



```

(NTHCHARCODE FILE TEM)) ; all device returned have DEVICE.END on it so that NIL: will
; work
(UNPACKFILE1 'DEVICE POS (if CLFLG
; then (SUB1 TEM)
; else TEM))
(SETQ POS (ADD1 TEM))
(SETQ HOSTP T))
(COND
  ((EQ DIRFLG 'RETURN) ; assert that this is a directory; more forgiving about missing
; trailing delimiter. There are two distinct cases for the missing
; initial delimiter. If HOST is also specified, it is dealt with as the
; true "relative pathname" by device dependent manner,
; otherwise it is dealt with following the "incomplete file names"
; convention. In the first case, returns RELATIVEDIRECTORY
; instead of DIRECTORY and in the second case, returns
; SUBDIRECTORY.

(LET ((TYPE 'DIRECTORY)
      (START (SELCHARQ (NTHCHARCODE FILE POS)
                       (NIL
                        (RETURN (DREVERSE VAL)))
                        ((/ <)
                         (ADD1 POS))
                         POS))
      END)
      (SETQ END (SELCHARQ (NTHCHARCODE FILE -1)
                          ((/ >)
                           [COND
                            ((EQ START POS) ; Didn't start with a directory delimiter,
                             (COND
                              ((NOT HOSTP) ; "Incomplete file names" case defined in IRM. This is a
                               ; subdirectory of the current connected directory
                               (SETQ TYPE 'SUBDIRECTORY))
                              (T ; True "relative pathname". The way to deal with it is dependent
                               ; on the device on which HOST is implemented.
                               (SETQ TYPE 'RELATIVEDIRECTORY])
                             (COND
                              ((EQ LEN POS) ; Only the initial directory is specified (i.e. "{DSK}"/).
                               (SETQ START POS)
                               -1)
                              (T -2)))
                             (PROGN [COND
                                      [(EQ START POS) ; Both of the initial and trail delimiters are omitted.
                                       (COND
                                        ((NOT HOSTP) ; "Incomplete file names" case defined in IRM. This is a
                                         ; subdirectory of the current connected directory
                                         (SETQ TYPE 'SUBDIRECTORY))
                                        (T ; True "relative pathname". The way to deal with it is dependent
                                         ; on the device on which HOST is implemented.
                                         (SETQ TYPE 'RELATIVEDIRECTORY])
                                       (T (COND
                                            ((EQ LEN POS) ; Only the initial directory is specified (i.e. "{DSK}<").
                                             (SETQ START POS)
                                             -1)))
                                       (UNPACKFILE1.DIRECTORY TYPE START END))
                                      (RETURN (DREVERSE VAL)))
                             ((SELCHARQ (NTHCHARCODE FILE POS)
                                         (/
                                          (SETQ TEM (LASTCHPOS (CHARCODE (/ >))
                                                                FILE
                                                                (ADD1 POS)))
                                          T)
                                         ((< >) ; Interlisp-D and most other Xerox systems, and Tops-20/Tenex
; use <>. Jericho uses >>
; In the case of the {DSK}<FOO/BAR, FOO should be dealt with
; as a directory.

(SETQ TEM (LASTCHPOS (CHARCODE (> /))
                     FILE
                     (ADD1 POS)))
          T)
          NIL)
;; allow {DSK}/etc to be a directory specification.
(if TEM
  then (UNPACKFILE1.DIRECTORY 'DIRECTORY (ADD1 POS)
                               (SUB1 TEM))
        (SETQ POS (ADD1 TEM))
  else ;; {DSK}/foo: the directory is /, the name is foo
        (UNPACKFILE1.DIRECTORY 'DIRECTORY POS POS)
        (SETQ POS (ADD1 POS))
        (SETQ HOSTP T))
(SETQ TEM (LASTCHPOS (CHARCODE (/ >))
                     FILE POS)) ; {eris}abc> relative
;; This is the true "relative pathname". Returns RELATIVEDIRECTORY instead of DIRECTORY.

