAAAA RRRRRRRR
TT PP PP AA AA MMMM MMMM AA AA RR RR
TT PP PP AA AA MMMM MMMM AA AA RR RR
TT PP PP AA AA MM MM AA AA RR RR
TT P P PP AA AA MM MM AA AA RRRRRRRR
TT P P P P AA AA MM MM AA AA RRRRRRRR
TT PP AAAAAAAAAA MM MM AAAAAAAAAA RR RR
TT PP AAAAAAAAAA MM MM AAAAAAAAAA RR RR
TT PP AA AA MM MM AA AA RR RR
TT PP AA AA MM MM AA AA RR RR
TT PP AA AA MM MM AA AA RR RR
TT PP AA AA MM MM AA AA RR RR
```

```
MM MM AAAAAA RRRRRRRR
MM MM AAAAAA RRRRRRRR
MMM MMM AA AA RR RR
MMM MMM AA AA RR RR
MM MM AA AA RR RR
MM MM AA AA RR RR
MM MM AA AA RRRRRRRR
MM MM AA AA RRRRRRRR
MM MM AAAAAAAAAA RR RR
MM MM AAAAAAAAAA RR RR
MM MM AA AA RR RR
MM MM AA AA RR RR
MM MM AA AA RR RR
MM MM AA AA RR RR
```

.NLIST

.TITLE TPAMAC - MACROS TO GENERATE STATE AND KEYWORD TABLES FOR TPARSE

Version: 'V04-000'

```

*****
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```

ANDREW C. GOLDSTEIN 9-JUN-78 13:43

MODIFIED BY:

```

V03-003 MCN0187      Maria del C. Nasr      09-Aug-1984
                Since $STRAN is a nested macro, the argument MASK which
                can be radix argument, needs to be enclosed by delimiters.

```

```

V03-002 ACG0392      Andrew C. Goldstein,  19-Jan-1984  21:58
                Add filespec token type

```

```

V03-001 ACG0345      Andrew C. Goldstein,  1-Aug-1983  14:20
                Add PSECT argument to $INIT_STATE, add UIC and IDENT types

```

```

0010 MTR0001      Michael T. Rhodes,  24-Nov-1981  09:15
                Remove angle brackets from .IDN tests of the LABEL argument to
                TPAS_EXIT and TPAS_FAIL (which would not check both upper and lower
                case text).

```

```

0009 ACG0048      Andrew C. Goldstein,  20-Jun-1979  14:20
                Change PSECT attributes to EXE

```

```

0008 ACG0043      Andrew C. Goldstein,  23-May-1979  21:47
                Change PSECTs to PIC

```

```

0007 ACG0032      Andrew C. Goldstein,  27-Mar-1979  13:12

```

```

:      Circumvent assembler string truncation in IRPC
:
:      0006  ACG0024      Andrew C. Goldstein, 27-Feb-1979 16:52
:      Fix PSECTs for new RTL standards
:
: **

```

```

: INITIALIZE TABLE GENERATION - CALL ONCE AT START OF EACH
: FINITE STATE MACHINE DESCRIPTION. USER MUST SUPPLY LABELS
: FOR THE STATE AND KEYWORD TABLES.

```

```

.MACRO $INIT_STATE      STTBL,KEYTBL,PSECT_ARG

```

```

  .IF      B      PSECT_ARG
  .MACRO   TPASPSECT_STATE
  .PSECT  LIB$STATES,SHR,PIC,NOWRT,EXE,BYTE
  .ENDM   TPASPSECT_STATE
  .MACRO   TPASPSECT_KEY0
  .PSECT  LIB$KEY0$,SHR,PIC,NOWRT,EXE,WORD
  .ENDM   TPASPSECT_KEY0
  .MACRO   TPASPSECT_KEY1
  .PSECT  LIB$KEY1$,SHR,PIC,NOWRT,EXE,WORD
  .ENDM   TPASPSECT_KEY1

