JMB 26-DEC-74 12:07 24824

Support for (24802,) re MOVE

Agreed. 1

JMB 26-DEC-74 12:07 24824

Support for (24802,) re MOVE

(J24824) 26-DEC-74 12:07;;;; Title: Author(s): Jeanne M. Beck/JMB;
Distribution: /FEED([INFO-ONLY]) SRI-ARC([INFO-ONLY]) ;
Sub-Collections: SRI-ARC; Clerk: JMB;

JMB 26-DEC-74 12:10 24825

Re--24806,> A multi-level Integrated User Help System

The concept is usefull. 1

JMB 26-DEC-74 12:10 24825

Re--24806,> A multi-level Integrated User Help System

(J24825) 26-DEC-74 12:10;;;; Title: Author(s): Jeanne M. Beck/JMB;
Distribution: /DCE([INFO-ONLY]) DIRT([INFO-ONLY]) ;
Sub-Collections: SRI-ARC DIRT; Clerk: JMB;

DCE 26-DEC-74 12:14 24826

To FDBK re two jump-link bugs

Below are recorded two strange malfunctions in Jump Link. I was using DNLS-8. The examples are embedded in text copied from the places where I discovered the troubles. 1

In the statement below, the links both point to recent Journal messages, in Branches J24815 and J24802 respectively of File <JOURNAL>JRNL24.NLS;23, 26-DEC-74 10:38 XXX (being modified ..). The second link worked appropriatedly, the first didn't (signalled that the file wasn't on line). 2

... reply to Bair (24815,) and Kelley (24802,) reg... 2a

In the fist sub-statement, Jump Link produces an error message saying "Illegal Link Syntax or Semantics, Missing Right Delimiter or Bad viewspecs." But the same link will work in other contexts; in particular, deleting the double-quote character (as in the successor statement) will produce appropriate Jump Link action. 3

... Referencing your message of 17 Dec (24769,), "An IDENT FOR DOCUMENTATION": a... 3a

... Referencing your message of 17 Dec (24769,), An IDENT FOR DOCUMENTATION": a... 3b

DCE 26-DEC-74 12:14 24826

To FDBK re two jump-link bugs

(J24826) 26-DEC-74 12:14;;;; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /FDBK([ACTION]) ; Sub-Collections: SRI-ARC FDBK; Clerk: DCE;

PREFACE 1

The Procedure Call Protocol (PCP) is an inter-process and/or inter-host protocol that permits a collection of processes within one or more ARPANET hosts to communicate at the procedure call level. In effect, it makes the component procedures of remote software systems as accessible to the programmer as those within his own system. PCP specifies both a virtual programming environment (VPE) in which remote procedures may be assumed to operate, as well as the inter-process exchanges that implement it. 1a

The Multi-Process Software System (MPSS) whose construction PCP makes practical and of which the NSW is an example, consists of collections of "procedures" and "data stores" called "packages", in one or more "processes", interconnected in a tree structure by "physical channels". Procedures within a process have free access to the procedures (and data stores) of each process adjacent to it in the tree structure, and may call upon them as if they were local subroutines. Superimposed upon the tree structure is a more general set of interconnections which give non-adjacent processes in the tree the same kind of access to one another. 1b

The MPSS is implemented by: 1c

1) low-level protocols which provide the basic, inter-process communicaton (IPC) facilities by which channels are implemented: an inter-host IPC protocol (PCPHST), an inter-Tenex-fork IPC protocol (PCPFRK), and data structure format specifications for both connection types (PCPFMT). 1c1

2) PCP proper, which largely defines the VPE (especially, the procedure call and return mechanism) and specifies the inter-process control exchanges required to implement it. 1c2

3) a set of system packages, implemented within each process, which augment PCP proper by providing mechanisms by which user procedures can: call remote procedures (implemented by the Procedure Interface Package, PIP), manipulate remote data stores (implemented by the PCP Support Package, PSP), and interconnect processes (implemented by the Process Management Package, PMP). 1c3

4) user packages in each process. 1c4

INTRODUCTION 2

The Network Virtual Terminal Package (package name = NVTP) contains the procedures interfacing PCP procedure calls to terminal oriented input and output character streams as defined by the ARPANET Telnet protocol. 2a

The Network Virtual Terminal Package procedures are concieved of as being a relay point between a network virtual terminal on one side and a serving process on the other side. The procedures defined here are expected to be called by a process which contains a "User Telnet" program. The procedures defined here will act as a "Server Telnet" program if the serving process is located in the same host as the NVTP (i.e. if it is named by the $F construct), or will only relay the data via Telnet conventions if the serving process is in another host (i.e. if it is named by the $N construct). 2b

PROCEDURES 3

Open from network virtual terminal to serving process 3a

OPNNVT 3a1

(srvprc, pkh, pname => nvth) 3a2

This procedure opens a network virtual terminal stream between the calling procedure and the process named by SRVPRC mediated by the procedures of the NVTP. The arguments PKH and PNAME identify a procedure provided by the caller to receive information output by the process SRVPRC. The handle NVTH is assigned to identify this conversation in subsequent related calls. 3a3

The serving process is specified using the syntax defined in the Process Management Package (PMP -- 24462,) however in this case the process created is not expected to use PCP, but to communicate as if NVTP were a terminal using either the local mechanisms or the Telnet protocol. The syntax of the argument SRVPRC is either: 3a4

$F <SP> filename 3a4a

If the process SRVPRC is named via the $F construct a new, non-PCP, process in this host is created and communicated with such that the procedures in NVTP act

as the controlling terminal for the process SRVPRC. In this case the procedures in NVTP implement a "Server Telnet".

$N <SP> host <SP> socket 3a4b

If the process SRVPRC is named via the $N construct a network connection pair is established via the Initial Connection Protocol (ICP) and communication with the process SRVPRC is via the Telnet protocol. Since the process calling NVTP is a "User Telnet" and the serving process includes a "Server Telnet" the procedures in NVTP need and indeed do no processing of the data transmitted other than transcribing between the PCP format and the Telnet format, and reformulating the interrupt signal.

Argument/result types: 3a5

srvprc - CHARSTR 3a5a
pkh - INTEGER 3a5b
pname - CHARSTR 3a5c
nvth - INTEGER 3a5d

Close from network virtual terminal to serving process 3b

CLSNVT (nvth) 3b1

This procedure closes the network virtual terminal conversation identified by the handle NVTH. 3b2

Argument/result types: 3b3

nvth - INTEGER 3b3a

Send from network virtual terminal to serving process 3c

SNDNVT (nvth, string, interrupt) 3c1

This procedure either processes the string STRING as a "Server Telnet" or simply passes the string along to the process SRVPRC associated with the conversation handle NVTH. The Telnet processing occurs if the process SRVPRC is in the same host as NVTP. 3c2

The argument INTERRUPT is a boolean signal that indicates

that an interrupt has occured at the network virtual terminal if TRUE, otherwise its value is FALSE. 3c3

When TRUE this procedure takes action to signal an interrupt to the process SRVPRC associated with this conversation handle NVTH. The action may be that defined in the local system in the case that SRVPRC is local (i.e. was initiated via the $F construct), or the action may be sending the ARPANET host to host command INS if the process SRVPRC is in another host (i.e. was started via the $N construct). 3c3a

Argument/result types: 3c4

nvth - INTEGER 3c4a
string - BITSTR (a multiple of 8 in length) 3c4b
interrupt - BOOLEAN 3c4c

DATA STORES 4

There are no data stores in this package. 4a

COMMENTS 5

Flow of data from the serving process to the network virtual terminal 5a

The transmission of data from the serving process to the network virtual terminal is accomplished via a call made by a procedure in NVTP to the procedure indicated in the OPNNVT call. Such a call might appear as follows: 5a1

Receive by network virtual terminal from serving process 5a1a

CALPRO (ph, pkh, pname, LIST (nvth, string, interrupt), ...)

This is not a procedure in this package but a call by the NVTP on another procedure whose package handle PKH and procedure name PNAME were supplied by the call to OPNNVT. This is how the NVTP relays information output by the process SRVPRC. The argument STRING contains the relayed information and control information as defined by the ARPANET Telnet protocol.

The argument INTERRUPT is a boolean signal that

indicates that an interrupt has occured if TRUE, otherwise its value is FALSE.

Argument/result types:

ph	- INTEGER
pkh	- INTEGER
pname	- CHARSTR
nvth	- INTEGER
string	- BITSTR
interrupt	- BOOLEAN

Multiple Telnet 5b

Notice that it is quite easy for the NVTP to provide a user with a multiple Telnet facility, since the NVTP identifies each conversation with a handle NVTH. 5b1

Interrupt Handling 5c

The handling of interrupts as call arguments might be thought to be ineffective. This method of passing interrupt signals is acceptable when the Procedure Interface Package's (PIP -- 24460,) Interrupt Procedure procedure is utilized. 5c1

For example if the calling process has called SNDNVT with no interrupt signaled and before that call returns the calling process wishes to signal an interrupt it may use the INTPRO procedure to suspend the first call and make a new call to SNDNVT signalling an interrupt and an empty string then when that call returns resume the first call using PIP's RSMPRO. 5c2

If the NVTP process has multiple processors, it would not be neccessary to use the interrupt procedure and procedure procedure calls. 5c3

The Network Virtual Terminal Package
Version 2

16-DEC-74

Jon Postel
Augmentation Research Center

Stanford Research Institute
Menlo Park, California 94025

The Network Virtual Terminal Package (NVTP) is a set of procedures that interface processes using PCP and processes using the ARPANET Telnet protocol. This package of procedures operates within the setting provided by the Procedure Call Protocol (PCP -- 24459,), with which the reader of the present document is assumed familiar.

JBP 26 DEC 74 7:54PM The Network Virtual Terminal Package

(J24827) 26-DEC-74 13:05;;;; Title: Author(s): Jonathan B. Postel/JBP; Distribution: /SRI-ARC([INFO-ONLY]) NSW([INFO-ONLY]) ; Sub-Collections: SRI-ARC NSW; Clerk: JBP; Origin: < POSTEL, NSW-NVT.NLS;8, >, 19-DEC-74 17:35 JBP ;;;; ####;

The Network Virtual Terminal Package
Version 2

16-DEC-74

Jon Postel
Augmentation Research Center

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Menlo Park, California 94025

The Network Virtual Terminal Package (NVTP) is a set of procedures that interface processes using POP and processes using the ARPANET Telnet protocol. This package of procedures operates within the setting provided by the Procedure Call Protocol (POP -- 24459,), with which the reader of the present document is assumed familiar.

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1) low-level protocols which provide the basic, inter-process communicaton (IPC) facilities by which channels are implemented: an inter-host IPC protocol (PCPHST), an inter-Tenex-fork IPC protocol (PCPFRK), and data structure format specifications for both connection types (PCPFMT). 1c1

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Argument/result types: 3a5

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pkh - INTEGER 3a5b
pname - CHARSTR 3a5c
nvth - INTEGER 3a5d

Close from network virtual terminal to serving process 3b

CLSNVT (nvth) 3b1

This procedure closes the network virtual terminal conversation identified by the handle NVTH. 3b2

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This procedure either processes the string STRING as a "Server Telnet" or simply passes the string along to the process SRVPRC associated with the conversation handle NVTH. The Telnet processing occurs if the process SRVPRC is in the same host as NVTP. 3c2

The argument INTERRUPT is a boolean signal that indicates

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When TRUE this procedure takes action to signal an interrupt to the process SRVPRC associated with this conversation handle NVTH. The action may be that defined in the local system in the case that SRVPRC is local (i.e. was initiated via the $F construct), or the action may be sending the ARPANET host to host command INS if the process SRVPRC is in another host (i.e. was started via the $N construct). 3c3a

Argument/result types: 3c4

nvth - INTEGER 3c4a
string - BITSTR (a multiple of 8 in length) 3c4b
interrupt - BOOLEAN 3c4c

DATA STORES 4

There are no data stores in this package. 4a

COMMENTS 5

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The argument INTERRUPT is a boolean signal that

indicates that an interrupt has occured if TRUE, otherwise its value is FALSE.

Argument/result types:

ph	- INTEGER
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pname	- CHARSTR
nvth	- INTEGER
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Multiple Telnet 5b

Notice that it is quite easy for the NVTP to provide a user with a multiple Telnet facility, since the NVTP identifies each conversation with a handle NVTH. 5b1

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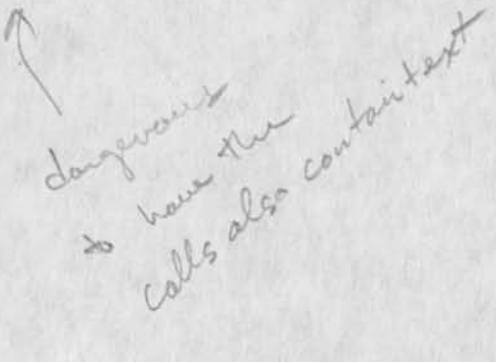
If the NVTP process has multiple processors, it would not be neccessary to use the interrupt procedure and procedure procedure calls. 5c3



< POSTEL, NVTP-COMMENTS.NLS;8, >, 21-JAN-75 16:42 JBP ;;;;

This is an attempt to clarify the role of the Network Virtual Terminal Package (NVTP) in interfacing "Old Programs" to the National Software Works (NSW). The discussion here assumes that the reader is familiar with the Procedure Call Protocol (PCP) and the Telnet protocol.

The NSW is composed of two principal entities and a group of auxiliary entities. The principals are a Works Manager (WM) and a Front END (FE). The auxiliaries are called Tool Bearing Hosts (TBHs).

The WM and the FE always communicate with each other and with the TBHs using PCP. This is a simplifying principle that allows for a cleaner and quicker implementation of the WM and the FE.

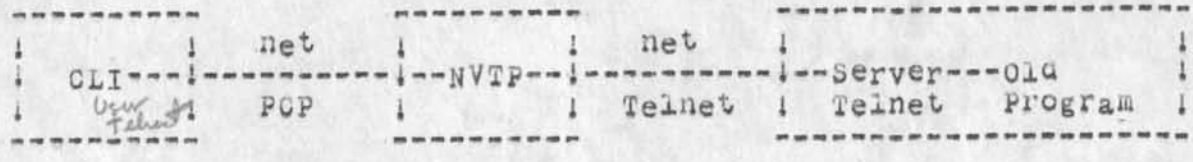
> (We note that at times the same machine that supports the FE may be used in a non-NSW context to communicate with other machines, including those that support the WM or those that are also TBHs, using other protocols. This does not alter our basic simplifying principle since those other communications protocols and programs are completely independent of the NSW.)

The active agent in the FE that carries out the users requests as interpreted using the grammar and the user profile is the Command Language Interpreter (CLI).

The TBHs support applications programs (e.g. text editors, compilers, reformatters, ...) called tools. These tools are or will be constructed with the NSW in mind, and will expect to communicate via PCP. Other applications programs, here called "Old Programs", were constructed to communicate only with a controlling teletype. The Telnet protocol has been designed and implemented such that a remote user's terminal can appear to be the controlling teletype when the remote user utilizes a "user Telnet" process to communicate via the network with a "server Telnet" process that directly controls the application program.

To interface such Old Programs into the NSW a NVTP has been designed to act as a converter between PCP and Telnet protocol. There are two cases to be distinguisned: first the case where the NVTP is in a third host, and second where the NVTP is directly controlling the Old Program. Note that in either case from the point of view of the WM and the FE the NVTP is the tool.

Case 1



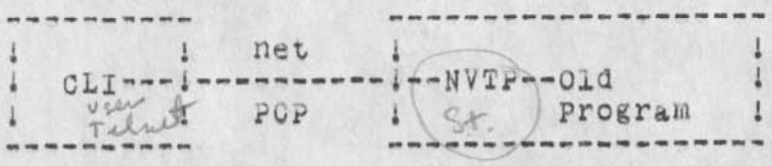
Notes:

CLI only does PCP calls.

NVTP merely copies data.

Server Telnet acts as controlling teletype to Old Program.

Case 2



Comment on two wake ups argument ?

Notes:

CLI only does PCP calls.

NVTP acts as controlling teletype to Old Program.

NVTP is a SMALL extension of Server Telnet program.

In the NSW environment the contol features of Telnet are generally unnecessary since these functions are performed by the FE.

Most of Telnet's control options are for controlling aspects of the users interaction that can be specified by a grammar or user profile. The difference is that in Telnet the parameters are dynamically controlled and transmitted between the user and server for each use of a program; in the NSW case these parameters are incorporated in the grammar and are therefore relatively static, but they are not renegotiated with each use of the tool and thus there is less network traffic. A user should be able to change aspects of the interaction by commands to the FE which do not require network traffic.

For example the most powerful Telnet Option -- Remote Controlled Transmission and Echoing (RCTE) -- is completely replaced by a grammar tailored to the serving host and tool. And the strategy of dynamic control used in RCTE requires substantially more network traffic than is neccessary in the NSW case.

An alternative communication strategy for Old Programs has been suggested that would have the FE communicate with the Old Program using Telnet protocol.

Used in Tipser

The WM is the only NSW process that initiates tool processses and the WM always communicates using PCP. It would be quite awkward to have the tool process initiated using PCP and subsequently communicate using Telnet protocol. The Telnet protocol does have a reconnection option (there are no known implementations of this feature), so that (in theory) control of a process created by a Telnet initiation by the WM could be switched to the FE, such a procedure requires both the WM and the FE to treat Old Programs differently than new tools, and requires both the WM and the FE to implement both PCP and Telnet protocol.

See RFC671

RLL 26-DEC-74 13:54 24828

Journal citation dialogue: second go around; two alternatives; call for a meeting.

I think it is time that a decision is made as to the form of the citation. Perhaps a meeting some time the week of january 6th. Send your responses to me (RLL) on either date and time or comments on alternatives. Thanks Rob

RLL 26-DEC-74 13:54 24828

Journal citation dialogue: second go around; two alternatives; call for a meeting.

