VMSLIB

```
        JJ  PPPPPPPP   IIIIII  TTTTTTTTTT   AAAAAA    BBBBBBBB  LL         EEEEEEEEEE
        JJ  PPPPPPPP   IIIIII  TTTTTTTTTT   AAAAAA    BBBBBBBB  LL         EEEEEEEEEE
        JJ  PP     PP    II        TT      AA    AA   BB    BB  LL         EE
        JJ  PP     PP    II        TT      AA    AA   BB    BB  LL         EE
        JJ  PP     PP    II        TT      AA    AA   BB    BB  LL         EE
        JJ  PP     PP    II        TT      AA    AA   BB        LL         EE
        JJ  PPPPPPPP     II        TT      AA    AA   BBBBBBBB  LL         EEEEEEEE
        JJ  PPPPPPPP     II        TT      AA    AA   BBBBBBBB  LL         EEEEEEEE
  JJ    JJ  PP           II        TT    AAAAAAAAAA   BB    BB  LL         EE
  JJ    JJ  PP           II        TT    AAAAAAAAAA   BB    BB  LL         EE
  JJ    JJ  PP           II        TT      AA    AA   BB    BB  LL         EE
  JJ    JJ  PP           II        TT      AA    AA   BB    BB  LL         EE           ....
   JJJJJJ   PP         IIIIII      TT      AA    AA   BBBBBBB   LLLLLLLLLL EEEEEEEEEE    ....
   JJJJJJ   PP         IIIIII      TT      AA    AA   BBBBBBB   LLLLLLLLLL EEEEEEEEEE    ....


  MM      MM   AAAAAA    RRRRRRRR
  MM      MM   AAAAAA    RRRRRRRR
  MMMM  MMMM  AA    AA   RR    RR
  MMMM  MMMM  AA    AA   RR    RR
  MM  MM  MM  AA    AA   RR    RR
  MM  MM  MM  AA    AA   RR    RR
  MM      MM  AA    AA   RRRRRRRR
  MM      MM  AA    AA   RRRRRRR
  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
```

         .IDENT  'V04-000'

; ENVIRONMENT: prefix file

; AUTHOR: Ken Henderson        CREATION DATE: 10 Feb 1983

; MODIFIED BY:

;     V03-010 MSH0067          Michael S. Harvey      19-Jul-1984
;             Add JPIS_MAXDETACH, _MAXJOB and _SHRFILLM.

;     V03-009 HWS0056          Harold Schultz         11-Apr-1984
;             Add JPIS_MASTER_PID.

;     V03-008 CWH3008          CW Hobbs               20-Mar-1984
;             Add JPIS_PROC_INDEX

;     V03-007 MSH0010          Michael S. Harvey      16-Feb-1984
;             Add JPIS_TABLENAME
;             Add JPIS_CREPRC_FLAGS
;             Add JPIS_UAF_FLAGS

;     V03-006 ACG0385          Andrew C. Goldstein,   29-Dec-1983  16:23
;             Add JPIS_JOBTYPE item

;     V03-005 KFH0004          Ken Henderson          10 Sep 1983
;             Added CLINAME itemcode.
;             Added MODE, removed bit item-codes for
;             PCB$L_STS since they're defined in SYSDEF.

;     V03-004 KFH0003          Ken Henderson          23 Mar 1983

          Added PHDFLAGS.

     V03-003 KFH0002        Ken Henderson          1 Mar 1983
             Added item-codes for every bit in
             PCB$L_STS. And modified calls to
             JPI_ITEM_CODE macro. (some parameters
             added and renamed)

     V03-002 CWH1002        CW Hobbs               25-Feb-1983
             Modify JPI$_PID and JPI$_OWNER to return extended pids from
             PCB$L_EPID and PCB$L_EOWNER.

