WSD 2-APR-71 12:18 6200

Trial Use of Journal System

<JOURNAL>6200.NLS;2, 2-APR-71 19:55 WSD ;Title: Author(s): William S. Duvall/WSD; Distribution: Charles H. Irby, Harvey G. Lehtman, Jeanne B. North, James C. Norton, Bruce L. Parsley, Richard W. Watson/CHI HGL JBN JCN BLP RWW; Keywords: Trial Journal; Clerk: WSD;

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Trial Use of Journal System

I would like to bring up the Journal on a trial basis for a limited number of ARC people. 1
If you are interested in being a 'Guinea Pig', then please try using it during the next week or so, and watch for bugs. 2
Documents describing new commands, concepts, etc are: 3
(Journal, 6201, O:gw) Catalog Numbering System 3A
(Journal, 6202, O:gw) Journal entry system 3B
(Journal, 6203, O:gw) identification system 3C
If you do find any bugs, please call me, send me a note (via the Journal), or otherwise let me know. 4
Also, any immediate suggestions for improvement before releasing it to wide scale use would be heartily accepted. 5
Thanks....Bill Duvall 6

abortive attempt to use it for submitting a document to the Journal. 3A1A3A
It should not be necessary to use this command except in the case of system errors. 3A1A3B
The user remains in the submode until he types a CA or an error occurs. 3A1B

Programming information 4
The Catalog Number system uses the file <Journal>cnumbers for keeping track of catalog numbers. 4A
There are (optionally) four branches in the file: 4A1
(FREE) This branch consists of one statment, and contains the list of catalog numbers which are available for assignment. 4A1A
Entries in the FREE branch are either a single number delimited by any character other than '[on the left and '] on the right, or an interval of numberss indicated by the syntax '[.NUM ', .NUM ']. 4A1A1
Numbers must be entered into the free branch by an authorised user (the cnumbers file has the access jrnlaccess), and the number system takes care of deleting them when they are assigned. 4A1A2
(USED) This branch contains one substatement for each catalog number which has been assigned. 4A1B
The statement for a number is of the format: "(C" .NUM ') <collection> <identification> <date/time> 4A1B1
This format is used for the statement representing any number once it has been assigned, regardless of what its state is. 4A1B2
Thus the entry for a given number may be located by using the name : 'C .NUM where .NUM is the number. 4A1B3
(INUSE) This branch contains entries for all numbers are currently in the process of being assigned. 4A1C
(PREASSIGNED) This branch contains entries for numbers which have been pre-assigned to the Journal. 4A1D
If a preassigned number is 'In Use' (i.e. the journal is processing it) the string 'INUSE' is appended to the corresponding entry. 4A1D1
There are several routines which may be of use to a programmer wishing to use the number system when writing a process: 4B
(getcnum) 4B1
Parameters: identification string 4B1A
string for returning number 4B1A1
string containing collection identification (with a blank on either end) 4B1A2
destination of number: 4B1A3
0: used branch 4B1A3A
1: inuse branch 4B1A3B
2: Preassigned branch 4B1A3C

This routine is used for obtaining a new number. 4B1B
The identification string contains the identification of the user requesting the number, and the collection identification contains the name of the collection requesting the number (e.g. " JOURNAL" , " XDOC "). 4B1C
The number string will be used for returning the number assigned. 4B1D
The destination is the branch to which the entry for the allocated number will be moved. 4B1E

(ckcnum) 4B2
Parameter: action: =0 Return TRUE if number is preassigned to indicated user 4B2A
=1: Return TRUE if number is preassigned to user and not in use; Mark the number in use. 4B2A1
=2: Return TRUE if the number is preassigned to user and is in use; Mark not in use. 4B2A2
This routine reads a number and identification from the keyboard, and checks that number+iidentification for validity as indicated by the parameter. 4B2B
It returns TRUE/FALSE, the number read in *stno*, and the identification used in *stn*. 4B2C

Comments: 5
This design is rather old, having been mostly concieved several months before the arrival of the 10, and as such does not seem entirely proper in view of our increased knowledge of the 10 system 5A
In a next stage catalog system, the following should be considered: 5B
Do we really need different branches for inuse, used, etc? 5B1
Why can't we just put key words in the statements for the numbers reflecting the status??? 5B1A
The 'preassigned' function is specific to the Journal rather than the catalog system. Is there another way we can handle it to keep the catalog system 'pure'?? 5B2

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Description and Users Guide to Catalog Number System

<JOURNAL>6201.NLS;1, 2-APR-71 12:24 WSD ;Title: Author(s): William S. Duvall/WSD; Distribution: Charles H. Irby, Harvey G. Lehtman, Jeanne B. North, James C. Norton, Bruce L. Parsley, Richard W. Watson/CHI HGL JBN JCN BLP RWW; Keywords: Catalog Number Users Guide; Clerk: WSD;

PDP10 Journal System 1
Overview 2
The Journal system is intended to provide a convenient method of entering documents and messages into the Journal, while providing for automatic distribution and cataloging of these documents. 2A
It may bbe invoked directly from NLS, and presents itself in the form of a 'submode' of commands, much in the manner that the calculator is a 'submode'. 2B
The term message applies to single statement or literal entries submitted to the Journal. 2C
A branch, group, plex, or file is taken to be a document. 2D
From the senders viewpoint, messages and documents are handled in the same manner. 2E
The system, however, takes advantage of the distinction in certain effeciency considerations. 2E1
User Information 3
When a document is submitted to the Journal system, it is processed in roughly the following manner: 3A
(1) A catalog number is assigned. 3A1
(2) A work file is created, and the origin statement is modified to reflect information about the document (e.g. title, author, date, etc.) 3A2
(3) The document is copied to the work file. 3A3
If the document type is a file, then the origin statement of the document is appended to the header statemnt in the work file, so that statement numbering is preserved. 3A3A
(4) The user is given opportunity to change the information in the header, and to include optional information if desired (e.g. distribution, title, keywords, etc.) 3A4
(5) When the user is finished specifying and changing fields, the process continues. 3A5
(6) The header statement is filled out to conform to a Journal header standard. All identifications in the distribution and author fields are converted into full names. Directives are added/modified as necessary to provide proper Journal formatting. 3A6
(7) If the entry is a message, a catalog (or control) file is opened, and the name of the current active message file is read, and the file is opened. 3A7
If the entry is a document, then a file under user JOURNAL is created with the name equivalent to the document number. 3A7A

(8) The entry is appended to the message file or copied to the document file, whichever is appropriate. 3A8
(9) The message/document file is updated and closed. 3A9
(10) An entry is made into the catalog (control) file, and the file is updated and closed. 3A10
(11) The Distribution file is opened, and entries are created in this file which will be read and processed by a background process, automaticaally dstributing the document in hard copy and (at some future time) on-line. 3A11
(12) The distrubution file is updated and closed. 3A12
(13) A link to the document just entered is typed to the user. 3A13
(14) control is returned to the user. 3A14

NLS commands 3B

The user invokes the Journal submode with the command: 3B1

'Execute 'Journal
submit (('S/'B/'G/'F/'P) <address>/(SP/'M) <literal>) CA
number (CA/<number> CA Assigned to: <identification>
CA) 3B1A

Semantics: 3B1B

Execute Journal Submit 3B1B1

When the user types 'E 'J, NLS will ask for a structure type and address for the document to be submitted. 3B1B1A

In the event that the type is a file, any statement part of an address will be ignored. 3B1B1B

In the event that the type is a literal message (indicated by a SP or 'M), a carraige return will be typed, and the user will enter the desired literal using the same control characters he would in insert statement (i.e. BC, BW, etc.) 3B1B1C

Number (CA/<number>CA Assigned to: <identification>
CA) 3B1B2

When the document or message to be entered has been specified, the user is asked for a number. 3B1B2A

In the event that the user has previously gotten a number for the entry, (using the catalog Number System...see (Journal, 6201, O:gw)) he will type it in, along with the identification he used when he obtained it. 3B1B2B

The nubmr and initials are here checked for validity, and it is marked in use if it is ok. 3B1B2B1

If the user has not a pre-assigned number for the document (which will be the normal case), he types a CA and a number is assigned to he document by the system, and typed out. 3B1B2C

The Journal submmode command level is indicated by the hearald character '&. 3B2

In the Journal submode, the following commands are legal: 3B3
'Author(s): <identlist> CA 3B3A
This allowss the user to specify the contents of the author field in the header statement. 3B3A1
This field is initially set to the identification of the person using NLS. 3B3A2
'Comments: <literal> CA 3B3B
This allows a user to enter a comment about the document being entered. 3B3B1

