

File created: 19-Jan-93 10:53:19 {DSK}<python>lde>lispcore>sources>LLNSDECLS.;2

changes to: (RECORDS NSADDRESS NSOCKET XIP ERRORXIP NSHOSTNUMBER)

previous date: 17-Dec-92 12:59:22 {DSK}<python>lde>lispcore>sources>LLNSDECLS.;1

Read Table: INTERLISP

Package: INTERLISP

Format: XCCS

::
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(RPAQQ LLNSDECLSCOMS

```
[ (COMS                                ; XIP layout (Xerox Internet Packet)
  (RECORDS XIP)
  (CONSTANTS \XIPOVLEN \MAX.XIPDATALENGTH)
  (CONSTANTS * RAWXIPTYPES))
 (COMS                                ; NSOCKET datatype
  (RECORDS NSOCKET)
  (CONSTANTS \NS.WKS.RoutingInformation 1) ; Well-known NS sockets
  (\NS.WKS.Echo 2)
  (\NS.WKS.PUPLLOOKUP 9))
 (COMS                                ; ERRORXIP -- overlays XIP
  (RECORDS ERRORXIP)
  (CONSTANTS * XIPERRORCODES))
 (COMS                                ; NSADDRESS
  (RECORDS NSADDRESS NSHOSTNUMBER)
  (MACROS LOADNSHOSTNUMBER STORENSHOSTNUMBER \MOVENSADDRESSES \SWAPNSADDRESSES)
  (CONSTANTS (\#WDS.NSADDRESS 6)
  (\#WDS.NSHOSTNUMBER 3))
  (MACROS \LOCALNSHOSTNUMBER \LOCALNSNETNUMBER \LOCALNSADDRESS \BLTLOCALHOSTNUMBER)
  (GLOBALVARS BROADCASTNSHOSTNUMBER \MY.NSADDRESS \MY.NSHOSTNUMBER \MY.NSNETNUMBER)
  (MACROS EQNSHOSTNUMBER EQNSADDRESS.HOST EQNBROADCASTBASE EQNSHOSTBASE)
  (FNS TRANSLATE.NSH)
  (ADDVARS (DONTCOMPILEFNS TRANSLATE.NSH))
```

:: XIP layout (Xerox Internet Packet)

(DECLARE%: EVAL@COMPILE

```
(ACCESSFNS XIP [(XIPBASE (LOCF (fetch (ETHERPACKET EPBODY) of DATUM)
  [BLOCKRECORD XIPBASE ((XIPCHECKSUM WORD)
    (XIPLLENGTH WORD)
    (XIPTCONTROL BYTE)
    (XIPTYPE BYTE)
    (XIPDESTNET FIXP)
    (XIPDESTWORD1 3 WORD)
    (XIPDESTSOCKET WORD)
    (XIPSOURCENET FIXP)
    (XIPSOURCEWORD1 3 WORD)
    (XIPSOURCESOCKET WORD)
    (XIPFIRSTDATAWORD WORD) ; Start of data
  )
  [ACCESSFNS XIPLLENGTH ((XIPCHECKSUMBASE (LOCF DATUM)
  [ACCESSFNS XIPFIRSTDATAWORD ((XIPCONTENTS (LOCF DATUM)
  [ACCESSFNS XIPSOURCEWORD1 ((XIPSOURCEHOST (\LOADNSHOSTNUMBER (LOCF DATUM))
    (\STORENSHOSTNUMBER (LOCF DATUM)
    NEWVALUE]
  [ACCESSFNS XIPDESTWORD1 ((XIPDESTHOST (\LOADNSHOSTNUMBER (LOCF DATUM))
    (\STORENSHOSTNUMBER (LOCF DATUM)
    NEWVALUE]
  [ACCESSFNS XIPSOURCENET ((XIPSOURCENSADDRESS (\LOADNSADDRESS (LOCF DATUM))
    (\STORENSADDRESS (LOCF DATUM)
    NEWVALUE]
  (ACCESSFNS XIPDESTNET ((XIPDESTNSADDRESS (\LOADNSADDRESS (LOCF DATUM))
    (\STORENSADDRESS (LOCF DATUM)
    NEWVALUE]
  (TYPE? (type? ETHERPACKET DATUM)))
)
```