```

```

(COND
  ((NOT HOSTP)
   (UNPACKFILE1.DIRECTORY (if (EQ DIRFLG 'FIELD)
                              then 'DIRECTORY
                              else 'SUBDIRECTORY)
    POS
    (SUB1 TEM)))
  (T
   (UNPACKFILE1.DIRECTORY (if (EQ DIRFLG 'FIELD)
                              then 'DIRECTORY
                              else 'RELATIVEDIRECTORY)
    POS
    (SUB1 TEM)
    (SETQ POS (ADD1 TEM))
    (SETQ HOSTP T)))
  (OR (SETQ CODE (NTHCHARCODE FILE (SETQ TEM POS)))
      (RETURN (DREVERSE VAL))))
  (if (EQ OSTYPE T)
      then
      (SETQ OSTYPE NIL))
  NAMELP
  ) ; "Incomplete file names" case.
  ) ; True "relative pathname".
  ) ; There wasn't a host field in the name, so we have no clue

```

;; At this point, CODE is the TEM'th char of file name. POS is the first character of the field we are currently working on.

```

(SELCHARQ CODE
 (%.
  (if BEYONDNAME
      then
      elseif FIRSTDOT
      then
      (if SECONDDOT
          then
          (SETQ FIRSTDOT SECONDDOT)
          (SETQ SECONDDOT TEM)
          else (SETQ FIRSTDOT TEM)))
      (! ; NIL)
      (if (SELCHARQ CODE
          (!
           (AND OSTYPE (NEQ OSTYPE 'IFS)))
           ;
           [AND BEYONDEXT (NOT (\UPF.TEMPFILEP FILE (ADD1 TEM))
            NIL)
          then (GO NEXTCHAR))
      (if FIRSTDOT
          then
          (if [AND SECONDDOT
              (NOT (if OSTYPE
                      then
                      (EQ OSTYPE 'TOPS20)
                      else
                      (AND [for I from (ADD1 SECONDDOT) to (SUB1 TEM) bind CH
                          always (OR (DIGITCHARP (SETQ CH (NTHCHARCODE FILE I)))
                                  (EQ CH (CHARCODE *])
                          (SELCHARQ CODE
                           (NIL
                            T)
                           ; end of file name, ok
                           ;
                           (\UPF.TEMPFILEP FILE (ADD1 TEM)))
                           NIL]
                          then
                          (SETQ FIRSTDOT SECONDDOT)
                          (SETQ SECONDDOT NIL)
                          (UNPACKFILE1 'NAME POS (SUB1 FIRSTDOT))
                          (SETQ POS (ADD1 (if SECONDDOT
                                              then (UNPACKFILE1 'EXTENSION (ADD1 FIRSTDOT)
                                                                (SUB1 SECONDDOT))
                                              (SETQ BEYONDEXT T)
                                                                SECONDDOT
                                              else FIRSTDOT)))
                          (SETQ BEYONDNAME T)
                          (SETQ FIRSTDOT NIL))
                          (UNPACKFILE1 (COND
                                      ((NOT BEYONDNAME)
                                       (SETQ BEYONDNAME NAME))
                                      ((NOT BEYONDEXT)
                                       'EXTENSION)
                                      ((AND (EQ BEYONDEXT (CHARCODE ";"))
                                       (\UPF.TEMPFILEP FILE POS)))
                                       (T
                                        ; Everything after the semi was version
                                        'VERSION))
                                      )
                                      )
                          POS

```

; Note position for later--we only want to deal with the last set of dots  
 ; no longer of interest (probably a bad name, too)  
 ; We're recording the second dot  
 ; Note only the two most recent dots  
 ; SUBDIRECTORY, NAME and EXTENSION fields definitely terminated by now  
 ; ! is only a delimiter on IFS, so ignore it if we know the ostype is something else  
 ; If we've already parsed the extension, then we have a semi in the middle of the version. Skip it unless it's ;T or ;S  
 ; Have a name and/or extension to parse now  
 ; Known OS type must be Tops20 for second dot to mean version  
 ; Unknown OS type, so check that "version" is numeric or wildcard  
 ; This semi-colon better not be introducing a version  
 ; Second dot is not introducing a version

```

                (SUB1 TEM))
            (if (NULL CODE)
                then
                    (RETURN (DREVERSE VAL))) ; End of string
            (SETQ BEYONDEXT CODE) ; Note the character that terminated the name/ext
            (SETQ POS (ADD1 TEM))
        (%'
            (add TEM 1)) ; Quoter
        NIL)
NEXTCHAR
    (SETQ CODE (NTHCHARCODE FILE (add TEM 1)))
    (GO NAMELP])

