

File created: 27-Jul-88 09:09:52 {MCS:MCS:STANFORD}<LANE>NSTALK.;3

changes to: (FNS DEFINE.GAP.SERVER)

previous date: 16-Jun-88 17:33:04 {MCS:MCS:STANFORD}<LANE>NSTALK.;1

Read Table: INTERLISP

Package: INTERLISP

Format: XCCS

#### (RPAQQ NSTALKCOMS

```
(( * TALK NS (GAP)
  Interface)
 (LOCALVARS . T)
 (FNS CH.USER.WORKSTATION TALK.NS.SERVER)
 (FNS TALK.NS.USERNAME TALK.NS.CONNECT TALK.NS.EVENT TALK.NS.CREDENTIALS)
 (* GAP Server)
 (FNS GAP.SERVER DEFINE.GAP.SERVER)
 (INITVARS GAP.SERVICETYPES [TALK.GAP.HANDLE '((0 0)
  (TALK.GAP.UNKNOWN " (Viewpoint or XDE User) "))
 (VARS TALK.GAP.PARAMETERS TALK.GAP.TRANSPORT)
 (GLOBALVARS GAP.SERVICETYPES TALK.GAP.HANDLE TALK.GAP.UNKNOWN TALK.GAP.PARAMETERS TALK.GAP.TRANSPORT)
 (DECLARE%: DONTCOPY (RECORDS GAP.SERVICETYPE))
 (* etc)
 (FILES TALK COURIERSERVE)
 (APPENDVARS (TALK.PROTOCOLTYPES (NS COERCE-TO-NSADDRESS TALK.NS.USERNAME TALK.NS.CONNECT TALK.NS.EVENT
  COURIER.START.SERVER)))
 [DECLARE%: DOCOPY (COMS (DECLARE%: EVAL@LOADWHEN (NOT (HASDEF 'GAP 'COURIERPROGRAM))
  (FILES NSTALKGAP)
 (* DECLARE%: DONTCOPY DONTEVAL@LOAD EVAL@COMPILE (FILES ETHERRECORDS SPPDECLS)
  (* Also need to load EXPORTS.ALL))
 (* COURIER.RESET.SOCKET used to be defined by TALK, now defined in COURIERSERVE module)
 (APPENDVARS (BEFORELOGOUTFORMS (COURIER.RESET.SOCKET)))
 (P (DEFINE.GAP.SERVER)
  (COURIER.START.SERVER)))
```

(\* \* TALK NS (GAP) Interface)

(DECLARE%: DOEVAL@COMPILE DONTCOPY

(LOCALVARS . T)
)

(DEFINEQ

#### (CH.USER.WORKSTATION

```
[LAMBDA (USER WORKSTATION) ; Edited 3-Jun-88 09:18 by cdl
  (if WORKSTATION
    then (LET (NSADDRESS)
      (if (SETQ NSADDRESS (COERCE-TO-NSADDRESS WORKSTATION (ZERO)))
        then (CH.DELETE.PROPERTY USER 'ADDRESS.LIST)
        (CH.ADD.ITEM.PROPERTY USER 'ADDRESS.LIST (SETQ NSADDRESS (CONS NSADDRESS))
          ' (SEQUENCE NSADDRESS))
        (CONS USER NSADDRESS)
      else (ERROR WORKSTATION "Address for host not found!")))
    else (CH.DELETE.PROPERTY USER 'ADDRESS.LIST])
```