     V03-001 KFH0001        Ken Henderson          10 Feb 1983
             Added JPI$_MSGMASK item-code.

```
        .MACRO  JPI_GENERATE_TABLE

;++
; ABSTRACT:
;
; JPI_GENERATE_TABLE macro
;
; This macro expands to generate multiple calls to the JPI_ITEM_CODE macro,
; which must be previously locally defined in the module which invokes
; JPI_GENERATE_TABLE.
;
; The parameters that are passed to the JPI_ITEM_CODE macro follow:
;
;       BASE            determines which EXE$GETJPI table to use. It's
;                       tables correspond roughly to the source of the data.
;                       The legal parameter values are:
;                       ADR, CTL, PCB, PHD, PCBFLD, PHDFLD
;
;       NAME            is the name of the SYS$GETJPI item-code.
;                       The legal parameter values here are determined by
;                       the $JPIDEF macro (in [VMSLIB.SRC]STARDEFFL.SDL).
;
;       SOURCE          is either an address of a cell, or an offset into
;                       a data structure.
;
;       DTYPE           is both a datatype and a usage indicator.
;                       The legal values and examples for this parameter follow:
;
;                       STDTIM  (CTL$GQ_LOGIN)          64 bit time
;                       STDUIC  (PCB$L_UIC)             user ID code
;                       HEXNUM  (CTL$A0_FXCVEC)         hex number
;                       DECNUM  (PCB$L_BYTLM)           decimal number
;                       PRVMSK  (PHD$Q_PRIVMSK)         privilege mask
;                       PRTMSK  (UCB$W_VPROT)           protection mask
;                       STRDSC  (CTL$GC_IMGHDRBF)       string descr
;                       CNTSTR  (PCB$T_TERMINAL)        counted string (max=255)
;                       PADSTR  (JIB$T_ACCOUNT)         blank padded str
;                       BITVEC  (PCB$L_STS)             bit vector
;                       BITVAL  (JIB$V_TERMDIAL)        boolean quantity
;                       ACPTYP  (AQB$B_ACPTYP)          ACP type
;
;       BITPCS          is the bit position for BITVAL data items.
;
;       BITSIZ          is the bit size for BITVAL data items.
;
;       OUTLEN          is used by EXE$GETJPI in fetching information (number
;                       of bytes).
;
;       STRUCT          is the user's data structure containing the information.
;                       (which is sometimes different than BASE)
;
;--
```

```
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
; Define Entries to ADRTBL
;
;BASE,  NAME,              SOURCE,           DTYPE,  BITPOS, BITSIZ, OUTLEN, STRUCT
;

; address of exception vectors
JPI_ITEM_CODE -
ADR,    EXCVEC,            CTL$AQ_EXCVEC,  HEXNUM, 0,      0,      8,        ADR

; address of final exception vectors
JPI_ITEM_CODE -
ADR,    FINALEXC,          CTL$AL_FINALEXC, HEXNUM, 0,     0,      4,        ADR

;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
; Define Entries to CTLTBL
;
;BASE,  NAME,              SOURCE,           DTYPE,  BITPOS, BITSIZ, OUTLEN, STRUCT
;

; peak virtual size
JPI_ITEM_CODE -
CTL,    VIRTPEAK,          CTL$GL_VIRTPEAK, DECNUM, 0,     0,      4,        CTL

; peak working set size
JPI_ITEM_CODE -
CTL,    WSPEAK,            CTL$GL_WSPEAK,  DECNUM, 0,      0,      4,        CTL

; username string
JPI_ITEM_CODE -
CTL,    USERNAME,          JIB$T_USERNAME, PADSTR, 0,      0,      12,       JIB

; account name string
JPI_ITEM_CODE -
CTL,    ACCOUNT,           JIB$T_ACCOUNT,  PADSTR, 0,      0,      8,        JIB

; quadword process privileges
JPI_ITEM_CODE -
CTL,    PROCPRIV,          CTL$GQ_PROCPRIV, PRVMSK, 0,     0,      8,        CTL

;  number of volumes mounted
JPI_ITEM_CODE -
CTL,    VOLUMES,           CTL$GL_VOLUMES, DECNUM, 0,      0,      4,        CTL

; process creation time
JPI_ITEM_CODE -
CTL,    LOGINTIM,          CTL$GQ_LOGIN,   STDTIM, 0,      0,      8,        CTL

; image header buffer address which is used to get image name
JPI_ITEM_CODE -
CTL,    IMAGNAME,          CTL$GL_IMGHDRBF, STRDSC, 0,     0,      4,        CTL

; Per-process site-specific cell
JPI_ITEM_CODE -
CTL,    SITESPEC,          CTL$GL_SITESPEC, DECNUM, 0,     0,      4,        CTL
```

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```
; Default message mask
JPI_ITEM_CODE -
CTL;    MSGMASK,          CTL$GB_MSGMASK, BITVEC, 0,      0,      1,      CTL

; command language interpreter name
JPI_ITEM_CODE -
CTL;    CLINAME,          CTL$GT_CLINAME, CNTSTR, 0,      0,      40,     CTL