```

(\UPF.NEXTPOS

```

[LAMBDA (CHAR STRING POS) ; (* lmm "5-Oct-84 18:41")
    (bind NCH while (SETQ NCH (NTHCHARCODE STRING POS)) do (COND
        ((EQMEMB NCH CHAR)
            (RETURN POS))
        ((EQ NCH (CHARCODE %'))
            (add POS 1))
        (add POS 1])
    )

```

(\UPF.TEMPFILEP

```

[LAMBDA (FILENAME START) ; Edited 6-Jan-88 13:12 by bvm:
    ;; Checks whether START denotes a temporary mark for Twenex filename beginning at START. Returns the appropriate field name if so. Not sure
    ;; we should parse this junk any more, but this at least localizes it.
    (SELCHARQ (NTHCHARCODE FILENAME START)
        ((T S) ; Funny temp stuff
            (AND (EQ START (NCHARS FILENAME))
                'TEMPORARY))
        NIL])
)

```

(DECLARE%: DONTCOPY

(DECLARE%: EVAL@COMPILE

(PUTPROPS CANONICAL.DIRECTORY MACRO

```

[OPENLAMBDA (SRCSTRING)
    (AND
        SRCSTRING
        (LET
            ((LEN (NCHARS SRCSTRING))
             (COND
                 ((EQ LEN 1)
                  (if (STREQUAL SRCSTRING "/")
                      then "<"
                      else SRCSTRING))
                 (T (LET* ((FATP (ffetch (STRINGP FATSTRINGP) of SRCSTRING))
                          (DSTSTRING (ALLOCSTRING LEN NIL NIL (AND FATP T)))
                          (DSTBASE (ffetch (STRINGP BASE) of DSTSTRING))
                          (DSTPOS 0)
                          (NEXTPOS -1))
                     (if (NOT FATP)
                         then [for SRCPOS from 1 to LEN bind CODE
                             first (while (EQMEMB (NTHCHARCODE SRCSTRING SRCPOS)
                                                    (CHARCODE (< / >)))
                                 do (add SRCPOS 1))
                             (if (> SRCPOS LEN)
                                 then (RETURN "<"))
                             do (SELCHARQ (SETQ CODE (NTHCHARCODE SRCSTRING SRCPOS))
                                     ((> /)
                                      (if (> DSTPOS NEXTPOS)
                                          then (\PUTBASETHIN DSTBASE DSTPOS (CHARCODE >))
                                          (SETQ NEXTPOS (add DSTPOS 1))))
                                     (%' (\PUTBASETHIN DSTBASE DSTPOS CODE)
                                      (add DSTPOS 1)
                                      (if (NEQ SRCPOS LEN)
                                          then (\PUTBASETHIN DSTBASE DSTPOS (NTHCHARCODE SRCSTRING
                                                                                          (add SRCPOS 1)))
                                          (add DSTPOS 1))))
                                 (PROGN (\PUTBASETHIN DSTBASE DSTPOS CODE)
                                      (add DSTPOS 1)))
                             finally (RETURN (if (EQ DSTPOS LEN)
                                                  then (if (EQMEMB (NTHCHARCODE DSTSTRING -1)
                                                                    (CHARCODE (> /)))
                                                          then (SUBSTRING DSTSTRING 1 -2)
                                                          else DSTSTRING)
                                                  elseif (EQMEMB (NTHCHARCODE DSTSTRING DSTPOS)
                                                                    (CHARCODE (> /)))
                                                  then (SUBSTRING DSTSTRING 1 (SUB1 DSTPOS))
                                                  else (SUBSTRING DSTSTRING 1 DSTPOS]
                                     else (for SRCPOS from 1 to LEN bind CODE