(DECLARE%: EVAL@COMPILE

(RPAQQ \XIPOVLEN 30)

(RPAQQ \MAX.XIPDATALENGTH 546)

(CONSTANTS \XIPOVLEN \MAX.XIPDATALENGTH)

(RPAQQ RAWXIPTYPES ((\XIPT.ROUTINGINFO 1)
 (\XIPT.ECHO 2)

(\XIPT.ERROR 3)
(\XIPT.EXCHANGE 4)
(\XIPT.SPP 5)
(\XIPT.PUPLOOKUP 6))

(DECLARE%: EVAL@COMPILE

(RPAQQ \XIPT.ROUTINGINFO 1)

(RPAQQ \XIPT.ECHO 2)

(RPAQQ \XIPT.ERROR 3)

(RPAQQ \XIPT.EXCHANGE 4)

(RPAQQ \XIPT.SPP 5)

(RPAQQ \XIPT.PUPLOOKUP 6)

(CONSTANTS (\XIPT.ROUTINGINFO 1)
(\XIPT.ECHO 2)
(\XIPT.ERROR 3)
(\XIPT.EXCHANGE 4)
(\XIPT.SPP 5)
(\XIPT.PUPLOOKUP 6))
)

:: NSOCKET datatype

(DECLARE%: EVAL@COMPILE

(DATATYPE NSOCKET ((NIL BITS 4)
(NSOCLINK POINTER)
(ID# WORD)
(NSOCHANDLE WORD)
(NSOC#OPENP FLAG)
(NSOC#CONNECTIONP FLAG)
(NIL BITS 2)
(INQUEUE POINTER)
(INQUEUELENGTH WORD)
(NSOC#ALLOCATION WORD)
(NSOCEVENT POINTER))
INQUEUE _ (create SYSQUEUE)
NSOC#ALLOCATION _ \MAX.EPKTS.ON.NSOCKET)
)

; So that we can Queue them

(/DECLAREDATATYPE 'NSOCKET ' ((BITS 4)
POINTER WORD WORD FLAG FLAG (BITS 2)
POINTER WORD WORD POINTER)

:: ---field descriptor list elided by lister---
' 10)

:: Well-known NS sockets

(DECLARE%: EVAL@COMPILE

(RPAQQ \NS.WKS.RoutingInformation 1)

(RPAQQ \NS.WKS.Echo 2)

(RPAQQ \NS.WKS.PUPLOOKUP 9)

(CONSTANTS (\NS.WKS.RoutingInformation 1)
(\NS.WKS.Echo 2)
(\NS.WKS.PUPLOOKUP 9))
)

:: ERRORXIP -- overlays XIP

(DECLARE%: EVAL@COMPILE

[ACCESSFNS ERRORXIP ((ERRORXIPBASE (fetch XIPCONTENTS of DATUM)))
(BLOCKRECORD ERRORXIPBASE ((ERRORXIPCODE WORD)
(ERRORXIPARG WORD)
(ERRORXIPBODY WORD)

; As many words of offending XIP as sender felt like including...

