

File created: 18-Dec-2022 11:55:01 {WMEDLEY}<library>UNIXCOMM.;11

changes to: (FNS INITIALIZE-SHELL-DEVICE UNIX-BACKFILEPTR UNIX-STREAM-EOFP)
(VARS UNIXCOMMCOMS)

previous date: 25-Oct-2022 21:56:00 {WMEDLEY}<library>UNIXCOMM.;9

Read Table: INTERLISP

Package: INTERLISP

Format: XCCS

;;
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(RPAQQ **UNIXCOMMCOMS**

```
(;; streams to UNIX processes & pseudo terminals
;; this stuff should really be implemented in terms of {SHELL} and {PTY} devices

(COMS                                ; Forking stuff
  (FNS FORK-SHELL FORK-UNIX UNIX-KILL UNIX-WRITE CREATE-SHELL-STREAM CREATE-PROCESS-STREAM
    UNIXCOMM-AROUNDEXITFN) )

[COMS                                ; Operations on the shell device
  (FNS INITIALIZE-SHELL-DEVICE UNIX-GET-NEXT-BUFFER UNIX-BACKFILEPTR UNIX-STREAM-EOFP
    UNIX-STREAM-OUT UNIX-STREAM-CLOSE)
  (GLOBALVARS *SHELL-DEVICE*)
  (DECLARE%: DONTEVAL@LOAD DOCOPY (P (INITIALIZE-SHELL-DEVICE))
    (ADDVARS (AROUNDEXITFNS UNIXCOMM-AROUNDEXITFN)
      T)))
(COMS                                ; Stuff for direct manipulation of Unix sockets
  (FNS CREATE-UNIX-SOCKET-STREAM ACCEPT-UNIX-SOCKET-STREAM) )
(DECLARE%: EVAL@COMPILE DONTCOPY (MACROS UNIX-CHANNEL)
  (P (CHECKIMPORTS ' (FILEIO LLSUBRS)
    T)))
(PROP FILETYPE UNIXCOMM) )
```

;; streams to UNIX processes & pseudo terminals
;; this stuff should really be implemented in terms of {SHELL} and {PTY} devices
;; Forking stuff

(DEFINEQ

(**FORK-SHELL**

```
[LAMBDA (TERMTYPE COMMAND)                                ; Edited 14-Feb-90 14:27 by bvm
  (if (SUBRCALL UNIX-HANDLECOMM 8)
    then                                                    ; Yes, Ide supports this new version
      [SUBRCALL UNIX-HANDLECOMM 11 (if (NULL TERMTYPE)
        then ""
        elseif (TYPEP TERMTYPE 'ONED-ARRAY)
          then TERMTYPE
          else (\DTEST (LISP-TO-UNIX-TERMTYPE TERMTYPE)
            'ONED-ARRAY))
        (if (NULL COMMAND)
          then ""
          else (\DTEST COMMAND 'ONED-ARRAY))
      ]
    elseif COMMAND
      then                                                    ; have to use a different old call
        (FORK-UNIX COMMAND)
    else (SUBRCALL UNIX-HANDLECOMM 4])
```

(**FORK-UNIX**

```
[LAMBDA (STR)                                              ; Edited 25-May-88 15:47 by drc:
  (SUBRCALL UNIX-HANDLECOMM 0 (\DTEST STR 'ONED-ARRAY))
```

(**UNIX-KILL**

```
[LAMBDA (CONN)                                            ; Edited 25-May-88 16:04 by drc:
  (if CONN
    then (SUBRCALL UNIX-HANDLECOMM 3 CONN 0])
```

(**UNIX-WRITE**

```
[LAMBDA (CONN VAL)                                        ; Edited 24-Sep-90 11:27 by jds
  ;; Write a byte (VAL) to the outgoing pipe connection CONN. If the write fails for non-fatal reasons (i.e., would block), loop until it succeeds. If the
  ;; write returns NIL (meaning total failure), pass that along to the caller.
  (PROG (LENGTH-WRITTEN)
    WRITE-LOOP
      [SETQ LENGTH-WRITTEN (SUBRCALL UNIX-HANDLECOMM 1 (\DTEST CONN 'SMALLP)
        (\DTEST VAL 'SMALLP))
      ]
    (COND
      ((AND LENGTH-WRITTEN (IEQP 0 LENGTH-WRITTEN))
        (BLOCK)
```

```
(GO WRITE-LOOP)))
(RETURN LENGTH-WRITTEN])
```

(CREATE-SHELL-STREAM

[LAMBDA (TERMTYPE COMMAND)