#### (TALK.NS.SERVER

```
[LAMBDA (INPUTSTREAM PROGRAM PROCEDURE PARAMETERS TRANSPORT WAITTIME CREDENTIALS VERIFIER)
  ; Edited 15-Jun-88 11:10 by cdl
  (* DECLARATIONS%: (ASSOCRECORD ALST
  (service)))
  (LET ((USER (TALK.NS.CREDENTIALS CREDENTIALS))
    (ADDRESS (create NSADDRESS
      NSSOCKET _ (ZERO) using (SPP.DESTADDRESS INPUTSTREAM)))
    (SERVICETYPE)
    (with GAP.SERVICETYPE [for SERVICETYPE in GAP.SERVICETYPES
      thereis (for NUMBER in (CAR (with ALST TRANSPORT service))
        thereis (with GAP.SERVICETYPE SERVICETYPE (EQP NUMBER GAP.UNSPECIFIED)
          (if (OR TALK.GAG (NOT (TALK.ANSWER (OR USER TALK.GAP.UNKNOWN)
            GAP.SERVICENAME
            'NS ADDRESS)))
            then (if (AND (EQ GAP.SERVICENAME 'TTY)
              (NULL VERIFIER))
                then
```

(\* Should be noAnswerOrBusy, but that 915's XDE/Viewpoint so use VERIFIER to determine if called by Lisp, can't count on this for future)

```
      ' (ABORT serviceNotFound)
    else ' (ABORT noAnswerOrBusy))
  else (COURIER.RETURN INPUTSTREAM PROGRAM PROCEDURE TALK.GAP.HANDLE)
  (TALK.PROCESS INPUTSTREAM (SPPOUTPUTSTREAM INPUTSTREAM)
  GAP.SERVICENAME
```

'NS  
'SERVER USER])

)

(DEFINEQ

**(TALK.NS.USERNAME**

```
[LAMBDA (INPUTSTREAM OUTPUTSTREAM SERVICETYPE MODE USER) ; Edited 9-Jun-88 12:42 by cdl
  (LET (OBJECT NAME (SERVICE (with TALK.SERVICETYPE SERVICETYPE TALK.SERVICENAME)))
    (DECLARE (GLOBALVARS LOCAL.CLEARINGHOUSE CH.NET.HINT))
    (if (OR (EQ SERVICE 'Tedit)
            (EQ MODE 'CLIENT))
        then (if (STREQUAL (SETQ NAME (USERNAME))
                          (CONSTANT null))
                 then (SETQ NAME NIL)
                 elseif (OR LOCAL.CLEARINGHOUSE CH.NET.HINT)
                 then (if (SETQ OBJECT (CH.LOOKUP.OBJECT NAME))
                          then (SETQ NAME OBJECT)))
                (PRINTOUT OUTPUTSTREAM NAME T)
                (FORCEOUTPUT OUTPUTSTREAM))
        (if (OR (EQ SERVICE 'Tedit)
                (EQ MODE 'SERVER))
            then (if (SETQ OBJECT (RATOM INPUTSTREAM TALK.READTABLE))
                    then (SETQ USER OBJECT)) (* Eat EOL)
                (BIN INPUTSTREAM))
        (SELECTQ SERVICE
          (TTY (with SPPCON (with SPPSTREAM OUTPUTSTREAM SPP.CONNECTION)
                (SETQ SPPEOMONFORCEOUT T)))
          NIL)
        USER]))
```