#This is an updated copy of the journal citation debate. New items are preceded by a '#'. Three new branches are Dialogue, New Comments, and 'Latest' Alternatives. The actual header in the journal file should contain the same information but it need not be in the same format. whether the format should be same, easily readable by the user, etc. is another issue to be resolved. 1

Various alternatives for a new journal citation. 2

One consideration is to allow each person to pick his own form. This would be stored in his ident record. The journal system (already having it loaded) would read the reference format name and use the appropriate "rel" file. If the "rel" file is not known or if none is specified, a default form will be used. 2a

There are two questions, what are the fields of information desired and what are the formats of these fields. These question are partially separate but not wholely. 2b

Some overall criteria to use for determining what fields are useful and where they should go. 2c

Citation should be as short as possible. 2c1

A form which is suitable for sorting. 2c2

Conform to other citations in the literature. 2c3

Take advantages of level and line capabilities. 2c4

Although a new journal system might not developed for some time, pressure for maintaining the same format will be very high and thus the future situation should be heavily considered. 2c5

e.g. multiple hosts 2c5a

(FIELDS) Below is a list of various fields, synoyms on the left. Arguments for or against this field to be included are found on the levels below it. 2d

AIDENT author ident 2d1

PRO: Considered by most to be very important and should be on first line. 2d1a

ORG acronym of author's organization 2d2

Journal citation dialogue: second go around; two alternatives; call for a meeting.

CON: Easily obtained from ident record (which is available to journal system). 2d2a

PRO: For a large user community, the organization might be more meaningful than the person's ident or even his full name. 2d2b

PRO: This field is almost always included in most citations in the literature. 2d2c

#CON: could be very long for multiple authors; might not be suitable for following the AIDENT but on another line. 2d2d

NAME last name or full name 2d3

PRO: Most citation in the literature include full last name and initials 2d3a

CON: With the ident system one only needs to show record for ident. 2d3b

#CON: could be very lengthy for multiple idents. 2d3c

DATE day, month, and year when mail item was sent, (dd-mm-yy) 2d4

PRO: Used by many as a sort parameter. 2d4a

CON: Should not be on first line since it does not add to the recognition of what this mail item is. For those you like to sort on it, programs can be coded even if it appears on a second or third line. 2d4b

#PRO: should be on first line to permit later, immediate retrieval; if the item is old then it might be irrelevant hence after author this might be the next important item. 2d4c

TIME time that the mail item was sent (xx:xx:xx); 24 hour clock or AM/PM 2d5

PRO: Gives another means for uniquely (almost) identifying mail item (especially sndmsg items). 2d5a

#PRO: important for tracing the history of a dialog 2d5b

ZONE time zone 2d6

RLL 26-DEC-74 13:54 24828

Journal citation dialogue: second go around; two alternatives; call for a meeting.

PRO: Users of the system are scattered among various time zones. 2d6a

PRO: It is possible that different computers might be in different time zones. 2d6b

CON: The journal system should maintain only one time zone for dating of mail items. 2d6c

DAY day of the week that mail item was sent (MON TUE ....) 2d7

#CON: seldom relevant 2d7a

RDATE: date and time when mail item was received. 2d8

CON: Not needed, one can use the signature of the statement. 2d8a

PRO: Signatures are not widely known and are costly for TNLS users. 2d8b

#PRO: Statement signatures may be meaningless, since user can edit his citation statement. 2d8c

#PRO: Could point out interesting and serious communications dynamics; delivery is not always immediate and items may be very timely. 2d8d

JNUM journal number 2d9

PRO: Useful for sorting and uniqueness of item; only of value in first line. 2d9a

CON: Duplicates information in LINK. 2d9b

CON: LINK might be better on first line. 2d9c

LINK complete journal reference in form of link 2d10

PRO: Should be in first statement of citation in order for jump to link to work when only first line is bugged or referenced. 2d10a

PRO: Even for messages that are delivered with the citation it should be present. This enables one to delete the message and still have the link. 2d10b

PRO: For messages that are delivered with citation ((ncluding SNDMSG mail) this should be a link with only

Journal citation dialogue; second go around; two alternatives; call for a meeting.

viewspecs that opens up the view to show the whole message. This is predicated on the user having only a clipped view initial. 2d10c

#PRO: a second link might be desirable if the message follows immediately. The first link would just open up the view and the second would be the complete reference link. 2d10d

TITLE the title or subject of mail item 2d11

PRO: Nearly everyone agrees this is the most useful field. 2d11a

COMMENT comments 2d12

PRO: to be put at a level below main citation. 2d12a

DIST distribution list of idents 2d13

#PRO: In participating in a dialog, I need to know who else is currently involved and might be interested in my response. 2d13a

#PRO: Should be exhaustive (including recipient himself) since citation could be copied by someone not on list. 2d13b

TO distribution list of idents receiving mail as action 2d14

PRO: Distinction should be made between list of people receiving item and those receiving an information only copy. 2d14a

CC distribution list of idents receiving mail item as information only 2d15

PRO: Distinction should be made between list of people receiving item and those receiving an information only copy. 2d15a

CON: Can use uppercase and lowercase to distinguish action and info copies. 2d15b

PRO: For uppercase only teminals, uppercase/lowercase will not distinguish 2d15c

#FROM the author(s) ident 2d16

#PRO: to be included if the full name or full last name is used instead of ident. 2d16a

#PRO: can serve as place where author's organization can be

Journal citation dialogue: second go around; two alternatives; call for a meeting.

specified since the ORG might be too much for the first line. 2d16b

#PRO: conforms to existing formats used by many organizations including the federal government. 2d16c

TYPE the word ACTION and INFO, for action or information 2d17

PRO: For a shorter citation just a short word might suffice 2d17a

PRO: Useful on the first line of citation to quickly determine whether to read mail or not. 2d17b

PRIV privacy type (priv or public or blank) 2d18

PRO: Might be nice to know if item is private or not. 2d18a

#PRO: tells recipient whether or not to share article with others. 2d18b

#UNREC unrecorded status. UNREC if unrecorded; blank if recorded. 2d19

PRO: If one depends on the indexes for later retrieval, then one is lost if the mail item is unrecorded. 2d19a

ORIGIN name of originating host computer 2d20

PRO: might be nice when there are many hosts (Office-1,2,3,4,5...) 2d20a

#PRO: helps locate author. 2d20b

#PRO: it is the place of "publication" which is often included in many citations. 2d20c

REF references 2d21

PRO: Often used in many memos and useful for recipent. 2d21a

KEYW keywords 2d22

#PAGES number of pages (or suitable unit) of document 2d23

PRO: could be the number of disk pages or approximate number of hardcopy pages, or number of statements. An often used item in citations. 2d23a

RLL 26-DEC-74 13:54 24828

Journal citation dialogue: second go around; two alternatives; call for a meeting.

Leading contenders for the new journal citation format and comments (author ident at beginning). 2e

(JEW) provide several options and have the journal use your prefered format. (This is clearly the way to go.)(KIRK)(CHI)(RLL) 2e1

In addition, have a special directory containing userprogram formats ok'd by the journal programmer. 2e1a

(NDM) JFORM3,CA (matches MESSAGE,SUBSYS format) 2e2

DATE TIME AUTHORIDENT: The title begins here terminated by a CR and 3 spaces
Distribution: ACTION IDENTS ARE UPPER CASE info only idents are lower case
Received at: 12-OCT-74 04:31
(JJOURNAL,12345,1:w) 2e2a

Text of Message is a substructure statement. Note and Comments are also seperate statements in the order listed below. Note: in the statement above this, indentation does NOT represent a change in level. 2e2a1

Note: [ACTION] 2e2a2

Comments: Comments would appear last. 2e2a3

(KEV) modification of jform2 2e3

AUTHOR-IDENT: The title here would be terminated by a carriage return
DAY DATE TIME <Message -- 12345,>
TO: myident(comment to me) BUGS abc def 2e3a

Comment: date and time would contain the day of the week. 2e3a1

Message: The message occurs after the comment and is a statement in the substructure. For Journal links, <Message-- 12345,> would be replaced by <JJOURNAL, 12345,> 2e3a2

(JHB) places most parameters on first line including beginning of title. 2e4

DATE SENT (ONLY) AUTHOR(S) JNUMBER The title begins here terminated by a CR and 3 spaces

RLL 26-DEC-74 13:54 24828

Journal citation dialogue: second go around; two alternatives; call for a meeting.

Received: TIME DATE; Sent: TIME
TO: Idents of recipients for action followed by a CR and 3 spaces
CC: Idents of recipients for info only followed by a CR and 3 spaces
Link or message is appended to citation here. Note indentation does not represent a change in level. 2e4a

New statement here is for comment. 2e4a1

New statement here is for notes. 2e4a2

(KIRK) closely resembles standard reference formats 2e5

AUTHOR-IDENT, Title begins here after a comma and has no CR following it. <JJOURNAL, 12345,> SITE DAY DATE TIME 2e5a

Distribution: UPPER CASE IDENTS FOR ACTION lower case idents for info-only 2e5a1

Note: this is where a note would appear. 2e5a2

Comment: this is where comments would appear. 2e5a3

For messages, "<JJOURNAL, 12345,>" is replaced by "Journal Number 12345" and the text of the message is located here. Distribution, Note, Comment, and Message are all separate statements in substructure. 2e5a4

(xxx) Just to see if all fields can fit. 2e6

AIDENT ORG TITLE, LINK, DATE TIME ZONE DAY ORIGIN
<CR><SP><SP><SP> RDATE TYPE PRIV<CR><SP><SP><SP> TO:
identlist<CR><SP><SP><SP> CC: identlist[next level down]
COMMENT[next statement] REF[next statement] KEYW[next statement]Message (if delivered with citation) 2e6a

2e6b

Example. 2e6c

RLL (SRI-ARC) A Note on the future of journal headers, (JJOURNAL,12345,1:w), 22-OCT-74 1332 PDT WED at OFFICE-1
Received at: 22-OCT-74 1356 PDT for ACTION (PRIVATE)
TO: ABC DEF GHI
CC: JKL MNO PQR SRT 2e6d

Comments: Just a test for fun. 2e6d1

RLL 26-DEC-74 13:54 24828

Journal citation dialogue: second go around; two alternatives; call for a meeting.

REFERENCES: (MJOURNAL,34567,1:w) 2e6d2

KEYWORDS: test, journal, header 2e6d3

#Dialogue [new since last journalization as (MJOURNAL, 24284, 1:w)] 3

KIRK 17-NOV-74 01:52 24530journal citations
Good and Bad NLS practice reflected in your proposed sendail citation
Location: (GJOURNAL, 24530, 1:w)
*****Note: [ACTION] *****
3a

DVN 7-NOV-74 16:46 24437
One More thought about Journal Deliveryy
Message: As a step toward (documentation, final,,6b6c4) and the rest of that plex, what the journal should do is enter in everyone's initial file an author,keword, and arrival data catalog of journal items sent to her or that she sent.
*****Note: [ACTION] *****
3b

KEV 28-OCT-74 17:33 24337
journal citations again 3c

Message: The issue that Dean raises (in-- 24336,) (and I think Jake raised it also) about having sort programs, etc, work is I beleive looking at the citation issue in the wrong way. The problem, as I see it, is having citations presented to an INDIVIDUAL user in the format preferred by that INDIVIDUAL user. Then if an individual wishes to sort her citations, it is her responsibility (perhaps with our help) to provide the sort keys, programs, etc, that will sort the citations in the desired manner. Obviously, these programs must be aware of the format of the citations they are to sort. 3c1

If an individual wishes to make use of pre-existing sorting programs, then she must see to it that her citations conform to the input format required by the program to be used (and of course both available programs and required citation formats should be published). All the catalog production programs that I am aware of, do not go through individual initial files to get their data, but work on other data bases. Thus, if an individual is only interested in seeing who wrote an article, when it was written, and where it lives, (admittedly a perverse example), there is NO need to have the title in the citation that gets delivered to this person.

RLL 26-DEC-74 13:54 24828

Journal citation dialogue: second go around; two alternatives; call for a meeting.

*****Note: [ACTION] *****

3c2

Comments: I do have one or two other things to do, but occasionally I need a relief from them! 3c2a

NDM 28-OCT-74 15:34 24336
Opinion on Journal Citation Delivery Format
Location: (MJOURNAL, 24336, 1:w)
*****Note: [INFO-ONLY] *****

3d

Comments: Modifies slightly format listed as NDM's choice in (24284,). 3d1

27-OCT-74 2047-PDT BAIR: Journal headers
Distribution: LIEBERMAN, bair
Received at: 27-OCT-74 20:47:29 3e

Rob, All my input is in...a clear statement of what it shoould in view of your suggestions. That comprimise should satisfy all .
I do not think it should be sent to KWAC. It would be very inconsistent with previous design poloicypolicy. (witness the unilateral imposition of the info and attention branches.) 3e1

CHI 25-OCT-74 10:26 24324
Journal Citation Recomendations 3f

Message: Robbert, I have the following recommendations re Journal citations delivered to users: 3f1

1) The recipient should be able to choose among several citation formats for mail delivered to him, or perhaps make up his own ala KEV's suggestion (This desired Citation format could be stored in master ident file) 3f2

2) The distribution lists should be made available to the recipient 3f3

3) the [ACTION] and [INFO-ONLY] fields should not be removed from the citation even though they are deposited into action and info branches (because if the user moves them he looses this info) and
4) I would like a citation format that had the author and title (as much as would fit) in the first line for t-viewspec.
*****Note: [ACTION] *****

3f4

RLL 26-DEC-74 13:54 24828

Journal citation dialogue: second go around; two alternatives; call for a meeting.

JAKE 24-OCT-74 22:58 24319
Op. Cit.
Location: (MJOURNAL, 24319, 1:w)
*****Note: [INFO-ONLY] *****

3g

DVN 24-OCT-74 22:17 24318
More On Journal Citations
Location: (MJOURNAL, 24318, 1:w)
*****Note: [ACTION] *****

3h

KEV 24-OCT-74 14:38 24315
journal citations revisited
Location: (MJOURNAL, 24315, 1:w)
*****Note: [ACTION] *****

3i

JBP 24-OCT-74 09:58 24294
journal headers
Location: (MJOURNAL, 24294, 1:w)
*****Note: [ACTION] *****

3j

JHB 24-OCT-74 08:56 24291
re J24269: Journal notification & info/action branches
Message: I agree with Dirk's notion aout these 2 new features, particularly info and action. These are arbitrary categories at best, and serve to force additional compensatory decisions on the real users. IT's difficult not to be snide, but I don't recall any debate or even discussion about this.
I hope that the items that have been sent by myself and others on the Journal citation format are ok. If not let's have some discussion on them !
*****Note: [INFO-ONLY] *****

3k

RLL 23-OCT-74 22:38 24284
New Jornal header: alternatives; call for comments and additional input.
Location: (MJOURNAL, 24284, 1:w)
*****Note: Author Copy*****

3l

Comments: Comments received by FRiday 25Oct74 will be included for next pass which will include the KWAC. Thank you for contributing.

3l1

RLL 26-DEC-74 13:54 24828

Journal citation dialogue: second go around; two alternatives; call for a meeting.

17-OCT-74 0755-PDT BAIR at OFFICE-1: Journal citation format
Distribution: KELLEY AT SRI-ARC, engelbart at sri-arc, norton at sri-arc, watson at sri-arc,, lieberman at sri-arc, bair at sri-arc
Received at: 17-OCT-74 07:56:01 3m

Dear Kirk, I understand (second hand) that you are in charge of the design of a new Journal citation format. In that case, I would like to cast my vote for the following (coordinated with RLL): 3m1

DATE SENT (ONLY) AUTHOR(S) JNUMBER TITLE <CR>
Received: Time and date; Sent: Time<CR>
TO: Idents of recipients for action<CR>
CC: Idents of recipients for info<CR>
Link or message
<new satements>comments. 3m2

This would permit a sort on meaningful fields, date and author ident, and would fit enough of the title on the first line for informative 1 line 1 level perusal. I think this is consistent with what most Utility clients want.
Thank you, Jim 3m3

#New comments [new since last journalization as (MJOURNAL, 24284, 1:w)] 4

A basic dilemma 4a

It was noted that the people at ARC are not typical of the overwhelming majority of users and, therefore, are a poor group to make the decision as to what citation should look like. 4a1

It was also noted that the users are basically unsophisticated (at least at the moment) and do not understand the potential and facilities of NLS, therefore they are a poor group for which to base the format of the citation. 4a2

It is hope that an evolving format will most likely be the best long term solution. In this case the more knowledgeable group (ARCers !!!) should have more say at the moment. 4a3

The link should always be in angle brackets: 4b

to stand out 4b1

to have a higher probability of not conflicting with some parenthetical remark. 4b2

Journal citation dialogue: second go around; two alternatives; call for a meeting.

to conform to the statement zero in a file. 4b3

The message (if delivered) should stand out. 4c

It would be nice to have the message appear earlier so that one does not have to go through all the extra info. 4d

Levels should be used rather than lines for formating. 4e

If a 'line' actually is two or more line the format will look poor. 4e1

Some lines will be lost if more than two are present. 4e2

JHB believes his suggestion is most consistent with what utility clients want. He belives DATE, AUTHOR and TITLE are the important fields for the first line. 4f

Several people did not like the pending split between INFO and ACTION branches. 4g

CON: arbitrary categories 4g1

CON: most users integrate items based on date or subject not these categories 4g2

CON: force additional compensatory decision on users 4g3

CON: it would be better to have a code on first line indicating these two categories so that users can quickly judge whether to read the item or not. 4g4

Almost all agreed that some selecton of templates should be made available for users. Most also agreed that the method by which the user can specify his own would be desirable. 4h

An extensive preliminary specification of a template system to generate user defined formats was given (see -- MJOURNAL, 24315, 1:W) 4h1

It was mentioned that allowing arbitrary formats for the user would make it difficult to maintain a full selection of sort programs. 4h2

CON: For each template a sort program might have to be written. 4h2a

PRO: Sort programs are really only useful for the master

Journal citation dialogue: second go around; two alternatives; call for a meeting.

indexes and if a user wishes to sort his items and makes up his own template he should also make up his own sort routine. 4h2b

PRO: if a user wishes to sort his items and makes up his own template he should also make up his own sort routine. 4h2c

CON: It is a magnitude more difficult to make up a sort program than to specify a template for a header format. 4h2d

A suggestion was made (see -- MJOURNAL, 24318, 1;w) that it would be nice to have a daily (weekly ??) list generated of all journal items. This would serve to increase the usefulness and dialog interchange of the journal system. 4i

Most agreed that almost all the fields should be given. It is easy enough to delete fields or reformat but not easy to retrieve information from various sources and from various encryptions. 4j

One person stated that he used the date and time fields to trace the history of a dialog and as the primary access to items. He was in the minority as for primary access but most agreed that it was important and should be present (but not on first line). 4k

The following is a quote from one responder. 4l

The file itself ought to be a complete repository for information about that item. I think it is more important to have a format where the information is accessable in easily defined fields rather than deciding now what is pretty and/or limiting the content to what we currently think is standard/important. I think we ought to use the standard catalog citation format in the origin statement of journal file. 4l1

A distinction was made between citations delivered to users' initial files and what is kept in the journal itself (as a header). (see -- MJOURNAL, 24319, 1;w) 4m

The concerned here was for the actual header in the journal. A strong desire was issued to have this look very much like the 'standard' citation used in the literature. E.G.: 4m1

Engelbart, D. C. and Jones, S. A. Who says people at Arc are KWACS? NLS Online Journal, Vol. 7, No. 23456, 28-32 (June 1974). 4m1a

Volume could be the file name or directory name. 4m1a1

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Journal citation dialogue: second go around; two alternatives; call for a meeting.

