

File created: 7-Aug-2023 13:31:49 {DSK}<home>frank<il>medley>gmedley>internal>loadups>MAKEINIT.;4

changes to: (FNS MAKEINITGREET)

previous date: 3-Aug-2023 17:37:51 {DSK}<home>frank<il>medley>gmedley>internal>loadups>MAKEINIT.;1

Read Table: INTERLISP

Package: INTERLISP

Format: XCCS

(RPAQQ **MAKEINITCOMS**
((COMS

;;; From MAKEINITGREET

```
(FNS MAKEINITGREET)
(FILESET (SOURCE)
  FILESETS)
(FILESET (LOADCOMP)
  LLARITH LLFLOAT)
(FILESET (RENAMEFNS XCL-PACKAGE CMLARRAY-SUPPORT VMEM))
(COMS
  ;; From original MAKEINIT
  (FNS LOADMAKEINIT LOADMKIFILES RELOAD MAKEINIT MKI.START)
  (COMS
    ; reading compiled files and processing well-known expressions
    (FNS MKI.PASSFILE SCRATCHARRAY DOFORM CONSTFORMP NOTICECOMS EVALFORMAKEINIT)
    (FNS I.ADDTOVAR I.DECLARE%: I.DEFINE-FILE-INFO I.FILECREATED I.PUTPROPS I.RPAQ I.RPAQQ
      I.RPAQ? I.SETTOPVAL I.NOUNDO)
    (PROP MKI.ADDTOVAR DECLARE%: DEFINE-FILE-INFO FILECREATED PUTPROPS RPAQ RPAQ? RPAQQ
      LISPXPRINT PRETTYCOMPRINT * SETTOPVAL SETQ SETQ /SETTOPVAL))
    (FNS I.ATOMNUMBER I.\ATOMCELL I.FIXUPNUM I.FIXUPPTR I.FIXUPSYM I.WORDSPERNAMEENTRY
      I.SETSTKNTOFFSET)
    (COMS
      ; stuff for MAXC
      (FNS MKI.ATOM MKI.IEEE))
    [COMS
      ; stuff to maintain symbol values, prop lists during makeinit--all
      ; dumped at end.
      (FNS MKI.DSET MKI.ADDTO MKI.PUTPROP)
      (VARS (MKI.ARRAY)
        (MKI.TVHA (HASHARRAY 400))
        (MKI.PLHA (HASHARRAY 150))
        (MKI.ATOMARRAY (HASHARRAY 5000))
        (INIT.EXT 'SYSOUT])
      (COMS (FNS DUMPVVP BOUTZEROS BIN16 BOUT16)
        (VARS (MKI.FirstDataByte 1024)
          (MKI.Page0Byte 512)
          (MKI.DATE (DATE))
          MKI.CODESTARTOFFSET MKI.SEQUENTIAL PRINTEXPRS))
      (INITIVARS (PRINTEXPRS T)
        (REMOTECOMPILE.EXT COMPILE.EXT))
      (DECLARE%: EVAL@COMPILE (PROP MACRO SETXVAR IEQ)
        DONTCOPY
        (FILESET (LOADCOMP)
          MEM)))
  (COMS
    ;; from DLFIXINIT
```

```
;; This file is all because the dandelion needed its microcode embedded in the init file, and MAIKO wasn't around. So this is all to
;; make room for microcode we don't need. Except something(?) might expect the "InterfacePage" as page 2 of the file, so we're
;; leaving it in place now
```

```
(FNS DLFIXINIT DLSORTSYSOUTPAGES DLNEXTFP DLLOCKEDPAGEP DLSETLOCKBIT DLCOPYPAGEMAP DLCOPYVMPAGE
  DLADDPAGEMAPENTRIES ASSIGNFILEPAGE ASSIGNFILEPAGERANGE DLDUMPSYSOUT DLDUMPFPTOVP
  DLDUMPPAGEMAPS DLDUMPMEMPAGES DLSETBOOTPTR DLDUMPARRAY DLMARKSDUMPED DLDUMPMEMPAGE
  INSTALLDOMINO INSTALLDOMINO.DIRECT INSTALLNEWDOMINO)
(FILESET READSYS)
(FNS DLPRINTFPTOVP PRINTPRIMARYMAP DLREADPAGEOFWORDS SETDIF)
(CONSTANTS \NO.PAGE.ASSIGNED)
(GLOBALVARS DLPRIMARYMAP DLSECONDARYMAP DLLOCKBITS DLLASTDOMINOPAGE DLIFPAGE DLNEXTPM DLPAGEMAPFF
  FPTOVP NEWFFFROMOLD VMEMFILE VMEMFILEX)))
```

;;; From MAKEINITGREET

(DEFINEQ

(MAKEINITGREET

[LAMBDA (SYSOUTFILE DLINITFILE)

```
; Edited 3-Aug-2023 17:37 by frank
; Edited 11-Mar-2021 22:14 by larry
; Edited 5-Dec-2017 15:26 by rmk:
```

;;

```
;; Updated Lisp version for big physical memory --bvm |11/3/87
```

;;

(* Versions are Lisp Microcode Bcpl)

(MEDLEY-INIT-VARS)

(RESETLST

(RESETSAVE OK.TO.MODIFY.FNS T)

```
(DORENAME 'I)
(DORENAME 'R)
(DLFXINIT (MAKEINIT '(39424 5682 11008)
  SYSOUTFILE NIL DIRECTORIES DISPLAYFONTDIRECTORIES)
  DLINITFILE))])
```

)

```
(FILESLOAD (SOURCE)
  FILESETS)
```

```
(FILESLOAD (LOADCOMP)
  LLARITH LLFLOAT)
```

```
(FILESLOAD RENAMEFNS XCL-PACKAGE CMLARRAY-SUPPORT VMEM)
```

:: From original MAKEINIT

(DEFINEQ

(LOADMAKEINIT

(* Imm "31-JUL-81 14:27")

```
[LAMBDA (LARGEFLG)
  [SELECTQ (SYSTEMTYPE)
    ((D ALTO))
    (PROGN (ADDOVAR DIRECTORIES BLISP)
      (GCGAG 1000)
      [COND
        ((NOT LARGEFLG)
          (SETSEPR '(%| 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)
            1 FILERDTBL)
          (MINFS 45000 'ARRAYP)
          (MINFS 10000 'FIXP)
          (MINFS 3000 'STRING.CHARS)
          (MINFS 2000 'ATOM.CHARS)
          (MOVD? 'NIL 'MKNUMATOM)
```

:: This is a kludge to get around the problem that, while MKATOM is in LLNEW, MKNUMATOM is not, and MKATOM calls
 :: MKNUMATOM when given an atom beginning with a digit. It turns out that MKNUMATOM will always return NIL in the cases
 :: called from MAKEINIT because MAKEINIT is merely copying things which it knows are really LITATOM and spelled like it.

```
(MOVD? '* 'BLOCKRECORD)
(PUTDQ? FIXSPELL1 (LAMBDA (OLD NEW)
  (PRINT (LIST OLD '-> NEW)
    T T])
```

(LOADMKFILES)

```
(SELECTQ (SYSTEMTYPE)
  ((D ALTO))
  (PROGN (MINFS 10000 'ALTOPOINTER)
    (RECLAIM 'ARRAYP)
    (RECLAIM 'ATOM.CHARS)
    (MINFS 10000 'ARRAYP)
    (MINFS 5000 'LISTP)
    (SYSOUT 'MKI.SAV]))
```

; doesn't work until after datatype declaration has been loaded

(LOADMKFILES

```
[LAMBDA NIL
```

; Edited 7-Feb-2021 17:39 by Imm
 (* mjs "13-Mar-84 14:41")

```
(for X in MAKEINITFILES do (RELOAD (PACKFILENAME 'BODY X 'EXTENSION COMPILE.EXT]))
```

(RELOAD

(* Imm "13-APR-81 21:16")

```
[LAMBDA (FILE)
  (PROG (DATE FULLFILENAME)
    RETRY
    (COND
      ([ILESSP (OR (GETPROP FILE 'LOADDATE)
        MIN.INTEGER)
        (SETQ DATE (GETFILEINFO (SETQ FULLFILENAME (OR (FINDFILE FILE T)
          (GO NOTFOUND)))
          'ICREATIONDATE])
        (LOAD FULLFILENAME T)
        (PUTPROP FILE 'LOADDATE DATE)))
      (RETURN T)
      NOTFOUND
      (COND
        ((GETP (NAMEFIELD FILE)
          'FILEDATES)
          (PRINT (CONS FILE '(already loaded))
            T)
          (RETURN)))
        (ERROR FILE "not found.")
        (GO RETRY]))
```