3B3B2
The text of the comment will be the last thing in the header statement, and will be preceded by 2 carraige returns. 3B3B3
'Distribution: <identlist> CA 3B3C
This command allows the user to specify a list of persons who will recieve copies of the document being entered. 3B3C1
'Expedite ('Y/CA/'N/SP/CD) 3B3D
This tells the system that distribution of the document is to be expedited. 3B3D1
'Go CA 3B3E
This causes the entry process to continue after the user has specified any header information he wishes. 3B3E1
'I: Interrogate CA 3B3F
This causes the Journal system to enter a non-passive command mode, whereby the user is interrogated for header information. 3B3F1
The information which will be requested by the system will be: 3B3F2
Author(s): 3B3F2A
Title: 3B3F2B
Distribution 3B3F2C
Expedite 3B3F2D
Keywords: 3B3F2E
Comments: 3B3F2F
Go: 3B3F2G
The user should respond to the commands in the normal manner. 3B3F3
If he does not wish to respond to a certain command, he may proceed to the next by typing a CD 3B3F4
If he does not wish to 'GO' following the interrogation, a CD will return him to the Journal System command level for further specification. 3B3F5
'Keywords: $<words> CA 3B3G
This allows the user to specify key words which he thinks typify the nature of the document. 3B3G1
These words will be included in a special keyword

field in the header which may be used for later content se arches of documents. 3B3G2

'Operator <identification> CA 3B3H

This allows the user to specify the identification of te person who is currently doing the entry of te document. 3B3H1

It is assumed (bby default) to be the NLS user. 3B3H2

'Quit CA 3B3I

This command may be used to return to the NLS command mode. 3B3I1

It should not be necessary except in cases where there has been a system error. 3B3I2

'Status CA 3B3J

This causes the system to type out the values of the alterable fields in the header statemmnt. 3B3J1

The fields typed out by status are: 3B3J2

Document number 3B3J2A

Author 3B3J2B

title 3B3J2C

distribution 3B3J2D

expedite 3B3J2E

keywords 3B3J2F

Clerk 3B3J2G

Comment 3B3J2H

Any fields which are empty are omitted from the typeout. 3B3J3

'Title: <literal> 3B3K

This allows the user to enter a title which will be used in the hard copy printouts of the document. 3B3K1

Note that the title will be overidden by any .HED directives within the text of the document. 3B3K2

Relevant Metalinguistic variables 3B4

<literal> ::= $CH CA 3B4A

<identlist> ::= <identification> $((',/SP) <identification>) 3B4B

<identification> ::= (L $LD/CR <newident>)('($CH ')/<empty>)/<empty> 3B4C

An identification is a letter digit sequence assigned to each NLS/Journal/NIC/etc. user. 3B4C1

In the event that the field is empty, and it is terminated by a CA, the identification of the current NLS user is indicated. 3B4C2

If the field begins with a Carraige return (CR), the system assumes a new ident is being entered, and interrogates the user for the necessary information. 3B4C3

A further discussion of identifications may be found in (journal,6203,0:gw)) 3B4C4

If an identification field is terminated or

immediately followed by a '(, the text between the '(and the next ') is taken as a comment. 3B4C5

This is useful for making notes about or to particular authors or recipients, e.g. WSD (Please see branch 1a2) 3B4C5A

Journal Header Format 3B5

The journal header statment will always be printed as the last page of a hard copy Journal documnt. 3B5A

The format of this header is: (optional fields enclosed by brackets) 3B5B

("(J" <catalog number> ") " <date/time of entry>/<NLS root>) [\"Expedite)"] " "; Title: " <title directive> "; Author(s): " <author names> '/ <identlist> ["; Keywords: " $<words>] ["; Distribution: <recipient names> '/ <identlist>] "; Clerk: " <identification> "; " <journal formatting directives> [CR "Origin: " <origin statement of original file>] CR CR [<comments>] 3B5B1

When the entry is a message, the first form of the catalog number, date, and time are used. 3B5B2

When the entry is a document, the header statement is also the origin statement of a file, hence the catalog number, date and time are included in the root part of the origin statement(the part of the origin statement before the first semicolon after the file name). 3B5B2A

Examples: 3B5C

Message header 3B5C1

(J1234) 16-MAR-71 14:23 (Expedite) Title:
Author(s): William S. Duvall/WSD;
Distribution: William S. Duvall, James C. Norton, Douglas C.
Englebart/WSD JCN DCE; Keywords: header example journal; Clerk:
WSD; SNF=72; .MCH=65;

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WSD 16-MAR-71 14:23
journal header example

this is an example of a complete Journal Header statement

3B5C1A
3B5C2

Document Header
<JOURNAL>1234.NLS;1, 16-MAR-71 14:23 WSD ;
(Expedite) Title:
Author(s): William S. Duvall/WSD;
Distribution: William S. Duvall, James C. Norton, Douglas C.
Englebart/WSD JCN DCE; Keywords: header example journal; Clerk:
WSD; SNF=72; .MCH=65;

WSD 16-MAR-71 14:23
Journal header example

Origin: <DUVALL>JOURNALEXAMPLE.NLS;1, 16-MAR-71 14:20 WSD :

this is an example of a complete Journal Header statement

3B5C2A

Distribution of Journal Documents and Messages 3C

Initially, Hard copy of all Journal Documents and messages will be distributed by mail (interoffice, U.S., or otherwise) in the following poytions: 3C1

One copy to each recipient designated in the distribution field of the header. 3C1A

One copy to the ARC Master Collection 3C1B

One copy to the ARC access collection. 3C1C

It is planned that on-line distribution--via a users control file--will become operational in the near future. 3C2

There are several unresolved questions concerning the nature of control files, etc prohibit the immediate implementation of this feature. 3C2A

Future distribution mechanisms which seem reasonable and practicable will be accomidated as they arise. 3C3

User on-line access to Journal documents. 3D

On-line access to Journal documents (and messages) will be straight forward initially, and somewhat awkward. 3D1

The awkwardness will be alleviated with the file system and other improvements, so we should have to live with it at a maximum of 2 months. 3D1A

Documents 3D2

Journal entries which have been designated as documents may be accessed as normal NLS files. 3D2A

The normal NLS machinery is used to access them, including jump link, etc. 3D2A1

A user will, however, not be allowed write access to the files, and any attempt to modify a jlournal file will result in an error. 3D2A2

The user may copy a Journal file, and modify the copy, however. 3D2A2A

Messages 3D3

Messages are stored in groups in files. 3D3A

If a user wishes to access a message, and the name of the file containing that message is known, he must load the file and then, once the file is loaded, the branch containing the message may be located by the name 'J<catalog number>, e.g. J1234 is the name of te branch containing message 1234. 3D3B

There will be a read only file under user Journal called

'JCAT' which will contain a branch for each Journal entry (addressable by 'J<catalog number>. 3D3C

This file may be used to locate a message when the name of the file containing it is not known. 3D3C1

A substatement of the branch for any given entry will contain a link to that entry 3D3C2

Future on-line access 3D4

When the file system is implemented, a user will be able to access a Journal entry in any reasonable NLS context by simply using the catalog number in the same manner that he would use a file name. 3D4A

Thus the accessing of documents will remain substantially the same, while the accessing of messages will become more like the accessing of documents. 3D4B

NoteWorthy User Hazards. 3E

There are two user hazards which are especially worth mentioning: 3E1

(1) Directives. 3E1A

Th Journal system does not tamper with any directives in your file other than those using .HED. 3E1A1

T

In the event that there are directives in a file which would contradict those added by the Journal in the header statement, the user must delete or edit them so as not to detract fromm the format of the hard-copy of the Journal document being entered. 3E1A2

A convenient way of dispensing with any directives past the origin statement in a file is to include a directive in the comment field of the header (using the 'Comment statement). 3E1A3

Note that the positive side of leaving directives 'as is' in the documents being submitted, is that a user may format his printout in harmony with the Journal Directives. 3E1A4

Any last moment directives may be included in the comment field of the header. 3E1A4A

(2) Aborting 3E1B

As with NLS on the 10 in general, IT IS CATASTROPHIC TO ↑C OUT OF A JOURNAL PROCESS. 3E1B1

Doing so will most likely leave things in a state such that no-one may use the system further until Journal personnel have patched things up. 3E1B2

If you wish to abort a Journal process, do so by typeing a CD, waiting until the system returns to the Journal command level (indicated by typing a '&), and then executing a Quit command. 3E1B3

WSD 2-APR-7I 12:36 6202

Journal System Description and User Information

<JOURNAL>6202.NLS;1, 8-APR-71 12:38 WSD ;Title: Author(s): William S. Duvall/WSD; Distribution: Charles H. Irby, Harvey G. Lehtman, Jeanne B. North, James C. Norton, Bruce L. Parsley, Richard W. Watson/CHI HGL JBN JCN BLP RWW; Keywords: Journal Specification Description Users Guide ; Clerk: WSD;