Pages could be statement numbers (SIDS ?). 4m1a2

Number could be the NIC number. 4m1a3

A strong opinion was given that the header should be exactly like the citation except for the necessary Ouput Processor commands. 4m2

The overwhelming opinion was to have only the author and title on the first line. 4n

New forms: 4o

(JBP) similar to (XXX) (see -- MJOURNAL, 24294, 1:w) 4o1

Postel (SRI-ARC) A Note on the future of journal headers, (JJOURNAL,12345,1:w), 22-OCT-74 1332 PDT WED at OFFICE-1
Received at: 22-OCT-74 1356 PDT for ACTION (PRIVATE)
TO: ABC DEF GHI
CC: JKL MNO PQR SRT
FROM: JBP 4o1a

Comments: Just a test for fun. 4o1a1

REFERENCES: (MJOURNAL,34567,1:w) 4o1a2

KEYWORDS: test, journal, header 4o1a3

(NDM) new form (see -- MJOURNAL, 24336, 1:w) 4o2

DATE TIME-ZONE AIDENT: TITLE terminated by a CR and 3 spaces
For your ACTION/INFORMATION, Private
Distribution: ACTION IDENTS ARE UPPER CASE info only idents are lower case (recipient included here somewhere)
Author orgs: Idents,,,
Received at: 12-OCT-74 04:31
(JJOURNAL,12345,1:w) 4o2a

Comments: Comments would appear as substatement of citation. 4o2a1

Text of Message is a substructure statement. 4o2a2

#Latest Alternatives 5

First alternative 5a

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Journal citation dialogue: second go around; two alternatives; call for a meeting.

Examples. 5a1

RLL, A Note on the future of journal citation
22-OCT-74 1332 PDT <:wg> <JOURNAL,JRNL24,J12345:wg> for ACTION [PRIV,UNREC] 5a2

To: ABC DEF GHI
Cc: JKL MNO PQR SRT
From: OFFICE-2, Lieberman (SRI-ARC) 5a2a

Comments: Just a test for fun, [Statement not here if no comments] 5a2b

MESSAGE: If, indeed, it is delivered, the message text appears here, Notice the MESSAGE keyword is uppercase and text starts on same line. 5a2c

References: <MJOURNAL,34567,1:w> [Statement not implemented yet]
Keywords: journal, header [Statement not here if no keywords]
Received at: 22-OCT-74 1356 PDT 5a2d

RLL JHB, Another example of future journal citation
22-OCT-74 1343 PDT <JJOURNAL,67891,1:w> for INFORMATION 5a3

To: ABC DEF GHI
Cc: JKL MNO PQR SRT
From: OFFICE-2, Lieberman (SRI-ARC) Bair (SRI-ARC) 5a3a

Received at: 22-OCT-74 1359 PDT 5a3b

Discussion 5a4

Should the link jump to the 0 or 1 statement in the journal file? Should the viewspec be 'w'? 5a4a

Should the TO, CC, and FROM lines be on separate statements? Should COMMENTS, KEYWORDS, REFERENCES be on separate statements or separate lines? The consensus is for the message (if it appears in citation) be a separate statement. 5a4b

Should the fact that an item was 'unrecorded' be stated? If unrecorded it might be lost forever if the receiving parties delete the message (hoping to retrieve it by the indexes in the future). 5a4c

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Journal citation dialogue: second go around; two alternatives; call for a meeting.

Should the FROM precede the TO? 5a4d

Should fields for the UPDATE and OBSOLETE commands in SENDMAIL be provided? 5a4e

Should the originating host be specified for each author? Only if different for each author? Only the first author's host? 5a4f

Note when the message immediately follows, a link with only viewspecs to open the view to full is inserted before the actual link. This makes it possible to just Jump to Link in every case without worrying about whether the message is in the delivered citation or not. 5a4g

What should the viewspecs be for this link? 5a4g1

Should it be in angle brackets or parentheses to distinguish it from the full link? 5a4g2

Note that the PRIVATE and UNRECORDED fields are enclosed in square brackets to prevent any possible conflict with a link. 5a4h

With a long title, a portion of the title will be hanging on a second line by itself. This may or may not be nice for viewing, but does give an uncertainty to whether the link and other 'second line' parameters are indeed on the second line. 5a4i

This might encourage the title to be another line after 'From' and restrict the title to whatever fits on the first line of the citation. 5a4i1

Note that the full last name is used in the FROM line. 5a4j

The duplication of the author is for the following purposes: 5a4k

the organization can be specified 5a4k1

to simulate existing formats of memos 5a4k2

to allow the full last name to be seen (with a large community of users the ident might be very obscure and the IDENT system not used by the naive user.) 5a4k3

Note that except for the message header, only the first letter of the header is uppercase. 5a4l

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Journal citation dialogue: second go around; two alternatives; call for a meeting.

This allows the actual message (if it appears) to stand out. 5a411

Note a one line, all level view has a "decent" view. Also if one turns on 'y' viewspec with all lines, all levels the format looks 'good'. 5a4m

The message text should begin on the same line as the word MESSAGE since a one line view of the citation would provide one line of the message itself thus adding information to the decision process of whether to read this item and, later, helping to decide if it is relevant. 5a4n

CON: It would be easy to delete and manipulate the message text if it were a branch headed by 'MESSAGE' (messages are projected to be plexes which are less than 2000 characters.) 5a4n1

In the event that no one is receiving the item for action the 'TO' list will be empty; should the header 'TO' still appear or should the entire line be missing? Same for the 'CC' line. 5a4o

The 'received' statement is the last one since: 5a4p

most felt it irrelevant 5a4p1

some professional journals put date received at the end of the article. 5a4p2

The split between lines and statements should be guided by viewspec controls and ease of manipulation. 5a4q

The clipped views showing one or two lines only will provide a nice view of mail items. 5a4r

Perhaps the COMMENTS field could be temporarily used for specifying references (indeed it has been by many). 5a4s

It should be noted that the new field called REFERENCES has been strongly supported by several people. This would require a mod to the sendmail subsystem. The value is, of course, in having a clearer interlinking among the journal collection and conforming to many formats used by government and others. 5a4t

Few supported having the date and time on the first line.

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Journal citation dialogue: second go around; two alternatives; call for a meeting.

All supported having it appear in the first statement and having the capability to sort on it. 5a4u

Note that the time is a 24 hour clock. 5a4v

The CC list represents those who were specified as receiving item for information only for journal items and the CC list in the sndmsg items. 5a4w

Note that the DATE TIME starts on a new line so that it will not be split as it might be if it just followed the AUTHOR and TITLE. 5a4x

Note that the date, time and link are on the second line first statement. Sorting on date and time can easily be done. It is intended that such sort programs be made available at the same time this new header is instituted. 5a4y

Note that even for messages the complete link is given. It is hoped that this will be enough to actual perform the link. 5a4z

Should the directory appear in the link? It might be confusing to most people. It is unneeded but makes retrieval faster. 5a4a@

Another alternative for those wanting the date and time on first line. 5b

RLL 22-OCT-74 1332 PDT, A Note on the future of journal citation,
<:wg> <JOURNAL,JRNL24,J12345:wg> for ACTION [PRIV,UNREC] 5b1

To: ABC DEF GHI
Cc: JKL MNO PQR SRT
From: OFFICE-2, Lieberman (SRI-ARC) 5b1a

Comments: Just a test for fun. [Not here if no comments] 5b1b

MESSAGE: If, indeed, it is delivered, the message text appears here. 5b1c

References: <MJOURNAL,34567,1:w> [Not implemented yet] 5b1d

Keywords: test, journal, header [Not here if no keywords] 5b1e

Received at: 22-OCT-74 1356 PDT 5b1f

RLL 26-DEC-74 13:54 24828

Journal citation dialogue: second go around; two alternatives; call for a meeting.

RLL JHB 22-OCT-74 1332 PDT, A Note on the future of journal citation format
<HJOURNAL,12345,1:w> for ACTION [UNREC] 5b2

To: ABC DEF GHI
Cc: JKL MNO PQR SRT
From: OFFICE-2, Lieberman (SRI-ARC) Bair (SRI-ARC) 5b2a

Comments: Just a test for fun, [Not here if no comments] 5b2b

Received at: 22-OCT-74 1359 PDT 5b2c

Discussion: 5b3

See the discussion with other alternative. 5b3a

A carriage return follows the title. 5b3b

The author is first field to allow for a meaningful statement name (statement names cannot begin with a number hence the date would be a poor choice). 5b3c

The duplication of the author is for the following purposes: 5b3d

the organization can be specified 5b3d1

to simulate existing formats of memos 5b3d2

to allow the full last name to be seen (with a large community of users the ident might be very obscure and the IDENT system not used by the naive user.) 5b3d3

RLL 26-DEC-74 13:54 24828

Journal citation dialogue: second go around; two alternatives; call for a meeting.

(J24828) 26-DEC-74 13:54;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /DCE([ACTION]) JCN([ACTION]) JHB([ACTION]) JAKE([INFO-ONLY]) JDH([INFO-ONLY]) RWW([INFO-ONLY]) ; Keywords: journal citation header; Sub-Collections: SRI-ARC; Clerk: RLL; Origin: < LIEBERMAN, HEADERS,NLS;37, >, 26-DEC-74 13:46 RLL ;;;;####;

Cover Letter

This note announces release of the second published version of the Procedure Call Protocol -- PCP Version 2. Version 2 is SUBSTANTIALLY different than Version 1; it and all intermediate, informally distributed PCP documents are obsoleted by this release. 1

Version 2 consists of the following documents. Each is available on-line in two forms: as an NLS file and as a formatted text file. The Journal number (e.g. 24459) refers to the former, of course, and the pathname (e.g. [SRI-ARC]<NLS>PCP.TXT) to the latter, accessible via FTP using USER=ANONYMOUS and PASSWORD=GUEST (no account required). Hardcopy is being forwarded by US Mail to all those who have expressed an interest in PCP. If you don't receive a copy and would like one of this and/or future releases, send a note to that effect to WHITE@SRI-ARC: 2

PCP (24459,) "The Procedure Call Protocol" 2a

This document describes the virtual programming environment provided by PCP, and the inter-process exchanges that implement it. 2a1

Pathname: [SRI-ARC]<NLS>PCP.TXT 2a1a

PIP (24460,) "The Procedure Interface Package" 2b

This document describes a package that runs in the setting provided by PCP and that serves as a procedure-call-level interface to PCP proper. It includes procedures for calling, resuming, interrupting, and aborting remote procedures. 2b1

Pathname: [SRI-ARC]<NLS>PIP.TXT 2b1a

PSP (24461,) "The PCP Support Package" 2c

This document describes a package that runs in the setting provided by PCP and that augments PCP proper, largely in the area of data store manipulation. It includes procedures for obtaining access to groups of remote procedures and data stores, manipulating remote data stores, and creating temporary ones. 2c1

Pathname: [SRI-ARC]<NLS>PSP.TXT 2c1a

PMP (24462,) "The Process Management Package" 2d

This document describes a package that runs in the setting provided by PCP and that provides the necessary tools for interconnecting two or more processes to form a multi-process system (e.g. NSW). It includes procedures for creating, deleting, logically and physically interconnecting processes, and for allocating and releasing processors. 2d1

Pathname: [SRI-ARC]<NLS>PMP.TXT 2d1a

PCPFMT (24576,) "PCP Data Structure Formats" 2e

This document defines formats for PCP data structures, each of which is appropriate for one or more physical channel types. 2e1

Pathname: [SRI-ARC]<NLS>PCPFMT.TXT 2e1a

PCPHST (24577,) "PCP ARPANET Inter-Host IPC Implementation" 2f

This document defines an implementation, appropriate for mediating communication between Tenex forks, of the IPC primitives required by PCP. 2f1

Pathname: [SRI-ARC]<NLS>PCPHST.TXT 2f1a

PCPFRK (24578,) "PCP Tenex Inter-Fork IPC Implementation" 2g

This document defines an implementation, appropriate for mediating communication between processes on different hosts within the ARPANET, of the IPC primitives required by PCP. 2g1

Pathname: [SRI-ARC]<NLS>PCPFRK.TXT 2g1a

PCPTNXINT (24792,) "Tenex PCP process Internal Structure" 2h

This document defines the internal structure of a PCP process implemented to run on Tenex, and as such serves as a process implementer's guide. It describes the process' fork structure, the role and composition of each fork, and the manner in which the various forks interact with one another; indicates which components are supplied with PCP and which are the responsibility of the process implementer; and describes the manner in which the components are assembled at load time. 2h1

Pathname: [SRI-ARC]<NLS>PCPTNXINT.TXT 2h1a

The first document, PCP, is the place the interested reader should start. It gives the required motivation for the Protocol and states the substance of the Protocol proper. The reader may then, if he chooses, read the next three documents: PIP, PSP, and PMP. The latter has the most to offer the casual reader; the programmer faced with coding in the PCP environment should read all three. The final few documents -- PCPFMT, PCPHST, and PCPFRK -- are of interest only to the PCP implementer. The final (and most recent) document should be of interest to implementers of the PCP mechanisms in TENEX. 3

JBP 26-DEC-74 16:42 24829
PCP Cover Letter

(J24829) 26-DEC-74 16:42;;;; Title: Author(s): Jonathan B.
Postel/JBP; Distribution: /JBP([INFO-ONLY]) ; Sub-Collections:
SRI-ARC; Clerk: JBP; Origin: < POSTEL, PCPCOVER.NLS;5, >,
26-DEC-74 16:39 JBP ;;;;.SNF=72;.HJRM=72####;

Cover Letter

This note announces the release of the second published version of several National Software Works (NSW) and Procedure Call Protocol (PCP) documents. Version 2 is SUBSTANTIALLY different than Version 1; it and all intermediate, informally distributed PCP documents are obsoleted by this release. 1

Each of the following documents is available on-line in two forms: as an NLS file and as a formatted text file. The Journal number (e.g. 24459) refers to the former, of course, and the pathname (e.g. [SRI-ARC]<NLS>PCP.TXT) to the latter, accessible via FTP using USER=ANONYMOUS and PASSWORD=GUEST (no account required). Let it be emphasised that files indicated by pathname of the form [SRI-ARC]<NLS>name.TXT are ASCII text files not NLS files. 2

The specifications are contained in the following documents: 3

HOST (24581,) "NSW Host Protocol" 3a

This document describes the host level protocol used in the NSW. The protocol is a slightly constrained version of the standard ARPANET host to host protocol. The constraints affect the allocation, RFNM wait, and retransmission policies. 3a1

Pathname: [SRI-ARC]<NLS>HOST.TXT 3a1a

EXEC (24580,) "The Executive Package" 3b

This document describes a package that runs in the setting provided by PCP. It includes procedures and data stores for user identification, accounting, and usage information. 3b1

Pathname: [SRI-ARC]<NLS>EXEC.TXT 3b1a

FILE (24582,) "The File Package" 3c

This document describes a package that runs in the setting provided by PCP. It includes procedures and data stores for opening, closing, and listing directories, for creating, deleting, and renaming files, and for transfering files and file elements between processes. 3c1

Pathname: [SRI-ARC]<NLS>FILE.TXT 3c1a

FILE-APP (24813,) "The File Package Appendix" 3d

This appendix contains some comments on implementation strategy. The thrust is to argue that the file package as specified is near minimal and that the conversion between the PCP format and the internal storage format can be encapsulated into a few subroutines. 3d1

Pathname: [SRI-ARC]<NLS>FILE-APP.TXT 3d1a

BATCH (24583,) "The Batch Job Package" 3e

This document describes a package that runs in the setting provided by PCP. It includes procedures for creating and deleting batch jobs, obtaining the status of a batch job, and communicating with the operator of a batch processing host. This package is implemented at the host that provides the batch processing facility. 3e1

Pathname: [SRI-ARC]<NLS>BATCH.TXT 3e1a

LLDBUG (24579,) "The Low-Level Debug Package" 3f

This document describes a package that runs in the setting provided by PCP. It includes procedures for a remote process to debug at the assembly-language level, any process known to the local process. The package contains procedures for manipulating and searching the process' address space, for manipulating and searching its symbol tables, and for setting and removing breakpoints from its address space. Its data stores hold process characteristics and state information, and the contents of program symbol tables. 3f1

Pathname: [SRI-ARC]<NLS>LLDBUG.TXT 3f1a

BOXES (24584,) "Black Boxes in PCP" 3g

This document describes the transliteration of the black boxes defined by Millstein and Warshall into the setting provided by PCP, especially the File Package and the Executive Package. 3g1

Pathname: [SRI-ARC]<NLS>BOXES.TXT 3g1a

RJE-MODEL (24655,) "The NSW Remote Job Entry Model" 3h

This document discusses the process of utilizing a batch processing facility to complete a programming task in the NSW environment. This same activity in another environment might utilize a remote job entry system. 3h1

Pathname: [SRI-ARC]<NLS>RJE-MODEL.TXT 3h1a

TBH (24656,) "NSW Requirments on Tool Bearing Hosts" 3i

This document discusses the environment needed in the tool bearing host and the interfaces to the operating system components by various PCP packages. 3i1

Pathname: [SRI-ARC]<NLS>TBH.TXT 3i1a

NVTP (24827,) "The Network Virtual Terminal Package" 3j

The Network Virtual Terminal Package (package name = NVTP) contains the procedures interfacing PCP procedure calls to terminal oriented input and output character streams as defined by the ARPANET Telnet protocol. 3j1

Pathname: [SRI-ARC]<NLS>NVTP.TXT 3j1a

The document on the Host level protocol, HOST, is a suggestion for some restrictions on the regular ARPANET host protocol for use in NSW, this topic has little impact on the remainder of the NSW protocols. 4

The documents EXEC, FILE, FILE-APP, and BATCH describe procedure packages to be implemented as appropriate to provide the services of the accounting/status/usage statistics subsystem, the file subsystem or batch processing subsystem respectively. 5

The LLDBUG package specifies a debugging package that operates in the PCP environment. 6

The document called BOXES describes a mapping between the PCP mechanisms and the File Package procedures and the Black Boxes needed by the Works Manager. 7

The document RJE-MODEL describes how a user would utilize various tools in the NSW in the process of carrying out tasks he might in the absence of NSW achieve using a remote job entry system. This should be read with the document on BATCH. 8

The document TBH speaks to the requirements placed on the Tool Bearing Host. This document indicates how and where various PCP packages interface to an operating system. 9

The NVTP document describes how a PCP package may be used to interface between the PCP world and the existing ARPANET Telnet Protocol. 10

JBP 26-DEC-74 16:43 24830
NSW Cover Letter

(J24830) 26-DEC-74 16:43;;;; Title: Author(s): Jonathan B. Postel/JBP; Distribution: /JBP([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JBP; Origin: < POSTEL, NSWCOVER.NLS;4, >, 26-DEC-74 16:39 JBP ;;;;,SNF=72:,HJRM=72####;

NLS-8 Command Summary

--As of 26-DEC-74; This slightly modified edition will be COM'd.