**(TALK.NS.CONNECT**

```
[LAMBDA (HOST SERVICETYPES) ; Edited 15-Jun-88 10:40 by cdl
  (* DECLARATIONS%: (RECORD AUTHENTICATOR
    (CREDENTIALS VERIFIER)))
  (PROG (USER STREAM SERVICETYPE RESULT (CREDENTIALS (with AUTHENTICATOR (CH.GETAUTHENTICATOR T)
    CREDENTIALS))
        (VERIFIER (with AUTHENTICATOR (CH.GETAUTHENTICATOR)
          VERIFIER)))
    (DECLARE (GLOBALVARS SPP.USER.TIMEOUT))
    (if (SETQ STREAM (COURIER.OPEN HOST NIL T (PACK* 'TALK# HOST)))
        then
        (if
          (SETQ SERVICETYPE
            (for SERVICETYPE in SERVICETYPES
              thereis
                (SELECTQ [CAR
                  (SETQ RESULT
                    (COURIER.CALL
                     STREAM
                     'GAP
                     'Create TALK.GAP.PARAMETERS
                     `([service (, (with GAP.SERVICETYPE [for TYPE in GAP.SERVICETYPES
                       thereis (with GAP.SERVICETYPE TYPE
                         (with TALK.SERVICETYPE
                           SERVICETYPE
                             (EQ GAP.SERVICENAME
                               TALK.SERVICENAME]
                               GAP.UNSPECIFIED]
                             ,@TALK.GAP.TRANSPORT)
                             SPP.USER.TIMEOUT CREDENTIALS VERIFIER 'RETURNERRORS]
                             (ERROR (SELECTQ (CADR RESULT)
                               (noAnswerOrBusy (* User hung up or didn't answer, don't try another service)
                               (RETURN)
                               (serviceNotFound
                                 (if (with TALK.SERVICETYPE SERVICETYPE (EQ TALK.SERVICENAME 'TTY))
                                   then
                                     (* Don't try services following TTY service for NS we don't know if remote service wasn't there or remote user refused
                                       connection so we may annoy the remote user, of course we may miss a possible connection)
                                     (RETURN) )
                                 NIL)
                               RESULT)))
                             then [RETURN (CONS SERVICETYPE (CONS STREAM (SPPOUTPUTSTREAM STREAM]
                               else (CLOSEF? STREAM)
                               (RETURN 'ANSWER))
                             else (RETURN 'CONNECT]))
```

**(TALK.NS.EVENT**

```
[LAMBDA (INPUTSTREAM OUTPUTSTREAM) (* cdl "10-Jun-87 07:55")
```

```
(if (AND (OPENP INPUTSTREAM)
        (OPENP OUTPUTSTREAM)
        (NOT (READP INPUTSTREAM)))
    then (AWAIT.EVENT (with SPPCON (with SPPSTREAM INPUTSTREAM SPP.CONNECTION)
                        SPPINPUTEVENT)))
      (if (OPENP INPUTSTREAM)
          then (SELECTQ (EOFP INPUTSTREAM)
                       (ATTENTION (SPP.CLEARATTENTION INPUTSTREAM)
                                   (BIN INPUTSTREAM))
                       (EOM (SPP.CLEAREOM INPUTSTREAM))
                       (T (CLOSEF INPUTSTREAM))
                       NIL))
```

**(TALK.NS.CREDENTIALS**

```
[LAMBDA (CREDENTIALS) ;(* cdl " 6-May-87 15:58")
  (if (AND CREDENTIALS (SETQ CREDENTIALS (CADR CREDENTIALS)))
      then (SUBATOM (COURIER.READ.REP CREDENTIALS 'CLEARINGHOUSE 'NAME)
                    1 -2))
)
```

(\* \* GAP Server)

(DEFINEQ

**(GAP.SERVER**

```
[LAMBDA (STREAM PROGRAM PROCEDURE PARAMETERS TRANSPORT WAITTIME CREDENTIALS VERIFIER)
; Edited 9-Jun-88 12:06 by cdl
(* DECLARATIONS%: (ASSOCRECORD ALST
  (service)))
  (LET (SERVICETYPE)
      (if [OR [for NUMBER in (CAR (with ALST TRANSPORT service))
              thereis (SETQ SERVICETYPE (for SERVICETYPE in GAP.SERVICETYPES
                                           thereis (with GAP.SERVICETYPE SERVICETYPE (AND (EQP NUMBER
                                                                                               GAP.UNSPECIFIED)
                                                                                               GAP.SERVERFN]
                                           (AND (SETQ SERVICETYPE (ASSOC T GAP.SERVICETYPES))
                                               (with GAP.SERVICETYPE SERVICETYPE (* There was a server in place before TALK was loaded)
                                               (FGETD GAP.SERVERFN]
                                           then (APPLY* (with GAP.SERVICETYPE SERVICETYPE GAP.SERVERFN)
                                                         STREAM PROGRAM PROCEDURE PARAMETERS TRANSPORT WAITTIME CREDENTIALS VERIFIER)
                                           else ' (ABORT serviceNotFound])
```