Description of Proposed Identification System

Includes user information
Proposal For Initial Identification System. 1
In order to distribute and adequately catalogue documents submitted to the (Nic or Arc) journal, it is desirable to: 2
(a) Briefly and unambiguously identify auuthors and recipients of Journal Documents. 2A
(b) Have access to an information file for each person so identified, which may contain, among other things, his full name and address, affiliation, etc. 2B
We have, within ARC, successfully (although nominally) used initials for this purpose. 3
The proposal here is to extend the concept of initials to a more general 'identification word', and to maintain a set of NLS files containing information about persons identified by the identification words. 4
These files are accessible and may be manipulated by Higher Level Processes, and are therefore availible to, for example, the Journal system. 5
When A new user is introduced to the system, an entry is made for him in the identification files. 6
At the time of his introduction, he either chooses or is assigned his identification word. 6A
He will subsequently use this I.D. word whenever he wishes to identify himself to the system. 6B
Other users may equally use the I.D. when they wish to address something (e.g. a Journal Document) to that person. 6C
While it is expected that the main 'Handle' for a user will be his identification word, it will be possible to address him by other means (e.g. his full name). 6D
The Journal System will use the Identification System initially in the following manner: 7
Throughout the Journal Specification, (Journal, 6202, O:gw) a metalinguistic variable 'identlist' is used. 7A
We here define an identlist: 7B
<identlist> ::= <identification> $((',/SP)<identification>) 7B1
<identification> ::= (L $LD/CR <newident>)('($CH ')/<empty>)/<empty> 7B2
If an identification field is terminated or immediately followed by a '(, the text between the '(and the next ') is taken as a comment. 7B2A
This is useful for making notes about or to particular authors or recipients, e.g. WSD (Please see branch 1a2) 7B2A1
In the event that an Identlist is empty, it is assumed to be equivalent to the identification of the user directing

the process using the identification machinery (normally the NLS user). 7B3
The normal value of an ident will be an identification word which has been assigned to some person in the ARC/NIC environment. 7B4
There will, however, be occaisional need to refer to a person who is not recognised in the existing identification files. 7B5
In this case, a procedure will be allowed, which will create an entry in the identification files for the referenced person. 7B6
This will require a certain amount of information about the person, probably name, address, and affiliation as a minimum. 7B6A
The entry so created will have a funny status, insofar as the person referenced may not know that he is 'recognised' by the system. 7B6B
The Process for entering a new user in this manner will be as follows: 7B6C
Syntax: (CR) NAME <name> CA Address: <address> CA Affiliation: <Affiliation> CA Identification: (L $LD/ <empty>) CA 7B6C1
Semantics: After the CR, the system will type a CRLF and The Word 'Name: '. 7B6C2
The user is here expected to type in the new users name. 7B6C3
The system will at this time make a search of the existing identification file for any entries with the same last name as the name entered, and type any that it finds, expecting a response from the user after each one. 7B6C3A
If the user responds with a Yes, then the ident corresponding to that entry is selected, and the 'Entry mode' is exited. 7B6C3A1
Otherwise the search continues until the file is exhausted. 7B6C3A2
After ascertaining that the new user has not previously been entered, the user will equest the address, affiliation and comments. 7B6C3B
The system subsequently requests the 'Identification:', to which the user may respond with a CA (in which case the system will assign an identification) or a letter/digit string. 7B6C3B1
If the user enters a string, that string is checked for uniqueness, and assigned if it is unique 7B6C3B1A
If the string is not unique, a message is

typed, and the identification step is repeated. 7B6C3B1A1

If the system assigns the identification, it computes it in the following manner: 7B6C3B1B

First, the initials (got from the name field) are tested for uniqueness. 7B6C3B1B1

If they are not unique, the a number is appended to them (initially 0). 7B6C3B1B1A

This number is incremented until a unique identification is encountered. 7B6C3B1B1B

When A user has been entered in this manner, he may be subsequently referred to by his identification. 7B6C3C

We need a way for people to fiddle with their identification file entry, such as an NLS submode devoted to the manipulation of the identification files. 7B6C3C1

Although this description is brief and spotty, it is hoped that it indicates the philosophy and approximate nature of the proposed identification system sufficiently to allow its use in the Journal System. 8

In a future and more complete specification we should consider at least the following: 9

- A proper HLP for manipulation and maintenance of the identification files. 9A
  - Including reorganisation of the files so that out of date identifications are moved to low level files. 9A1
- The relation of the identification system to the TENEX user identification system, which seems to parallel it on a higher (or less specific) level. 9B
- The use of the identification files as a master list of NIC members. 9C
- Future applications of the system such as: 9D
  - Automatic Document Selecting from new entries to collections (e.g. all documents by xxx, or all documents concerning zzz, etc.) 9D1
  - Automatic document culling(i.e. I want to see documents from xxx immediately, and you may send all communications from zzz to my secretary) 9D2
- Accounting information based on the individual users 9E
  - Includes any variety of options and restrictions, etc. 9E1
- The connection of the identification file to a users file directory, control file, etc. 9F

WSD 2-APR-71 12:44 6203

Description of Proposed Identification System

<JOURNAL>6203.NLS;1, 2-APR-71 12:45 WSD ;Title: Author(s): William S. Duvall/WSD; Distribution: Charles H. Irby, Harvey G. Lehtman, Jeanne B. North, James C. Norton, Bruce L. Parsley, Richard W. Watson/CHI HGL JBN JCN BLP RWW; Keywords: Identification Proposal; Clerk: WSD;

WSD 6-APR-71 12:08 6205

Notes on Journal Delivery system

Harvey... 1

I have made the following changes to jnldel this morning: 1A

We were locking the distfile for a long period of time when distribution was in progress. 1A1

In order to alleviate this, I introduced a new file--HCDISTFILE--which is the distribution machinery's copy of the distribution file. 1A1A

Now, the first thing that the distribution stuff does, is to copy over the contents of DISTFILE to HCDISTFILE, and delete them from DISTFILE. 1A1B

All subsequent work is done using HCDISTFILE. 1A1C

I put a status command in (invoked by an 'S). 1A2

It searches through the HCDISTFILE and returns the number of copies of documents to be printed as: 1A2A

Expedited NNNN
Normal NNNN
Total NNNN 1A2A1

I changed it so that when a Journal document is not found, only the printing of that one document is aborted, rather than the whole operation. 1A3

I changed the way errors terminate, by returning from the procedure TERMNAT if it is called with an error, and letting the SIGNAL which called it propogate down the stack. 1A4

This means that termnat is called in error from only one place now...the SIGNAL statement in delcont. 1A4A

All other calls have been changed to use err or SIGNAL. 1A4B

The reason for doing all of this is that we would have entered an infinite loop the way it was before, viz. SIGNAL calls termnat calls err which calls SIGNAL which calls termnat calls.... 1A4C

Other things which we should probably consider are: 1B

Printing an explicit document (e.g. 6213) 1B1

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Notes on Journal Delivery system

If a file is not on disk and we try to open it, we bomb out inelegantly. What can we do about this??? 1B2

So far as I know, there is not yet a users/operators guide for the hard-copy distribution stuff. 1B3

How about writing one, along with a generally descriptive document?? 1B3A

We still don't have the stuff in to handle comments in the distribution list nicely...any ideas??? 1B4

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Notes on Journal Delivery system

<JOURNAL>6205.NLS;1, 6-APR-71 12:08 WSD ;
\Expedite) Title: Author(s): William S. Duvall/WSD; Distribution:
Harvey G. Lentman/HGL; Keywords: Journal Hard Copy Distribution; Clerk:
WSD;

WSD 6-APR-71 13:01 6206

Comments on TNLS User Features

Chuck... 1

I would like to put a vote in for the following user feature modifications for TNLS: 1A

I find it very convenient to use altmode as a command accept. 1A1

It is more convenient than having to type a control shift and a character, and it is compatible with TENEX, reducing errors in file names, etc. 1A1A

When it has been defined as a CA, it is still useful in its 'string save' function if preceeded by a literal escape. 1A1B

It would, however, be convenient to have some other control character serve as an alternate 'string save' key, say ↑S. 1A1C

Lacking this, it would be nice to be able to define a character as the string save guy, which I have not succeeded doing to date.. 1A1D

I would find levadj numbers more useful if they were printed after each character (u/d) is typed. 1A2

I am continually irritated by having to type a ":1 " before using a name in an address field. If name searches began at the origin statement unless otherwise specified it would help muchly. 1A3

I attempted to use a link to another file in an address field, onnly to find that it did not work. 1A4

Further inspection showed that provision was made only for links within the same file as an address element. If this is intentional, I would like to discuss changing it, and if not, can we get it fixed?? 1A4A

Sometime back, a colon was introduced as an escape character for statement numbers on a provisional basis. 1A5

My understanding was that there would be a time in the future when this feature would be evaluated. 1A5A

Has this time occurred, and if not, I would like to be included in said evaluation. 1A5B

WSD 6-APR-71 13:01 6206

Comments on TNLS User Features

<JOURNAL>6206.NLS;1, 6-APR-71 13:01 WSD ;Title:
Author(s): William S. Duvall/WSD; Distribution: Charles H. Irby/CHI;
Keywords: TNLS User Features; Clerk: WSD;

A Preliminary (incomplete) Proposal for a Stage I Set System

Introduction 1

This proposal is intended to provoke dialogue about a stage 1 set manipulation system within NLS. 1A

It is largely sketchy and incomplete, but hopefully will serve as a starter. 1B

Some of the stuff mentioned is based on a memo by DCE: SETQ 11/13/70 1C

This file attempts to propose a flexible way of generating and storing sets which is upwardly compatible with the set baseline (such as it is currently envisioned), while utilising existing capability within the NLS framework so far as is reasonable. 1D

The system proposed here attempts to deal directly with the needs of BLP and the managment system, while at the same time providing a base which may be used for generating sets over the ARC catalog collections. 1E