```

```

  .IFF

```

```

  .MACRO   TPASPSECT_STATE
  .PSECT  PSECT_ARG^ STATE,SHR,PIC,NOWRT,EXE,BYTE
  .ENDM   TPASPSECT_STATE
  .MACRO   TPASPSECT_KEY0
  .PSECT  PSECT_ARG^ KEY0,SHR,PIC,NOWRT,EXE,WORD
  .ENDM   TPASPSECT_KEY0
  .MACRO   TPASPSECT_KEY1
  .PSECT  PSECT_ARG^ KEY1,SHR,PIC,NOWRT,EXE,WORD
  .ENDM   TPASPSECT_KEY1
  .ENDC

```

```

  .SAVE
  TPASPSECT_STATE

```

```

STTBL::

```

```

  TPASPSECT_KEY0

```

```

KEYTBL::
$$KEYTAB=

```

```

  TPASPSECT_KEY1
  $$$KEY = -1
  $$$FLG = -1
  $$$KFG = -1

```

```

  TPAS_EXIT      = -1
  TPAS_FAIL      = -2
  TPAS_MAXKEY    = 220
  TPAS_KEYWORD   = 256
  TPAS_FILESPEC  = 490
  TPAS_UIC       = 491

```

```
TPAS_IDENT      = 492
TPAS_ANY        = 493
TPAS_ALPHA     = 494
TPAS_DIGIT     = 495
TPAS_STRING    = 496
TPAS_SYMBOL    = 497
TPAS_BLANK     = 498
TPAS_DECIMAL   = 499
TPAS_OCTAL     = 500
TPAS_HEX       = 501
TPAS_LAMBDA    = 502
TPAS_EOS       = 503
TPAS_SUBXPR    = 504
```

```
.ENDM .RESTORE
$INIT_STATE
```

```
: DECLARE A STATE
```

```
.MACRO $STATE LABEL
.SAVE
TPASPSECT_STATE

$$$FLG = $$$FLG!4
TPASMTRAN
```

```
LABEL: .IF NB LABEL
.ENDC
```

```
.IF EQ $$$KFG
TPASPSECT_KEY1
.BYTE 255
.ENDC
```

```
$$$FLG = -1
$$$KFG = -1
```

```
.ENDM .RESTORE
$STATE
```

```
: SPECIFY A STATE TRANSITION
```

```
.MACRO $STRAN TYPE,LABEL,ACTION,MASK,ADDR,PARAM
.SAVE
TPASPSECT_STATE

TPASMTRAN
```

```
.IF NB ACTION
$$$FLG = $$$FLG!128
.MACRO $$$ACT
.LONG ACTION--4
.ENDM $$$ACT
.ENDC
```

```
.IF NB <MASK>
$$$FLG = $$$FLG!32
.ELSE
.ELSEB ADDR
.ERROR <MASK> ; MASK ADDRESS NOT PRESENT
.ENDC
.MACRO $$$BIT
.LONG <MASK>
.ENDM $$$BIT
.ENDC
```

```
.IF NB ADDR
$$$FLG = $$$FLG!64
.MACRO $$$ADR
.LONG ADDR-. -4
.ENDM $$$ADR
.ENDC
```

```
.IF NB PARAM
$$$FLG = $$$FLG!256!2
.MACRO $$$PRM
.LONG PARAM
.ENDM $$$PRM
.ENDC
```

```
.IF NB LABEL
$$$FLG = $$$FLG!16
.ELSE
.ELSEIDN LABEL,TPAS_EXIT
.MACRO $$$STA
.WORD LABEL
.ENDM $$$STA
.ELSE
.ELSEIDN LABEL,TPAS_FAIL
.MACRO $$$STA
.WORD LABEL
.ENDM $$$STA
.ELSE
.MACRO $$$STA
.WORD LABEL-. -2
.ENDM $$$STA
.ENDC
.ENDC
.ENDC
```

```
$$$MOD = 0
.IRPC $$$X,<TYPE>
.ELSE
.ELSEIDN <$$$X>,<'>
$$$MOD = 1
.ENDC
.ELSE
.ELSEIDN <$$$X>,<!>
$$$MOD = 2
.ENDC
.MEXIT
.ENDR
```

```
.IF EQ $$$MOD-1
.NCHR $$$CNT,<TYPE>
```

```

    .IF      GT      3-$$$CNT
    .ERROR   ; INVALID CHARACTER TYPE
    .ENDC
    .IF      EQ      3-$$$CNT
    .MACRO   $$$TYP
    .ASCII  TYPE
    .ENDM   $$$TYP

    .IFF

    $$$FLG = $$$FLG!1
    TPASPSECT_KEY1
    $$$TMP = :
    $$$KFG = 0
    .ASCII  TYPE

    .IF      EQ      4-$$$CNT
    $$$AST = 0
    .IRPC   $$$Y,<TYPE>
    .IF     IDN     <$$$Y>,<*>
    $$$AST = 1
    .ENDC
    .ENDR
    .IF     NE      $$$AST
    : = -1
    .ENDC
    .ENDC
    .BYTE   255

    TPASPSECT_KEY0
    .WORD   $$$TMP-$$$KEYTAB

    .MACRO   $$$TYP
    .BYTE   $$$KEY
    .ENDM   $$$TYP

    $$$KEY = $$$KEY+1
    .IF     GE      $$$KEY-TPAS_MAXKEY
    .ERROR   ; TPARSE - TOO MANY KEYWORDS
    .ENDC

    .ENDC
    .IFF

    .IF     EQ      $$$MOD-2

    $$$FLG = $$$FLG!8!1
    .MACRO   $$$EXT
    .WORD   0'TYPE--2
    .ENDM   $$$EXT

    .MACRO   $$$TYP
    .BYTE   TPAS_SUBXPR&255
    .ENDM   $$$TYP

    .IFF