; Edited 11-Oct-2022 09:56 by Imm

; Edited 21-May-90 15:39 by jrb:

```
(LET ((CHAN (FORK-SHELL TERMTYPE COMMAND)))
(COND
  (CHAN (LET ((STR (create STREAM
                        ACCESS _ 'BOTH
                        DEVICE _ *SHELL-DEVICE*))
    (CL:SETF (UNIX-CHANNEL STR)
      CHAN)
    (push (fetch (FDEV OPENFILELST) of *SHELL-DEVICE*)
      STR)
    (STREAMPROP STR 'SENDSSCREENPARAMS (FUNCTION UNIX.SENDSCREENPARAMS))
    (STREAMPROP STR 'SETDISPLAYTYPE (FUNCTION UNIX.SETDISPLAYTYPE))
    STR]))
```

(CREATE-PROCESS-STREAM

[LAMBDA (COMM)

;; Edited 11-Oct-2022 10:05 by Imm

;; Edited 8-Oct-2022 16:04 by Imm

;; Edited 3-Jul-2022 16:04 by rmk: Removed external format here, the device has the environmental defaultg

;; Edited 21-May-90 15:39 by jrb:

```
(LET ((CHAN (FORK-UNIX COMM)))
(if CHAN
  then (LET ((STR (create STREAM
                        ACCESS _ 'BOTH
                        DEVICE _ *SHELL-DEVICE*
                        EOLCONVENTION _ LF.EOLC)))
    (CL:SETF (UNIX-CHANNEL STR)
      CHAN)
    (push (fetch (FDEV OPENFILELST) of *SHELL-DEVICE*)
      STR)
    STR])
```

(UNIXCOMM-AROUNDEXITFN

[LAMBDA (EVENT)

; Edited 25-Oct-2022 21:20 by Imm

; Edited 11-Oct-2022 10:07 by Imm

; Edited 2-Jul-90 16:35 by jrb:

```
(CASE EVENT
  ((AFTERLOGOUT AFTERMAKESYS AFTERSAVEVM AFTERSYSOUT)
    (for STREAM in (fetch (FDEV OPENFILELST) of *SHELL-DEVICE*) do (CLOSEF STREAM))
    (REPLACE (FDEV DEFAULTEXTERNALFORMAT) OF *SHELL-DEVICE* WITH (SYSTEM-EXTERNALFORMAT)))
  ((BEFORELOGOUT BEFOREMAKESYS BEFORESYSOUT)
    ;; Make sure any Unix sockets get closed here, so their file system handles get closed as well
    (for STREAM in (fetch (FDEV OPENFILELST) of *SHELL-DEVICE*) when (EQ -3 (SUBRCALL UNIX-HANDLECOMM 14
      (UNIX-CHANNEL STREAM))))
    do (CLOSEF STREAM))))]
```

)

;; Operations on the shell device

(DEFINEQ

(INITIALIZE-SHELL-DEVICE

[LAMBDA NIL

; Edited 18-Dec-2022 11:53 by rmk

; Edited 25-Oct-2022 21:54 by Imm

;; only using for holding open list

; Edited 3-Jul-2022 16:15 by rmk

; Edited 14-Dec-88 10:45 by bane

```
(SETQ *SHELL-DEVICE* (create FDEV
  NODIRECTORIES _ T
  DEVICENAME _ 'UNIX-PTY
  BIN _ (FUNCTION \BUFFERED.BIN)
  BOUT _ (FUNCTION UNIX-STREAM-OUT)
  PEEKBIN _ (FUNCTION \BUFFERED.PEEKBIN)
  CLOSEFILE _ (FUNCTION UNIX-STREAM-CLOSE)
  GETFILEINFO _ (FUNCTION NIL)
  SETFILEINFO _ (FUNCTION NIL)
  EOFP _ (FUNCTION UNIX-STREAM-EOFP)
  BACKFILEPTR _ (FUNCTION UNIX-BACKFILEPTR)
  GETNEXTBUFFER _ (FUNCTION UNIX-GET-NEXT-BUFFER)
  BLOCKIN _ (FUNCTION \BUFFERED.BINS)
  DEFAULTEXTERNALFORMAT _ (SYSTEM-EXTERNALFORMAT]))
```

(UNIX-GET-NEXT-BUFFER

[LAMBDA (STREAM WHATFOR NOERRORFLG)

; Edited 13-Jun-90 01:07 by mitani

```

(CASE WHATFOR
  (READ [PROG ([BUF (ffetch (STREAM CBUFPTR) of (\DTEST STREAM 'STREAM]
    (CONN (UNIX-CHANNEL STREAM))
    LEN)
    RETRY
    (BLOCK)
    ; Just so other procs get to run when someone is pounding
    ; output at Chat
    (if [AND CONN (SETQ LEN (SUBRCALL UNIX-HANDLECOMM 9 (\DTEST CONN 'SMALLP)
      (OR BUF (replace (STREAM CBUFPTR) of STREAM
        with (SETQ BUF (NCREATE 'VMEMPAGEP]
        then (if (EQ LEN T)
          then
            (if NOERRORFLG
              then (RETURN NIL)
              else
                (GO RETRY))
            ; no input available, but still alive
          else (UNINTERRUPTABLY
            (replace (STREAM COFFSET) of STREAM with 0)
            (replace (STREAM CBUFSIZE) of STREAM with LEN))
            (RETURN T))
          else (RETURN (AND (NOT NOERRORFLG)
            (\EOF.ACTION STREAM))
            (T (SHOULDNT))))))