Overview 2

A set, as referred to in this document, is a branch in an NLS file. 2A

A set branch has two major sub-branches. 2B

One of these is a set definition, and the other is a set evaluation, i.e. a branch of statements, branches, etc. which constitute an evaluated set. 2B1

A set definition consists of the information, programs, etc. necessary to create a branch of entities constituting an evaluated set. 2B2

A branch which is a set may not be distinguished from any other NLS branch except by format. 2C

Thus sets may be edited, manipulated, copied, etc. via the normal NLS mechanisms. 2D

There will be an NLS 'sub-mode' of commands for manipulating sets as special entities. 2E

Sets will be referred to by names or links, the name of a set

being the NLS statement name of the highest statement in the branch. 2F

Set branches. 3

Set Definition 3A

A set definition consists of two parts: a set generation function, and a range. 3A1

A set generation function is in essence a program, written in a specially concocted language, which, when executed and provided a range of candidate statements/branches, will produce a plex of branches/statements which are elements of an evaluated set. 3A2

The specially concocted language will, initially, be an amalgamation of at least the following capabilities: 3A2A

L10 code 3A2A1

Links to other set generator functions. (may be thought of as macro or subroutine calls) 3A2A2

A provision for explicit membership 3A2A3

Possibly special functions such as UNION, INTERSECTION, etc. of sets. 3A2A4

Anything else which seems reasonable. 3A2A5

A range of a set is a plex of links, each of which points to the head of a branch which is to be considered as a candidate when the set is evaluated. 3A3

There is considerable room for elaboration here, insofar as the scope of the branch to be evaluated may be limited by viewspecs, we may want to filter it first, perhaps we should have links which point to sets, which may in turn be evaluated (or previous evaluations may be used) to produce candidates. 3A3A

It is not clear how far we should immediately go here, but I feel intuitively that we might, by proper design, allow a link to point to a set, and cause that set to be evaluated dynamically. 3A3B

Much discussion needed here. 3A3C

Also, some assessment of need must be made for these fancy things. 3A3D

Evaluated Set 3B

This is the evaluated set as of the last evaluation of the set definition (or maybe we want to make the user decide when to change it) 3B1

The top-level statement contains information pertaining to the evaluation of the set, e.g. date/time of evaluation, who did it, etc. 3B1A

The plex is the actual evalutaed set. 3B1B

User Procedure. 4

The user, in creating a set, need simply to create an NLS branch of the proper format, roughly: 4A

(setex) SET 4A1

(description) 4A1A

(Generator) 4A1A1

L1O: FINISH 4A1A1A

CALL (linkfile, setname,) 4A1A1B

INCLUDE (linklfile, linklname,) 4A1A1C

(range) 4A1A2

(rangfile, name, :gw) 4A1A2A

SET (setfile, namel,) 4A1A2B

EVALUATE SET(setfill, name2,) 4A1A2C

(evaluated) 5-APR-71 19:10 WSD 4A1B

This is set element 1 4A1B1

And this is element 2 4A1B2

and one last one 4A1B3

He then will be provided commands to: 4B

Compile the set generator. 4B1

for syntax??? shall we save the code, and if so where?? 4B1A

evaluate the set 4B2

This should use the range provided, which the user has modified beforehand using normaal NLS. 4B2A

Mebbee we want to allow some interactive stuff during evaluation. where does this fit in??? 4B2B

The evaluation replaces the evaluated branch accordingly. 4B2C

WSD 6-APR-71 15:35 6207

A Preliminary (incomplete) Proposal for a Stage I Set System

<JOURNAL>6207.NLS;1, 6-APR-71 15:35 WSD ;
(Expedite) Title: Author(s): William S. Duvall/WSD; Distribution: Bruce L. Parsley, Charles H. Irby/BLP CHI; Keywords: SET manipulation proposal; Clerk: WSD;

This is quite incomplete, and needs a great deal of discussion

WSD 6-APR-71 16:29 6208

test of distlist comments

Harvey....I think that the comments in the distribution list work now..this message tests them 1

test of distlist comments

(J6208) 6-APR-71 16:29; (Expedite) Title:
Author(s): William S. Duvall/WSD; Distribution: Harvey G. Lehtman,
William S. Duvall/HGL (If you see this, it works) WSD; Clerk: WSD;

Use of SIGNAL construct for NLS Error Machinery

The error mechanisms within NLS have been changed to utilise the SIGNAL constructs in L10. 1

If the implementation described here is amenable to all concerned parties, I propose that is be adopted for general use within the NLS program environment. 2

Otherwise, I suggest that we meet and decide on some alternate standard. 2A

The SIGNAL constructs are described in a blurb by WHP on new L10 Language features. 3

A note on implementation is included here. 3A

When a procedure call is executed, the left half of the cell containing the return location is cleared. 3B

An ON SIGNAL statement moves the location of the code to be executed when a signal is called into the left have of the return loc cell. 3C

When a SIGNAL is executed (a branch to the routine <NLS, Utilty, syssig> is executed), the stack is searched, beginning with the return location cell of the procedure which called the procedure in which the SIGNAL occurred, until a non-zero left half is found, or the stack bottom is reached. 3D

If a non-zero left half is found, then the contents are moved to the return location of the next highest mark in the stack (which the mark has been set to point at), and a procedure return is executed. 3E

If the bottom of the stack is reached, then the procedure <NLS, Auxcod, deferr> is called 3F

This procedure types the message in sysmsg and resets NLS according to the value in sysgnl: 3F1

=0: like err used to 3F1A

=-1: werr 3F1B

=-2: abort 3F1C

=-3: wabort 3F1D

=other: err 3F1E

After typing the message and resetting things, sysmsg is set to the string "Error", and sysgnl is cleared to zero. 3F2

The error routines used by NLS (err, werr, abort, wabort) have been modified so that after determining the proper error message, they make a call on SIGNAL, with a value for sysgnl indicating the routine, and the address of a message for sysmsg. 4

When a rubout is typed ind rubabt is true, a SIGNAL is called with a value of -4 for sysgnl, and the string "User Terminated Process" for sysmsg. 5

The main control sections of TNLS/DNLS have an armed signal statement which catches rubouts, which allows the functional effect of a rubout to be identical to the previous implementation. 5A

When a process wishes to gain control upon the occurrence of an error, it may do so by means of a SIGNAL statement. 6

After gaining control, it may propogate the signal to a lower level if so desired. 6A

An example of the use of this is: 6B

```
stid ← 0;                                                    6B1

ON SIGNAL ELSE IF stid.stfile THEN close(stid.stfile);       6B2

stid.stfile ← open(0, $fname);                               6B3

close(stid.stfile := 0);                                     6B4

END.                                                         6B5
```

If an error occurs after the file is opened, it will be trapped by he ON SIGNAL stateemnt, and the file will be closed. 6C

After closing the file, the signal is propogated. 6D

SYSGNL values. 7

When a system error routine calls SIGNAL, it should provide a negative number (or 0) for sysgnl. 7A

User calls should use positive numbers. 7B

WSD 7-APR-71 12:24 6209

Use of SIGNAL construct for NLS Error Machinery

<JOURNAL>6209.NLS;1, 7-APR-71 12:24 WSD ;Title:
Author(s): William S. Duvall/WSD; Distribution: Charles H. Irby, Mimi S.
Church, William H. Paxton, Harvey G. Lehtman/CHI MSC WHP HGL; Keywords:
SIGNAL error NLS; Clerk: WSD;

Please feel free to extend and augment this as necessary

Getting On The Network-Stage 0

1

Our strategy for getting on the network to the point where we are offering the services we have discussed with ARPA is to come on in 3 stages separated roughly bytime periods of 6weeks. The initial experimental stage(Stage 0) is to be in operation May 1. 2

Stage 0 will offer service to a limited number of selected sites and users and will provide the following basic services: 3

Access to our Exec 3A

Network users will be assigned to a separate Tenex Group and thus will not have access to our files. 3A1

Access to TNLS 3B

Use of the Message System with online entry and hardcopy delivery by mail. 3C

A TNLS Primer. 3D

To provide the above services implies the following requirements. 4

Tenex: 4A

We need to bring up the available version of Tenex with the BBN NCP andTelnet. 4A1

Make any changes in Tenex which may be required to allow network usrers access to TNLS with user or server site echoing. 4A2

Linking for advise mode if possible. 4A3

Some increase in reliability. 4A4

Diagnostics for IMP interface. 4A5

Specifications for access to us: 4B

List of character set which sites must be able to send us 4B1

Logger protocol. 4B2

Message format. 4B3

Documentation: 4C

A Primer describing TNLS andExec features 4C1

A user guide to the Message System. 4C2

TNLS: 4D

Ability to control whether echoing is user site or server site. For the former there is to be no commandfeedback. Default condition is user site echoing. 4D1

Completion of implementation of Execute Viewchange 4D2

All terminations CA no CR's. 4D3

Bief review of system for John Melvin and myself. 4D4

Message System: 4E

Ability to run message system with user or server site echoing. 4E1

Removal of distinction between Journal and other subcollections. 4E2

There should be a general command to preassign message number(s) for subcollection list. (see below) 4E2A