(MAKEINIT

```
[LAMBDA (VERSIONS TOFILE TYPE LOADUPDIRS FONTDIRS)
```

; Edited 7-Feb-2021 17:46 by Imm
 ; Edited 19-Jul-90 17:26 by jds

(LOADMKIFILES)

```
(PROG ([TYPELST (OR (LISTP TYPE)
                   (OR (CDR (ASSOC TYPE MAKEINITTYPES))
                       (ERROR TYPE '?]
                   FILES SIZEGUESS AFTERINITFILESET EXPRESSIONS)
;; TYPELST is a list of the form (type file-list after-init-files init-size-guess)
(SETQ FILES (CADR TYPELST))
(SETQ AFTERINITFILESET (CADDR TYPELST))
(SETQ SIZEGUESS (CADDRR TYPELST))
(RESETLST
 [RESETSAVE (OUTPUT (SETQ TOFILE (OPENSTREAM (PACKFILENAME.STRING 'BODY (OR TOFILE (CAR TYPELST)
                                                                    'XXX)
                                                                    'EXTENSION INIT.EXT)
                                                                    'OUTPUT
                                                                    'NEW 8]
 (RESETSAVE NIL (LIST [FUNCTION (LAMBDA (FL)
                            (AND (OPENP FL)
                                (CLOSEF FL))
                            (AND RESETSTATE (DELFILE (FULLNAME FL)
                                                       TOFILE))
 (PROG ((OUTX TOFILE))
 (SETQ DIRECTORIES LOADUPDIRS)
 (MKI.START)
 (for X in FILES do (MKI.PASSFILE X))
```

;; Generally loads the files in 0LISPSET and 1LISPSET, with 2LISPSET getting loaded immediately after the init starts.

```
(AND LOADUPDIRS (MKI.DSET 'LOADUPDIRECTORIES LOADUPDIRS))
(AND FONDIRS (MKI.DSET 'DISPLAYFONDDIRECTORIES FONDIRS))
[COND
 (AFTERINITFILESET ; Load stuff that has to be loaded before we can call LOADUP.
                   ; Ugly expression here is because FILESLOAD is on
                   ; MACHINEINDEPENDENT.
```

```
  [MKI.ADDTO 'MAKEINIT.EXPRESSIONS
    \((MAPC ', (EVAL AFTERINITFILESET)
      (FUNCTION (LAMBDA (FILE)
                (OR [SOME LOADUPDIRECTORIES
                    (FUNCTION (LAMBDA (DIR FL)
                              (COND
                                ((SETQ FL (INFILEP
                                           (PACKFILENAME.STRING
                                             'DIRECTORY DIR
                                             'NAME FILE 'EXTENSION
                                             COMPILER.EXT)))
                                  (LOAD FL 'SYSLOAD)
                                T]
                    (PRINT (CONS FILE '(not found))
                          T])
```

```
  (MKI.ADDTO 'BOOTFILES '(MAKEINIT.EXPRESSIONS]
  (I.MAKEINITLAST VERSIONS)))
(RETURN (FULLNAME TOFILE])
```

(MKI.START

```
[LAMBDA NIL ; (* bvm%: "12-Dec-84 15:23")
 (SETQ RESETPTR)
 (SETQ RESETPC)
 (BOUTZEROS MKI.FirstDataByte)
 (CLRHASH MKI.TVHA)
 (CLRHASH MKI.PLHA)
 (CLRHASH MKI.ATOMARRAY)
 (RESETMEMORY)
 (SETQ MKI.VALUES (for X in INITVALUES bind Y collect (SET (SETQ Y (PACK* "I." (SUBSTRING (CAR X)
                                                                                       2 -1)))
                                                         (EVAL (CADR X)))
                 Y))
 (SETQ MKI.PTRS (for X in INITPTRS bind Y collect (SET (SETQ Y (PACK* "I." (SUBSTRING (CAR X)
                                                                                       2 -1)))
                                                       (CADR X))
              Y))
 (I.MAKEINITFIRST)
 (MKI.DSET NIL NIL)
 (MKI.DSET T T)
 (MKI.DSET 'MAKEINITDATES (LIST MKI.DATE (DATE)))
 (for X in INITCONSTANTS when (NEQ (CAR X)
                                     '*))
  do (I.FSETVAL (CAR X)
              (COND
                [(LISTP (CADR X))
                 (I.VAG2 (CAADR X)
                       (CADR (CADR X)
                             (T (I.\COPY (CADR X))
```

)

;; reading compiled files and processing well-known expressions

(DEFINEQ

(MKI.PASSFILE

[LAMBDA (FILESET)

; Edited 19-Jul-2021 23:50 by rmk:

;;; Read a DCOM file and load its contents into the INIT.

;;; FILESET can be one of a number, which is a LISPSET number, or a list of file names, or a file name

(COND

[(NUMBERP FILESET)

; We were given a nLISPSET number. Pack it up to get the list
; of files

(MKI.PASSFILE (EVALV (PACK* FILESET 'LISPSET]

((LISTP FILESET)

; We were given a list of file names

(MAPC FILESET (FUNCTION MKI.PASSFILE)))

(T

; It's a file name. Read it in.

(INPUT (SETQ FILESET (OPENSTREAM (OR (FINDFILE (PACKFILENAME.STRING 'BODY FILESET 'EXTENSION
REMOTECOMPILE.EXT)

T)

FILESET)

'INPUT

'OLD 8 MKI.SEQUENTIAL)))

[MKI.ADDTO 'LOADEDFILELST (LIST (SETQ FILESET (FULLNAME FILESET]

(PRINT FILESET T T)

(LET* ((FILEROOT (NAMEFIELD FILESET))

[COMSNAMES (LIST (PACK* FILEROOT 'COMS]

SKIPVARS MEXPRS X)

(DECLARE (SPECVARS COMSNAMES SKIPVARS MEXPRS)) ; used by I.RPAQQ and DOFORM

;;; Loop here reading from the dcom file into the init.

;; RMK: Pick off the DEFINE-FILE-INFO first, so we can read the rest of the file. This is done locally, not in the DOFORM. The
;; rest of the file is run in the external format that the reader returns.

(WITH-READER-ENVIRONMENT (READ-READER-ENVIRONMENT (INPUT
OLD-INTERLISP-READ-ENVIRONMENT))

[until (SELECTQ (SETQ X (READ))

((STOP NIL)

; End of file

T)

NIL)

do (COND

((NLISTP X)

;; Start of a code object. Skip the code indicator (assume it says to read with DCODERD) and read the code

(IF (NOT (LITATOM (READ)))

THEN (ERROR "Bad compiled function" X))

(I.DCODERD X))

(T

; It's a form. go either do it now or add it to the forms to execute
; inside the init.

(DOFORM X)))

finally (COND

((CAR MEXPRS)

; There are expressions to be executed in the INIT when it
; comes up. Save them.

(MKI.ADDTO (SETQ FILESET (PACK* FILEROOT ".EXPRESSIONS"))

(CAR MEXPRS))

(MKI.ADDTO 'BOOTFILES (LIST FILESET))

(CLOSEF (INPUT]))

(SCRATCHARRAY

[LAMBDA (NBYTES ALIGN)

; Edited 30-Mar-87 16:20 by bvm:

[COND

((OR (NULL MKI.ARRAY)

(IGREATERP NBYTES (ARRAYSIZE MKI.ARRAY)))

;; make sure the scratch array is big enough. Note that the scratch array is unboxed, not code, since we aren't going to be storing legitimate
;; local code in it (let's not fool the garbage collector too much).

(SETQ MKI.ARRAY (**create** ARRAYP

TYP _ \ST.BYTE

BASE _ (\ALLOCBLOCK (FOLDHI NBYTES BYTESPERCELL)

UNBOXEDBLOCK.GCT 0 CELLSPERQUAD)

LENGTH _ NBYTES

ORIG _ 0]

(**for I from 0 to** (SUB1 (UNFOLD ALIGN BYTESPERCELL)) **do** (\BYTESETA MKI.ARRAY I 0))

; clear the fnheader area

MKI.ARRAY])

(DOFORM

[LAMBDA (X NOPROP)

(* bvm%: "30-Aug-86 15:36")

;;; Handle a raw form found in a dcom file that's going into a makeinit.