; command language interpreter table name
JPI_ITEM_CODE -
CTL;    TABLENAME,        CTL$GT_TABLENAME, CNTSTR, 0,    0,      255,    CTL

; flags in $CREPRC which created this process
JPI_ITEM_CODE -
CTL;    CREPRC_FLAGS,     CTL$GL_CREPRC_FLAGS, BITVEC, 0, 0,      4,      CTL

; flags from user's UAF record
JPI_ITEM_CODE -
CTL;    UAF_FLAGS,        CTL$GL_UAF_FLAGS, BITVEC, 0,    0,      4,      CTL

; maximum number of detached processes for a single username
JPI_ITEM_CODE -
CTL;    MAXDETACH,        JIB$W_MAXDETACH, DECNUM, 0,     0,      2,      JIB

; maximum number of active processes for a single username
JPI_ITEM_CODE -
CTL;    MAXJOBS,          JIB$W_MAXJOBS, DECNUM, 0,       0,      2,      JIB

; maximum number of open shared files
JPI_ITEM_CODE -
CTL;    SHRFILLM,         JIB$W_SHRFLIM, DECNUM, 0,       0,      2,      JIB
```

```
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
; Define Entries to PCBTBL

;BASE,  NAME,            SOURCE,       DTYPE,  BITPOS, BITSIZ, OUTLEN, STRUCT
;

; access modes with active ASTs
JPI_ITEM_CODE -
PCB,    ASTACT,          B_ASTACT,     BITVEC, 0,      0,      1,      PCB

; access modes with ASTs enabled
JPI_ITEM_CODE -
PCB,    ASTEN,           B_ASTEN,      BITVEC, 0,      0,      1,      PCB

; current process priority
JPI_ITEM_CODE -
PCB,    PRI,             B_PRI,        DECNUM, 0,      0,      1,      PCB

; PID of creator
JPI_ITEM_CODE -
PCB,    OWNER,           L_EOWNER,     HEXNUM, 0,      0,      4,      PCB

; UIC of process
JPI_ITEM_CODE -
PCB,    OIC,             L_UIC,        STDUIC, 0,      0,      4,      PCB

; group field of UIC
JPI_ITEM_CODE -
PCB,    GRP,             W_GRP,        DECNUM, 0,      0,      2,      PCB

; member field of UIC
JPI_ITEM_CODE -
PCB,    MEM,             W_MEM,        DECNUM, 0,      0,      2,      PCB

; process status
JPI_ITEM_CODE -
PCB,    STS,             L_STS,        BITVEC, 0,      0,      4,      PCB

; process state
JPI_ITEM_CODE -
PCB,    STATE,           W_STATE,      DECNUM, 0,      0,      2,      PCB

; process base priority
JPI_ITEM_CODE -
PCB,    PRIB,            B_PRIB,       DECNUM, 0,      0,      1,      PCB

; active page table count
JPI_ITEM_CODE -
PCB,    APTCNT,          W_APTCNT,     DECNUM, 0,      0,      2,      PCB

; termination mailbox unit
JPI_ITEM_CODE -
PCB,    TMBU,            W_TMBU,       DECNUM, 0,      0,      2,      PCB

; global page count in ws
JPI_ITEM_CODE -
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PCB,    GPGCNT,        W_GPGCNT,      DECNUM, 0,    0,    2,    PCB
; process page count in ws
JPI_ITEM_CODE -
PCB,    PPGCNT,        W_PPGCNT,      DECNUM, 0,    0,    2,    PCB

; ast count remaining
JPI_ITEM_CODE -
PCB,    ASTCNT,        W_ASTCNT,      DECNUM, 0,    0,    2,    PCB

; buffered I/O count remaining
JPI_ITEM_CODE -
PCB,    BIOCNT,        W_BIOCNT,      DECNUM, 0,    0,    2,    PCB

; buffered I/O limit
JPI_ITEM_CODE -
PCB,    BIOLM,         W_BIOLM,       DECNUM, 0,    0,    2,    PCB

; buffered I/O byte count remaining
JPI_ITEM_CODE -
PCB,    BYTCNT,        L_BYTCNT,      DECNUM, 0,    0,    4,    JIB

; direct I/O count remaining
JPI_ITEM_CODE -
PCB,    DIOCNT,        W_DIOCNT,      DECNUM, 0,    0,    2,    PCB

; direct I/O count limit
JPI_ITEM_CODE -
PCB,    DIOLM,         W_DIOLM,       DECNUM, 0,    0,    2,    PCB