The assign number command would not be needed. 4E2B

The system would build one uniform master catalog except for enties tagging the subcollectios(s) to which the document or message belongs. Later additional information relevant to a particular subcollection catalog would be entered by hand. 4E2C

All users from the network automatically enter docs to the NIC subcollection. 4E2D

All users from ARC automatically enter docs to the Journal subcollection, but can specify other subcollections. 4E2E

Course: 4E3

We need to run a two day introductory course the last week of Aprilhere for the initial participants. 4E3A

Getting On The Network Stage 0

Course limited to 12 people from around 6 sites.
Canidate sites areUCLA RANDSDC UCSB UTAH MIT possibly
BBN and/or MITRE if MIT can not get on net. We may want
to invite RADC also. 4E3B

Getting On The Network Stage 0

<JOURNAL>6210.NLS;1, 8-APR-71 11:13 RWW ;
(Expedite) Title: Author(s): Richard W. Watson/RWW; Distribution: Richard W. Watson, James C. Norton, William S. Duvall, Douglas C. Engelbart, Charles H. Irby, Harvey G. Lehtman, Jeanne B. North, Bruce L. Parsley, William H. Paxton, Ed K. Van De Riet, Kenneth E. Victor/RWW JCN WSD DCE CHI HGL JBN BLP WHP EKV KEV; Clerk: RWW;

WSD 12-APR-71 14:10 6211

Comments on StageO Network System (Journal, 6210, O:gw)

Having read through your memo 6210 I have the following comments, reactions, suggestions. 1

General 1A

There is a problem with ↑C on our system. 1A1

A user may successfully wipe himself out in NLS by intemperate use of ↑C. 1A1A

Worse, he may immobilise the Journal system for all users with ↑C. 1A1B

I would be loathe to make a system available to a large community such as the Network users without doing something about this. 1A1C

I feel defensive about the tendency to think of the Journal system as a message system. 1A2

That is a secondary use. 1A2A

Its primary intended use is in the support of dialogue. 1A2B

I think that the distinction is doubly important, insofar as we are just now getting to the stage where we may begin to implement some of the more interesting support features, e.g., sets, backlinks, etc. 1A2C

It would seem to me to be highly advantageous to have a Library File system available for the first Network users. 1A3

As such, I would like to use the stage 0 network system as an intermediate target for a stage 0 file system. 1A3A

The most important feature of this system is the ability to access any numbered master catalog item in the same manner as files are now references, and in links. 1A3A1

Secondary to this is the ability to create and use files which are handled by the file system, and known to the master catalog, and 1A3A2

Tertiary is the ability to automatically archive such files, and retrieve them. 1A3A3

I am in the process of preparing a plan for a stage O file system, following the above outline. 1A3B

If you have any immediate comments, please let me know. 1A3C

Otherwise, I will ask for comments, etc. when the preliminary plans is complete. 1A3D

Timetable 1A4

I would estimate, taking some liberty having not contacted concerned persons, the following timetable as optimistic: 1A4A

(Journal, 6210, 4a1) 2 days 1A4A1

(Journal, 6210, 4a2) Up to 5 days, part of which is allocatable to design. 1A4A2

(Journal, 6210, 4a3) 0 days (not absolutely needed) 1A4A3

(Journal, 6210, 4a4) 5 days for noticeable change 1A4A4

(Journal, 6210, 4a5) 1 day ?? 1A4A5

(Journal, 6210, 4b) 3 days 1A4A6

(Journal, 6210, 4c) 5 days 1A4A7

(Journal, 6210, 4e) 7 days including design and spec. 1A4A8

The total here is 28 days. 1A4B

My guess is that this will make May 1 (or more specifically the last week in April due to the course) a difficult date to meet, and it leaves us little room for error and/or design evaluation before use. 1A4C

Specific 1B

(Journal, 6210, 4e2) Lumping all subcollections into one big bag eliminates a great deal of the flexibility which I had intended in designing the Journal (with implications towards the catalog system). 1B1

The impression I get from reading this part of the proposal is that I have not made my proposed catalog

design clear, especially since most of the things mentioned are already allowed for. 1B1A

Let me re-iterate my vision of the master catalog/subcollection picture: 1B1B

There is, at the center, a master catalog which has connected with it support library procedures. 1B1B1

These library procedures provide a portal through which processes, including processes representing subcollections, may enter, modify, and retrieve documents and document citations. 1B1B1A

The simplement process using this portal provides a direct user interface to the master catalog system. 1B1B1B

Certain sub-collections may wish to process the documents in their collection in a particular manner. 1B1B2

The Journal system wishes to provide, for example, dialogue support. 1B1B2A

The Xdoc collection is interested in information concerning publication and availability of documents (which may not be NLS files). 1B1B2B

In order to facilitate the pecularities of a particular collection, a process may be written which serves as a special interface from the master catalog system to the user. 1B1B3

This process or interface may, of course, perform many functions which are only incidentally related to the master catalog system. 1B1B3A

Insofar as is possible, subcollections should share processes. 1B1B4

They should not, however, be required to share processes. 1B1B5

Thus, it seems entirely reasonable that there should be a high degree of commonality between the ARC and NIC Journals. Perhaps they should in essence be the same. 1B1B6

The Xdoc collection, however, will probably need a process which does not have this degree commonality. Consequently, it will use that part of the ARC/NIC Journal process as is applicable, and provide the remainder from other sources. 1B1B7

In the absence of a processor to handle the entry of documents to a particular sub-collection, items may be entered into the collection manually or semi-automatically, by using the direct user interface to the master catalog, specifically the Assign Number function. 1B1B8

Collections maintained in this manner will still be properly recorded in the master catalog. 1B1B8A

(Journal, 6210, 4d3) Perhaps we should make our command accepts CR's rather than the other way around. 1B2

This is not too terribly ugly, although it clouds the issue of literal CR's in text (but this is already clouded by EOL's) 1B2A

It greatly reduces the confusion the user must deal with in file names, etc. 1B2B

It maintains a compatibility with TENEX 1B2C

WSD 12-APR-71 14:10 6211
Comments on StageO Network System (Journal, 6210, O:gw)

<JOURNAL>6211.NLS;1, 12-APR-71 14:11 WSD ;
(Expedite) Title: Author(s): William S. Duvall/WSD; Distribution:
Richard W. Watson, James C. Norton, Douglas C. Engelbart, Charles H.
Irby, Harvey G. Lehtman, Jeanne B. North, Bruce L. Parsley, William H.
Paxton, John T. Melvin/RWW JCN DCE CHI HGL JBN BLP WHP JTM; Keywords:
NIC Network Stage O; Clerk: WSD;

15-APR-71 10:07 6212

Positon of Header-comments Page in Journal Document

I would like to suggest a slight change to the way the hardcopy Journal documents a assembled. Namely, because of the importance of drawing peoples attention to the comments, I think that the header-comment page should be the second page of the document. Page 1 of the document should be the first page of the item submitted. 1

15-APR-71 10:07 6212

Positon of Header-comments Page in Journal Document

(J6212) 15-APR-71 10:07; Title: Author(s): /; Distribution: Harvey G. Lehtman, William S. Duvall, James C. Norton/HGL WSD JCN; Clerk: RWW;

Link Delimiter Change

The link parsing machinery in NLS has been changed to allow "--" as a left link delimiter. 1

This allows links such as (see--username, filename, statname: vspecs) 2

It disallows the use of two consecutive hyphens in a user, file, or statement name. 3

WSD 12-APR-71 14:17 6214

Link Delimiter Change

<JOURNAL>6214.NLS;1, 12-APR-71 14:17 WSD ;Title:
Author(s): William S. Duvall/WSD; Distribution: Charles H. Irby/CHI;
Keywords: Link Syntax; Clerk: WSD;

Chuck--I addressed this to you as User Feature Man..do with it
what you will

Proposal for Group Identification Within the Identification System

There is a reasonable need, within the environs of the identification system, to access groups of people by a name (or identification). 1

An example of where this might be useful is in the Journal, where it is being used to support a dialogue between more than two people. 1A

It is inconvenient to type the list of the identifications for all of the people in th group each time a document is submitted and distributed to the members of the dialogue. 1B

The ability to create a group, and subsequently use the name of that group in lieu of the membership is important. 1C

The plan here is to provide this 'Group' facility by amending and extending the existing identification system. 2

Group Identification 3

The identification for a group is identical in form to that for a person. 3A

Syntax: L $LD 3A1

At the level of the user typing in a identification list, there is normally no distinction. 3A2

There is, however, one exception. 3A3

A group may be referenced in one of two manners. 3A3A

Normally, the appearance of a group name in an identification list is a substitution for the identifications of the persons (or groups) in that group. 3A3A1

This is an expanded reference. 3A3A1A

There may be instances, however, when the desire is to reference the group itself as an entity, rather than the members of the group. 3A3A2

This is an un-expanded reference, and is indicated by preceding the identification with the character '&. 3A3A2A

The character '& is chosen due to a relatively weak similarity of this function to the REF variables in L10. 3A3A2B