(LET [(FN (GETPROP (CAR X)

'MKI]

(**if** (AND FN (NOT NOPROP))

then

; it's a local command that can be run 'renamed' . Execute it in
; the local context.

(* ASSERT%: (CALLS I.ADDTOVAR I.DECLARE%:
I.DEFINE-FILE-INFO I.DEFLIST I.FILECREATED
I.PRETTYDEFMACROS I.PUTPROPS I.RPAQ I.RPAQQ
I.SETHASHQ))

(APPLY* FN X)
else ;; it's a command that has to be done remotely, since we don't know how to do it from here. Add it to the collection of init
;; expressions.
(COND
 (PRINTEXPRS (PRINT X T T)))
 (SETQ MEXPRS (TCONC MEXPRS X]))

(CONSTFORMP

(* Imm " 7-MAR-80 08:54")

[LAMBDA (X)
(COND
 ((LISTP X)
 (SELECTQ (CAR X)
 ('FUNCTION
 X)
 NIL))
 [(LITATOM X)
 (SELECTQ X
 (NIL 'NIL)
 (T T)
 (AND (SETQ X (GETHASH X MKI.TVHA))
 (KWOTE (CDR X))
 (T X])

(NOTICECOMS

(* Imm "10-Mar-85 14:51")

[LAMBDA (VAL)
 (for X in VAL when (LISTP X) do (COND
 [(AND (EQ (CADR X)
 '*)
 (LITATOM (CADDR X))]
 (COND
 ((EQ (CAR X)
 'COMS)
 (push COMSNAMES (CADDR X)))
 (T (push SKIPVARS (CADDR X))
 (T (SELECTQ (CAR X)
 ((COMS DECLARE%:
 (NOTICECOMS (CDR X)))
 NIL]))

(EVALFORMAKEINIT

(* bvm%: " 2-NOV-83 15:22")

[LAMBDA (FORM)
(COND
 ((LISTP FORM)
 (SELECTQ (CAR FORM)
 (MKATOM (COND
 ((STRINGP (CADR FORM))
 (MKATOM (CADR FORM)))
 (T (HELP))))
 (HELP)))
 ((FIXP FORM)
 FORM)
 (T (HELP]))

(DEFINEQ

(I.ADDTOVAR

(* Imm " 2-DEC-81 23:58")

[LAMBDA (FORM)
 (MKI.ADDTO (CADR FORM)
 (CDDR FORM])

(I.DECLARE%:

(* Imm "18-FEB-80 14:04")

[LAMBDA (FORM)
 (PROG ((L FORM)
 (FLAG T)
 X FN)
 LP (COND
 ((NULL (SETQ L (CDR L)))
 (RETURN))
 ((NLISTP (SETQ X (CAR L)))
 (SELECTQ X
 ((EVAL@LOAD DOEVAL@LOAD)
 (SETQ FLAG T))
 (DONTEVAL@LOAD
 (SETQ FLAG NIL))
 NIL))
 (T (DOFORM X)))

(GO LP])

(I.DEFINE-FILE-INFO

[LAMBDA (FORM)

(* bvm%: "30-Aug-86 15:32")

::: Set reader environment for reading rest of file

(SET-READER-ENVIRONMENT (\DO-DEFINE-FILE-INFO NIL (CDR FORM]))

(I.FILECREATED

[LAMBDA (X)

; Edited 12-Jan-88 11:00 by bvm

:: Form is (FILECREATED date filename . otherstuff)

(COND

((NLISTP (CADDR X))

; FILENAME a list is for the "compiled on" expression

(LET [(NAME (NAMEFIELD (CADDR X]

(MKI.ADDTO 'BOOTLOADEDFILES (LIST NAME))

(MKI.PUTPROP NAME 'FILEDATES (LIST (CONS (CADR X) (CADDR X]))

(I.PUTPROPS

[LAMBDA (FORM)

(* lpd%: "29-APR-77 13:22")

(MKI.PUTPROP (CADR FORM)

(CADDR FORM)

(CADDR FORM])

(I.RPAQ

[LAMBDA (FORM)

(* edited%: "10-Jul-84 14:05")

(PROG ((VAL (CADDR FORM))

V)

(COND

((SETQ V (CONSTFORMP VAL))

(MKI.DSET (CADR FORM)

(EVAL V)))

(T (DOFORM (LIST 'SETTOPVAL (KWOTE (CADR FORM)) VAL)

T])

(I.RPAQQ

[LAMBDA (FORM)

(* Imm "30-APR-80 22:12")

(PROG ((ATM (CADR FORM))

(VAL (CADDR FORM)))

(COND

((FMEMB ATM COMSNAMES)

(NOTICECOMS VAL))

((FMEMB ATM SKIPVARS))

(T (MKI.DSET ATM VAL])

(I.RPAQ?

[LAMBDA (FORM)

(* Imm " 7-MAR-80 08:36")

(PROG ((VAL (CADDR FORM))

V)

(COND

((SETQ V (CONSTFORMP VAL))

(MKI.DSET (CADR FORM)

(EVAL V)))

(T (DOFORM (LIST 'SETTOPVAL (KWOTE (CADR FORM)) VAL])

(I.SETTOPVAL

[LAMBDA (FORM)

(* edited%: "10-Jul-84 14:07")

(PROG (V)

(if [AND (EQ (CAR (LISTP (CADR FORM)))

'QUOTE)

(SETQ V (CONSTFORMP (CADDR FORM))

then (MKI.DSET (CADR (CADR FORM))

(EVAL V))

else (DOFORM FORM T])

(I.NOUNDO

[LAMBDA (FORM)

(* edited%: "10-Jul-84 14:02")

(if (EQ (NTHCHAR (CAR FORM)

1)

'/)

then (DOFORM (CONS (SUBATOM (CAR FORM)

2 -1)

(CDR FORM)))

else (SHOULDNT])

```

)
(PUTPROPS ADDOVAR MKI I.ADDTOVAR)
(PUTPROPS DECLARE%: MKI I.DECLARE%:)
(PUTPROPS DEFINE-FILE-INFO MKI I.DEFINE-FILE-INFO)
(PUTPROPS FILECREATED MKI I.FILECREATED)
(PUTPROPS PUTPROPS MKI I.PUTPROPS)
(PUTPROPS RPAQ MKI I.RPAQ)
(PUTPROPS RPAQ? MKI I.RPAQ?)
(PUTPROPS RPAQQ MKI I.RPAQQ)
(PUTPROPS LISXPRT MKI NIL)
(PUTPROPS PRETTYCOMPRINT MKI NIL)
(PUTPROPS * MKI NIL)
(PUTPROPS SETTOPVAL MKI I.SETTOPVAL)
(PUTPROPS SETQQ MKI I.RPAQQ)
(PUTPROPS SETQ MKI I.RPAQ)
(PUTPROPS /SETTOPVAL MKI I.NOUNDO)
(DEFINEQ

```

(I.ATOMNUMBER

```

[LAMBDA (A) ; Edited 27-Oct-92 14:10 by sybalsky:mv:envos
;; Given a symbol, return the symbol's atom #, in the INIT being made.
;; NB that this will work only so long as there are no NEW-SYMBOLs in the INIT, because of the LOLOC.
(I.LOLOC (COND
          ((LITATOM A)
           (MKI.ATOM A))
          (T A))

```

(I.ATOMCELL

```

[LAMBDA (X N) ; Edited 26-Oct-92 14:24 by sybalsky:mv:envos
(LET ((ATOMNO (I.ATOMNUMBER X)))
(COND
(NIL ;; THIS WAS THE PRE-BIGVM CODE:
(LET [(LOC (SELECTC N
                 (10 (I.ATOMNUMBER X))
                 (12 (I.ATOMNUMBER X))
                 (2 (I.ATOMNUMBER X))
                 (8 (I.ATOMNUMBER X))
                 (SHOULDNT])
      (I.ADDBASE (I.VAG2 N LOC)
                 LOC)))
[ (EQ (LRSH ATOMNO 16)
      0) ; Xerox Lisp traditional symbol
;; CHANGED 1/30/98 JDS TO VAG2 44... FROM VAG2 8.. BECAUSE ATOMS MOVED (PNPSPACE SHOLE G
(LET [(LOC (SELECTC N
                 (10 4)
                 (12 2)
                 (2 6)
                 (8 0)
                 (SHOULDNT])
      (I.ADDBASE (I.VAG2 \ATOM.HI 0)
                 (IPLUS LOC (ITIMES 10 ATOMNO)

```

; New symbol that appears after traditional symbol runs out.