)

(RPAQQ XIPERRORCODES ((\XIPE.CHECKSUM 1)
(\XIPE.NOSOCKET 2)
(\XIPE.SOCKETFULL 3)
(\XIPE.GATEWAY.CHECKSUM 513)
(\XIPE.NOROUTE 514)
(\XIPE.LOOPEED 515)

(\XIPE.TOOLARGE 516))

(DECLARE%: EVAL@COMPILE

(RPAQQ \XIPE.CHECKSUM 1)

(RPAQQ \XIPE.NOSOCKET 2)

(RPAQQ \XIPE.SOCKETFULL 3)

(RPAQQ \XIPE.GATEWAY.CHECKSUM 513)

(RPAQQ \XIPE.NOROUTE 514)

(RPAQQ \XIPE.LOOPED 515)

(RPAQQ \XIPE.TOOLARGE 516)

(CONSTANTS (\XIPE.CHECKSUM 1)
(\XIPE.NOSOCKET 2)
(\XIPE.SOCKETFULL 3)
(\XIPE.GATEWAY.CHECKSUM 513)
(\XIPE.NOROUTE 514)
(\XIPE.LOOPED 515)
(\XIPE.TOOLARGE 516))

)

:: NSADDRESS

(DECLARE%: EVAL@COMPILE

[DATATYPE NSADDRESS ((NSNET FIXP)
(NSHNM0 WORD)
(NSHNM1 WORD)
(NSHNM2 WORD)
(NSSOCKET WORD))
(AccessFNS (NSHOSTNUMBER (\LOADNSHOSTNUMBER (LOCF (fetch NSHNM0 of DATUM)))
(STORENSHOSTNUMBER (LOCF (fetch NSHNM0 of DATUM)
NEWVALUE)))
(BLOCKRECORD NSADDRESS ((NSNETI WORD)
(NSNETLO WORD]

(TYPERECORD NSHOSTNUMBER (NSHOST0 NSHOST1 NSHOST2))

)

(/DECLAREDATATYPE 'NSADDRESS ' (FIXP WORD WORD WORD WORD)

;; ---field descriptor list elided by lister---

' 6)

(DECLARE%: EVAL@COMPILE

(PUTPROPS LOADNSHOSTNUMBER MACRO (= . \LOADNSHOSTNUMBER))

(PUTPROPS STORENSHOSTNUMBER MACRO (= . \STORENSHOSTNUMBER))

(PUTPROPS MOVENSADDRESSES MACRO ((BASE1 BASE2)
(\BLT BASE2 BASE1 \#WDS.NSADDRESS))

(PUTPROPS SWAPNSADDRESSES MACRO [OPENLAMBDA (BASE1 BASE2)
(for I from 0 to (SUB1 \#WDS.NSADDRESS)
do (\PUTBASE BASE1 I (PROG1 (\GETBASE BASE2 I)
(\PUTBASE BASE2 I (PROGN (\GETBASE BASE1 I)))

]])

)

(DECLARE%: EVAL@COMPILE

(RPAQQ \#WDS.NSADDRESS 6)

(RPAQQ \#WDS.NSHOSTNUMBER 3)

(CONSTANTS (\#WDS.NSADDRESS 6)
(\#WDS.NSHOSTNUMBER 3))

)

(DECLARE%: EVAL@COMPILE

(PUTPROPS \LOCALNSHOSTNUMBER MACRO (NIL \MY.NSHOSTNUMBER))

(PUTPROPS \LOCALNSNETNUMBER MACRO (NIL \MY.NSNETNUMBER))

(PUTPROPS \LOCALNSADDRESS MACRO (NIL \MY.NSADDRESS))

(PUTPROPS \BLTLOCALHOSTNUMBER MACRO ((BASE)
(\BLT BASE (LOCF (fetch (IFPAGE NSHost0) of \InterfacePage)
3)))

```
)
(DECLARE%: DOEVAL@COMPILE DONTCOPY
(GLOBALVARS BROADCASTNSHOSTNUMBER \MY.NSADDRESS \MY.NSHOSTNUMBER \MY.NSNETNUMBER)
)
```