SUPERVISOR SUBSYSTEM

1

; TYPEIN 2

Execute (command in) SUBSYSTEM 3

SUBSYSTEM = Base/Programs/Sendmail/Useroptions/Calculator

Goto (subsystem) SUBSYSTEM OK 4

SUBSYSTEM = Base/Programs/Sendmail/Useroptions/Calculator/Tenex

Goto (subsystem) Tenex OK 5

Help TyPEIN (Help) TyPEIN (Help) ... 6

Help TYPEIN (Help) _ ("FLASHBACK") ANSWER OK (Help) ... 7

Help TYPEIN (Help) " OK (Help) ... 8

Help OK (Help) TYPEIN (Help) ... 9

Help OK (Help) _ ("FLASHBACK") ANSWER OK (Help) ... 10

Help OK (Help) " OK (Help) ... 11

!DNLS! Jump (to) BUG VIEWSPECS OK 12

!DNLS! Jump (to) Address (relative to) DESTINATION ADDRESS VIEWSPECS OK 13

!TNLS! Jump (to) Address DESTINATION OK 14

Jump (to) Back DESTINATION VIEWSPECS OK 15

Jump (to) Content First CONTENT VIEWSPECS OK 16

Jump (to) Content First OKREPEAT VIEWSPECS OK 17

Jump (to) Content Next CONTENT VIEWSPECS OK 18

Jump (to) Content Next OKREPEAT VIEWSPECS OK 19

Jump (to) Down DESTINATION VIEWSPECS OK 20

Jump (to) End (of Branch) DESTINATION VIEWSPECs OK 21

Jump (to) File Named CONTENT VIEWSPECS OK 22

Jump (to) File Return OK ("FLASHBACK") ANSWER 23

!DNLS! Jump (to) File BUG VIEWSPECS OK 24

Jump (to) Head DESTINATION VIEWSPECS OK 25

Jump (to) Item DESTINATION VIEWSPECS OK 26

Jump (to) Link CONTENT OK 27

Jump (to) Name Any CONTENT VIEWSPECS OK 28

Jump (to) Name External CONTENT VIEWSPECS OK 29

Jump (to) Name First CONTENT VIEWSPECS OK 30

Jump (to) Name Next CONTENT VIEWSPECS OK 31

!DNLS! Jump (to) Name BUG VIEWSPECS OK 32

Jump (to) Next DESTINATION VIEWSPECS OK 33

Jump (to) Origin DESTINATION VIEWSPECS OK 34

Jump (to) Predecessor DESTINATION VIEWSPECS OK 35

Jump (to) Return OK ("FLASHBACK") ANSWER 36

Jump (to) Successor DESTINATION VIEWSPECS OK 37

Jump (to) Tail DESTINATION VIEWSPECS OK 38

Jump (to) Up DESTINATION VIEWSPECS OK 39

Jump (to) Word First CONTENT VIEWSPECS OK 40

Jump (to) Word First OKREPEAT VIEWSPECS OK 41

Jump (to) Word Next CONTENT VIEWSPECS OK 42

Jump (to) Word Next OKREPEAT VIEWSPECS OK 43

Quit OK 44

Quit Nls OK 45

Quit To SUBSYSTEM OK 46

NLS-8 Command Summary

SUBSYSTEM = Base/Programs/Sendmail/Useroptions/Calculator

Syntax (of Command) COMMANDWORD OK 47

> 48

< 49

!DNLS! <CTRL-Q> (Searching, please wait) (Help) ... 50

!TNLS! <CTRL-Q> () (Help) ... 51

<CTRL-S> 52

BASE SUBSYSTEM

53

!TNLS! <LF> 54

!TNLS! " 55

!TNLS! \ 56

!TNLS! / 57

!TNLS! . 58

<TAB> 59

Accept Connect (from terminal number) CONTENT (for) Output (Only) OK 60

Accept Connect (from terminal number) CONTENT (for) Input (and Output) OK 61

Append Statement (at) SOURCE (to) DESTINATION (join with) CONTENT OK 62

Archive File CONTENT OK 63

Archive File CONTENT OPTION (opt:) Reset (Request Status) OK (Finished?) ANSWER 64

Archive File CONTENT OPTION (opt:) Prevent (Deletion After Archiving) OK (Finished?) ANSWER 65

Archive File CONTENT OPTION (opt:) Not (Allowed) OK (Finished?) ANSWER 66

Archive File CONTENT OPTION (opt:) Deferred OK (Finished?) ANSWER 67

Archive File CONTENT OPTION (opt:) Delete (After Archiving) OK (Finished?) ANSWER 68

Break Statement (at) DESTINATION LEVEL-ADJUST OK 69

!DNLS! Clear (TTY Window) OK 70

Connect (to) Directory CONTENT (Password) CONTENT OK 71

Connect (to) Directory CONTENT (Password) OK 72

Connect (to) Tty (Number) CONTENT (for) Output (Only) OK 73

Connect (to) Tty (Number) CONTENT (for) Input (and Output) OK 74

Connect (to) Display (Number) CONTENT (for) Output (Only) OK 75

Connect (to) Display (Number) CONTENT (for) Input (and Output) OK 76

Copy Directory (of) CONTENT (to follow) DESTINATION LEVEL-ADJUST OK 77

Copy Directory (of) CONTENT (to follow) DESTINATION LEVEL-ADJUST OPTION (opt:) DIROPT (Finished?) ANSWER OK 78

Copy Directory (of) OK (to follow) DESTINATION LEVEL-ADJUST OK 79

Copy Directory (of) OK (to follow) DESTINATION LEVEL-ADJUST OPTION (opt:) DIROPT (Finished?) ANSWER OK 80

DIROPT = Sort (by) SRTOPT OK / Sort (by) Reverse SRTOPT OK / Group (by) GRPOPT OK / Group (by) Reverse GRPOPT OK / Verbose OK Time (and Date of) Write OK / Time (and Date of) Read OK / Time (and Date of) First (Version Creation) OK / Time (and Date of) Last (Dump) OK / Time (and Date of) Creation OK / Time (and Date of) Archive OK / Size (in Pages) OK / Protect OK / No Extension (name) OK / No Versions (number) OK / Number (of) Accesses OK / Number (of) Versions (to keep) OK / Miscellaneous (Information) OK / Length (and Bytesize) OK / Last (Writer) OK / Everything OK / Dump (Tape Number) OK / Date (of) Write OK / Date (of) Read OK / Date (of) First (Version Creation) OK / Date (of) Last (Dump) OK / Date (of) Creation OK / Date (of) Archive OK / Account OK / Archive Tape (Numbers) OK / Archive Status OK / For (File) CONTENT OK / Undelete (Files Only) OK / Delete (Files Only) OK / All (Files) OK

SRTOPT = Write (Time and Date) / Size (in Pages) / Read (Time and Date) / First (Version Creation) / Number (of) Versions (to keep) / Number (of) Write / Number (of) Read / Number (of) Accesses / Length (in Bytes) / Last (Writer) / Dump Time (and Date) / Dump Tape / Delete (Status) / Creation (time and Date) / Bytesize / Archive Time (and Date) / Archive Tape / Alphabetical / Account

GRPOPT = Write (Date) / Read (Date) / Protect / Number (of Versions to Keep) / Last (Writer) / First (Version Creation) / Dump Tape / Dump Date / Delete (Status) / Creation (Date) / Archive Tape / Archive Status / Archive Date / Account / No (Grouping)

Copy File (from) CONTENT (to) CONTENT OK 81

Copy STRING (from) SOURCE (to follow) DESTINATION OK 82

Copy STRUCTURE (from) SOURCE (to follow) DESTINATION LEVEL-ADJUST OK 83

Copy STRUCTURE (from) SOURCE (to follow) DESTINATION OPTION (Filtered:) VIEWSPECS LEVEL-ADJUST OK 84

Copy Sequential (file from) CONTENT (to follow) DESTINATION LEVEL-ADJUST (using) Assembler OK 85

Copy Sequential (file from) CONTENT (to follow) DESTINATION LEVEL-ADJUST (using) One (<CR> to end statement) OK 86

Copy Sequential (file from) CONTENT (to follow) DESTINATION LEVEL-ADJUST (using) Two (<CR>s end statement) OK 87

Copy Sequential (file from) CONTENT (to follow) DESTINATION LEVEL-ADJUST (using) Two (<CR>s end statement) Justified (delete extra <SP>) OK 88

Create File CONTENT OK 89

Delete All (markers) OK 90

Delete !DNLS! Edge (at) DESTINATION OK 91

Delete File CONTENT OK 92

Delete Marker (named) CONTENT OK 93

Delete Modifications (to file) OK (really?) OK 94

Delete STRING (at) DESTINATION OK 95

Delete STRUCTURE (at) DESTINATION OK 96

Delete STRUCTURE (at) DESTINATION OPTION (Filtered:) VIEWSPECS OK 97

Disconnect Terminal OK 98

!TNLS! Edit Statement (at) DESTINATION EDITSTRING OK 99

Expunge Directory OK 100

Force (Case) Mode CASEMODE OK 101

Force (Case) STRUCTURE (at) DESTINATION OK 102

Force (Case) STRUCTURE (at) DESTINATION OPTION CASEMODE OK 103

Force (Case) STRING (at) DESTINATION OK 104

NLS-8 Command Summary

Force (Case) STRING (at) DESTINATION OPTION CASEMODE OK 105

CASEMODE = Lower / Upper / First (letter upper)

!DNLS! Freeze Statement (at) DESTINATION VIEWSPECS OK 106

Insert Date (to follow) DESTINATION OK 107

Insert !DNLS! Edge (perpendicular to) BUG OK 108

Insert !DNLS! Edge (perpendicular to) Center (of) DESTINATION OK 109

Insert STRING (to follow) DESTINATION CONTENT OK 110

Insert STRUCTURE (to follow) DESTINATION LEVEL-ADJUST CONTENT OK 111

Insert Sendmail (form) (to follow) DESTINATION LEVEL-ADJUST OK 112

Insert Time (and Date to follow) DESTINATION OK 113

Load File CONTENT OK 114

Logout OK 115

Mark Character (at) DESTINATION (with marker named) CONTENT OK 116

Merge Branch (at) SOURCE (into) DESTINATION OK 117

Merge Group (at) SOURCE (into) DESTINATION OK 118

Merge Plex (at) SOURCE (into) DESTINATION OK 119

Move !DNLS! Edge (from) DESTINATION (to) BUG OK 120

Move !DNLS! Edge (from) DESTINATION (to) Center (of) DESTINATION OK 121

Move File (from old filename) CONTENT (to new filename) CONTENT OK 122

Move STRUCTURE (from) SOURCE (to follow) DESTINATION LEVEL-ADJUST OK 123

Move STRUCTURE (from) SOURCE (to follow) DESTINATION OPTION (Filtered:) VIEWSPECS LEVEL-ADJUST OK 124

Move STRING (from) SOURCE (to follow) DESTINATION OK 125

Output (to) Assembler Append (to File) CONTENT OK 126

Output (to) Assembler Append (to File) CONTENT Force (upper case) OK 127

Output (to) Assembler File CONTENT OK 128

Output (to) Assembler File CONTENT Force (upper case) OK 129

Output (to) Com OK 130

Output (to) Com Append (to File) CONTENT OK 131

Output (to) Com Copies CONTENT OK 132

Output (to) Com File CONTENT OK 133

Output (to) Com Test File CONTENT OK 134

Output (to) Com Test OK 135

Output (to) Journal (Quickprint) OK 136

Output (to) Journal (Quickprint) Append (to File) CONTENT OK 137

Output (to) Journal (Quickprint) Copies CONTENT OK 138

Output (to) Journal (Quickprint) File CONTENT OK 139

Output (to) Journal (Quickprint) Test File CONTENT OK 140

Output (to) Journal (Quickprint) Test OK 141

Output (to) Printer OK 142

Output (to) Printer Append (to File) CONTENT OK 143

Output (to) Printer Copies CONTENT OK 144

Output (to) Printer File CONTENT OK 145

Output (to) Printer Test File CONTENT OK 146

Output (to) Printer Test OK 147

Output (to) Quickprint OK 148

Output (to) Quickprint Append (to File) CONTENT OK 149

Output (to) Quickprint Copies CONTENT OK 150

Output (to) Quickprint File CONTENT OK 151

Output (to) Quickprint No (Headers) OK 152

Output (to) Quickprint No (Headers) Append (to File) CONTENT OK 153

Output (to) Quickprint No (Headers) Copies CONTENT OK 154

Output (to) Quickprint No (Headers) File CONTENT OK 155

Output (to) Quickprint No (Headers) Test OK 156

Output (to) Quickprint Test OK 157

Output (to) Remote (printer -- TIP) CONTENT (Port #) CONTENT OK (Send Form Feeds?) N (Simulate?) ANSWER (Wait at page break?) ANSWER (Go?) N (Type CA when ready, CD to abort) OK 158

Output (to) Remote (printer -- TIP) CONTENT (Port #) CONTENT OK (Send Form Feeds?) N (Simulate?) ANSWER (Wait at page break?) ANSWER (Go?) Y 159

Output (to) Remote (printer -- TIP) CONTENT (Port #) CONTENT OK (Send Form Feeds?) Y (Wait at page break?) ANSWER (Go?) N (Type CA when ready, CD to abort) OK 160

Output (to) Remote (printer -- TIP) CONTENT (Port #) CONTENT OK (Send Form Feeds?) Y (Wait at page break?) ANSWER (Go?) Y 161

Output (to) Sequential Append (to File) CONTENT OK 162

Output (to) Sequential Append (to File) CONTENT Force (upper case) OK 163

Output (to) Sequential File CONTENT OK 164

Output (to) Sequential File CONTENT Force (upper case) OK 165

Output (to) Terminal OK (Send Form Feeds?) N (Simulate?) ANSWER (Wait at page break?) ANSWER (Go?) N (Type CA when ready, CD to abort) OK 166

Output (to) Terminal OK (Send Form Feeds?) N (Simulate?) ANSWER (Wait at page break?) ANSWER (Go?) Y 167

Output (to) Terminal OK (Send Form Feeds?) Y (Wait at page break?) ANSWER (Go?) N (Type CA when ready, CD to abort) OK 168

Output (to) Terminal OK (Send Form Feeds?) Y (Wait at page break?) ANSWER (Go?) Y 169

Output (to) Terminal File CONTENT OK (Send Form Feeds?) N (Simulate?) ANSWER (Wait at page break?) ANSWER (Go?) N (Type CA when ready, CD to abort) OK 170

Output (to) Terminal File CONTENT OK (Send Form Feeds?) N (Simulate?) ANSWER (Wait at page break?) ANSWER (Go?) Y 171

Output (to) Terminal File CONTENT OK (Send Form Feeds?) Y (Wait at page break?) ANSWER (Go?) N (Type CA when ready, CD to abort) OK 172

Output (to) Terminal File CONTENT OK (Send Form Feeds?) Y (Wait at page break?) ANSWER (Go?) Y 173

Playback Record (of Session from file) CONTENT (Simulate Recorded timing?) ANSWER OK 174

!TNLS! Print File OK 175

!TNLS! Print Journal (mail) OK 176

!TNLS! Print Rest OK 177

!TNLS! Print STRUCTURE (at) DESTINATION VIEWSPECS 178

Process (Commands from) STRUCTURE (at) DESTINATION OK 179

!DNLS! Release All (frozen statements) OK 180

!DNLS! Release Frozen (statement at) DESTINATION OK 181

Renumber Sids (in file) OK 182

Replace STRUCTURE (at) DESTINATION (by) CONTENT OK 183

Replace STRING (at) DESTINATION (by) CONTENT OK 184

Reset Archive (request for file) CONTENT OK 185

Reset Case (mode) OK 186

Reset !DNLS! Character (size for window) OK 187

Reset Content (Pattern) OK 188

Reset Link (default for file) OK 189

Reset Name (delimiters in) STRUCTURE (at) DESTINATION OK 190

Reset Temporary (modifications for file) OK 191

Reset !DNLS! Tty (window) OK 192

Reset Viewspecs OK 193

Set !DNLS! Character (size for window to) CONTENT OK 194

Set Content (pattern) Off OK 195

Set Content (pattern) On OK 196

Set Content (pattern) To CONTENT OK 197

Set External (Names Link File To:) CONTENT OK 198

Set Link (default for file to directory) CONTENT OK 199

Set Name (delimiters in) STRUCTURE (at) DESTINATION (left delimiter) CONTENT (right delimiter) CONTENT OK 200

Set Nls (protection for file) Private OK 201

Set Nls (protection for file) Public OK 202

Set Temporary (modifications for file) OK (really?) OK 203

Set Tenex (protection for file named) CONTENT Allow WHOM DOING (Finished?) ANSWER OK 204

Set Tenex (protection for file named) CONTENT Forbid WHOM DOING (Finished?) ANSWER OK 205

Set Tenex (protection for file named) CONTENT Private (for) WHOM OK 206

Set Tenex (protection for file named) CONTENT Reset OK 207

Set Tenex (protection for file named) CONTENT Set (to) CONTENT OK 208

WHOM = Public / Group / Self

DOING = All (access) / List (access) / Append (access) / Execute (access) / Write (access) / Read (access) / Set (to) CONTENT