; enqueue count remaining
JPI_ITEM_CODE -
PCB,    ENQCNT,        W_ENQCNT,      DECNUM, 0,    0,    2,    JIB

; enqueue count limit
JPI_ITEM_CODE -
PCB,    ENQLM,         W_ENQLM,       DECNUM, 0,    0,    2,    JIB

; open file count remaining
JPI_ITEM_CODE -
PCB,    FILCNT,        W_FILCNT,      DECNUM, 0,    0,    2,    JIB

; count remaining of time queue entries
JPI_ITEM_CODE -
PCB,    TQCNT,         W_TQCNT,       DECNUM, 0,    0,    2,    JIB

; event flag wait mask
JPI_ITEM_CODE -
PCB,    EFWM,          L_EFWM,        BITVEC, 0,    0,    4,    PCB

; local event flags 0-31
JPI_ITEM_CODE -
PCB,    EFCS,          L_EFCS,        BITVEC, 0,    0,    4,    PCB

; local event flags 32-64
JPI_ITEM_CODE -

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PCB,    EFCU,           L_EFCU,      BITVEC, 0,    0,    4,    PCB

; process identification
JPI_ITEM_CODE -
PCB,    PID,            L_EPID,      HEXNUM, 0,    0,    4,    PCB

; buffered I/O byte count limit
JPI_ITEM_CODE -
PCB,    BYTLM,          L_BYTLM,     DECNUM, 0,    0,    4,    JIB

; subprocess count
JPI_ITEM_CODE -
PCB,    PRCCNT,         W_PRCCNT,    DECNUM, 0,    0,    2,    PCB

; total subprocess count in job
JPI_ITEM_CODE -
PCB,    JOBPRCCNT,      W_PRCCNT,    DECNUM, 0,    0,    2,    JIB

; process name string
JPI_ITEM_CODE -
PCB,    PRCNAM,         T_LNAME,     CNTSTR, 0,    0,    16,   PCB

; login terminal name
JPI_ITEM_CODE -
PCB,    TERMINAL,       T_TERMINAL,  CNTSTR, 0,    0,    8,    PCB

; swap file backing store address
JPI_ITEM_CODE -
PCB,    SWPFILLOC,      L_WSSWP,     HEXNUM, 0,    0,    4,    PCB

; process mode
JPI_ITEM_CODE -
PCB,    MODE,           L_STS,       DECNUM, 0,    0,    4,    PCB

; job type code
JPI_ITEM_CODE -
PCB,    JOBTYPE,        B_JOBTYPE,   DECNUM, 0,    0,    1,    JIB

; process index code - unique id for process
JPI_ITEM_CODE -
PCB,    PROC_INDEX,     L_PID,       DECNUM, 0,    0,    1,    PCB

; PID of master process in a job.
JPI_ITEM_CODE -
PCB,    MASTER_PID,     L_MPID,      HEXNUM, 0,    0,    4,    JIB
```

```
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
; Define entries to PHDTBL
;
;BASE,  NAME,             SOURCE,      DTYPE,  BITPOS, BITSIZ, OUTLEN, STRUCT
;

; quadword current privilege mask
JPI_ITEM_CODE -
PHD,    CURPRIV,          Q_PRIVMSK,   PRVMSK, 0,      0,      8,      PHD

; current working set size
JPI_ITEM_CODE -
PHD,    WSSIZE,           W_WSSIZE,    DECNUM, 0,      0,      2,      PHD

; authorized working set size
JPI_ITEM_CODE -
PHD,    WSAUTH,           W_WSAUTH,    DECNUM, 0,      0,      2,      PHD

; quota on working set size
JPI_ITEM_CODE -
PHD,    WSQUOTA,          W_WSQUOTA,   DECNUM, 0,      0,      2,      PHD

; maximum extent on working set
JPI_ITEM_CODE -
PHD,    WSEXTENT,         W_WSEXTENT,  DECNUM, 0,      0,      2,      PHD

; authorized working set extent
JPI_ITEM_CODE -
PHD,    WSAUTHEXT,        W_WSAUTHEXT, DECNUM, 0,      0,      2,      PHD

; default working set size
JPI_ITEM_CODE -
PHD,    DFWSCNT,          W_DFWSCNT,   DECNUM, 0,      0,      2,      PHD

; first free addr. at end of P0 space
JPI_ITEM_CODE -
PHD,    FREP0VA,          L_FREP0VA,   HEXNUM, 0,      0,      4,      PHD