(I.FIXUPNUM

```

[LAMBDA (CA BN NUM MASK) ; Edited 11-Jul-2022 20:00 by rmk
; Edited 17-Jul-90 14:28 by jds
;; Perform atom-number fixup for a code block.
(COND

```

```

((FMEMB :3-BYTE COMPILER::*TARGET-ARCHITECTURE*)
;; If it's on a machine wiht 3 byte atom numbers, treat it as a pointer.
(I.FIXUPPTR CA BN NUM))
(T ;; Otherwise, fill in the two bytes.
(\BYTESETA CA (SUB1 BN)
 (LOGOR (LOGAND (\BYTELT CA (SUB1 BN))
 (LRSH (LOGXOR MASK 65535)
 8))
 (LOGAND (LRSH (LOGAND NUM MASK)
 8)
 255)))
(\BYTESETA CA BN (LOGAND NUM 255])

```

(I.FIXUPPTR

[LAMBDA (CA BN PTR)

; Edited 22-Jul-90 12:10 by jds

;; Specific for MAXC --- actual ptr is same as simulated ptr

```

(PROG ((LOLOC (I.LOLOC PTR))
(\BYTESETA CA (SUB1 BN)
 (LRSH LOLOC 8))
(\BYTESETA CA BN (LOGAND LOLOC 255))
(\BYTESETA CA (IDIFFERENCE BN 2)
 (LOGOR (\BYTELT CA (IDIFFERENCE BN 2))
 (I.HILOC PTR))

```

(I.FIXUPSYM

[LAMBDA (CA BN NUM MASK)

; Edited 11-Jul-2022 20:00 by rmk

; Edited 23-Jan-91 19:04 by jds

;; Perform SYMBOL fixup for a code block.

```

(COND
((FMEMB :3-BYTE COMPILER::*TARGET-ARCHITECTURE*)
;; If it's on a machine wiht 3 byte atom numbers, treat it as a pointer.
(I.FIXUPPTR CA BN (I.ATOMNUMBER NUM)))
(T ;; Otherwise, fill in the two bytes.
(\BYTESETA CA (SUB1 BN)
 (LOGOR (LOGAND (\BYTELT CA (SUB1 BN))
 (LRSH (LOGXOR MASK 65535)
 8))
 (LOGAND (LRSH (LOGAND (I.ATOMNUMBER NUM)
 MASK)
 8)
 255)))
(\BYTESETA CA BN (LOGAND (I.ATOMNUMBER NUM)
 255])

```

(I.WORDSPERNAMEENTRY

[LAMBDA NIL

; Edited 25-Jan-91 15:35 by jds

;; For MAKEINIT, returns the number of words in a name-table entry.

;; For the old 2-byte atom case, it's 1 word; for 3-byte atoms, 2 words.

;; An "Entry" means an entry in each half of the name table (symbol & type/offset).

;; While we're building the INIT, react to either :3-BYTE or :3-BYTE-INIT in the target architecture -- we're automatically CROSSCOMPILING as far

;; as this function is concerned.

```

(COND
((FMEMB :3-BYTE COMPILER::*TARGET-ARCHITECTURE*)
 2)
((FMEMB :3-BYTE-INIT COMPILER::*TARGET-ARCHITECTURE*)
 2)
(T 1])

```

(I.SETSTKNTOFFSET

[LAMBDA (BASE OFFSET TYPE VAL)

; Edited 25-Jan-91 16:00 by jds

;; FOR MAKEINIT: Set the offset entry for a name-table entry, from the symbol to fill in plus the variable-type marker value SHIFTED LEFT 14
;; BITS ALREADY.

```

(COND
((FMEMB :3-BYTE COMPILER::*TARGET-ARCHITECTURE*)
 (I.FIXUPNUM BASE (IDIFFERENCE OFFSET BYTESPERWORD)
 TYPE)
 (I.FIXUPNUM BASE OFFSET VAL))
((FMEMB :3-BYTE-INIT COMPILER::*TARGET-ARCHITECTURE*)
 (I.FIXUPNUM BASE (IDIFFERENCE OFFSET BYTESPERWORD)
 TYPE)
 (I.FIXUPNUM BASE OFFSET VAL))
(T (I.FIXUPNUM BASE OFFSET (IPLUS TYPE VAL))

```

)

:: stuff for MAXC

(DEFINEQ

(MKI.ATOM

[LAMBDA (X)

(* Imm "29-JUL-81 22:46")
; for MAXC

```
(AND X (OR (GETHASH X MKI.ATOMARRAY)
            (PUTHASH X (COND
                        ((EQ X 'NOBIND)
                         PTRNOBIND)
                        (T (I.COPYATOM X)))
            MKI.ATOMARRAY]))
```

(MKI.IEEE

[LAMBDA (X BOX)

(* bvm%: "16-Dec-80 00:44")

:: Converts pdp-10 floating-point number X to IEEE standard for Dolphin, storing (with I.PUTBASE) into BOX. For MAXC only.

```
(PROG (MAGNITUDE (SIGN 0)
        (EXP 0)
        (FRAC 0))
```

RETRY

```
[SETQ MAGNITUDE (COND
                  [(MINUSP X)
                   (SETQ SIGN 32768)
                   (IMINUS (OPENR (LOC X)
                                 (T (OPENR (LOC X)
                                           (ZEROP MAGNITUDE)
                                           (GO DONE))
                                 ((IEQP (LOGAND MAGNITUDE 67108864)
                                         0)
                                  (SETQ X (FPLUS X 0.0))
                                  (GO RETRY)))
                   (COND
                    ((ILEQ (SETQ EXP (IDIFFERENCE (LRSH MAGNITUDE 27)
                                                    2))
                            0)
                     ; Exponent bias is off by 1, plus another 1 because of the implicit high bit. Thus have to watch for underflow
                     (ERROR "Unrepresentable floating-point number" X)
                     (SETQ EXP (SETQ SIGN 0)) ; If continued, make it zero
                     (GO DONE)))
                  [SETQ FRAC (IPLUS (LOGAND (LRSH MAGNITUDE 3)
                                           16777215)
                                   (COND
                                    ((OR (ILESSP (LOGAND MAGNITUDE 7)
                                                4)
                                         (EQ (LOGAND MAGNITUDE 15)
                                             4))
                                     0)
                                    (T 1)
                                   )
                  [COND
                   ((IGREATERP FRAC 16777215) ; Rounding overflowed the high bit
                    (SETQ FRAC (LRSH FRAC 1)) ; EXP can't overflow, because of bias difference
                    (SETQ EXP (ADD1 EXP)) ; FRAC is now a 24-bit fraction with its high bit on
                   ]
                  DONE
                  (I.PUTBASE BOX 0 (LOGOR SIGN (LLSH EXP 7)
                                                (LOGAND (LRSH FRAC 16)
                                                         127)))
                  (I.PUTBASE BOX 1 (LOGAND FRAC 65535]))
```

; unnormalized number???

; Round down

; Rounding overflowed the high bit
; EXP can't overflow, because of bias difference
; FRAC is now a 24-bit fraction with its high bit on

)

:: stuff to maintain symbol values, prop lists during makeinit--all dumped at end.