Set !DNLS! Tty (simulation for window) BUG OK 209

Set Viewspecs VIEWSPECS OK 210

Show Directory (of) CONTENT OK OK 211

Show Directory (of) CONTENT OK OPTION (opt:) DIROPT (Finished?) ANSWER OK 212

Show Directory (of) OK OK 213

Show Directory (of) OK OPTION (opt:) DIROPT (Finished?) ANSWER OK 214

DIROPT = Sort (by) SRTOPT OK / Sort (by) Reverse SRTOPT OK / Group (by) GRPOPT OK / Group (by) Reverse GRPOPT OK / Verbose OK / Time (and Date of) Write OK / Time (and Date of) Read OK / Time (and Date of) First (Version Creation) OK / Time (and Date of) Last (Dump) OK / Time (and Date of) Creation OK / Time (and Date of) Archive OK / Size (in Pages) OK / Protect OK / No Extension (name) OK / No Versions (number) OK / Number (of) Accesses OK / Number (of) Versions (to keep) OK / Miscellaneous (Information) OK / Length (and Bytesize) OK / Last (Writer) OK / Everything OK / Dump (Tape Number) OK / Date (of) Write OK / Date (of) Read OK / Date (of) First (Version Creation) OK / Date (of) Last (Dump) OK / Date (of) Creation OK / Date (of) Archive OK / Account OK / Archive Tape (Numbers) OK / Archive Status OK / For (File) CONTENT OK / Undelete (Files Only) OK / Delete (Files Only) OK / All (Files) OK

SRTOPT = Write (Time and Date) / Size (in Pages) / Read (Time and Date) / First (Version Creation) / Number (of) Versions (to keep) / Number (of) Write / Number (of) Read / Number (of) Accesses / Length (in Bytes) / Last (Writer) / Dump Time (and Date) / Dump Tape / Delete (Status) / Creation (time and Date) / Bytesize / Archive Time (and Date) / Archive Tape / Alphabetical / Account

GRPOPT = Write (Date) / Read (Date) / Protect / Number (of Versions to Keep) / Last (Writer) / First (Version Creation) / Dump Tape / Dump Date / Delete (Status) / Creation (Date) / Archive Tape / Archive Status / Archive Date / Account / No (Grouping)

Show Disk (space status) OK 215

Show File Default (directory for links) OK 216

Show File Modifications (status) OK 217

Show File Return (ring) OK 218

Show File Size OK 219

Show File Status OK 220

Show Marker (list) OK 221

Show Name (delimiters for statement at) DESTINATION OK 222

Show Return (ring) OK 223

Show Viewspecs (status) OK 224

Show Viewspecs (status) OPTION Verbose OK 225

Simulate (terminal type) DEVICES OK 226

DEVICES = 37-tty / 35-tty / 33-tty / Execuport / Imlac / Lineprocessor / Nvt / Ti (Terminal) / Tasker

Sort Branch DESTINATION OK 227

Sort Group DESTINATION OK 228

Sort Plex DESTINATION OK 229

Start Record (of Session on file) CONTENT OK 230

Stop Record (of Session) OK 231

Substitute STRING (in) STRUCTURE (at) DESTINATION (STRING) CONTENT (STRING) CONTENT (Finished?) ANSWER OK 232

Substitute STRING (in) STRUCTURE (at) DESTINATION (STRING) CONTENT (STRING) CONTENT (Finished?) (Finished?) OK 233

Substitute STRING (in) OPTION (Filtered:) VIEWSPECS STRUCTURE (at) DESTINATION (STRING) CONTENT (STRING) CONTENT (Finished?) ANSWER OK 234

Substitute STRING (in) OPTION (Filtered:) VIEWSPECS STRUCTURE (at) DESTINATION (STRING) CONTENT (STRING) CONTENT (Finished?) (Finished?) OK 235

Transpose STRUCTURE (at) DESTINATION (and) DESTINATION OK 236

Transpose STRUCTURE (at) DESTINATION (and) DESTINATION OPTION (Filtered:) VIEWSPECS OK 237

Transpose STRING (at) DESTINATION (and) DESTINATION OK 238

Transpose STRING (at) DESTINATION (and) DESTINATION OPTION (Filtered:) VIEWSPECS OK 239

Trim Directory (no. versions to keep) CONTENT OK (really?) OK 240

Undelete File CONTENT OK 241

Undelete Modifications (to file) OK 242

Update File OK 243

Update File Compact OK 244

Update File Old (version) OK 245

Update File Rename (filename) CONTENT OK 246

Verify File OK 247

USEROPTIONS SUBSYSTEM

248

Control (characters for terminal) DEVICES OK (control character) Bc (character(s)) CONTENT (echo as) CONTENT OK 249

Control (characters for terminal) DEVICES OK (control character) Bs (character(s)) CONTENT (echo as) CONTENT OK 250

Control (characters for terminal) DEVICES OK (control character) Bw (character(s)) CONTENT (echo as) CONTENT OK 251

Control (characters for terminal) DEVICES OK (control character) Ca (character(s)) CONTENT (echo as) CONTENT OK 252

Control (characters for terminal) DEVICES OK (control character) Cd (character(s)) CONTENT (echo as) CONTENT OK 253

Control (characters for terminal) DEVICES OK (control character) Ignore (character(s)) CONTENT (echo as) CONTENT OK 254

Control (characters for terminal) DEVICES OK (control character) Insert (character(s)) CONTENT (echo as) CONTENT OK 255

Control (characters for terminal) DEVICES OK (control character) Litesc (character(s)) CONTENT (echo as) CONTENT OK 256

Control (characters for terminal) DEVICES OK (control character) Rpt (character(s)) CONTENT (echo as) CONTENT OK 257

Control (characters for terminal) DEVICES OK (control character) Sc (character(s)) CONTENT (echo as) CONTENT OK 258

Control (characters for terminal) DEVICES OK (control character) Sw (character(s)) CONTENT (echo as) CONTENT OK 259

Control (characters for terminal) DEVICES OK (control character) Tab (character(s)) CONTENT (echo as) CONTENT OK 260

DEVICES =
37-tty/35-tty/33-tty/Execuport/Imlac/Lineprocessor/Nvt/Ti/Tasker

Currentcontext (length) CONTENT OK 261

Entry Program CONTENT OK 262

Entry Subsystem SUBSYSTEM OK 263

SUBSYSTEM = Base/Programs/Sendmail/Useroptions/Calculator/
Supervisor/Syntaxgenerator

Exclude Program CONTENT OK 264

Exclude Subsystem SUBSYSTEM OK 265

SUBSYSTEM = Base/Programs/Sendmail/Useroptions/Calculator/
Supervisor/Syntaxgenerator

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Reserve Xdoc (numbers -- how many?) CONTENT (insert the number list?) Y (to follow) DESTINATION OK

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NLS-8 Command Summary

DEFINITIONS AND CONVENTIONS

This document assumes that you know the meanings of the basic NLS concepts. We here define special terms needed to understand the syntax of the command summary. Use the on-line Help command or the forthcomming hardcopy Users' Glossary for general concepts and functions of the commands.

Each command-word begins with a capital letter, and the rest is lower case. Recognition of command-words will depend on the users' recognition mode. Words all in upper case are variables, which stand for certain alternatives; they are either defined below, or are denoted following the commands in which they appear.

(...) noise words echoed by system; prompts are not shown

!...! our comments, not part of commands

/ means or

SUBSYSTEM = Base / Programs / Sendmail / Calculator / Useroptions
!Others are allowed sometimes, see the syntax for each command!

(These are commandwords)

STRING = Character / Word / Visible / Invisible
/ Number / Link / Text

(These are commandwords)

STRUCTURE = Statement / Group / Branch / Plex

(These are commandwords)

ADDRESS:
a FILEADDRESS and/or an INFILEADDRESS ending with an OK (or just an OK in TNLS for prior location). FILEADDRESS if used must come first. Elements of an INFILEADDRESS, if more than one are used, must be separated by <SP>.

DESTINATION:
In TNLS: DESTINATION = ADDRESS.
In DNLS: DESTINATION = BUG / ADDRESS
When referring to Group or Text, two BUGS or two ADDRESSES are needed.

SOURCE:
In TNLS: SOURCE = ADDRESS / OPTION TYPEIN
In DNLS: SOURCE = BUG / ADDRESS / OPTION TYPEIN
When referring to Group or Text, two BUGS or two ADDRESSES are needed.

CONTENT:
In TNLS: CONTENT = TYPEIN / OPTION ADDRESS
In DNLS: CONTENT = BUG / TYPEIN / OPTION ADDRESS
When refering to Group or Text, two BUGS or two ADDRESSES are needed.

TYPEIN = a string of characters from the keyboard, ending with an OK.
TYPEIN has a special form when a FILEADDRESS or Link or Ident is called for (You can tell from the noise words).

OPTION = the <CTRL-u> character

LEVEL-ADJUST:
a lowercase u or d or a string of lowercase u's and d's, optionally preceded by integers, terminated by a <SP> or OK, the difference between the number of u's and d's is taken as a level adjustment value. If you only type a <SP> or OK, the level will be the same.

VIEWSPECS:
Type a string of any of the viewspec codes, terminated by an OK, or just type an OK if you don't want to change the viewspecs.

ANSWER: Type y for yes or n for no
You usually may also type OK here; the command will be immediately executed in most cases.

OK = CA / OKINSERT / OKREPEAT

Default special characters:	DNLS	TNLS
CA: Command Accept: confirms a command or terminates a field within a command.	CA/ <CTRL-d>	CR/ <CTRL-d>
OKINSERT: At the end of a command in Base subsystem only, executes the command and starts "Insert Statement" command, defaulting current location. Then you do: LEVEL-ADJUST CONTENT OK. INSERT mode continues until you type CD. In all other cases, OKINSERT has no special meaning; it is equivalent to Command Accept.	<CTRL-e>	<CTRL-e>
OKREPEAT: At end of any command, executes it and repeats it from the beginning, defaulting each command-word until reaching the first field not a command-word that you can specify. Then you take over the command. REPEAT mode continues until you type CD. Used elsewhere, OKINSERT has no special meaning; it is equivalent to Command Accept.	<CTRL-b>/ ALTMODE	<CTRL-b>/ ESC/ALT
CD: Command Delete: aborts a command immediately, will also take you out of INSERT or REPEAT mode.	CD/ <CTRL-x>	<CTRL-x>

If a TYPEIN or a LEVEL-ADJUST or VIEWSPECS or an ADDRESS immediately precedes OK, the field's terminator serves as the OK character, so if you want to INSERT or REPEAT the command, terminate the TYPEIN, LEVEL-ADJUST, VIEWSPECS, or ADDRESS with the INSERT or REPEAT instead of CA.

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NLS-8 COMMAND SUMMARY

SRI-ARC

26 DEC 74

Augmentation Research Center

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NLS-8 Command Summary

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LINEPROCESSOR USERS' GUIDE

SRI-ARC

7 OCT 75

Augmentation Research Center

STANFORD RESEARCH INSTITUTE
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This revised and expanded Lineprocessor Users' Guide replaces an earlier document of the same name dated 31-DEC-74. It includes instructions for ELF users as well as TIP users, descriptions of newer models of Lineprocessor, and expanded sections on Copy Printer use and on Trouble-shooting.
The new Lineprocessor Users' Guide is available in hardcopy from FEEDBACK, the trainers, or ARC-ADG. This journalized version is primarily for historical purposes. An online version is being maintained in (Userguides,Lineprocessor,), which will be the source document for any further update/release.

INTRODUCTION 1

The Lineprocessor is a device that sits between certain alpha-numeric display terminals and a source of NLS computer service to allow use of the features of Display NLS. 1a

At a workstation equipped with a Lineprocessor you can view your file two-dimensionally, like looking at a page, and at the same time make changes anywhere in text by pointing to it on the screen with a rolling, pointing device called a mouse. A mouse and a small keyset allow typing in characters with one hand while moving the mouse with the other. A printer may be attached and function in parallel with normal display use. The Lineprocessor also does some simple computing that reduces the load on the communication lines and the central computer. 1a1

The Lineprocessor must be connected to a source of computer service. It may be wired directly to the computer or to a network connection, or the connection may be through a high-speed telephone line, with modem. The modem may use an acoustic coupler that cradles the receiver. Whatever the Lineprocessor is connected to is herein called the External Processor. 1a2

Detailed instructions follow for starting up DNLS under two different sets of conditions. Read the section called "TIP USER'S STARTUP" if your Lineprocessor is either directly wired, or connected by a modem without acoustic coupler, to a TIP (Terminal Interface Message Processor; see the TIP User's Guide for further information). Read the section called "ELF USER'S STARTUP" if your Lineprocessor is either directly wired, or connected by a modem without acoustic coupler, to a PDP-11 ELF system. If the devices are not connected yet, see the "Setup" procedures in Appendix B. 1a3

TIP USER'S STARTUP 2

STEP 1: Turn on the display with its ON-OFF switch. 2a

STEP 2: Turn the display to "online" or "receive" mode if this does not happen automatically; make certain that some dial or switch on the terminal is set to "full duplex" mode. 2b

STEP 3: On the Lineprocessor (the blue and white box), make sure all the sense switches (the slim silver toggles on the upper right) are down (See Figure 1 on page 8). 2c

STEP 4: If you have a telephone modem, turn it on. 2d

STEP 5: Turn on the Lineprocessor with the ON-OFF button toward the lower right and press the System Reset button. 2e

NOTE: At this point the display cursor (on most displays a small line like a hyphen) should move when you move the mouse on the table. If it doesn't, first press the System Reset button, center top on the Lineprocessor. If that doesn't work, check the connections described under "Appendix B, Setup". 2e1

The "error" light on the upper left corner of the Lineprocessor does not indicate a problem at this stage. If it comes on, turn it off by pressing the Error Reset button just to its left. The status lights (See Figure 1) should read: 0X00 (X means light ON; 0 means light OFF). 2e2

STEP 6: Type "@ i <SP> 25 <CR>". 2f

NOTE: You are to type the characters that are between the quote marks. <SP> indicates you are to hit the SPACE bar. The blank spaces are for readability only. <CR> indicates you are to hit the Carriage Return key. 2f1

Normally the character "@" (atsign) gets the attention of the TIP. The TIP starts listening when you hit "@" and stops listening when you hit Carriage Return or Linefeed. The atsign is called the TIP intercept character. "@" is inconvenient for the Lineprocessor. The 25 in the command to the TIP in STEP 6 makes <CTRL-Y> the TIP intercept character. <CTRL-Y> will remain your TIP intercept character until you turn off the machines, reset the TIP, the TIP malfunctions, or you set the intercept to some other character (see--Appendix B, "Trouble Shooting"). <CTRL-Y> is a control character, which you type by holding down the CTRL key (like a shift key) while typing the character after the hyphen. 2f2

STEP 7: Type "<CTRL-Y> o <SP> 43 <CR>" 2g

NOTE: 43 is the number of host Office-1; you may open a connection to other hosts by using other numbers. Only certain hosts run NLS. The number of host BBN-TENEXB is 49. 2g1

The TIP will respond by writing "open" and Office-1 will respond with its TENEX login message: 2g2

```
TENEX 1.3#.##.## OFFICE-1 EXEC 1.5# ##
@
```
2g2a

STEP 8: When you've seen the atsign "@" after the message, type: "USERNAME <SP> PASSWORD <SP> <CR>". 2h

NOTE: For "USERNAME" & "PASSWORD", fill in your access information. When the login is completed, you will see your job number and other information, and the TENEX @ will print again. 2h1

STEP 9: Now type "ter <ESC> li <ESC> <CR>". 2i

NOTE: This is to tell the system you are working at a Lineprocessor. <ESC> means to hit the ESCAPE or ALTMODE key on your keyboard. 2i1

STEP 10: When you see the atsign again, call NLS by typing "nls <CR>". 2j

NOTE: Your display will change to the specially formatted DNLS screen. You will see that your initial file has been loaded for you in the display area. When the display changes, the status lights should read: 0X0X (light 3 will come on). If not, push the System Reset button first, and if that doesn't work, give a <CTRL-C> to get back to TENEX and start again with STEP 9. If at any time the lights flash, wait until the Ep port's LPR light has stopped blinking (indicating that data flow from the external processor has stopped) and then push the System Reset button (illustrated on page 8). The lights should stop flashing, your display will disappear briefly, and then reappear working normally--with lights 0X0X. Push the button again if that doesn't happen (if there is still no response, read Appendix G, section--5g5). 2j1

TO LEAVE THE SYSTEM (and return later):
To end your DNLS session and also Logout from TENEX, type (in DNLS): "<SP> L <CA>". 2k

NOTE: This gives the Logout command in NLS which logs you out of both NLS & TENEX. <CA>--Command Accept--means to type your OK character, labeled "OK" or "CA" on the keyboard. 2k1

At this point you can leave the machines on and pick up at STEP 8 later by first typing <CTRL-C> (unless "Closed" has appeared on your screen in the meantime; in that case start at STEP 6); 2l

OR, you can switch off the Lineprocessor and display power. Turning off the Lineprocessor closes your TIP connection to Office-1 and resets your TIP intercept character to "@". For your next session, you will have to start again with STEP 1. Start over again whenever the machines have been turned off, no matter what was previously typed (If the machines were turned off while your job was still running, your job may be detached. Check if this is so before you do STEP 8 again; use the WHERE command described in paragraph "3." under--5g5b); 2m

OR, you can give the TIP command to close your connection to Office-1: "<CTRL-Y> c <CR>". This will not reset your TIP intercept character; you may pick up again at STEP 7; 2n

OR, you can reset the TIP, which closes your connection and resets the TIP intercept character, by typing "<CTRL-Y> r <CR>". To reenter the system, you will have to start with STEP 6. 2o

ELF USER'S STARTUP 3

STEP 1: Turn on the display with its ON-OFF switch. 3a

STEP 2: Turn the display to "online" or "receive" mode if this does not happen automatically; make certain that some dial or switch on your terminal is set to "full duplex" mode. 3b

STEP 3: On the Lineprocessor (the blue and white box), make sure all the sense switches (the slim silver toggles on the upper right) are down (See Figure 1 on page 8). 3c

STEP 4: Turn on the Lineprocessor with the ON-OFF button toward the lower right and press the System Reset button. 3d

NOTE: At this point the display cursor (on most displays a small line like a hyphen) should move when you move the mouse on the table. If it doesn't, first press the System Reset button, center top on the Lineprocessor. If that doesn't work, check the connections described under "Appendix B, Setup". 3d1

The "error" light on the upper left corner of the Lineprocessor does not indicate a problem at this stage. If it comes on, turn it off by pressing the Error Reset button just to its left. The status lights (See Figure 1) should read: 0X00 (X means light ON; 0 means light OFF). 3d2