; first free addr. at end of P1 space
JPI_ITEM_CODE -
PHD,    FREP1VA,          L_FREP1VA,   HEXNUM, 0,      0,      4,      PHD

; available pages for expansion
JPI_ITEM_CODE -
PHD,    FREPTECNT,        L_FREPTECNT, DECNUM, 0,      0,      4,      PHD

; default page fault cluster
JPI_ITEM_CODE -
PHD,    DFPFC,            B_DFPFC,     DECNUM, 0,      0,      1,      PHD

; process cputime accumulated
JPI_ITEM_CODE -
PHD,    CPUTIM,           L_CPUTIM,    DECNUM, 0,      0,      4,      PHD

; subprocess quota
JPI_ITEM_CODE -
```

```
PHD,    PRCLM,           W_PRCLIM,      DECNUM, 0,     0,     2,     JIB

; ast limit
JPI_ITEM_CODE -
PHD,    ASTLM,           W_ASTLM,       DECNUM, 0,     0,     2,     PHD

; process accumulated faults
JPI_ITEM_CODE -
PHD,    PAGEFLTS,        L_PAGEFLTS,    DECNUM, 0,     0,     4,     PHD

; accumulated direct I/Os
JPI_ITEM_CODE -
PHD,    DIRIO,           L_DIOCNT,      DECNUM, 0,     0,     4,     PHD

; accumulated buffered I/Os
JPI_ITEM_CODE -
PHD,    BUFIO,           L_BIOCNT,      DECNUM, 0,     0,     4,     PHD

; limit on cputime
JPI_ITEM_CODE -
PHD,    CPULIM,          L_CPULIM,      DECNUM, 0,     0,     4,     PHD

; max. virtual page count
JPI_ITEM_CODE -
PHD,    PGFLQUOTA,       L_PGFLQUOTA,   DECNUM, 0,     0,     4,     JIB

; current paging file usage
JPI_ITEM_CODE -
PHD,    PAGFILCNT,       L_PGFLCNT,     DECNUM, 0,     0,     4,     JIB

; open file limit
JPI_ITEM_CODE -
PHD,    FILLM,           W_FILLM,       DECNUM, 0,     0,     2,     JIB

; limit on time queue entries
JPI_ITEM_CODE -
PHD,    TQLM,            W_TQLM,        DECNUM, 0,     0,     2,     JIB

; authorized privilege mask
JPI_ITEM_CODE -
PHD,    AUTHPRIV,        Q_AUTHPRIV,    PRVMSK, 0,     0,     8,     PHD

; installed image privilege mask
JPI_ITEM_CODE -
PHD,    IMAGPRIV,        Q_IMAGPRIV,    PRVMSK, 0,     0,     8,     PHD

; authorized base priority
JPI_ITEM_CODE -
PHD,    AUTHPRI,         B_AUTHPRI,     DECNUM, 0,     0,     1,     PHD

; page file backing store address
JPI_ITEM_CODE -
PHD,    PAGFILLOC,       L_PAGFIL,      HEXNUM, 0,     0,     4,     PHD

; image counter (clocked by RUNDOWN)
JPI_ITEM_CODE -
```

```
PHD,    IMAGECOUNT,    L_IMGCNT,    DECNUM, 0,    0,    4,    PHD
; flags word
JPI_ITEM_CODE -
PHD,    PHDFLAGS,      W_FLAGS,     BITVEC, 0,    0,    2,    PHD

;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
; Define entries to PCBFLDTBL
;
;BASE,  NAME,          SOURCE,      DTYPE, BITPOS, BITSIZ, OUTLEN, STRUCT
;

;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
; Define entries to PHDFLDTBL
;
;BASE,  NAME,          SOURCE,      DTYPE, BITPOS, BITSIZ, OUTLEN, STRUCT
;

        .ENDM   JPI_GENERATE_TABLE
```

CLIMAC
REQ

TPAMAC
REQ

UTLDEFB
B32

STARMISC
MAR

EQDEFM
MAR

TPAMAR
MAR

CALBYNAME
LIS

SCRPROLOG
REQ

STARLET
SDL

SCRTCB
REQ

OFFSET
MAR

SYITABLE
MAR

STARLET
LIS

EQDEFB
B32

JPITABLE
MAR

DVITABLE
MAR

UTLDEFM
MAR

B32MSG
LIS

SCRTERM
REQ

RSXLBLDF
MAR

C74MSG
LIS