```

```

first (while (EQMEMB (NTHCHARCODE SRCSTRING SRCPOS)
                    (CHARCODE (< / >)))
      do (add SRCPOS 1))
do (SELCHARQ (SETQ CODE (NTHCHARCODE SRCSTRING SRCPOS))
    (> /))
  (if (> DSTPOS NEXTPOS)
      then (\PUTBASEFAT DSTBASE DSTPOS (CHARCODE >))
          (SETQ NEXTPOS (add DSTPOS 1)))
  (%' (\PUTBASEFAT DSTBASE DSTPOS CODE)
      (add DSTPOS 1)
      (if (NEQ SRCPOS LEN)
          then (\PUTBASEFAT DSTBASE DSTPOS (NTHCHARCODE SRCSTRING
                                              (add SRCPOS 1)))
              (add DSTPOS 1)))
  (PROGN (\PUTBASEFAT DSTBASE DSTPOS CODE)
        (add DSTPOS 1)))
finally (RETURN (if (EQ DSTPOS LEN)
                    then (if (EQMEMB (NTHCHARCODE DSTSTRING -1)
                                       (CHARCODE (> /)))
                              then (SUBSTRING DSTSTRING 1 -2)
                              else DSTSTRING)
                    elseif (EQMEMB (NTHCHARCODE DSTSTRING DSTPOS)
                                   (CHARCODE (> /)))
                            then (SUBSTRING DSTSTRING 1 (SUB1 DSTPOS))
                            else (SUBSTRING DSTSTRING 1 DSTPOS]))

```

```

(PUTPROPS UNPACKFILE1.DIRECTORY MACRO [OPENLAMBDA (NAM ST END)
  (LET* ((OLDDIR (SUBSTRING FILE ST END))
        (NEWDIR (CANONICAL.DIRECTORY OLDDIR)))
    (COND
      [(NOT ONEFIELDFLG)
       (SETQ VAL (CONS (COND
                        (PACKFLG (AND NEWDIR (MKATOM NEWDIR)))
                        (T (OR NEWDIR ""))))
                     (CONS NAM VAL))]
      [(EQMEMB NAM ONEFIELDFLG)
       (RETURN (COND
                (PACKFLG (AND NEWDIR (MKATOM NEWDIR)))
                (T (OR NEWDIR "")))]))

```

```

(PUTPROPS UNPACKFILE1 MACRO [OPENLAMBDA (NAM ST END) (* lmm "22-APR-81 22:21")
  (COND
    [(NOT ONEFIELDFLG)
     (SETQ VAL (CONS (COND
                      (PACKFLG (SUBATOM FILE ST END))
                      (T (OR (SUBSTRING FILE ST END)
                             ""))))
                 (CONS NAM VAL))]
    [(EQMEMB NAM ONEFIELDFLG)
     (RETURN (COND
              (PACKFLG (SUBATOM FILE ST END))
              (T (OR (SUBSTRING FILE ST END)
                     "")))]))
)
)

```

:: Debugging

:: DOTTEDNAMES: mismatch intended

:: RETURNFAILS: mismatch with DIRFLG=RETURN, DIRECTORY and SUBDIRECTORY are swapped. But original doesn't agree with its own  
:: complete analysis.

```
(RPAQQ DOTTEDNAMES ("x." ">.git" "x.y.100"))
```