STEP 5: Type <CTRL-C>
or hit CALL button on the Data Media keyboard. 3e

NOTE: <CTRL-C> (hold down the CTRL key--like a shift key--while typing the letter "c") gets the attention of the ELF. It responds with this login message: 3e1

```
XXXXXX ELF System ##.##.#
TYPE ? IF YOU NEED HELP.
@
```
3e1a

STEP 6: When you've seen the atsign "@" after the message, login to ELF; type "log <SP> USERNAME <SP> PASSWORD <CR>". 3f

NOTE: You are to type the characters that are between the quote marks. <SP> indicates you are to hit the SPACE bar. The blank spaces are for readability only. <CR> indicates you are to type the Carriage Return key. For USERNAME & PASSWORD, fill in your access information. ELF will give you a job number and then the atsign will print again. 3f1

STEP 7: Type "telnet <CR>". 3g

NOTE: This calls the TELNET subsystem, which provides access to hosts on the ARPA Network. You are in Telnet when a "#" prints at the left margin of your screen. 3g1

STEP 8: Type "es <ESC> <CTRL-Y> <CR>". 3h

NOTE: <ESC> means to hit the ESCAPE or ALTMODE key on your keyboard. 3h1

Normally the character <CTRL-Z> gets the attention of Telnet. Telnet starts responding when you hit <CTRL-Z> and stops responding when you hit Carriage Return. <CTRL-Z> is called the Telnet escape character. You will not be able to run the SNDMSG program at the host TENEX with <CTRL-Z> as the escape character, so this Telnet command will change the escape character to <CTRL-Y>. It will go back to <CTRL-Z> the next time you call Telnet. 3h2

The initial Telnet escape character may be permanently changed to <CTRL-Y> in the future. In that case, STEP 8 will no longer be necessary. 3h3

STEP 9: Type "office-1 <CR>". 3i

NOTE: This Telnet command requests a connection with the host Office-1; you may connect to other hosts by specifying other names. Only certain hosts run NLS. Type "bbnb <CR>" for host BBN-TENEXB. The host computer will respond with its TENEX login message: 3i1

```
TENEX 1.3#.##.## OFFICE-1 EXEC 1.5# ##
@
```
3i1a

STEP 10: When you've seen the atsign (this one is TENEX's ready signal), login to TENEX, type: "USERNAME <SP> PASSWORD <SP> <CR>". 3j

NOTE: You will see your a job number and other login information, and the TENEX @ will appear again. 3j1

STEP 11: Now type "ter <ESC> li <ESC> <CR>". 3k

NOTE: This is to tell the system you are working at a Lineprocessor. 3k1

STEP 12: Call NLS, type "nls <CR>". 31

NOTE: Your display will change to the specially formatted DNLS screen. You will see that your initial file has been loaded for you in the display area. When the display changes, the status lights should read: 0X0X (light 3 will come on). If not, push the System Reset button first, and if that doesn't work, give a <CTRL-C> to get back to TENEX and start again with STEP 11. If at any time the lights flash, wait until the Ep port's LPR light has stopped blinking (indicating that data flow from the external processor has stopped) and then push the System Reset button (illustrated on page 8). The lights should stop flashing, your display will disappear briefly, and then reappear working normally--with lights 0X0X. Push the button again if that doesn't happen (If there is still no response, read Appendix G, section--5g5). 311

TO LEAVE THE SYSTEM: 3m

STEP 13: To end your DNLS session and also Logout from TENEX, type (in DNLS): "<SP> L <CA>". 3n

NOTE: This gives the Logout command in NLS which logs you out of both NLS & TENEX. <CA>--Command Accept--means to type your OK character, labeled "OK" or "CA" on the keyboard. 3n1

STEP 14: Type: <CTRL-Y> 3o

NOTE: This returns you to Telnet. TELNET's # will print at the margin of your screen. 3o1

STEP 15: Type "quit <CR>". 3p

NOTE: You'll return to your local ELF. The ELF's @ will print at the margin. 3p1

STEP 16: Type "logo <CR>". 3q

NOTE: You log out from local ELF. Turn OFF Lineprocessor and display terminal;
OR, leave the machines on and pick up again later with STEP 5. 3q1

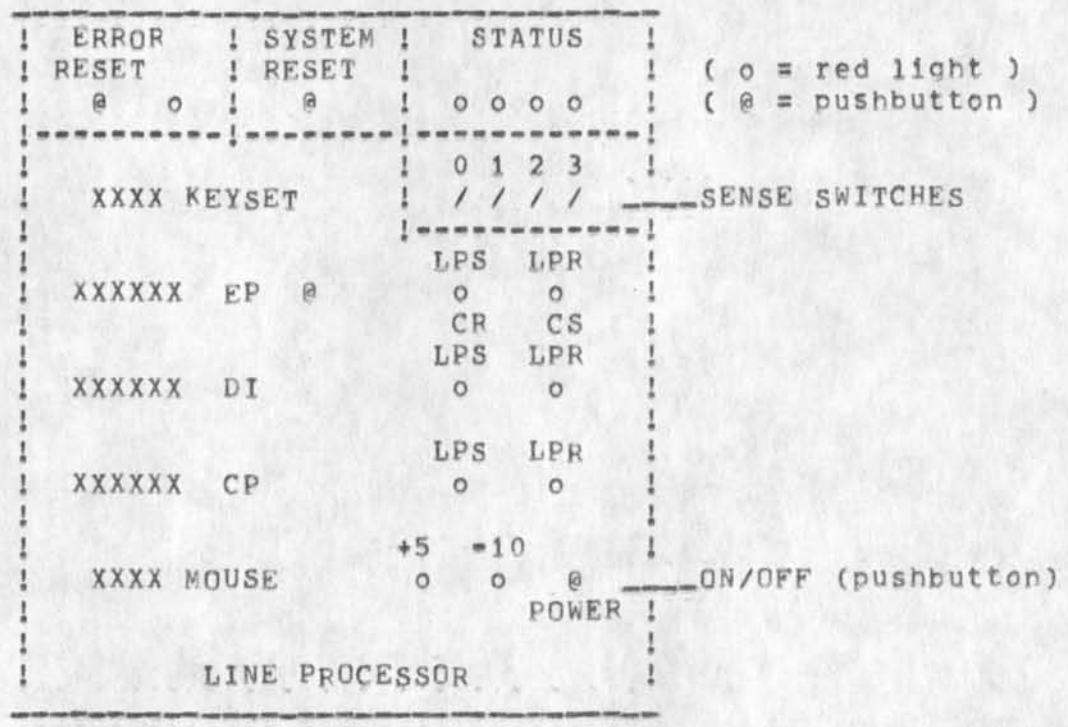

FIGURE 1 - LINEPROCESSOR

LEGEND:

CONNECTION PORTS	DATA FLOW LIGHTS
EP = External Processor	LPS = Lineprocessor Send
DI = Display	LPR = Lineprocessor Receive
CP = Copy Printer	CR = Computer Receive
	CS = Computer Send

SENSE SWITCHES	STATUS LIGHTS
0 = Printer Operation	0 = Printer Status
1 = Echo Test	1 = Lineprocessor Status
2 = Special Keys	2 = Echo Test
3 = Coordinate Mode	3 = Coordinate Mode

[Note that the Lineprocessor sends to and receives from both the display and the EP. The send and receive data flow lights for the display and the EP are to the right of their respective ports, send in the left column & receive in the right. The proper light flashes when a character is being transmitted.]

[See appendices E & F for more about Sense Switches and Status Lights.]

APPENDICES 5

Appendix A, Printer Operation [Doesn't work for ELF users] 5a

The copy printer (CP) port on the Lineprocessor is designed to produce a hard copy in parallel with normal workstation use. At present it is necessary to run a user program to get a printout. Running this program, called LPPRINT, allows a Lineprocessor user to print a sequential file on the hardcopy terminal attached to the copy printer port. 5a1

Pre-Operational Notes: 5a2

1. Be sure the Lineprocessor CP port speed matches the speed of the hardcopy terminal which you have connected to the port. To check this, open the top of the Lineprocessor. Facing upward near the center you will see a column of thumb switches with white numbers indicating the position; these are the switches that select the speed for each port. The third switch from the front panel is the switch for the CP port. Turn that switch to the appropriate one of the following positions: 5a2a

    Position 0 = 300 baud
    Position 1 = 600 baud
    Position 2 = 1200 baud
    Position 3 = 2400 baud
    Position 4 = 4800 baud
    Position 5 = 9600 baud

2. Sense Switch 0 (see Figure 1 on p.8) on the Lineprocessor controls the printing: DOWN = PRINT, UP = DON'T PRINT. Put the switch up when you want to interrupt the printing to fix jammed paper, position the paper, etc; then put the switch back down and your printing will continue (i.e, the characters are not lost). 5a2b

3. Most importantly, the LPPRINT program allows you to print only sequential files, not NLS files. Thus, before you begin the LPPRINT procedure below, output the NLS file you want to print to a sequential file. Some NLS commands which result in a sequential file are: 5a2c

    Output Sequential File
    Output Quickprint File
    Output Printer File
    Output Terminal File

To Run the LPPRINT Program: 5a3

First make sure you are in DNLS and in Lineprocessor mode (lights should read: 0X0X) and all sense switches are down. 5a3a

[Typing instructions: You type characters that are in upper case below, with these exceptions: OK means hit the CA or OK key; <CR> means to hit the Carriage Return key; do not type anything in parentheses.] 5a3b

Execute (command in) programs Load Program LPPRINT OK 5a3c

Execute (command in) Programs Run Program LPPRINT OK 5a3d

[At this point the program will prompt you with the words in parentheses:] 5a3e

(print file:) SEQUENTIALFILENAME <CR> 5a3f

[SEQUENTIALFILENAME indicates where you are to specify the name and extension of the sequential file you made, e.g., REPORT.TXT]

(on LP printer ok?) <CR> 5a3g

(device type:) DEVICECODE <CR> 5a3h

[For DEVICECODE you are to indicate the type of printer being used; type one of the following codes:
TI for Texas Instruments
TE for the GE Terminet
C for the Centronics 101
M for the Memorex 1240
See below for further comments on the devices this program supports.]

Upon typing the Carriage Return, light 0 should be on, the LPS light across from the CP port should begin blinking, and printing should start. 5a3i

Interruption of Printing: 5a4

To interrupt printing at any time, flip up sense switch 0. While switch 0 is up you may perform any NLS operation, or any TENEX operation if you reach TENEX by NLS's Goto Tenex command and return to NLS via TENEX's Quit command before you put switch 0 back down. When you put switch 0 down again, printing will continue. 5a4a

At times when many data transmission errors are occurring, the printer may stop (STOP, not just pause for a few seconds). Press the System Reset button, and printing should take up where it left off. Very occasionally, Reset will drop a few characters from what was printing. 5a4b

To STOP the Printing: 5a5

To stop printing altogether before the document is finished, run the program LPPRINT again, like so: 5a5a

First make sure you are in DNLS and in Lineprocessor mode (lights should read: 0X0X) and switch 0 is down.

Execute (command in) Programs Run Program LPPRINT OK

At this point the program will recognize that you are already printing and ask you if you want to stop. Type <CR>. 5a5b

This program supports only certain hardcopy devices investigated by us--currently the Texas Instruments 700 series, the GE Terminets, the Memorex 1240, the Centronics 101, and the Anderson/Jacobson 830 (For the AJ830, give TI for DEVICECODE when running the program on the previous page). Potentially, any ASCII terminal can be used as a copy printer; different terminals require different padding provisions in the LPPRINT program. If you want us to support a new printer device, you should see to it that ARC's Applications Staff gets necessary technical data to make these provisions in the program. 5a6

Appendix B, Setup 5b

When first setting up a display and Lineprocessor, perform these steps: 5b1

Plug display into "DI" port of Lineprocessor. 5b1a

Set the transmission rate of your display to 9600 baud. 5b1b

Set Lineprocessor "DI" speed to 9600 baud (under the top cover of the Lineprocessor, the 5th thumb switch from the front is the one for the DI port--turn it to position 5). 5b1c

Set display to full duplex (called "echo plex" on some terminals). 5b1d

Connect the line from the modem, TIP, or computer to the "Ep" port on Lineprocessor. 5b1e

Set the "EP" baud rate switches to the correct setting -- to match PDP-11 or modem or TIP connection speeds. 5b1f

Connect printer (if you have one) to "CP" port on Lineprocessor and set speed to correct value (see--5a2a). 5b1g

Connect mouse and keyset to Lineprocessor at the plugs marked on the Lineprocessor. 5b1h

Appendix C, Teletype Mode 5c

The mode of Lineprocessor operation that supports a two-dimensional display and the action of the mouse is called coordinate mode. The Lineprocessor-display combination can also simulate a teletype. A command to the host computer switches from one mode to the other. The command you gave in the Startup procedure, Terminal type Lineprocessor, activates coordinate mode. If you don't call for that, the Lineprocessor goes into Teletype mode. If you are in coordinate mode, the TENEX command Terminal Type 37 will return you to teletype mode. 5c1

Appendix D, Special Key Translation 5d

Because NLS uses certain control characters for common special functions (e.g. <CTRL-D> for Command Accept <CA>, and <CTRL-X> for Command Delete <CD>), the Lineprocessor translates convenient keys on some keyboards into these special function codes. The translation depends on the keyboard; we suggest you stick labels on the keys listed: 5d1

Data Media 5d2

Tilde is changed to Command Accept or OK [<CA> <CTRL-D>]. 5d2a

Capital _ is changed to Command Delete [<CD> <CTRL-X>]. 5d2b

Rubout is changed to Backspace Character [<BC> <CTRL-A>]. 5d2c

\ is changed to Backspace Word [<BW> <CTRL-W>]. 5d2d

Left brace is changed to Command Delete [<CD> <CTRL-X>]. 5d2e

Right brace is changed to _. 5d2f

Delta Data 5d3

RUBOUT [<CTRL-X>] is changed to Command Accept [<CA> <CTRL-D>]. 5d3a

Back quote is changed to Backspace Character [<BC> <CTRL-A>]. 5d3b

Left brace is changed to Backspace Word [<BW> <CTRL-W>]. 5d3c

Right brace is changed to OKREPEAT [<CTRL-B>]. 5d3d

Vertical bar is changed to Command Delete [<CD> <CTRL-X>]. 5d3e

NOT symbol is changed to RUBOUT [<CTRL-X>]. 5d3f

Hazeltine 5d4

Left brace is changed to Command Accept [<CA> <CTRL-D>]. 5d4a

Vertical bar is changed to Command Delete [<CD> <CTRL-X>]. 5d4b

Right brace is changed to Backspace Character [<BC> <CTRL-A>]. 5d4c

NOT symbol is changed to Backspace Word [<BW> <CTRL-W>]. 5d4d

Appendix E, Sense Switch Settings 5e

All sense switches are down in normal operation of NLS through the Lineprocessor. 5e1

Putting sense switch 0 up stops printer output (for changing paper, etc.) 5e2

Putting switch 1 up and then hitting the System Reset button starts a Lineprocessor Echo-test program running. Do this only with an ARC hardware person's help (See below--Appendix H, Hardware Checkout). 5e3

Putting sense switch 2 up inhibits the translations of special keys noted in Appendix D; the keys then have their normal meanings. 5e4

Putting sense switch 3 up inhibits transmissions of the location of the cursor to the computer. In this condition you may send control characters through the Lineprocessor to the TIP or TENEX as if you were at a teletype (See Appendix C). 5e5

Appendix F, Status Lights 5f

The lights on in normal operation are either lights 1 and 3 (for Display mode), or light 1 only (Teletype mode). 5f1

Light 0 on means the printer is "open". 5f2

Light 1 on means the Lineprocessor is running. 5f3

Light 2 is only on (i.e. status lights reading: 00X0) when the Echo-test program is running. This is a hardware checkout program ARC can run for you (See below--Appendix H, Hardware Checkout). 5f4

Light 3 on means the Lineprocessor is in "coordinate" mode. When light 3 is on you may send control characters to the External Processor as if there were no Lineprocessor. 5f5

If the lights start flashing, wait for the light labeled LPR to the right of the plug marked EP to remain off for at least a second, then push the System Reset button. If you were in NLS when this happened, the screen should be repainted for you. 5f6

Appendix G, Trouble Shooting 5g

Reset of TIP Intercept Character (for TIP users) 5g1

If you are using a TIP and break your connection with it or Reset the TIP (by typing "<CTRL-Y> R <CR>"), the intercept character for the TIP returns to "@". You must then repeat STEP 6. The number 16 instead of 25 in the command in STEP 6 would make <CTRL-P> the TIP intercept character instead of <CTRL-Y>. 5g1a

Sometimes your TIP intercept character (the character that interrupts what you're doing and reads your input as commands to the TIP) may be changed to atsign "@" by accident (such as a data error on the phone line). It is difficult to tell when this happens, but it will trouble you when you happen to hit "@" in the course of your work. Then the TIP will start reacting in unexpected ways to what you type. 5g1b

If your commands stop going in, or there is unrecognizable response to your input, or your normal intercept character fails, and there are no indications of other errors described below, test for this problem by typing a carriage return. Chances are that your preceding input will not be a valid TIP command, and therefore the TIP will respond with "BAD". When you see "BAD", repeat STEP 6 and then press the System Reset button on the Lineprocessor; you should be able to go on working. 5g1c

Error Lights 5g2

The error light on the upper left of the Lineprocessor indicates a hardware transmission error, which usually does not affect the operation of your programs. Hit the reset button next to it to turn it off. This light should not come on, but occasional errors are possible. Frequent errors indicate hardware failure or incorrect setup. 5g2a

Local Loop Test Button (on some later models of Lineprocessor) 5g3

To check if the cause of transmission failure is due to the External Processor or the local Lineprocessor, you can hold down the button just to the right of the EP connection while typing characters. Characters input bypass the EP - you are simply in a local loop. If the two data flow lights across from the EP port blink in response to your input, then the Lineprocessor probably is sending and receiving successfully. 5g3a

Halts 5g4

The Lineprocessor will detect certain kinds of errors and will halt, displaying an error number in the status lights (the error number flashes on and off at about 10 Hertz). 5g4a

The number indicates a type of transmission error or program error that prevents the Lineprocessor from continuing.

If in NLS, the user should wait until the "LPR" light on the "EP" connection stops flashing, and then push the System Reset button. NLS will restore the Lineprocessor status and the display.