(DEFINEQ

(MKI.DSET

[LAMBDA (A VAL)

; Edited 12-Jan-88 11:03 by bvm

```
(LET ((LST (GETHASH A MKI.TVHA)))
      (COND
       (LST (COND
             ((NOT (EQUAL VAL (CDR LST)))
              (EXEC-FORMAT "(Value of ~S changed from ~S to ~S)~%" A (CDR LST)
                           VAL)))
             (RPLACD LST VAL)))
       (T (PUTHASH A (CONS NIL VAL)
                    MKI.TVHA)))
```

(MKI.ADDTO

[LAMBDA (A VAL)

(* lpd%: "29-APR-77 13:20")

```
(PROG ((LST (GETHASH A MKI.TVHA)))
```

```
(COND
  [LST (RPLACD LST (UNION VAL (CDR LST)
    (T (PUTHASH A (CONS NIL VAL)
      MKI.TVHA])
```

(MKI.PUTPROP

; Edited 12-Jan-88 11:04 by bvm

```
[LAMBDA (A PROP VAL)
  (LET ((LST (GETHASH A MKI.PLHA)))
    (COND
      (LST (COND
        ((LISTGET LST PROP)
          (EXEC-FORMAT "(Property ~S of ~S has been changed)~%" A PROP)))
        (LISTPUT LST PROP VAL))
      (T (PUTHASH A (LIST PROP VAL)
        MKI.PLHA))
```

)

```
(RPAQQ MKI.ARRAY NIL)
(RPAQ MKI.TVHA (HASHARRAY 400))
(RPAQ MKI.PLHA (HASHARRAY 150))
(RPAQ MKI.ATOMARRAY (HASHARRAY 5000))
(RPAQQ INIT.EXT SYSOUT)
(DEFINEQ
```

(DUMPVP

```
[LAMBDA (VP)
  (PRIN1 '* T)
  (WriteoutPage OUTX VP]) (* lpd%: "27-APR-77 20:24")
```

(BOUTZEROS

```
[LAMBDA (N)
  (FRPTQ N (\BOUT OUTX 0]) (* Imm "16-MAY-81 16:49")
```

(BIN16

```
[LAMBDA (STREAM)
  (LOGOR (LSH (BIN STREAM)
    8)
  (BIN STREAM]) (* edited%: " 2-Apr-85 17:11")
```

(BOUT16

```
[LAMBDA (STREAM N)
  (BOUT STREAM (LRSH N 8))
  (BOUT STREAM (LOGAND N 255))
  N]) (* edited%: " 2-Apr-85 17:11")
```

)

```
(RPAQQ MKI.FirstDataByte 1024)
(RPAQQ MKI.Page0Byte 512)
(RPAQ MKI.DATE (DATE))
(RPAQQ MKI.CODESTARTOFFSET 60)
(RPAQQ MKI.SEQUENTIAL ((SEQUENTIAL T)))
(RPAQQ PRINTEXPRS T)
(RPAQ? PRINTEXPRS T)
(RPAQ? REMOTECOMPILE.EXT COMPILE.EXT)
(DECLARE%: EVAL@COMPILE
(PUTPROPS SETXVAR MACRO [X `(SETQ.NOREF %, (CADAR X)
  %,
  (CADR X])
(PUTPROPS IEQ MACRO ((X Y)
  (IEQP X Y)))
```

```
(FILESLOAD (LOADCOMP)
  MEM)
```

)

:: from DLFIXINIT

:: This file is all because the dandelion needed its microcode embedded in the init file, and MAIKO wasn't around. So this is all to make room for
:: microcode we don't need. Except something(?) might expect the "InterfacePage" as page 2 of the file, so we're leaving it in place now

(DEFINEQ

(DLFIXINIT

```
[LAMBDA (SYSOUTFILE DLBOOTFILE) ; Edited 7-Feb-2021 13:49 by lmm
; Edited 2-Nov-92 08:16 by sybalsky:mv:envos

  (PROG ( (DBPAGES 3)
    (%#UCODEPAGES 3)
    (%#ADDEDFILEPAGES 0)
    (%#OLDFILEPAGES %#NEWFILEPAGES %#FPTOVPPAGES DLFIXEX)
    (DECLARE (SPECVARS %#UCODEPAGES NEWFFFROMOLD DBPAGES %#NEWFILEPAGES %#OLDFILEPAGES %#ADDEDFILEPAGES
      %#FPTOVPPAGES DLFIXEX))
    (READSYS SYSOUTFILE)
    (SETQ %#OLDFILEPAGES (FOLDHI (GETFILEINFO VMEMFILE 'LENGTH)
      BYTESPERPAGE))
    (DLCOPYPAGEMAP)
    (SETQ NEWFFFROMOLD (ARRAY %#OLDFILEPAGES 'WORD \NO.PAGE.ASSIGNED 1))
    (DLSORTSYSOUTPAGES)
    (DLDUMPSYSOUT)
    (READSYS)
    (RETURN DLBOOTFILE]))
```

(DLSORTSYSOUTPAGES

```
[LAMBDA NIL ; Edited 4-Nov-92 15:47 by sybalsky:mv:envos
  (DECLARE (USEDFREE FPSIZE NEWFFFROMOLD FPTOVPSIZE FPTOVP PGTAB %#FPTOVPPAGES)
    (SPECVARS LASTFP))
  (PROG (LASTFP)
    (ASSIGNFILEPAGE \FP.IFPAGE \VP.IFPAGE (SUB1 \FP.IFPAGE)
      T) ; SUB1 because old FP's are zero-based! See VMEM structures
    (ASSIGNFILEPAGERANGE \VP.DISPLAY \NP.DISPLAY (DLFFFROMMRP \RP.TEMPDISPLAY))
    (ASSIGNFILEPAGERANGE \VP.STACK PAGESPERSEGMENT (DLFFFROMMRP \RP.STACK)
      T)
    (ASSIGNFILEPAGERANGE \VP.TYPETABLE \NP.TYPETABLE (DLFFFROMMRP \RP.TYPETABLE))
    (ASSIGNFILEPAGERANGE \VP.GCTABLE \NP.GCTABLE (DLFFFROMMRP \RP.GCTABLE))
    (ASSIGNFILEPAGERANGE \VP.GCOVERFLOW \NP.GCOVERFLOW (DLFFFROMMRP \RP.GCOVERFLOW))
    (ASSIGNFILEPAGERANGE \VP.FPTOVP %#FPTOVPPAGES (DLFFFROMMRP \RP.FPTOVP))
    (replace (IFPAGE FPTOVPStart) of DLIFPAGE with (DLFFFROMMRP \RP.FPTOVP))
    (replace (IFPAGE LastDominoFilePage) of DLIFPAGE with (SETQ DLLASTDOMINOPAGE %#UCODEPAGES))
    [SETQ LASTFP (SUB1 (SETQ DLPAGEMAPFP (DLFFFROMMRP \RP.MISCLOCKED))
```

:: Assign next the pagemap pages, since we have to know where they live (some are new) and it is very convenient for them to be contiguous

```
(for J from 0 to (SUB1 \NumPMTpages) do (ASSIGNFILEPAGE (DLNEXTFP)
  (IPLUS J \VP.PRIMARYMAP)
  NIL T))
(replace (IFPAGE filePnPMT0) of DLIFPAGE with DLPAGEMAPFP)
(replace (IFPAGE filePnPMP0) of DLIFPAGE with (IPLUS DLPAGEMAPFP \NumPMTpages))
```

:: NO LONGER -- 5,,0 TAKEN FOR FPTOVP IN MEDLEY 2.1 -- but we need the secondary page table up thru building things, so assign it:

```
(for J from 0 to (SUB1 (FOLDHI DLNEXTPM WORDSPERPAGE)) do (ASSIGNFILEPAGE (DLNEXTFP)
  (IPLUS J \VP.SECONDARYMAP)
  NIL T))
```

:: Similarly, assign locked page table, which is another structure we rewrite

```
(for J from 0 to (SUB1 \NumLPTPages) do (ASSIGNFILEPAGE (DLNEXTFP)
  (IPLUS J \VP.LPT)
  NIL T))
```

:: Finally, assign file pages for everyone we haven't taken care of yet. First the locked pages, which have to be at the front of the sysout, after the
:: fixed assignments we have already made

```
[for IFLOCKED in ' (T NIL)
  do (for VPSEG from 0 to \MAXVMSEGMENT bind PGTAB2 when (NEQ (SETQ PGTAB2 (FASTELT PGTAB VPSEG))
    PGENEMPTY)
    do (for I from 0 to (SUB1 PAGESPERSEGMENT) bind (VPBASE _ (UNFOLD VPSEG PAGESPERSEGMENT))
      OLDFP
      when (AND [NOT (ZEROP (SETQ OLDFP (FASTELTN PGTAB2 I)
        (EQ (DLLOCKEDPAGEP (IPLUS VPBASE I))
        IFLOCKED)
        (EQ (FASTELTN NEWFFFROMOLD OLDFP)
          \NO.PAGE.ASSIGNED))
      do (ASSIGNFILEPAGE (DLNEXTFP)
        (IPLUS VPBASE I)
        OLDFP IFLOCKED)))
  (COND
    (IFLOCKED (replace (IFPAGE LastLockedFilePage) of DLIFPAGE with LASTFP)
      (SETQ LASTFP DLLASTDOMINOPAGE))
    (replace (IFPAGE NDirtyPages) of DLIFPAGE with (replace (IFPAGE NActivePages) of DLIFPAGE with
      %#NEWFILEPAGES
      )))
```