(RPAQQ TESTS

```

("*,;"
 "*.;*;"
 "*.;"
 "*,;"
 "///abc/x"
 "/abc.x"
 "<"
 "<<<abc"
 "<<<abc>"
 "<<<abc>>"
 "<<<abc>x"
 "<<<abc"
 "<<xyz>>>zz"
 "<<xyz>>>zzz/"
 "<<xyz>>>zz/"
 "<<xyz>>zz"
 "<ABC>"
 "<XYZ>aa"
 "<a.b>"
 "<a;b>"
 "<a;b;c"
 "<ab>"
 "<abc"
 "<abc*."
 "<abc.x"
 "<abc.x;1"
 "<abc;x"
 "<abc<<<x"
 "<abc<xyz<foo"
 "<abc<xyz>qrs"
 "<abc>"
 "<abc>;1"
 "<abc>xyz"
 "<abc>xyz>foo"
 "<xxx"
 "<xy>>zz"
 "<xyz>>>zzz/"
 ">"
 ">>>abc/x"
 ">abc"
 ">abc;1"
 ">abc>"
 ">abc>xyz>foo"
 ">xxx"
 "A.B.C"
 "XXX<yyy"
 "a;b"
 "a;b/d"
 "a;b;c"
 "a;b;c;d"
 "aa"
 "aa;"
 "aa;NEWEST"
 "aa;newest"
 "aaa"
 "aaa/bbb"
 "aaa/bbb/"
 "aaa/xyz;x;m"
 "aaa<bbb"
 "aaa<bbb/"
 "aaa<xyz>"
 "aaa>bbb>"
 "aaa>xyz.e;m;n"
 "aaa>xyz>qrs"
 "abc"
 "abc..c"
 "abc///XYZ//"
 "abc/d"
 "abc/xyz"
 "abc/xyz.qrs"
 "abc/xyz.qrs;2"
 "abc:x<qrs>z"
 "abc<<<XYZ/"
 "abc<x"
 "abc<xyz"
 "abc<xyz>qq"
 "abc<xyzqq"
 "abc>;1"
 "abc>qr.x"
 "abc>xy"
 "abc>xyz"
 "abc>xyz;2"
 "dev:aaa>xyz>qrs"
 "foo:"
 "foo:aaa<xyz"
 "foo:aaa<xyz>"
 "foo:x<qrs>z"
 "foo<a:B>"
 "s;n;b"
 "x.y.z;w"
 "x.y;z"
 "x;y"
 "x<abc<xyz>qrs"
 "x<abc<z"
 "x<abc>z"
 "xxx<yyy"
 "xxx<yyy>"
 "xxx<yyy>zzz"
 "xxx<yyy"
 "xxx<yyy>"
 "{ABC}"
 "{ABC}XXX:"
 "{DSK}"
 "{DSK}*.;"
 "{DSK}...<a"
 "{DSK}<a"
 "{DSK}xxx<a"
 "{DSK}xxx<xxx>yyy"
 "{DSK}xxx>xxx"
 "{DSK}xxx>yyy"
 "{HOST}foo:x<qrs>z"
 "{HOST}x<qrs>z"
 "{abc}"
 "{dsk}foo:aaa>b>.c.e.g;f"
 "{dsk}foo:aaa>b>.c.e;f"
 "{dsk}foo:aaa>b>c.e;f"
 "{eris}abc>"
 "{host}abc/xyz;2"
 "{host}abc>xyz;2"
 "{x}abc<xyz>qq"
 "{x}abc<xyzqq"
 "<abc<xyz>abc"
 "<abc<xyz>qrs"
 "<abc<xyz>")

```

```
(RPAQQ RETURNFAILS (">" ">>>abc/x" ">abc" ">abc;1" ">abc>" ">abc>xyz>foo" ">xxx" ">" ">>>abc/x" ">abc"
">abc;1" ">abc>" ">abc>xyz>foo" ">xxx"))
```