In the event that the identification of a person is preceded by the '& character, its meaning is ucdefined and it is ignored. 3A4

Group Identification Record. 4

Syntax: '(<identification> ') [\"Expand\"] \"Group (\" <identification list> ') $NP <affilitaion> <Proper name> <Mailing address> EOL EOL <Comments> 4A

The optional "Expand" parameter specifies whether normal references to the group are treated as expanded or un-expanded references. 4B

This will normally be set to expanded. 4B1

The identification list following the word 'Group' describes the membership of the group. 4C

Note that the identification list may include: 4C1

Identifications of people 4C1A

Identifications of other groups (as expanded or un-expanded references) 4C1B

An expanded reference to another group is expanded if and only if the reference to he current group was expanded. 4C1B1

Commments 4C1C

The proper name is the full name of the group, e.g. Dialogue Support System Interest Group. 4D

The address field contains a mailing address for un-expanded references to the group. 4E

This would presumably be a secretary, coordinator, etc. 4E1

Changes to Identification Lists 5

Proposal for Group Identification Within the Identification System

The only change which the inclusion of group identifications in identification lists brings is the inclusion of the un-expanded reference operator, '&. 5A

As expounded elsewhere, this character signifies that aareference to a group is to be expanded (regardless of the expand parameter in the group identification record). 5B

The use of this character preceding a personal identification is ignored. 5C

Examples: &DSSIG &NICIG 5D

Creating a group 6

A group is created in much the same manner that a new personal identification is entered. 6A

The mechanism for dreaating new Identifications is currently usable only from the Journal submode, however see (Journal, 6213, 0:gw) for future plans. 6B

A user may currently enter a new identification by typing a CR When entering an identification list (see--Journal, 6203, 7b6:gw) 6C

In order to enter a new group into the system, the user responds to he query 'Name: ' with a CA. 6D

The system will subsequently enter a special 'Group entry' submode, and the user will be interrogated as follows: 6E

Group Name: 1$(L $-NP $NP) CA 6E1

Membership: <identification list> CA 6E2

Expand References? <answer> 6E3

The address, comments, affiliation, and identification are requested in a manner identical to that for personal identifications (see--Journal, 6203, 7b6:gw). 6E4

Modifying a Group 7

When the identification system sub-mode becomes operational, there will be easy methods for modifying Identification records. 7A

In the meanwhile, it will be necessary to modify the records using the normal NLS editing commands. 7B

This requires that the user have Journal Access enabled. 7C

See DSS personnel to find out how to do this. 7D

WSD 12-APR-71 14:39 6215

Proposal for Group Identification Within the Identification System

<JOURNAL>6215.NLS;1, 12-APR-71 14:41 WSD ;
(Expedite) Title: Author(s): William S. Duvall/WSD; Distribution: James C. Norton, Charles H. Irby, William H. Paxton, Bruce L. Parsley, Douglas C. Engelbart/JCN CHI WHP BLP DCE; Keywords: Identification Group; Clerk: WSD;

WSD 12-APR-71 21:29 6216

Changes to Journal System (Hard Copy Distribution)

I have changed the Journal system so it sends copies of each document to the authors. 1

Additionally, the Master, Access, and Engelbart copies are appropriately titled now, and a copy is printed for the Duvall collection. 2

WSD 12-APR-71 21:29 6216
Changes to Journal System (Hard Copy Distribution)

<JOURNAL>6216.NLS;1, 12-APR-71 21:29 WSD ;
(Expedite) Title: Author(s): William S. Duvall/WSD; Distribution:
Harvey G. Lehtman, James C. Norton/HGL JCN; Keywords: Journal Hard Copy
Change; Clerk: WSD;

<ROW>6212.NLS;7, 12-APR-71 15:59 BER ; 1

An interesting question has arisen as we carry out our online dialog. Which is how to title our comments on comments ---- so that the title carries some meaningful information about where in the dialog we are. 1A

GENERAL 1B

(Journal, 6211, 1a1) 1B1

You are correct, ↑C is dangerous, but it is also dangerous for ARC users and therefore I recommend protection in the Journal System. Stage1 which opens NIC to general users will have a self-contained version of TNLS with Exec functions and will handle ↑C itself. 1B1A

(Journal, 6211, 1a2) 1B2

You are correct, we should not call it the NIC message system as its goals for the network are basically identical to those of the Journal for ARC. It is a dialog support system requiring all the capabilities eventually that are going to be in the ARC Journal. 1B2A

(Journal, 6211, 1a3) 1B3

The concept of the Library File system is good, but I do not think it essential for Stage0. 1B3A

(Journal, 6211, 1a4) 1B4

It is my assumption that a number of these tasks will proceed in parallel. For example, John Melvin is working on (Journal, 6210, 4a) (Journal, 6210, 4b), estimated time 8 days. Marilyn Auerbach is working on (Journal, 6210, 4c), estimated time 10 days. A knowledgeable NLS person will probably do (Journal, 6210, 4d), estimated time 2-3 days. Finally (Journal, 6210, 4e) will probably be done by a knowledgeable Journal System person, estimated time 2-3 days. All negotations for skills have not yet been completed, but should be completed early next week. Given this parallel effort for restrained goals, May 1 seems reasonable. 1B4A

Specifics 1C

(Journal, 6211, 1b1) 1C1

The main thrust of (Journal, 6210, 4e) is to indicate my feeling that the difference between the ARC Journal and the NIC Journal Systems is minimal. The basic problem as I understand it is the following. 1C1A

We have a number of subcollections. It should be possible to enter documents into these collections online or offline (including the ARC Journal). 1C1A1

When a document is entered online, you enter into the Master Catalog the skelton information available at the point of entry (i.e., the information you now enter plus an indication of subcollection(s) to which the document belongs). 1C1A2

Later by hand or with a program to be written in the future, additional information unique to a subcollection is entered. 1C1A3

In other words, the only changes I would request to the present system are: 1C1A4

to be able to automatically place documents entered from ARC into the ARC Journal and from the Network into the NIC Journal. 1C1A4A

to allow ARC users the ability to specify other subcollections. 1C1A4B

When a document is entered online to any subcollections one be able to have a number assigned on the spot or be able to use a preassigned number. 1C1A4C

When a document is to be entered into a subcollection offline one needs to get a preassigned number. The catalog entry would be entered by hand or through a special program to be built in the future. 1C1A5

(Journal, 6211, 1b2) 1C2

Presently it is my understanding that Display NLS uses CA uniformly. 1C2A

(Journal, 6211, 1b3) 1C3

It is my understanding that for users running with local echoing, there will be no file name recognition in the sense we have it with ALTMODE and that standard extension, version defaults will be used or where ambiguity exists a ? will be typed. 1C3A

(Journal, 6211, 1b4) 1C4

Completion of implementation of execute viewchange is only in regard to character redefinition, shift control characters, tabs, and the other elementary typewriter oriented items originally planned. 1C4A

<JOURNAL>6218.NLS;1, 13-APR-71 8:40 RWW ;
(Expedite) Title: Author(s): Richard W. Watson/RWW; Distribution:
Richard W. Watson, James C. Norton, Douglas C. Engelbart, Harvey G.
Lehtman, Jeanne B. North, John T. Melvin, Bruce L. Parsley, William H.
Paxton, Charles H. Irby, William S. Duvall/RWW JCN DCE HGL JBN JTM BLP
WHP CHI WSD; Clerk: RWW;

Users' and Operators' Guide to the Hard Copy Journal Distribution System 1

Hard copies of journal items may be printed out with the addresses of those to whom the message was to be distributed by simply issuing the Hard Copy Distribution Command valid only in TNLS. 1A

It is:
'E xecute 'H ard Copy Journal Distribution System. Giving the command with the proper password ("JPD") puts the user in a special submode. The user is then asked for initials. At this point the system automatically opens up several files: 1B

The file <JOURNAL>DISTFILE described in the document on the Journal System (Journal, 6202, 0:gw) is copied into the file <JOURNAL>HCDISTFILE. It is then cleared. The hard copy distribution system makes use of the file HCDISTFILE leaving DISTFILE available for new entries into the Journal. These new entries will not be printed out at this time; only those items referred to in HCDISTFILE go out at this run. 1B1

The file HCDISTFILE may be modified by a user with Journal Access set. This may be useful and necessary in case of a serious crash. 1B1A

A file <JOURNAL>DISTWORK is opened and serves as a work file. 1B2

A dollar sign appears in the herald column indicating that the system is ready for the next command of the user. The options include the following: 1C

'S tatus (CA) 1C1

The number of copies of items to be printed out will be displayed. This number includes the three Journal copies and all copies addressed to particular people. Three numbers are dsplayed-- the number of Expedited copies, the number of Normal copies, and the total number of copies. A dollar sign is then printed permitting another user choice. 1C1A

'E xpedited Documents Only (CA) 1C2

Only those items submitted to the Journal with the expedited option on are printed. 1C2A

'N ormal Documents Only (CA) 1C3

Only those documents that were not expedited will be printed. 1C3A

'A ll Documents (CA) 1C4

All documents will be printed out. 1C4A

'Q uit (CA) 1C5

No documents will be printed. This is a command useful after the status command for gracefully getting back to the normal NLS command level. 1C5A