(DLNEXTFP

```
[LAMBDA NIL ; Edited 2-Nov-92 12:29 by sybalsky:mv:envos
```

```
(do (add LASTFP 1) repeatuntil (EQ (FASTELTN FPTOVP (LLSH LASTFP 1))
\NO.VMEM.PAGE))
LASTFP])
```

(DLLOCKEDPAGEP

```
[LAMBDA (VP) (* bvm%: " 6-Dec-84 22:25")
(NEQ 0 (LOGAND (.LOCKEDVPMASK. VP)
(FASTELTN DLLOCKBITS (FOLDLO VP BITSPERWORD]))
```

(DLSETLOCKBIT

```
[LAMBDA (VP) (* bvm%: " 6-Dec-84 22:26")
(FASTSETAN DLLOCKBITS (FOLDLO VP BITSPERWORD)
(LOGOR (.LOCKEDVPMASK. VP)
(FASTELTN DLLOCKBITS (FOLDLO VP BITSPERWORD]))
```

(DLCOPYPAGEMAP

```
[LAMBDA NIL ; Edited 3-Nov-92 15:46 by sybalsky:mv:envos
(PROG NIL
[SETQ DLIFPAGE (DLCOPYVMPAGE \VP.IFPAGE (NCREATE 'VMEMPAGEP)
; Install interface page by magic
(SETQ DLPRIMARYMAP (ARRAY (UNFOLD \NumPMTpages WORDSPERPAGE)
'WORD 0 0)) ; Primary map table
[for J from 0 to (SUB1 \NumPMTpages) do (DLCOPYVMPAGE (IPLUS J \VP.PRIMARYMAP)
(\ADDBASE (fetch (ARRAYP BASE) of DLPRIMARYMAP)
(UNFOLD J WORDSPERPAGE))
(SETQ DLNEXTTPM (fetch (IFPAGE NxtPMAddr) of DLIFPAGE)) ; First free offset in secondary map
(DLADDPAGEMAPENTRIES \VP.FPTOVP \NP.FPTOVP)
(COND
((NOT (VMPAGEP \VP.DISPLAY))
(DLADDPAGEMAPENTRIES \VP.DISPLAY \NP.DISPLAY)
(add %#ADDEDFILEPAGES \NP.DISPLAY)))
(SETQ %#NEWFILEPAGES (IPLUS (SUB1 %#OLDFILEPAGES)
(SUB1 %#UCODEPAGES)))]
;; Used to use WORDSPERPAGE, until an FPTOVP entry went from word to cell 11/3/92 JDS:
(SETQ %#FPTOVPPAGES (ADD1 (FOLDHI (IPLUS %#NEWFILEPAGES %#ADDEDFILEPAGES)
CELLSPERPAGE)))
;; Number of pages of FPTOVP needed -- cover everything in sysout, plus one more possibly needed to cover FPTOVP itself
(add %#ADDEDFILEPAGES %#FPTOVPPAGES)
(add %#NEWFILEPAGES %#ADDEDFILEPAGES)
;; Make FPTOVP big enough to hold #NEWPAGES, plus a couple of entries as slop, to prevent off-by-1's.
(SETQ FPTOVP (ARRAY (+ 16384 (LLSH %#NEWFILEPAGES 1))
'WORD \NO.VMEM.PAGE 1))
(SETQ DLSECONDARYMAP (ARRAY (CEIL DLNEXTTPM WORDSPERPAGE)
'WORD 0 0))
;; Allocate enough space to accomodate existing secondary map plus anything we added. Round up to a page boundary
(replace (IFPAGE NxtPMAddr) of DLIFPAGE with DLNEXTTPM) ; Store back new DLNEXTTPM as updated by
; DLADDPAGEMAPENTRIES
(SETQ DLLOCKBITS (ARRAY (UNFOLD \NumLPTPages WORDSPERPAGE)
'WORD 0 0)) ; Read the locked page table
(for J from 0 to (SUB1 \NumLPTPages) do (DLCOPYVMPAGE (IPLUS J \VP.LPT)
(\ADDBASE (fetch (ARRAYP BASE) of DLLOCKBITS)
(UNFOLD J WORDSPERPAGE))]
```

(DLCOPYVMPAGE

```
[LAMBDA (VP BASE) (* bvm%: "14-Dec-84 12:46")
(* Reads page VP from VMEMFILE into BASE, returning BASE)
(SETVMPTR (UNFOLD VP WORDSPERPAGE))
(\BINS VMEMFILEX BASE 0 BYTESPERPAGE)
BASE])
```

(DLADDPAGEMAPENTRIES

```
[LAMBDA (VP NPAGES) (* bvm%: "27-MAR-83 17:53")
(to NPAGES do [COND
((IEQ (FASTELTN DLPRIMARYMAP (fetch (VP PRIMARYKEY) of VP))
\EmptyPMTEntry)
(COND
((EVENP DLNEXTTPM WORDSPERPAGE) (* must add a new page map page)
(add %#ADDEDFILEPAGES 1)))
(FASTSETAN DLPRIMARYMAP (fetch (VP PRIMARYKEY) of VP)
DLNEXTTPM)
(SETQ DLNEXTTPM (IPLUS DLNEXTTPM \PMblockSize]
(add VP 1])
```

(ASSIGNFILEPAGE

```
[LAMBDA (FP VP OLDFP LOCKED) ; Edited 9-Nov-92 14:54 by sybalsky:mv:envos
;; Assign VP to live in FP (and hence a related real page); OLDFP is where VP lives in the old sysout
```

```
(COND
  ([NOT (ZEROP (OR OLDFP (SETQ OLDFP (LOGAND (FASTELTN (FASTELT PGTAB (LRSH VP 8))
                                               (LOGAND VP 255))
                                               32767])
          (FASTSETAN NEWFPFROMOLD OLDFP FP)))
   (FASTSETAN FPTOVP (ADD1 (LLSH FP 1))
    VP)
   (FASTSETAN FPTOVP (LLSH FP 1)
    0)
   (PROG [(SECONDARY (FASTELTN DLPRIMARYMAP (fetch (VP PRIMARYKEY) of VP]
                                                    ; Update pagemap to point to the new FP
          (COND
            ((IEQ SECONDARY \EmptyPMTEntry)
             (HELP VP "has no primary map entry"))
            (T (FASTSETAN DLSECONDARYMAP (IPLUS SECONDARY (fetch (VP SECONDARYKEY) of VP))
              FP)))
          (COND
            (LOCKED (DLSETLOCKBIT VP]))
```

(ASSIGNFILEPAGERANGE

```
[LAMBDA (VPSTART NPAGES FPSTART ONLYIF THERE) (* bvm%: "25-MAR-83 12:44")
  (for I from 0 to (SUB1 NPAGES) unless [AND ONLYIF THERE (NOT (VMPAGEP (IPLUS VPSTART I]
  do (ASSIGNFILEPAGE (IPLUS FPSTART I)
    (IPLUS VPSTART I)
    NIL T])
```