If not in NLS, the user must issue the Terminal type Lineprocessor command (STEP 9 in the TIP Startup section above; STEP 11 in ELF Startup) to TENEX again and continue.

If trouble persists, call ARC personnel at (415)326-6200 extension 3630, or, if you can wait a day, send a message to FEEDBACK.

When the Host Crashes or your Connection is Broken 5g5

Symptoms: You are in DNLS and nothing seems to be happening on the screen; or the lights on the Lineprocessor are flashing; or you suspect that you are not connected to anything. 5g5a

TIP User's Response: 5g5b

Hit the System Reset button on the Lineprocessor, and wait up to one minute. If the screen repaints, continue as before. If it does not, type <CTRL-T> twice. If the answer is "RUNNING...", all your connections are good, the host is connected, and some process is running. Give it 5 minutes to complete and respond. If still nothing happens, then hit <CTRL-C> and do STEPS 9 - 10 of the TIP User's Startup instructions again and you should be in DNLS. If there was no response to your <CTRL-T>s, do just STEP 7 of the TIP User's Startup. The response should be one of the following:

1. "HOst not responding": This means that your host computer is down. Close your connection (type "<CTRL-Y> c <CR>") and try STEP 7 again later to see if you get response 3 below.

2. "CAN'T": Your connection is still open. Type a <CR> and hit System Reset button; if your screen does not come back, type "<CTRL-Y> c <CR>" and after "Closed" prints, try STEP 7 again to see if you get response 3 below.

3. The TENEX login message (see STEP 7): Do not login again immediately; to find out if your job is still there, first type "where <SP> USERNAME <CR>". If the response is "NOT LOGGED IN", then continue with STEP 8. If the response is "DETACHED JOB ##", attach to your disconnected job by typing "attach <SP> USERNAME <SP> PASSWORD <SP> <CR>". Then type <CTRL-C> and continue with STEP 9.

ELF User's Response: 5g5c

Hit the System Reset button on the Lineprocessor, and wait up to one minute. The response should be one of the following:

1. The screen repaints: continue as before.

2. The screen blanks out and the Telnet "#" appears on the left of the screen: Your host has most likely crashed, or you have been logged out. Do STEP 9 again and if it succeeds go on from there. If the connection is not made you can do STEPS 15 - 16 now and start completely over again later.

3. The screen blanks out and an "@" appears on the left of the screen: you're in TENEX, still logged in to the host; do STEPS 11 - 12 again.

4. The screen stays blank: Type <CTRL-T> twice.

a) If no response, your ELF has crashed. Try again later by hitting <CTRL-C>. When the ELF login message--or just its atsign--appears (see STEP 5 of ELF User's Startup), do STEPS 6 - 9 again. Do not login again immediately; to find out if your job is still there, first type "where <SP> USERNAME <CR>". If the response is "NOT LOGGED IN", then continue with STEP 10. If the response is "DETACHED JOB ##", attach to your disconnected job by typing "attach <SP> USERNAME <SP> PASSWORD <SP> <CR>". Then type <CTRL-C> and do STEPS 11 - 12 of the ELF User's Startup again.

b) If the answer is "RUNNING...", all your connections are good, the host is connected, and some process is running. Give it 5 minutes to complete and respond. If still nothing happens, then hit <CTRL-C> and do STEPS 11 - 12 of the ELF User's Startup again.

Directly Connected User's Response: 5g5d

Type a <CTRL-C>. If you get the TENEX atsign, do not login again immediately; to find out if your job is still there, first type "where <SP> USERNAME <CR>". If the response is "NOT LOGGED IN", then go ahead and login. If the response is "DETACHED JOB ##", attach to your disconnected job by typing "attach <SP> USERNAME <SP> PASSWORD <SP> <CR>". Then type <CTRL-C> and do the Terminal type Lineprocessor command and call NLS.

Appendix H, Hardware Checkout 5h

There is a hardware checkout procedure for measuring the error rate between the host and the Lineprocessor, called Echo-test. If you suspect many errors in your communication line, call ARC [(415)326-6200 extension 3630] and ask for someone to run the Lineprocessor's Echo-test program for you, with your help. A hardware person will probably ask you to put Switch 1 up and hit System Reset and give you further directions from there. 5h1

The Lineprocessor uses cards that include Programmable Read Only Memory (PROM). A two-PROM hardware test program is available from SRI-ARC for testing Lineprocessors. Operating instructions are included. A sequence of simple tests are provided to check out each aspect of the Lineprocessor and connected devices. 5h2

For more information on test programs, communicate with Martin Hardy at: 5h2a

SRI
333 Ravenswood Avenue
Menlo Park, California 94025
(415) 326-6200 ext.3921

or, send a message to FEEDBACK. 5h2b

The version number of the PROM in your Lineprocessor appears in the upper left hand corner of the screen as a letter and a number. If you are working through a TIP it shows briefly when you hit the System Reset button; if you are not working through a TIP it remains in place. From time to time ARC will issue updates, e.g. to accommodate new printing devices. ARC will notify you how to handle a change. 5h3

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(J24833) 6-OCT-75 20:03;;;; Title: Author(s): Stanford Research Institute /&SRI-ARC; Distribution: /US([ACTION]) KWAC([INFO-ONLY] A printed copy is being mailed to each architect) FEEDBACK([INFO-ONLY]) SRI-ARC([INFO-ONLY]) MAS2([INFO-ONLY]) PGL([INFO-ONLY]) MIKE([INFO-ONLY]) ; Sub-Collections: NIC US KWAC FEEDBACK SRI-ARC; Obsoletes Document(s): 22131; Clerk: JMB; Origin: < USERGUIDES, LINEPROCESSOR.NLS;2, >, 6-OCT-75 20:02 JMB ;;;;

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NSW Table of Contents

National Software Works PCP Documents

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HOST	(24581,)	"NSW Host Protocol"
EXEC	(24580,)	"The Executive Package"
FILE	(24582,)	"The File Package"
FILE-APP	(24813,)	"The File Package Appendix"
BATCH	(24583,)	"The Batch Job Package"
LLDBUG	(24579,)	"The Low-Level Debug Package"
BOXES	(24584,)	"Black Boxes in PCP"
RJE-MODEL	(24655,)	"The Remote Job Entry Model"
TBH	(24656,)	"Requirements on Tool Bearing Hosts"
NVTP	(xxxxx,)	"The Network Virtual Terminal Package"

NSW Table of Contents

(J24834) 26-DEC-74 18:03;;;; Title: Author(s): Jonathan B. Postel/JBP; Distribution: /JBP([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JBP; Origin: < POSTEL, NSWTOC.NLS;3, >, 26-DEC-74 16:04 JBP ;;;;####;

KIRK 26-DEC-74 18:03 24835

userguides,locator questions

Could you give me a link to the tenex references that are no longer in NLS form? I can't find what you're talking about. The NLS Code files have been referenced for at least a year. I think Dean first initiated that by providing a link to sysgd. 1

KIRK 26-DEC-74 18:03 24835

userguides,locator questions

(J24835) 26-DEC-74 18:03;;;; Title: Author(s): Kirk E. Kelley/KIRK; Distribution: /JHB([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: KIRK;

Procedure Call Protocol Documents

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PCP	(24459,)	"The Procedure Call Protocol"
PIP	(24460,)	"The Procedure Interface Package"
PSP	(24461,)	"The PCP Support Package"
PMP	(24462,)	"The Process Management Package"
PCPFMT	(24576,)	"PCP Data Structure Formats"
PCPHST	(24577,)	"PCP ARPANET Inter-Host IPC Implementation"
PCPFRK	(24578,)	"PCP Tenex Inter-Fork IPC Implementation"
PCPTNXINT	(24792,)	"Tenex PCP Process Internal Structure"

PCP Table of Contents

(J24836) 26-DEC-74 18:05;;;; Title: Author(s): Jonathan B. Postel/JBP; Distribution: /JBP([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JBP; Origin: < POSTEL, PCPTOC.NLS;5, >, 26-DEC-74 16:07 JBP ;;;;####;

DCE 26-DEC-74 18:36 24837

SRI-ARC CY74 Accomplishment List

A list requested by Licklider of all PI's -- contributed to by Watson, Norton and Feinler, and assembled/edited by Engelbart. The original was Output to Sequential File with VSPECS 'wynhA', and the resulting sequential file SNDMSG'd to Licklider at ISI, with alternate copies at OFFICE-1 and BBN-TENEX. Considerable trouble getting through to ISI, don't know if succeeded.

MAJOR R&D ACCOMPLISHMENTS FOR CALENDAR YEAR 1974 1

1) Released a Major New Version of NLS (NLS-8) 1a

The main design goals of this system were listed in last year's accomplishments. The significance of this year's accomplishment was their successful implementation, checkout, documentation, and user training. 1a1

NLS-8 from the user point of view consists of new capabilities for tailoring the interaction to user preferences through a User Profile database; a multilevel Help capability, providing prompting and optional showing of next-alternative command terms, command syntax, or relevant entry into a Help database with a simple query facility for full online documentation (Hardcopy documentation is derived from these facilities as well); greater consistency in command language forms; new commands where there was a strong need; and the ability to write sequences of commands and have them executed from a file. 1a2

From a system point of view, NLS-8 has a number of structural changes and ideas for specification of the user interaction at a high level, compilation of this specification into a data structure that in conjunction with the User Profile controls an interpreter. These ideas are being adopted in other ARPA programs such as the National Software Works (NSW), ISI message system, and are under consideration in ARPA programs under plan. 1a3

2) Released Line Processors to Support DNLS on Cheap, Commercial CRT Terminals 1b

Last year we designed a micro computer based box that would adapt a class of low cost commercially available alphanumeric CRT systems into true two dimensional devices for output (multi-window split screen operation) and allow use of two dimensional input pointing devices. This year a number of these devices are in field use supporting terminals of four different manufacturers. The Air Force through the NSW program will be exploring their use. The basic display techniques and communication protocols were published and have influenced other ARPA contractors in their design of terminal control systems. 1b1

The Line Processor is now being adapted to handle general graphics displays as well as offline cassette devices. 1b2

3) Designed Advanced Protocols for Resource Sharing on the ARPANET 1c

As part of the work for NSW, a new approach to protocols has been designed and thoroughly documented for inter-process and/or interhost communication and control. We call the approach a Procedure Call Protocol. It creates a distributed programming and process control environment. In effect it makes procedures and data structures of remote software systems as accessible to the programmer as those within his own system. 1c1

This approach will make it quite easy for new systems to be constructed from appropriate parts of existing systems and should greatly facilitate crossnet and cross process resource sharing. 1c2

4) Designed a Distributed-Service Frontend System 1d

A mini-computer system has been designed to provide a coherent command language environment for the multi-tool NSW system. We expect this approach to have considerable impact on system organizations of other systems to operate within an ARPANET like marketplace of information services. It will not only supply services to users to simplify the number of conventions they have to know when using a variety of ARPANET tools, but also provide services for tool builders to greatly simplify the task of specifying the user interface. The Frontend will provide all terminal handling and command parsing facilities and thus decrease the cost of providing new tools. 1d1

The initial Frontend will be implemented on a PDP-11 running the ELF operating system. We have developed a cross compiler and debugging environment for use of our system programming language L-10 for use with the PDP-11. 1d2

5) Designed a Distributed-Service Operating System Interface 1e

One important goal of the work ARC is doing on NLS and the NSW Frontend is to provide mechanisms to simplify and decrease the cost of movement of the programs developed to a variety of machines and operating system environments. To this end we have designed a virtual environment that all application level programs will see as their operating System Interface (OSI). The OSI will in turn contain the actual calls on a given operating system. 1e1

6) Designed Extensions for the NLS File System 1f

Designs have been completed that will enable NLS to support text and other media such as graphics, voice and so forth in an integrated fashion. Many systems support text, or speech, or

graphics, but this development will open the way for tool developments that utilize mulltimedia. 1f1

7) Designed Access Support for R&D Software Workers from ARPANET Sources 1g

We made the plans and ordered the hardware necessary to allow us to obtain the computer needed by our development staff from ARPANET hosts. 1g1

The significance of this development is that it is the first case of a fairly large project giving up its local computing capacity to obtain equivalent capacity through the Network, from sites specializing in providing service. 1g2

NOTE: THE FOLLOWING ITEMS ARE OF A DIFFERENT NATURE FROM "HARD" R&D ACCOMPLISHMENTS, THEY WOULD BE OF VALUE IN AN ARPA REVIEW MAINLY IF THERE WAS NEED FOR EXPLICIT EXAMPLES OF THE NEWER KIND OF INFORMATION SERVICES THAT WERE BOTH NEEDED BY, AND FACILITATED BY, THE APPLICATION OF A COMPUTER NETWORK. 2

MAJOR APPLICATION ACCOMPLISHMENTS 3

1) Launching the AKW Utility -- A customer-supported service was inauguated in January '74, providing advanced ARPA-developed computer tools and application techniqes from a centrally operated computer facility. An important part of the service is the unique support provided to the collborative work among distributed clientele. 3a

We feel that this is an important accomplishment, to provide for exploratory application by DoD clientele these very-advanced, ARPA-developed techniques that would be prohibitively expensive to install and support if distributed among the clients' local computer facilities. It is significant that, not only are the computer services being delivered over the Network, but a great deal of the collaborative counseling for user development is supported by the Network's advanced communication facilitation. 3a1

Here, the primary objective is one set by SRI, but ARPA's support was very important:
a) Some direct ARPA support came during this past year from its purchase of approximately half of the service capacity (while perhaps not from ARPA R&D funding, nonetheless a candidate for ARPA-supported accomplishment).
b) The Utility is built directly on top of two of ARPA's past R&D investments -- i.e. in the ARPANET and in ARC's Augmented Knowledge Workshop techniques. 3a2

2) Supporting the Report Development for the DoD Internetting Study Group -- a large report (over 300 typewritten pages) was developed by at least twelve heavy contributors, selected from among the larger Study Group. Many successive drafts, through heavy review and revison cycles, with most of the clerical work being done by newly trained secretaries provided by DCA using ARPA slots at OFFICE-1. 3b

This was an experiment on our part; apparently successful insofar as customer satisfaction is concerned. The report would have been extremely difficult to develop in the time frame allowed with any other means. High-quality photo-composition service via the Utility will produce the final edition. 3b1

MAJOR SERVICE ACCOMPLISHMENTS BY THE NETWORK INFORMATION CENTER (NIC) 4

1) Arpanet Directory 4a

Two issues of the Arpanet Directory were published and distributed in 1974, one in January and one in June. The format was revised to one that was more compact and easier to use. 4a1

2) Official Hostnames List 4b

The NIC maintained the Official Arpanet Hostnames List throughout 1974. This involved identifying new hosts on the network, contacting the host and getting a liaison appointed, establishing an official hostname, and collecting necessary data concerning computer, operating system, IMP/HOST combination, host address, and related information. The hostnames are made available through a machine-readable text file, <NETINFO>HOSTS.TXT, via ftp from OFFICE-1. 4b1

4) Protocol Notebook 4c

The Protocol Notebook was brought up to date in June and distributed to those known to have the full ringbinder Protocol Notebook. Since June of 1974 there has been no official protocol Notebook distribution as the NIC had distributed all of its copies and funds were not available to produce more. During this interval the NIC has functioned as an Interlibrary Loan distribution center for the separate RFCs that made up the old Protocol Notebook. 4c1

The lack of a Protocol Notebook was causing considerable hardship to new hosts coming onto the network, so in November

all existing protocols and some proposed protocols were gathered together. These have been published into a best-effort document and will be deposited with the Defense Documentation Center and ultimately with the National Technical Information Service where copies may be purchased by persons requesting a copy. The volume is being produced now and should be in the hands of DDC by early January 1975. 4c2

5) Resource Notebook 4d

New information was collected from all the hosts in May of 1974 with approximately 80-90% responding. Much of this was entered into online files and some was sent for hardcopy publication. There are now over 120 hosts with more being added continuously. It was agreed that the NIC would use Dec 1974 as a cut-off date for the upcoming issue of the Resource Notebook. It is now being reworked, and will hopefully be produced in hardcopy in a new compact handbook format in early 1975. Along with the usual host write-ups, work has included collection of available software packages and user programs available at the various server hosts. This information should be useful to new users of the network. 4d1

3) Official Liaison List 4e

Until June of 1974 the NIC maintained the Network Liaison Group as a subset of its Identification File. From this file hardcopy listings were distributed to all requestors. Since June 1974 when hardcopy distribution was halted, the NIC has maintained online, machine-readable official Liaison files at Office-1 for access by an Arpanet user via ftp. <NETINFO>LIAISON.TXT, contains names, addresses, hosts, phone numbers and network mailbox addresses, and <NETINFO>LIAISON-SNDMSG.TXT, contains listings of network mailbox addresses only, organized so as to be usable to send sndmsgs to all network liaison with network addresses. This has become one of the major distribution lists on the ARPANET. 4e1

6) RFC Distribution 4f

Until June 1974 RFCs were distributed to a large number of network personnel in hardcopy by the NIC. Since June, hardcopy distribution has ceased due to cuts in funding. It is now requested that all new RFCs be produced as online files. These are being distributed online to requestors. Copies are being maintained by the NIC at OFFICE-1 for access by ftp by any network user. Plans are underway to make the hardcopy available as soon as a suitable distribution and charging mechanism is worked out. 4f1

7) Reference Data Bases 4g

The NIC maintains several other online reference data bases, not all of which are available to the user community. The largest of these is the Resource Handbook data base available to users from OFFICE-1 via the NIC/QUERY language. In addition, the NIC assists in maintaining the ARC Identificiation System and also maintains a 100 page reference file called HOSTADDR-MASTER. This is used for hostname reference and is also used to maintain much of the information in the Arpanet Directory. It is not available to the general public. Each write-up for the Resorce Handbook is maintained online as a separate file for editing and viewing purposes. Work files (totaling over 200 files) are maintained at SRI-ARC by the NIC and finished versions are shipped to OFFICE-1 for viewing. Another large programs file, not yet available to the public, is also being built. 4g1

SRI-ARC CY74 Accomplishment List

(J24837) 26-DEC-74 18:36;;;; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /SRI-ARC([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DCE; Origin: < ENGELBART, ARC-ACCOMP.NLS;3, >, 26-DEC-74 17:34 DCE ;;;;####;

DCE 27-DEC-74 08:39 24838

To JAKE re a Licklider question on official host naming

Jake: Let me know soon if there is a reasonable answer for Lick (and the rest of his distributees??) -- cf. the following copy of a SNDMSG I just recieved: 1

L27-0420 LICKLIDER: Host-Name Confusion
Distribution: CRAY AT I4-TENEX, SUTHERLAND, ENGELBART AT SRI-ARC, licklider
Sent: 27-DEC-74 0721-EST 2

Just now I noticed that I could not send a message to Cray at the address given in the 'from' field of a message I received from him. I was sending from BBN, TENEX C, I think, (anyway, from BBN) and 'KI4-TENEX' was not recognized as a host name. 'I4-TENEX' was recognized (but is it the same machine?). SRI-ARC keeps the official list of host names. Let me ask you to get together on this matter. 2a

Regards 2b

Lick 2c

DCE 27-DEC-74 08:39 24838

To JAKE re a Licklider question on official host naming

(J24838) 27-DEC-74 08:39;;;; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /JAKE([ACTION]) JCN([INFO-ONLY]) RWW([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DCE;

JHB 27-DEC-74 08:53 24839

Pre-Xmas announcement of present

Missed you on my brief visit Mon, but I'm still in the area (using your terminal--thanks) and wiill be back to return terminal. If yo would liike to get together for any NLS discussions, just let me know. Merry Holidays to the Kennedys.