When a command to iterate over a group of messages has been specified, the word "Printing" will be displayed before each loop is made. (If "All" has been selected the first "Printing" indicates a looping over the Expedited files, the second a looping over the Normal files. The words "Output Processor in Progress" will appear for each copy printed out (until we fix the printer system). After each copy has been printed the words "Hard copy printed by (OPERATOR INITIALS)" will be put into the HCDISTFILE aaddress branch. After all desired copies of a document have been printed, these words will be put into the highest level statement in the branch. The looping then continues until all documents have been printed or the operator has terminated the process. 1D

The operator may terminate the process at any time by hitting a rubout. When this occurs, HCDISTFILE is printed out and updated and the open and locked files closed and unlocked. DO NOT USE CONTROL C TO STOP THE SYSTEM!!! If you do files will stay locked and HCDISTFILE will not be updated. 1D1

At this point the distribution file copy will be printed out and all highest level document branches completely printed out will be deleted from HCDISTFILE. Those which have not been completely printed will remain in HCDISTFILE until the next time the process is run. 1E

If the process terminates by itself, the words "Normal termination of Hard Copy Distribution process" will appear. If the operator hit a rubout, the words "User terminated

Process" appear, All error terminations should also properly close files and print out a termination message. A serious crash, however, may provide some difficulties. 1F

If, after a crash , the distribution system cannot be properly atarted, try copying all the files listed above into new versions of themselves and start the process over. This will unlock them. 1F1

If the system seems to be hung up, type a CONTROL T. If the system responds with an IO WAIT message, check the printer for a jam or for a lack of paper. 1G

It would be wise to "Execute Quit" and "Reset" before trying to do anything in NLS. 1H

When gathering the printouts, be sure the printouts of other users are not intermixed. 1I

Any questions or problems should be addressed to WSD or myself. For a while do not try to restart the system after a crash; let us try to do it. 1J

Hard Copy Distribution Operator's Guide

<JOURNAL>6219.NLS;1, 13-APR-71 12:00 HGL ;
(Expedite) Title: Author(s): Harvey G. Lehtman/HGL; Distribution: William S. Duvall, Harvey G. Lehtman, Cindy Page, Mil Jernigan, James C. Norton, Richard W. Watson, Barbara E. Row, Douglas C. Engelbart, Jeanne B. North/WSD HGL CXP MEJ JCN RWW BER DCE JBN; Keywords: documentation journal; Clerk: HGL;
Origin: <LEHTMAN>DELIVER.NLS;1, 13-APR-71 11:53 HGL ;

Journal Distribution Frequency

I feel the Hard Copy Journal Distribution Process should be run on expedited documents once every two hours and on all documents twice a day. Any greater use is likely to make the already heavy load on the system even more unbearable. 1

Journal Distribution Frequency

(J6220) 13-APR-71 16:04; (Expedite) Title:
Author(s): Harvey G. Lehtman/HGL; Distribution: James C. Norton, Jeanne B. North, Cindy Page, William S. Duvall, Richard W. Watson, Harvey G. Lehtman/JCN JBN CXP WSD RWW HGL; Keywords: journal distribution; Clerk: HGL;

First DEX Notes

Thoughts about the Deferred Execution System (DEX) arising from a conversation with DCE on 12 March 1971: 1

The needs and general idea of DEX-- part of a full spectrum of augmentation aids for the user. 2

As we make the resources of our site available to users on the network, and as the load on the system increases here, it becomes more clear that an additional option for doing low priority, non-interactive text creation and editing would be desirable. 2A

Input could be through paper tape here or through some form of queueing mechanism here and out on the network. 2A1

Compatability with existing systems-- DNLS and TNLS would be nice. 2B

Commands should be as similar as possible. With half-duplex terminals, it may be advantgeous to modify the TNLS command specification and feedback. 2B1

The differences between the parts of the spectrum should appear to be as minor as possible. Going from a fully interactive display system to the less interactive teltype system to the non-interactive deferred execution system should be painless and transparent to the user. 2B2

Coming full circle-- the capabilities of the old Off Line Text Editing System (FLTS). Features we can use or modify and those we can add. 3

To be expanded later. 3A

DEX and some proposed features-- a sample session. 4

To be expanded later. 4A

Proposed implementation schedule. 5

Phase 1-- Paper tape -- fresh material input. 5A

The first phase in the implementation of a deferred execution facility will be a system permitting off line insertion of files into the system. These files may be entered onto paper tape or into some sort of queue at other network sites to be inserted and processed at some later time. 5A1

There will be commands capable of doing several basic file creation tasks: 5A2

Insert a statement at a particular level in a particular location. Interpolate a statement into a location between (or before) earlier specified statements. Insert statements in any order. 5A2A

Create file from the input material. Enter it into the system. 5A2B

Print out a file; specify the format and structure of the print out. 5A2C

Modify commands made earlier in the input-- delete commands to isert statements, change the location specified by an insert command, modify a create file command-- change the name of the file created. Modify printout specification commands. 5A2D

Phase 2-- Access and modify existing files. 5B

The input commands and text can be on paper tape or can be in a subsystem of the Exec or can be queued at remote sites. The background job will process items in the queue at appropriate times. 5B1

In addition to the commands of Phase 1, the following additional commands will be added: 5B2

Insertion of new statements, words, characters. 5B2A

Deletion of items. 5B2B

Modify the sructure of the existing file. 5B2C

Copy and merge items from other files; copy items from the same file. 5B2D

Phase 3-- Make DEX commands compatilble with the on-line system. Permit essentially executable text. 5C

Maybe modify commands in TNLS and DNLS to make all systems as similar as possible. 5C1

First DEX Notes

<JOURNAL>6221.NLS;1, 13-APR-71 16:30 HGL ;Title:
Author(s): Harvey G. Lehtman/HGL; Distribution: Douglas C. Engelbart,
William S. Duvall, Charles H. Irby, Richard W. Watson/DCE WSD CHI RWW;
Keywords: DEX deferred execution; Clerk: HGL;
Origin: <LEHTMAN>DEXT.NLS;1, 13-APR-71 16:23 HGL ;

I would appreciate any suggestions you may have.

RWW 13-APR-71 17:19 6222

record of discussion stageO NIC dialog system

Bill Duvall and I discussed the StageO NIC Dialog Support System (NDSS) (journal,6218,) and made the following points . 1

Dialog support includes handling documents and messages that originate both online and offline. 1A

The present way that the Journal has been thought of is that it is just one collection among many XDOC,RINS etc. being others. 1A1

It may be better to think of the Journal as the entire collection or call it something else to indicate an entire collection,of which there are subcollections,ARC Journal, NIC Journal,XDOC,RINS etc. 1A2

A basic entry for all documents in a standard form exists in a master catalog. There may be separate catalogs for subcollections witd entries with more,less, or reformatted information for special purpose processing. 1A3

What is required as a minimum for StageO NDSS are: 1B

The ability in the present system to indicate subcollections to which an entry is to be apart. 1B1

The ability to have subcollection defaults. 1B2

For example,ARC users to the ARC subcollection 1B2A

NIC users to the NIC subcollection. 1B2B

The ability to handle entry into the system of offline documents with its associated problem of handling preassigned numbers. 1B3

An initial suggestion is that a preassigned number would be obtained with the present mechanisms. When the document is to be entered a header would be prepared online with the present system and with some indication that the contents are offline. This problem is primarily one of setting up the appropriate procedures and requires little new Journal machinery. 1B3A

Bill indicated that he would prepare three documents. 1C

A proposal for a StageO NDSS. 1C1

A discussion of the more expanded concept of the Journal

RWW 13-APR-71 17:19 6222

record of discussion stageO NIC dialog system

<JOURNAL>6222.NLS;1, 13-APR-71 17:20 RWW ;
(Expedite) Title: Author(s): Richard W. Watson/RWW; Distribution: James C. Norton, Douglas C. Engelbart, Harvey G. Lehtman, Jeanne B. North, John T. Melvin, Bruce L. Parsley, William H. Paxton, Charles H. Irby, William S. Duvall/JCN DCE HGL JBN JTM BLP WHP CHI WSD; Clerk: RWW;

Harvey: Your suggestion for handling of Journal distribution (journal,6220,) sounds good. Special arrangements could still be made for faste handling in case of meeting deadlines, departures, etc. where having the hardcopy sooner would really make a difference. 1

(J6224) 14-APR-71 8:34; (Expedite) Title:
Author(s): James C. Norton/JCN; Distribution: Harvey G. Lehtman, William S. Duvall, Richard W. Watson, Cindy Page, Jeanne B. North/HGL WSD RWW CXP JBN; Keywords: ; Clerk: JCN;

Note on Catalog Production Problem

The purpose of this note is to place in the Journal notice of the diffeculty presently existing in producing a new version of the NIC catalog. Jim Norton and Bill Duvall have been working very hard for the past 6 weeks to produce a new NIC catalog, but in trying to produce the keyword section the systemkeeps blowing up. It is my understanding that Bill now thinks that the large number of disk reads and writes on this large file eventually encounter bad spots on the disk. 1