(DECLARE%: EVAL@COMPILE

(PUTPROPS EQNSHOSTNUMBER MACRO (X (TRANSLATE.NSH X)))

```
(PUTPROPS EQNSADDRESS.HOST MACRO [OPENLAMBDA (X Y)
;; True if the 48-bit host components of 2 NSADDRESS's (or pointers to equivalent storage) are the
;; same
(AND (EQ (FFETCH NSHNM2 OF X)
(FFETCH NSHNM2 OF Y))
(EQ (FFETCH NSHNM1 OF X)
(FFETCH NSHNM1 OF Y))
(EQ (FFETCH NSHNM0 OF X)
(FFETCH NSHNM0 OF Y)))
```

```
(PUTPROPS EQBROADCASTBASE MACRO (OPENLAMBDA (X)
(EQ (LOGAND (\GETBASE X 0)
(\GETBASE X 1)
(\GETBASE X 2))
65535)))
```

```
(PUTPROPS EQNSHOSTBASE MACRO [OPENLAMBDA (X Y)
(AND (type? NSHOSTNUMBER Y)
(EQ (\GETBASE X 2)
(fetch (NSHOSTNUMBER NSHOST2) of Y))
(EQ (\GETBASE X 1)
(fetch (NSHOSTNUMBER NSHOST1) of Y))
(EQ (\GETBASE X 0)
(fetch (NSHOSTNUMBER NSHOST0) of Y))
)
```

(DEFINEQ

(TRANSLATE.NSH

(* bvm%: "28-Nov-83 17:32")

```
[LAMBDA (ARGS)
(SETQ ARGS (CDR (DWIMIFY (CONS 'PROGN ARGS)
T)))
(PROG ((ARG1 (CAR ARGS))
(ARG2 (CADR ARGS)))
(RETURN (COND
((OR (NLISTP ARG1)
(SELECTQ (CAR (SETQ ARG1 (OR (GETHASH ARG1 CLISPARRAY)
ARG1)))
((LOADNSHOSTNUMBER \LOADNSHOSTNUMBER)
NIL)
T))
(LIST 'EQUAL ARG1 ARG2))
((EQ ARG2 'BROADCASTNSHOSTNUMBER)
(LIST 'EQBROADCASTBASE (CADR ARG1)))
(T (LIST 'EQNSHOSTBASE (CADR ARG1)
ARG2]))
```

(ADDTOVAR DONTCOMPILEFNS TRANSLATE.NSH)

(PUTPROPS LLNSDECLS COPYRIGHT ("Venue & Xerox Corporation" 1985 1986 1987 1988 1990 1992 1993))

FUNCTION INDEX

TRANSLATE.NSH4

CONSTANT INDEX

\#WDS.NSADDRESS3	\XIPE.GATEWAY.CHECKSUM3	\XIPT.ECHO2
\#WDS.NSHOSTNUMBER3	\XIPE.LOOPED3	\XIPT.ERROR2
\MAX.XIPDATALENGTH1	\XIPE.NOROUTE3	\XIPT.EXCHANGE2
\NS.WKS.Echo2	\XIPE.NOSOCKET3	\XIPT.PUPLOOKUP2
\NS.WKS.PUPLOOKUP2	\XIPE.SOCKETFULL3	\XIPT.ROUTINGINFO2
\NS.WKS.RoutingInformation2	\XIPE.TOOLARGE3	\XIPT.SPP2
\XIPE.CHECKSUM3	\XIPOVLEN1	

MACRO INDEX

EQBROADCASTBASE4	EQNSHOSTNUMBER4	\BLTLOCALHOSTNUMBER3	\LOCALNSNETNUMBER3
EQNSADDRESS.HOST4	LOADNSHOSTNUMBER3	\LOCALNSADDRESS3	\MOVENSADDRESSES3
EQNSHOSTBASE4	STORENSHOSTNUMBER3	\LOCALNSHOSTNUMBER3	\SWAPNSADDRESSES3

RECORD INDEX

ERRORXIP2	NSADDRESS3	NSHOSTNUMBER3	NSOCKET2	XIP1
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VARIABLE INDEX

DONTCOMPILEFNS4	RAWXIPTYPES1	XIPERRORCODES2
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