JHB 27-DEC-74 08:53 24839

Pre-Xmas announcement of present

Congratulations to the Chriistians...and to the new(?) grandfather!! There's a restaraunt in Boston called the Noname restaurant. Dont no about the same practise for people. 1

JHB 27-DEC-74 08:53 24839

Pre-Xmas announcement of present

(J24839) 27-DEC-74 08:53;;;; Title: (Unrecorded) Title:
Author(s): James H. Bair/JHB; Distribution: /EJK([INFO-ONLY]) ;
Sub-Collections: SRI-ARC; Clerk: JHB;

JHB 27-DEC-74 09:08 24840

userguiide,locator questions

My question was not about the location of the Tenex manual, it was about the changes made to the locator: what exactly they are and why they were made, particularly the long standing liisting of the NLS code files. Were/are you responsible for this? POOH made the last changes. She should answer the question?? 1

userguiide,locator questions

(J24840) 27-DEC-74 09:08;;;; Title: (Unrecorded) Title:
Author(s): James H. Bair/JHB; Distribution: /KIRK([ACTION]) KIRK([
INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JHB;

National Software Works PCP Documents

Table of Contents

HOST	(24581,)	"NSW Host Protocol"
EXEC	(24580,)	"The Executive Package"
FILE	(24582,)	"The File Package"
FILE-APP	(24813,)	"The File Package Appendix"
BATCH	(24583,)	"The Batch Job Package"
LLDBUG	(24579,)	"The Low-Level Debug Package"
BOXES	(24584,)	"Black Boxes in PCP"
RJE-MODEL	(24655,)	"The Remote Job Entry Model"
TBH	(24656,)	"Requirements on Tool Bearing Hosts"
NVTP	(24827,)	"The Network Virtual Terminal Package"

NSW Table of Contents

(J24841) 27-DEC-74 10:29;;;; Title: Author(s): Jonathan B. Postel/JBP; Distribution: /JBP([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JBP; Origin: < POSTEL, NSWTOC,NLS;5, >, 27-DEC-74 10:28 JBP ;;;;####;

KIRK 27-DEC-74 14:30 24842

Locator answers to JHB's 'userguiide,locator questions' > <24840,>
responding to my 'userguide,locator questions' <24835,>

Jim, Although other people make changes to locater (POOH updates userguides listings, Jeff keeps the catalog links working, etc.) I have re-acquired the job of coOrdinating it. Please feel free to address questions about it to me and I will keep you informed of changes. In "Changed Userguides Locator. ?" <24816,> you said "the Tenex references are no longer in NLS form". Could you provide a link to one or an example as I cant find what you are talking about? 1

KIRK 27-DEC-74 14:30 24842

Locator answers to JHB's 'userguiide,locator questions' > <24840,>
responding to my 'userguide,locator questions' <24835,>

(J24842) 27-DEC-74 14:30;;;; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /JHB([ACTION]) POOH([INFO-ONLY]) DVN([INFO-ONLY
]) JOAN([INFO-ONLY] for dirt notebook) ; Sub-Collections: SRI-ARC;
Clerk: KIRK;

Network Journal Delivery

This is a suggestion for the text of the message sent to notify people of network journal delivery. 1

Date: 27 Dec 74 1435-PST
From: JOURNAL at SRI-ARC
Subject: [title]
To: POSTEL at SRI-ARC, WHITE at SRI-ARC

The NLS Journal document: [number]
Titled: [title]
by: [author full name]
whose SNDMSG address is: [authors sndmsg address]
and whose ident is: [author ident]
is now available as an online text file in the standard document format number 1 with the
pathname: [pathname]
the document is [count] pages long. 1a

Note that the entire message must conform to the standards of RFC561 (18516,) and that the file pointed to by the pathname must be an output processed textfile in format 1 of the standard file formats specified in RFC678 (31524,). 2

Network Journal Delivery

(J24843) 27-DEC-74 16:28;;;; Title: Author(s): Jonathan B. Postel/JBP; Distribution: /FEED([ACTION]) FDBK([ACTION]) NPG([INFO-ONLY]) ; Sub-Collections: SRI-ARC FDBK NPG; Clerk: JBP; Origin: < POSTEL, TEMP.NLS;2, >, 27-DEC-74 16:12 JBP ;;;;####;

CHI 27-DEC-74 17:22 24844

Some recommended ways of handling some problems that have arisen in the NLS Frontend-Backend Split

The following are some suggested ways of handling some Frontend-Backend facilities withing the NLS-9 and NSW context. 1

Process commands and record/playback session 1a

FE: 1a1

We make available in the CML a construct of the form INPUT FROM fn(args). The frontend will call fn and expect to get a buffer of input characters from the fn for each co-routine return it makes util it returns an End-of-File indication. When this happens, the FE will again read chars from the user's terminal. 1a1a

The FE may make available some debugging facilities so tat the user may STEP through the simulated user input. In addition, we could establish some conventions so hat certain characters or character string might cause the FE to interact with the real user for a while, etc. 1a1a1

ALSO allow OUTPUT TO fn() for recording sessions, etc. 1a1b

BE: 1a2

Provides a PCP-callable function that co-routine returns buffers of chars (say 200) to be used as a simulation of user input. Likewise, provide a recording fn. 1a2a

Terminal type simulation 1b

FE: 1b1

This will be handled almost entirely in the FE. The CML will allow a declaration of a fn to call in a BE to inform it of terminal class and window dimensions, etc. 1b1a

BE: 1b2

BE will provide a routine for setting teminal class. This will also be used for screen sharing. 1b2a

terminal linking (screen sharing) 1c

FE: 1c1

This is handled mostly in the FE. Whenever a tool tries to manipulate the user's terminal (via calls on fns in FE) then

the FE communicates this to the other FE's which perform the same action on its user's terminal. 1c1a

BE: 1c2

IF the BE cares about this happenning (NLS will) then it should provide a fn (describred above) which the FE will call when this is happening so the BE can adjust to the new conditions. 1c2a

This will be mostly a problem of formatting things on the terminal so that it fits on the logical intersection of the terminals being linked. 1c2a1

abort errors 1d

FE: 1d1

This is a standard PCP abort return from a remote fn. FE will display any msg and reset. 1d1a

BE: 1d2

BE should use PCP abort return to kill the command. 1d2a

status messages to user 1e

FE: 1e1

CML will provide a construct of the form SHOW (param), where param may be a variable or a fn call. If it is a fn call the a co-routine return is permitted and will allow te msg to be presented to the user piecemeal. The FE could instruct the fn to continue or stop on each co-routine resume. 1e1a

BE: 1e2

Fns just return the message as a result. 1e2a

TTY simulation window 1f

FE: 1f1

This is handled entirely by the FE and uses the window priority sceme provided by the OSI to control whether or not it is displayed. 1f1a

Some recommended ways of handling some problems that have arisen in the NLS Frontend-Backend Split

User programs that interact with the user. 1g

FE: 1g1

These are tools and are no different than other tools from the FE's viewpoint. 1g1a

BE: 1g2

The NLS BE will provide a fn to load a user program BE and make its external fns callable thru PCP. 1g2a

NDDT 1h

This will be replaced by KEV's debugger and will look very much like a normal tool with a grammar and BE's. When it is envoked, the CLI will be restarted to process the debugger grammar. when the control is returned to the original tool, the CLI will contiinue parsing that tool's grammar. The debugger will probably be implemented like IDDT. 1h1

BIT table manipulation 1i

This will be part of the OSI. 1i1

name area and viewspec area 1j

FE: 1j1

These areas do not exist. The space on the screen may be allocated by a parse fn and maintained by parse fns but he FE takes no responsibility for them and does not know they exist. 1j1a

BE: 1j2

No direct interaction with tese areas,. 1j2a

Subsystem/tool name area 1k

FE: 1k1

May maintain such a window. 1k1a

BE: 1k2

Doesn't know it exists. 1k2a

CHI 27-DEC-74 17:22 24844

Some recommended ways of handling some problems that have arisen in the NLS Frontend-Backend Split

(J24844) 27-DEC-74 17:22;;;; Title: Author(s): Charles H. Irby/CHI;
Distribution: /NPG([INFO-ONLY]) RWW([INFO-ONLY]) ;
Sub-Collections: SRI-ARC NPG; Clerk: CHI; Origin: <
NSW-SOURCES, SPLIT-NOTES,NLS;1, >, 27-DEC-74 17:21 CHI ;;;;####;

KIRK 28-DEC-74 10:11 24845

Bad bug in Copy or Move STRING across split screens

This is in running nls. Whenever a copy or move STRING command is used across horizontally split screens, the destination window gets recreated at an apparantly random place in the file, not where you were when you made the edit. Also the return ring no longer remembers the original place. DvN says when using vertically split screens, he gets in a loop every time and has to reset. This is probably more a function of the different files than different splits. Taking a look at pscopy, I notice dpset is called before curmkr is updated and ccoptex is called... 1

KIRK 28-DEC-74 10:11 24845

Bad bug in Copy or Move STRING across split screens

(J24845) 28-DEC-74 10:11;;;; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /FEED([ACTION]) JDH([ACTION]) DVN([INFO-ONLY])
BUGS([INFO-ONLY]) ; Sub-Collections: SRI-ARC BUGS; Clerk: KIRK;

DVN 28-DEC-74 14:01 24846

Request for Permission to Journalize Old Messages

I am pigeonholing some of my old sendmessages. Do either of you have any objection to my journalizing what's in (vannouhuys,holdmess,old) under the Title that is the first statement of the branch? 1

DVN 28-DEC-74 14:01 24846

Request for Permission to Journalize Old Messages

(J24846) 28-DEC-74 14:01;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /KIRK([ACTION]) JMB([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: DVN;

DVN 28-DEC-74 14:04 24847

Request for Permission to Journalize Old Messages

I am pigeonholing some of my old sendmessages. Do you have any objection to my journalizing what's in (vannouhuys,holdmess,dialog) under the Title that is the first statement of the branch? 1

DVN 28-DEC-74 14:04 24847

Request for Permission to Journalize Old Messages

(J24847) 28-DEC-74 14:04;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /DLS([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: DVN;

DVN 28-DEC-74 17:34 24848

ROUGH DRAFT NSW Documentation Work Breakdown and Time Allocation

I am sending out this draft to a few people mainly in the hope it will stir up enough information to make a better draft possible. If any of you believe I have omitted, misdivided, or misallocated anything, please let me know. 1

HELP(S)
By helps I mean covering a given subject in a help file, whether as a separate file or disperesed in a larger file. 2

NLS's New File structure. [1wk] 2a

COBOL Interface [2wks] 2b

Graphics [2wks] 2c

DPCS [4wks] 2d

Includes getting the present system in and figuring out how to do that. 2d1

Sequential I/O [1wk] 2e

Mail I/O [1wk] 2f

NLS for "Inexperienced Users" [2wks] 2g

(Needs to be very good.) 2g1

Works Manager [3wks] 2h

Not a lot of material, as I understand it, but unfamiliar ground. 2h1

Command Summaries 3

COBOL Interface [.5wk] 3a

DPCS [.5wk] 3b

-Possibly including Official User Programs. 3b1

NLS "For Inexperienced Users" [.5wk] 3c

Works Manager [1wk] 3d

Primers 4

COBOL Interface [1wk] 4a

Works Manager [2wk] 4b

Graphics [2wks] 4c

NLS "For Inexperienced Users" [2wks] 4d

May be a re-write of the existing TNLS-8 Primer, in which case will take lest time. 4d1

Discursive Intrductions 5

COBOL Interface [.5wk] 5a

Graphics [1wk] 5b

DPCS [1wk] 5c

New features only. 5c1

Mail I/O [1wk] 5d

NLS for "Inexperienced Users" [1wks] 5e

(Needs tc be very good, may be rewrite of Introduction to NLS.)) 5e1

Works Manager [2wks] 5f

Not a lot of material, as I understand it, but unfamiliar ground. 5f1

Scenarios
(other than primers, may be more than one to a subject; here is where we would give ground first on priority.) 6

COBOL Interface [1wk] 6a

DPCS [1wk] 6b

New features only. 6b1

Sequential I/O [1wk] 6c

Mail I/O [1wk] 6d

Works Manager [1wks] 6e

Total person weeks: 34 7

ROUGH DRAFT NSW Documentation Work Breakdown and Time Allocation

The Labour Pool From Janaury till July 8

POOH: January taken up by keeping up the shelves, finishing Glossary. Half time from then on maintaing Help and the shelves of documentation. Leaves 11 weeks free. 8a

DvN: Will be spending a time decreasing irregularlly from 75% to 25% on NSW documentaton. Planning, review, and Special projects will take up that time. 8b

KIRK. Working Half Time on Documentation including reprogramming. January takn up with reprogramming and running Glossary stuff. Leaves 5weeks 8c

XXX who wll be hired. Presumably can work close to full time on these projects. It will be the end of January before she can be useful. Leaves 22 weeks. We are depending on this new person. 8d

Total:36 weeks. That's cutting it pretty fine if there are schedule problems. 8e

Some Problems and Questions 9

To explain our dcumentation system to MCA. 9a

How to we creat the NLS-9 Help file(s), by beginning to build them up now, by a massive edit of NLS-8 help in May (seems a natural way, but hard on the Schedule), or some othr way? 9b

Do we set up a way for information about other people's tools to become available through the Works Manager's Help or some extension of it? Do we propose that for the NSW follow on? 9c

Note that Charles has proposed dividing NSW Help into separate files to confrom to NSW's limitations on who gets to use what. This will mean some extra work. 9d

Schedule: In don't understand the the scheduling of work on these parts of the system well enough to offer a documentation schedule yet. I hope to learn more in response to this draft. I do know that if they are all finished and need to be docuemented on June 1 we are in trouble. 10

DVN 28-DEC-74 17:34 24848

ROUGH DRAFT NSW Documentation Work Breakdown and Time Allocation

(J24848) 28-DEC-74 17:34;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /JOAN([ACTION] dirt and dpcs notebooks please) RWW([INFO-ONLY]) KIRK([INFO-ONLY]) POOH([INFO-ONLY]) JMB([INFO-ONLY]) EKM([INFO-ONLY]) CHI([INFO-ONLY]) ; Sub-Collections: DIRT SRI-ARC DPCS; Clerk: DVN; Origin: < VANNOUHUYS, NSWDOC,NLS;1, >, 28-DEC-74 17:31 DVN ;;;;####;

KIRK DVN 28-DEC-74 17:36 24849

Informal Weekly Documentation Report

KIRK: Wrote help descriptions for user-programs. They are in the review process. Fixed several "bugs" in help. 1

JMB: Revised Command Summary before sending to COM. Some commands, particularly Help commands, require editing after they come out of the system. 2

POOH: Continued work on NLS Glossary. 3

DVN: 4

Made rough DRAFT NSW documentation work breakdown and loading. 4a

Lineprocessor Usuer's Guide: Copies ready to be proofed for printer errors. 4b

Preface to NLS: Waiting for Application's Review 4c

Introduction to NLS (replacing the Howto branch of help):Waiting to br written. 4d

TNLS Addressing: It is on me to repsond to RWW's review. 4e

COM: 4f

Viewspec cards went to the printer 4f1

Martin Hardy's paper Microprocessor Techology is still waiting for DDSI to get stick fonts working. 4f2

The Sent revised Command Summary to DDSI. 4f3

The TNLS-8 Primer awaits my attention for COM printing. 4f4

Ken Victor's paper went back fo a second try at COM. 4f5

Talked on the phone to a number of possible aplicants for documentation work here; asked several to fill in applications. 4g

Worked on organizing and editing final report. 4h

KIRK DVN 28-DEC-74 17:36 24849

Informal Weekly Documentation Report

(J24849) 28-DEC-74 17:36;;;; Title: Author(s): Kirk E. Kelley, Dirk H. Van Nouhuys/KIRK DVN; Distribution: /JOAN([ACTION] dirt notebook please) DIRT([INFO-ONLY]) ; Sub-Collections: SRI-ARC DIRT; Clerk: DVN;

Procedure Call Protocol Documents

Table of Contents

	(20391,)	"Some Thoughts on System Design to Facilitate Resource Sharing"
PCP	(24459,)	"The Procedure Call Protocol"
PIP	(24460,)	"The Procedure Interface Package"
PSP	(24461,)	"The PCP Support Package"
PMP	(24462,)	"The Process Management Package"
PCPFMT	(24576,)	"PCP Data Structure Formats"
PCPHST	(24577,)	"PCP ARPANET Inter-Host IPC Implementation"
PCPFRK	(24578,)	"PCP Tenex Inter-Fork IPC Implementation"
PCPTNXINT	(24792,)	"Tenex PCP Process Internal Structure"

PCP Table of Contents

(J24850) 30-DEC-74 10:17;;;; Title: Author(s): Jonathan B. Postel/JBP; Distribution: /JBP([INFO-ONLY]) ; Clerk: JBP; Origin: < POSTEL, PCPJUNK.NLS;1, >, 30-DEC-74 10:04 JBP ;;;; <GJOURNAL>24836.NLS;1, 26-DEC-74 18:32 XXX ;;;; Title: Author(s): Jonathan B. Postel/JBP; Distribution: /JBP([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JBP; Origin: < POSTEL, PCPTOC.NLS;5, >, 26-DEC-74 16:07 JBP ;;;;####;

####;