**(DEFINE.GAP.SERVER**

```
[LAMBDA NIL ; Edited 27-Jul-88 09:08 by cdl
(* DECLARATIONS%: (ASSOCRECORD PROCEDURES
  (Create)) (PROPRECORD PROCEDURE
  (IMPLEMENTEDBY)))
  (if (HASDEF 'GAP 'COURIERPROGRAM)
      then (PROG [SERVERFN PROCEDURE (COURIERDEF (GETDEF 'GAP 'COURIERPROGRAM)
                                                    [with COURIERPGM COURIERDEF (SETQ PROCEDURE (with PROCEDURES PROCEDURES Create))
                                                    [if (SETQ SERVERFN (with PROCEDURE PROCEDURE IMPLEMENTEDBY))
                                                        then (if (EQ SERVERFN 'GAP.SERVER)
                                                            then (RETURN) ;(* Make the existing GAP server the default)
                                                            (if GAP.SERVICETYPES
                                                                then (PUTASSOC T '(DEFAULT ,SERVERFN)
                                                                    GAP.SERVICETYPES)
                                                                else (push GAP.SERVICETYPES '(T DEFAULT ,SERVERFN]
                                                                    (with PROCEDURE PROCEDURE (SETQ IMPLEMENTEDBY 'GAP.SERVER]
                                                                    (PUTDEF 'GAP 'COURIERPROGRAM COURIERDEF)
                                                                    (UNMARKASCHANGED 'GAP 'COURIERPROGRAM))
                                                                else (ERROR "Courier program GAP not defined!")])
                                                    else (ERROR "Courier program GAP not defined!")])
```

(RPAQ? GAP.SERVICETYPES NIL)

(RPAQ? TALK.GAP.HANDLE '((0 0)))

(RPAQ? TALK.GAP.UNKNOWN "(Viewpoint or XDE User)")

(RPAQQ TALK.GAP.PARAMETERS (ttyHost (seven even two 100 (none 0 0))))

(RPAQQ TALK.GAP.TRANSPORT ((teletype)))

(DECLARE%: DOEVAL@COMPILE DONTCOPY

(GLOBALVARS GAP.SERVICETYPES TALK.GAP.HANDLE TALK.GAP.UNKNOWN TALK.GAP.PARAMETERS TALK.GAP.TRANSPORT)

(DECLARE%: DONTCOPY

(DECLARE%: EVAL@COMPILE

{MEDLEY}<obsolete>lispusers>NSTALK.;1

```
(RECORD GAP.SERVICETYPE (GAP.UNSPECIFIED GAP.SERVICENAME GAP.SERVERFN))
)
)
```

(\* \* etc)

```
(FILESLOAD TALK COURIERSERVE)
```

```
(APPENDTOVAR TALK.PROTOCOLTYPES (NS COERCE-TO-NSADDRESS TALK.NS.USERNAME TALK.NS.CONNECT TALK.NS.EVENT
COURIER.START.SERVER))
```

```
(DECLARE%: DOCOPY
```

```
(DECLARE%: EVAL@LOADWHEN
```

```
(NOT (HASDEF 'GAP 'COURIERPROGRAM))
```

```
(FILESLOAD NSTALKGAP)
```

```
)
)
```

(\* \* DECLARE%: DONTCOPY DONTEVAL@LOAD EVAL@COMPILE  
(FILES ETHERRECORDS SPPDECLS) (\* Also need to load EXPORTS.ALL))

(\* \* COURIER.RESET.SOCKET used to be defined by TALK, now defined in COURIERSERVE module)

```
(APPENDTOVAR BEFORELOGOUTFORMS (COURIER.RESET.SOCKET))
```

```
(DEFINE.GAP.SERVER)
```

```
(COURIER.START.SERVER)
```

---

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