```

```
.IF      DF      TYPE
.IF      GE      TYPE-256
$$$FLG = $$$FLG!1
.ENDC
.ENDC

.MACRO   $$$TYP
.BYTE   TYPE&255
.ENDM   $$$TYP

.ENDC
.ENDC

.ENDM   .RESTORE
        $STRAN

; FINISH STATE TABLE

.MACRO   $SEND_STATE
        .SAVE
        $$$FLG = $$$FLG!4
        TPASMTRAN
        .IF      EQ      $$$KFG
        TPASPSECT_KEY1
        .BYTE   255
        .ENDC

        $$$FLG = -1
        $$$KFG = -1
        .RESTORE
.ENDM   $SEND_STATE

; OUTPUT LAST TRANSITION ENTRY

.MACRO   TPASMTRAN

        TPASPSECT_STATE

        .IF      EQ      $$$FLG+1
        $$$FLG = 0
        .MEXIT
        .ENDC

        $$$TYP
        .BYTE   $$$FLG&255

        .IF      NE      $$$FLG&2
        .BYTE   <$$$FLG/256>&255
        .ENDC

        .IF      NE      $$$FLG&8
        $$$EXT
        .ENDC

        .IF      NE      $$$FLG&256
```


TPAMAR.MAR;1

UT

SSSPRM
.ENDC

.IF NE SSSFLG&128
SSSACT
.ENDC

.IF NE SSSFLG&64
SSSADR
.ENDC

.IF NE SSSFLG&32
SSSBIT
.ENDC

.IF NE SSSFLG&16
SSSSTA
.ENDC

SSSFLG = 0

.ENDM TPASMTRAN

.LIST

A dense grid of text, likely a table of contents or index, containing numerous entries such as: CLIMAC REQ, TPAMAC REQ, LTLDEFB B32, STARMISC MAR, EODEFM MAR, TPAMAR MAR, CALBYNAME LIS, SCRPROLOG REQ, STARLET SDL, SCRTCB REQ, EODEFB B32, DVITABLE MAR, SCRTERM REQ, RSXLBDF MAR, OFFSET MAR, SYITABLE MAR, LUTLDEFM MAR, B32MSG LIS, and C24MSG LIS. Each entry is accompanied by a small, illegible graphic element.