(DLDUMPSYSOUT

```
[LAMBDA NIL ; Edited 7-Feb-2021 20:46 by larry
; Edited 7-Feb-2021 14:28 by lmm
; Edited 3-Nov-92 10:50 by sybalsky:mv:envos
  (PROG [(DLPAGEOFZEROS (NCREATE 'VMEMPAGEP]
  [SETQ DLFILEX (OPENSTREAM DLBOOTFILE 'OUTPUT 'NEW 8 (CONS (LIST 'LENGTH (UNFOLD %#NEWFILEPAGES
    BYTESPERPAGE))
    ' ((SEQUENTIAL T)
      (TYPE BINARY])
    (SETQ DLBOOTFILE (FULLNAME DLFILEX))
    (PROGN (\BOOTS DLFILEX DLPAGEOFZEROS 0 BYTESPERPAGE)
      (\BOOTS DLFILEX DLIFPAGE 0 BYTESPERPAGE)
      (\BOOTS DLFILEX DLPAGEOFZEROS 0 BYTESPERPAGE))
    (DLDUMPMEMPAGES (ADD1 DLLASTDOMINOPAGE)
      (SUB1 (DLFPFROMRP \RP.FPTOVP)))
    (DLDUMPFPTOVP)
    (DLDUMPMEMPAGES (IPLUS (DLFPFROMRP \RP.FPTOVP)
      %#FPTOVPPAGES)
      (SUB1 DLPAGEMAPFP))
    (DLDUMPPAGEMAPS)
    (DLDUMPMEMPAGES (IPLUS DLPAGEMAPFP \NumPMTpages (FOLDHI DLNEXTPM WORDSPERPAGE)
      \NumLPTPages)
      %#NEWFILEPAGES)
    (CLOSEF DLFILEX])
```

(DLDUMPFPTOVP

```
[LAMBDA NIL ; Edited 4-Nov-92 13:56 by sybalsky:mv:envos
  (printout T "[FPTOVP]")
  ;; Filepages are one-based, but FPTOVP in the sysout is zero-based for convenience. Hence, first entry (page zero) is dummy
  (\WOUT DLFILEX \NO.VMEM.PAGE)
  ;; With BIG VM, each FPTOVP entry is 2 words, and word 1 (the 1st element of the array) is actually part of the entry for page 0 (which we dumped
  ;; the other half above). So we need to dump 2*#pages + 1 elements of the array:
  (DLDUMPARRAY FPTOVP (ADD1 (LLSH %#NEWFILEPAGES 1)))
  (RPTQ (IDIFFERENCE (UNFOLD %#FPTOVPPAGES WORDSPERPAGE)
    (LLSH (ADD1 %#NEWFILEPAGES)
      1))
    (\WOUT DLFILEX \NO.VMEM.PAGE))
  ; Fill out rest of FPTOVP with no such page. Fill from #pages*2
  ; (it's cells now, not words per FPTOVP entry), out to the end of
  ; the FPTOVP pages.
  NIL])
```

(DLDUMPPAGEMAPS

```
[LAMBDA NIL ; Edited 3-Nov-92 10:47 by sybalsky:mv:envos
  (printout T "[PageMaps]")
  (DLDUMPARRAY DLPRIMARYMAP (UNFOLD \NumPMTpages WORDSPERPAGE))
  ; Dump primary map
  (DLDUMPARRAY DLSECONDARYMAP (CEIL DLNEXTPM WORDSPERPAGE))
  ; Dump secondary map
  (DLDUMPARRAY DLLOCKBITS (UNFOLD \NumLPTPages WORDSPERPAGE))
  ; Dump locked page table
  NIL])
```

(DLDUMPMEMPAGES

```
[LAMBDA (FIRSTFP LASTFP) ; Edited 2-Nov-92 12:30 by sybalsky:mv:envos
  (for FP from FIRSTFP to LASTFP bind VP do (COND
```

```

((AND (NEQ [SETQ VP (FASTEITN FPTOVP (ADD1 (LLSH FP 1)
\NO.VMEM.PAGE)
(VMPAGEP VP))
(SETVMPTR (UNFOLD VP WORDSPERPAGE))
(COPYBYTES VMEMFILE DLFILEX BYTESPERPAGE)
(PRIN1 '* T))
(T (\BOUTS DLFILEX DLPAGEOFZEROS 0 BYTESPERPAGE)
(PRIN1 'x T]))

```

(DLSETBOOTPTR

```

[LAMBDA (FP) ; (* bvm%: "27-MAR-83 17:39")
(printout T "[" .P2 FP "]")
(SETFILEPTR DLFILEX (UNFOLD (SUB1 FP)
BYTESPERPAGE))

```

(DLDUMPARRAY

```

[LAMBDA (ARR NWORDS) ; Edited 3-Nov-92 11:52 by sybalsky:mv:envos
;; Dump NWORDS from array ARR, starting with the first byte in the array's contents.
(\BOUTS DLFILEX (fetch (ARRAYP BASE) of ARR)
0
(UNFOLD NWORDS BYTESPERWORD))

```

(DLMARKASDUMPED

```

[LAMBDA (FIRSTFP NPAGES) ; Edited 2-Nov-92 12:30 by sybalsky:mv:envos
(for I from FIRSTFP to (IPLUS FIRSTFP NPAGES -1) do (FASTSETAN FPTOVP (LLSH I 1)
\NO.VMEM.PAGE])

```

(DLDUMPMEMPAGE

```

[LAMBDA (NEWFP VP LOCKEDP) ; (* bvm%: "28-MAR-83 12:11")
(COND
((VMPAGEP VP)
(SETVMPTR (UNFOLD VP WORDSPERPAGE))
[PROG ((DESTINATIONBYTE (UNFOLD (SUB1 NEWFP)
BYTESPERPAGE)))]
(COND
((NOT (IEQP (\GETFILEPTR DLFILEX)
DESTINATIONBYTE))
(printout T "[" .P2 NEWFP "]")
(SETFILEPTR DLFILEX DESTINATIONBYTE])
(COPYBYTES VMEMFILE DLFILEX BYTESPERPAGE)
(PRIN1 (COND
(LOCKEDP '$)
(T '*))
T))
(T (PRIN1 'x T]))

```

(INSTALLDOMINO

```

[LAMBDA (DBFILE) ; (* edited%: "14-APR-83 12:00")
(DLSETBOOTPTR 1)
(COPYBYTES DBFILE DLFILEX 0 BYTESPERPAGE)
(DLSETBOOTPTR (ADD1 \FP.IFPAGE)) ; (* Skip over InterfacePage)
(COPYBYTES DBFILE DLFILEX) ; (* Copy rest of Domino)
(DLSETBOOTPTR DLLASTDOMINOPAGE)
(SETFILEPTR DBFILE 0)

(* Copy first DB page into scratch at end of Domino reserved space so that SYSOUT can get it
(Dolphin and Dorado smash first page of vmem))

(COPYBYTES DBFILE DLFILEX 0 BYTESPERPAGE)]

```

(INSTALLDOMINO.DIRECT

```

[LAMBDA (DBFILE) ; (* bvm%: "29-JUL-83 16:16")
(PROG [(BUFFER (COND
((IGREATERP \#SWAPBUFFERS 1)
(RESETSAVE \EMUSWAPBUFFERS (\ADDBASE \EMUSWAPBUFFERS WORDSPERPAGE))
(RESETSAVE \#SWAPBUFFERS (SUB1 \#SWAPBUFFERS))
\EMUSWAPBUFFERS)
(T (RESETSAVE \EMUDISKBUFFERS (\ADDBASE \EMUDISKBUFFERS WORDSPERPAGE))
(RESETSAVE \#DISKBUFFERS (SUB1 \#DISKBUFFERS))
\EMUDISKBUFFERS]
(replace ENDOFSTREAMOP of DBFILE with (FUNCTION ZERO))
(\BINS DBFILE BUFFER 0 BYTESPERPAGE)
(COND
(EQ \MACHINETYPE \DANDELION)
(\ACTONVMEMFILE 1 BUFFER 1 T)))
(\BINS DBFILE BUFFER 0 BYTESPERPAGE) ; (* Skip over InterfacePage)
(for I from (ADD1 \FP.IFPAGE) until (\EOFP DBFILE) do (\BINS DBFILE BUFFER 0 BYTESPERPAGE)
(\ACTONVMEMFILE I BUFFER 1 T)) ; (* Copy rest of Domino)
])

```

])