```

(UNIX-BACKFILEPTR

```

[LAMBDA (STREAM)
  (COND
    ((AND (ffetch (STREAM CBUFPTR) of STREAM)
      (> (ffetch (STREAM COFFSET) of STREAM)
        0))
    (add (ffetch (STREAM COFFSET) of STREAM)
      -1))
    (T (ERROR "Can't back up this unix Stream" STREAM))
  )
; Edited 13-Jun-90 01:07 by mitani

```

(UNIX-STREAM-EOFP

```

[LAMBDA (STREAM)
; Edited 13-Jun-90 01:07 by mitani

```

;;; true if bsp STREAM is at end of file, i.e. is at a mark

```

(COND
  ((AND (ffetch (STREAM CBUFPTR) of (\DTEST STREAM 'STREAM))
    (< (ffetch (STREAM COFFSET) of STREAM)
      (ffetch (STREAM CBUFSIZE) of STREAM)))
  NIL)
  (T (NOT (UNIX-GET-NEXT-BUFFER STREAM 'READ T))

```

(UNIX-STREAM-OUT

```

[LAMBDA (STREAM CHAR)
  (OR (UNIX-WRITE (UNIX-CHANNEL STREAM)
    (\DTEST CHAR 'SMALLP))
    (CL:ERROR 'XCL:STREAM-NOT-OPEN STREAM))
; Edited 12-Jun-90 12:58 by jrb:

```

(UNIX-STREAM-CLOSE

```

[LAMBDA (STREAM)
  (PROG1 (UNIX-KILL (UNIX-CHANNEL STREAM))
    (CL:SETF (UNIX-CHANNEL STREAM)
      NIL)
    (CL:SETF (ffetch (FDEV OPENFILELST) of *SHELL-DEVICE*)
      (REMOVE STREAM (ffetch (FDEV OPENFILELST) of *SHELL-DEVICE*)))))
; Edited 12-Aug-88 13:24 by drc:

```

)

```

(DECLARE%: DOEVAL@COMPILE DONTCOPY

```

```

(GLOBALVARS *SHELL-DEVICE*)
)

```

```

(DECLARE%: DONTVAL@LOAD DOCOPY

```

```

(INITIALIZE-SHELL-DEVICE)

```

```

(ADDTOTVAR AROUNDEXITFNS UNIXCOMM-AROUNDEXITFN)
)

```

;; Stuff for direct manipulation of Unix sockets

```

(DEFINEQ

```

(CREATE-UNIX-SOCKET-STREAM

```

[LAMBDA (PATHNAME)
  (LET [(CHAN (SUBRCALL UNIX-HANDLECOMM 12 (\DTEST PATHNAME 'ONED-ARRAY)
    (if CHAN
; Edited 11-Oct-2022 10:11 by Imm
; Edited 29-May-90 16:23 by jrb:

```

```

then (LET ((STR (create STREAM
                      ACCESS _ 'BOTH
                      DEVICE _ *SHELL-DEVICE*
                      EOLCONVENTION _ LF.EOLC)))
      (CL:SETF (UNIX-CHANNEL STR)
                CHAN)
      (push (fetch (FDEV OPENFILELST) of *SHELL-DEVICE*)
            STR)
      STR])

```

(ACCEPT-UNIX-SOCKET-STREAM

[LAMBDA (SOCKSTREAM)

; Edited 11-Oct-2022 10:12 by Imm

; Edited 29-May-90 16:31 by jrb:

```

(LET ((CHAN (UNIX-CHANNEL SOCKSTREAM))
      NEWCHAN)
  (SELECTQ (SETQ NEWCHAN (SUBCALL UNIX-HANDLECOMM 13 CHAN))
    ((-1 NIL)
     NEWCHAN)
    (LET ((NEWSTREAM (create STREAM
                              ACCESS _ 'BOTH
                              DEVICE _ *SHELL-DEVICE*
                              EOLCONVENTION _ LF.EOLC)))
      (CL:SETF (UNIX-CHANNEL NEWSTREAM)
                NEWCHAN)
      (push (fetch (FDEV OPENFILELST) of *SHELL-DEVICE*)
            NEWSTREAM)
      NEWSTREAM]))

```

)

(DECLARE%: EVAL@COMPILE DONTCOPY

(DECLARE%: EVAL@COMPILE

```

(PUTPROPS UNIX-CHANNEL MACRO ((STR)
                              (fetch (STREAM F1) of STR)))

```

)

```

(CHECKIMPORTS ' (FILEIO LLSUBRS)
  T)

```

)

(PUTPROPS UNIXCOMM FILETYPE COMPILE-FILE)

(PUTPROPS UNIXCOMM COPYRIGHT ("Venue & Xerox Corporation" 1988 1989 1990 2018 2022))

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