(DEFINEQ

(TRY

```
[LAMBDA (FILE ONEFIELDFLG DIRFLG) ; Edited 23-May-2022 12:09 by rmk
; Edited 25-Apr-2022 14:15 by rmk
; Edited 24-Apr-2022 08:45 by rmk
; Edited 21-Apr-2022 15:36 by rmk

(CL:WHEN (LISTP (CAR (LISTP FILE)))
 (SETQ FILE (CAR FILE)))
(LET (ORIG NEW)
 (CL:WHEN (LISTP FILE)
 (SETQ ONEFIELDFLG (CADR FILE))
 (SETQ DIRFLG (CADDR FILE))
 (SETQ FILE (CAR FILE)))
 (SETQ ORIG (OLD-UNPACKFILENAME.STRING FILE ONEFIELDFLG DIRFLG))
 (SETQ NEW (UNPACKFILENAME.STRING FILE ONEFIELDFLG DIRFLG))
 (LIST (LIST FILE ONEFIELDFLG DIRFLG)
 (AND (EQUAL ORIG NEW)
 '=)
 ORIG NEW])
```

(TRYALL

```
[LAMBDA (FILES ALLFLAG ONEFIELDFLG DIRFLG) ; Edited 21-Apr-2022 17:56 by rmk
; Edited 2-Apr-2022 23:50 by rmk
; Edited 31-Mar-2022 22:57 by rmk

(CL:WHEN (LISTP FILES)
 (SETQ FILES (FOR F IN FILES COLLECT (CL:IF (LISTP (CAR (LISTP F)))
 (CAR F)
 F))))
(FOR FILE INFO (SAME _ 0)
 (DIFF _ 0) IN FILES EACHTIME (SETQ INFO (TRY FILE ONEFIELDFLG DIRFLG))
 (CL:IF (CADR INFO)
 (ADD SAME 1)
 (ADD DIFF 1))
UNLESS (AND (CADR INFO)
 (NOT ALLFLAG))
COLLECT (PRINTOUT T .P2 (CAAR INFO)
 31)
 (IF (CADR INFO)
 THEN (PRINTOUT T " = " .P2 (CADDR INFO))
 (CL:WHEN (OR (CADAR INFO)
 (CADDR INFO))
 (PRINTOUT T 60 (CADAR INFO)
 %,,
 (CADDR INFO))
 (TERPRI T))
 ELSE (PRINTOUT T " ~= " -2 "old: " .P2 (CADDR INFO))
 (CL:WHEN (OR (CADAR INFO)
 (CADDR INFO))
 (PRINTOUT T 60 (CADAR INFO)
 %,,
 (CADDR INFO))
 (TERPRI T))
 (PRINTOUT T 37 "new: " .P2 (CADDR INFO)
 T))
 INFO
FINALLY (PRINTOUT T SAME " matches, " DIFF " mismatches" T])
```

(DT

```
[LAMBDA (STRINGS ALLFLAG) ; Edited 21-Apr-2022 17:53 by rmk
; Edited 19-Apr-2022 20:55 by rmk

;; Tests the DIRFLG options on STRINGS. If an element of STRINGS is a list, it is assumed to be a (STRING ONEFIELD DIRFLG), STRING is
;; extracted.

(SETQ STRINGS (FOR S INSIDE STRINGS COLLECT (CL:IF (LISTP S)
 (CAR S)
 S)))
[AND NIL (FOR ONEFIELD IN '(NAME DIRECTORY SUBDIRECTORY RELATIVEDIRECTORY)
 JOIN (FOR DIR ORIG NEW SAME IN '(FIELD RETURN)
 JOIN (PRINTOUT T T "ONEFIELDFLG = " ONEFIELD -3 "DIRFLG = " DIR T T)
 (TRYALL STRINGS ALLFLAG ONEFIELD DIR))
 FINALLY (FOR INFO SAME (DIFF _ 0) IN $$VAL DO (CL:IF (CADR INFO)
 (ADD SAME 1)
 (ADD DIFF 1))
 FINALLY (SETQ SAME (IDIFFERENCE (LENGTH STRINGS)
 DIFF))
 (PRINTOUT T T "Overall: " SAME " matched, " DIFF " mismatched" T])
(TRYALL (FOR S IN STRINGS JOIN (FOR ONEFIELD IN '(NAME DIRECTORY SUBDIRECTORY RELATIVEDIRECTORY)
 JOIN (FOR DIR IN '(FIELD RETURN) COLLECT (LIST S ONEFIELD DIR])
```

)

---

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