(INSTALLNEWDOMINO

```

[LAMBDA (SYSOUTFILE DBFILE) (* bvm%: "29-JUL-83 16:08")
  (RESETLST
    (SETQ DBFILE (GETSTREAM (OPENFILE (OR DBFILE (INFILEP '{DSK}DLISPDOMINO.DB)
      '{PHYLUM}<LISPCORE>DLION>BASICS>DLISPDOMINO.DB)
      'INPUT)
      'INPUT))
    (RESETSAVE NIL (LIST 'CLOSEF DBFILE))
    (PROG ((DBPAGES (IPLUS (FOLDHI (GETFILEINFO DBFILE 'LENGTH)
      BYTESPERPAGE)
      2))
      %#UCODEPAGES DLFILEX)
      (DECLARE (SPECVARS DLFILEX))
      [COND
        [SYSOUTFILE [RESETSAVE NIL (LIST 'CLOSEF (SETQ SYSOUTFILE (OPENFILE SYSOUTFILE 'INPUT)
          (SETQ %#UCODEPAGES (SETQ DLLASTDOMINOPAGE (fetch (IFPAGE LastDominoFilePage)
            of (\MAPPAGE 1 (GETSTREAM SYSOUTFILE)
              (ASKUSER NIL NIL (LIST "Shall I install" (fetch FULLFILENAME of DBFILE)
                "directly into the vmem file"))
              (SETQ %#UCODEPAGES (SETQ DLLASTDOMINOPAGE (fetch (IFPAGE LastDominoFilePage) of \InterfacePage]
                (COND
                  ((ILESSP %#UCODEPAGES DBPAGES)
                    (RETURN "Not enough space for Domino"))
                  (COND
                    (SYSOUTFILE (OPENFILE (CLOSEF SYSOUTFILE)
                      'BOTH)
                      (SETQ DLFILEX (GETSTREAM SYSOUTFILE))
                      (INSTALLDOMINO DBFILE))
                    (T (INSTALLDOMINO.DIRECT DBFILE)))
                    (RETURN SYSOUTFILE)))]
          )
        (FILESLOAD READSYS)
        (DEFINEQ
          (DLPRINTFPTOVP
            [LAMBDA (STREAM) (* bvm%: "28-MAR-83 12:42")
              (\PRINTFPTOVP (\ADDBASE (fetch (ARRAYP BASE) of FPTOVP)
                -1)
                (fetch (IFPAGE NActivePages) of DLIFPAGE)
                STREAM])
          )
        (PRINTPRIMARYMAP
          [LAMBDA NIL (* bvm%: "28-MAR-83 23:25")
            (for I from 0 to 63 do (printout T I ": " 8)
              [for J from 0 to 7 bind PMPE do (COND
                ((EQ [SETQ PMPE (ELT DLPRIMARYMAP
                  (PLUS J (TIMES I 8)
                    65535)
                  (printout T " -----")
                  (T (printout T .I6.8 PMPE)
                    (TERPRI T)
                    unless (for J from 0 to 7 always (EQ (ELT DLPRIMARYMAP (PLUS J (TIMES I 8)))
                      65535]))
                )
            )
          (DLREADPAGEOFWORDS
            [LAMBDA (STREAM) (* bvm%: "29-MAR-83 00:03")
              (to WORDSPERPAGE collect (\WIN STREAM])
            )
          (SETDIF
            [LAMBDA (X Y) (* bvm%: "28-MAR-83 15:28")
              (for EL in X collect EL unless (FMEMB EL Y])
            )
          )
        (DECLARE%: EVAL@COMPILE
          (RPAQQ \NO.PAGE.ASSIGNED 0)
          (CONSTANTS \NO.PAGE.ASSIGNED)
          )
        (DECLARE%: DOEVAL@COMPILE DONTCOPY
          (GLOBALVARS DLPRIMARYMAP DLSECONDARYMAP DLLCKBITS DLLASTDOMINOPAGE DLIFPAGE DLNEXTPM DLPAGEMAPPF FPTOVP
            NEWFPFROMOLD VMEMFILE VMEMFILEX)
          )
    )
  )

```

(FILESLOAD READSYS)

(DEFINEQ

(DLPRINTFPTOVP

```

[LAMBDA (STREAM) (* bvm%: "28-MAR-83 12:42")
  (\PRINTFPTOVP (\ADDBASE (fetch (ARRAYP BASE) of FPTOVP)
    -1)
    (fetch (IFPAGE NActivePages) of DLIFPAGE)
    STREAM])

```

(PRINTPRIMARYMAP

```

[LAMBDA NIL (* bvm%: "28-MAR-83 23:25")
  (for I from 0 to 63 do (printout T I ": " 8)
    [for J from 0 to 7 bind PMPE do (COND
      ((EQ [SETQ PMPE (ELT DLPRIMARYMAP
        (PLUS J (TIMES I 8)
          65535)
        (printout T " -----")
        (T (printout T .I6.8 PMPE)
          (TERPRI T)
          unless (for J from 0 to 7 always (EQ (ELT DLPRIMARYMAP (PLUS J (TIMES I 8)))
            65535]))
      )
    )
  )

```

(DLREADPAGEOFWORDS

```

[LAMBDA (STREAM) (* bvm%: "29-MAR-83 00:03")
  (to WORDSPERPAGE collect (\WIN STREAM])

```

(SETDIF

```

[LAMBDA (X Y) (* bvm%: "28-MAR-83 15:28")
  (for EL in X collect EL unless (FMEMB EL Y])

```

(DECLARE%: EVAL@COMPILE
(RPAQQ \NO.PAGE.ASSIGNED 0)

(CONSTANTS \NO.PAGE.ASSIGNED)
)

(DECLARE%: DOEVAL@COMPILE DONTCOPY

(GLOBALVARS DLPRIMARYMAP DLSECONDARYMAP DLLCKBITS DLLASTDOMINOPAGE DLIFPAGE DLNEXTPM DLPAGEMAPPF FPTOVP
NEWFPFROMOLD VMEMFILE VMEMFILEX)
)

FUNCTION INDEX

ASSIGNFILEPAGE	12	DLLOCKEDPAGEP	12	I.FIXUPNUM	7	LOADMKIFILES	2
ASSIGNFILEPAGERANGE	13	DLMARKASDUMPED	14	I.FIXUPPTR	8	MAKEINIT	2
BIN16	10	DLNEXTFP	11	I.FIXUPSYM	8	MAKEINITGREET	1
BOUT16	10	DLPRINTFP TOVP	15	I.NOUNDO	6	MKI.ADDTO	9
BOUTZEROS	10	DLREADPAGEOFWORDS	15	I.PUTPROPS	6	MKI.ATOM	9
CONSTFORMP	5	DLSETBOOTPTR	14	I.RPAQ	6	MKI.DSET	9
DLADDPAGEMAPENTRIES	12	DLSETLOCKBIT	12	I.RPAQ?	6	MKI.IEEE	9
DLCOPYPAGEMAP	12	DLSORTSYSOUTPAGES	11	I.RPAQQ	6	MKI.PASSFILE	4
DLCOPYVMPAGE	12	DOFORM	4	I.SETSTKNTOFFSET	8	MKI.PUTPROP	10
DLDUMPARRAY	14	DUMPVP	10	I.SETTOPVAL	6	MKI.START	3
DLDUMPFPTOVP	13	EVALFORMAKEINIT	5	I.WORDSPERNAMEENTRY	8	NOTICECOMS	5
DLDUMPPAGEMAPS	13	I.ADDTOVAR	5	I.\ATOMCELL	7	PRINTPRIMARYMAP	15
DLDUMPSYSOUT	13	I.ATOMNUMBER	7	INSTALLDOMINO	14	RELOAD	2
DLDUMPMEMPAGE	14	I.DECLARE%:	5	INSTALLDOMINO.DIRECT	14	SCRATCHARRAY	4
DLDUMPMEMPAGES	13	I.DEFINE-FILE-INFO	6	INSTALLNEWDOMINO	15	SETDIF	15
DLFIXINIT	11	I.FILECREATED	6	LOADMAKEINIT	2		

PROPERTY INDEX

*	7	DECLARE%:	7	LISXPXPRINT	7	RPAQ	7	SETQ	7
/SETTOPVAL	7	DEFINE-FILE-INFO	7	PRETTYCOMPRINT	7	RPAQ?	7	SETQQ	7
ADDDTOVAR	7	FILECREATED	7	PUTPROPS	7	RPAQQ	7	SETTOPVAL	7

VARIABLE INDEX

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MKI.ARRAY	10	MKI.DATE	10	MKI.PLHA	10	PRINTEXPR	10
MKI.ATOMARRAY	10	MKI.FirstDataByte	10	MKI.SEQUENTIAL	10	REMOTECOMPILE.EXT	10

MACRO INDEX

IEQ	10	SETXVAR	10
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CONSTANT INDEX

\NO.PAGE.ASSIGNED	15
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