Two questions arise: 1A

What can be done to map the good and bad areas on the disk. 1A1

Why is the system so vulnerable to bad data in anycase? 1A2

Although Bill and Jim will employ black arts to try and produce the catalog inspite of these problems, these problems should be high on the list for study by whoever is responsible for the various programs involved. 2

Note on Catalog Production Problem

<JOURNAL>6225.NLS;1, 14-APR-71 11:18 RWW ;
(Expedite) Title: Author(s): Richard W. Watson/RWW; Distribution:
William S. Duvall, Douglas C. Engelbart, Charles H. Irby, John T.
Melvin, James C. Norton, Bruce L. Parsley, Ed K. Van De Riet, Kenneth E.
Victor/WSD DCE CHI JTM JCN BLP EKV KEV; Clerk: RWW;
Origin: <WATSON>CATPROB.NLS;1, 14-APR-71 10:20 RWW ;;

Some Thoughts on Deferred Mode

For the most part the comments here were covered in (Journal,6221,), but I want to restate them in slightly different words and ask some questions. 1

What dates are you planning to aim at for your various stages? 2

As a teletype user my biggest problem is the slow speed of the printout not to mention the noise. Therefore I am interested in minimizing it. When editing a document requiring much structural modification a deletion, insertion, or move etc. all the statement numbers change and Imust get more print out to see where I am. 3

This mode of working runs counter to my natural inclinations. 4

The way I like to work is to take a hardcopy version of the document to be edited and make a pass through it indicating the changes. Then I sit down at the console. I would like to enter all changes using the statement numbers of the hardcopy version o that I will know where I am. 5

It would also be nice on commands such as Delete to have a syntax of the form 6

'delete 'statement ADDRESS1 CA ADDRESS2 CA -------ADDRESSn CA CA
WHERE the ADDRESSES are those before execution of the command. Other commands might require address pairs TO CA FROM. 6A

This is an extension of the C. concept. The design principle involved is that once one has entered a mode he should be able to do as much work there as is possible without reentering it. 7

I agree strongly that DEX TNLS DNLS should be as compatible as possible so that people will feel comfortable in using any of them depending on system load and terminals available. 8

From the network I would see people preparing DEX files with their local editers QED, TECO etc and then shipping such a file to us for execution. File transfer protocol on the network has yet to be specified. 9

Prepare a DEX file at local site. 9A

Enter NIC sometime later. 9B

Copy the DEX file to aNIC file. 9C

Load the file to be edited. 9D

Execute the DEX file. 9E

Or it may be possible to execute a file stored at the user site. 9F

Some Thoughts on Deferred Mode

<JOURNAL>6226.NLS;1, 14-APR-71 11:24 RWW ;
(Expedite) Title: Author(s): Richard W. Watson/RWW; Distribution:
Douglas C. Engelbart, Charles H. Irby, Harvey G. Lehtman, John T.
Melvin, William H. Paxton, Richard W. Watson/DCE CHI HGL JTM WHP RWW;
Clerk: RWW;
Origin: <WATSON>C1DEX.NLS;1, 14-APR-71 11:07 RWW ;;

To Harvey

Requirements for Stage0 and Stage1 NICTNLS

Items with a * in front of them are needed for stage 0 other items are needed for stage 1. Target dates for stage 0 are May 1, for stage1 June 15. 2A

The goal for NICTNLS is to isolate in some reasonable way network users from ARC users. That is, there are some resources such as Tenex Exec commands, TNLS commands, Tenex subsystems, and files we do not want Network users to be able to access. 2B

There are two basic approaches: 2C

1) Place with NICTNLS those commands accessible from the Network 2C1

2) Place some simple protection structure within both Tenex and TNLS which only allows Network users access to allowed resources. 2C2

The creation of NICTNLS would seem the logical choice as NLS is evolving in this direction. A simple protection structure can be placed in NICTNLS to allow classes of access rights. 2D

Users of the NIC will log into NICTNLS with the normal Tenex login command. The question is raised whether or not we should also require entering of initials. I think not as we can have unique users names and look up the initials. 2E

A simple approach to implementing protection on the various commands and calls to subsystems would be to store a number (lock) with each command or subsystem. Users would be assigned a number (key). A user could access a subsystem or command if his key value was less than the value of the lock. If desired, this appraoch could be applied to subcommands as well. 2F

File protection would be handled with the normal Tenex protection mechanisms. The Tenex file system considers three sets of users. 2G

1) yourself 2G1

2) the group to which you belong 2G2

3) others 2G3

One can set the type of access to files allowed for each of these three sets of users. Any combination of the following capablities are allowed: 2H

i) Read 2H1

ii) Write 2H2

iii) Execute 2H3

iv) Append 2H4

v) List file in directory listing 2H5

Further, directories can be made available to selective Groups. 2I

NICTNLS should have the capability to start up other forks for background processes such as those used in the Journal system. 2I1

Tenex Executive Commands to be made available to Network users. 2I2

Login	Daytime	Rename
Logout	Directory	Undelete
Link		
Break Link	Delete	
Connect	Expunge	
Copy (to disc only)	↑T	

2I2A

TNLS commands not to be available to Network users 2I3

Goto
Load940 File
Output Quickprint
Load Checkpoint
Output Checkpoint
Output Device Printer
Output Procesor 2I3A

New TNLS commands required: 2I4

*Telnet Echo 2I4A

*NIC Echo 2I4B

The above would probably be subcommands of Execute Viewchange. These commands must do the right thing to the monitor also so that it echos or not. 2I4B1

For Network users operating from locally echoing systems, Execute Edit is probably useless, and some submodes of Execute Viewchange probably won't have meaning. 2I5

The default mode is to assume that user is at a locally echoing system unless explicitly commanded otherwise. 2J

In locally echoing case, no echoing during command is given. 2K

In order to aid users, a modifcation to the syntax should check for a ? in any field but a LIT. If found, the command is deleted and the syntax for the command should be prnted out in full as a prompting. From my experience using a teletype with 1 character feedback, I feel strongly network users without any feedback will need and appreciate such a feature and that it should have fairly high priority. More detailed help can be obtained by loading the TNLS Online Primer file. 2L

Some other things needing doing: 3

* Execute ViewChange implementation completed. 3A

* All terminations by CA's, no CR's. 3B

*Why double printing and sometimes new lines after shift chars on model 33 3C

* Change leftright movement conventions. 3D

* Any additional debugging required on TNLS. 3E

The command / instead of printing out the entire statement should probably only print enough characters on each side of the control marker to indicate context, say 10 chars. 3F

It would be nice to have a symbol indicating end of statement for insertion purposes. 3G

Requirements for StageO and Stage1 NICTNLS

<JOURNAL>6229.NLS;1, 14-APR-71 14:03 RWW ;
(Expedite) Title: Author(s): Richard W. Watson/RWW; Distribution:
Charles H. Irby, Douglas C. Engelbart, Mimi S. Church, William H.
Paxton, William S. Duvall, John T. Melvin, James C. Norton, Bruce L.
Parsley, Kenneth E. Victor, Ed K. Van De Riet/CHI DCE MSC WHP WSD JTM
JCN BLP KEV EKV; Clerk: RWW;
Origin: <WATSON>TNLSTODO.NLS;5, 14-APR-71 11:56 RWW ; ;

To Charles,
Please give me some feedback on three questions:
1)How many man days/weeks will the vatious tasks require?
2)When can the items for StageO and Stage1 or some approximation
to them be completed.
3)What tasks have a nigher priority than these if the May 1 and
June 15 dates seem hard to make?
Given the priority of getting up the NIC I assume there are more
people who might help with these than just the core NLS people.
Thanks

INTRODUCTION TO THE AUGMENTATION RESEARCH CENTER 1

The Augmentation Research Center (ARC) of Stanford Research Institute's Information Science and Engineering Division is an externally supported, multiply sponsored group of 25 persons working in close cooperation on the problem of "augmenting the human intellect". "Augmentation" means extension, improvement, and amplification of the intellectual capabilities of humans, both as individuals and as working groups. 2

Our current approach concentrates on the use of highly interactive computer systems designed to aid individuals and groups in manipulating the informaton that they work with. This manipulation of information includes the following: 3

Externalization and storage of "ideas" in symbolic form, for example, English text, drawings, computer programs, or special structures for relating various stored items. 3A

Study of the stored material, by means of high-speed computer display of the text, drawings, etc., coupled with specialized information-retrieval techniques. 3B

Modification and updating of the stored material by means of a highly sophisticated system of interactive commands, which permit a range of operations from detail editing to wholesale rearrangement of information structures. 3C

Access to other computation and storage facilities Through the ARPA Computer Network 3D

The research group is involved not only in the design of computer systems, but in studying and creating the methodology for using these systems in intellectual tasks such as system design, management, and implementation. An augmentation system is viewed as both a set of tools and the methodology for their use both of which are highly interdependent. 4

The ARC Online System (NLS) is introducted below; it presently runs on a Digital Equipment Corporation PDP-10 using the Bolt Beranek and Newman TENEX operating system. 5

INTRODUCTION TO THE ARC ONLINE SYSTEM 6

The RC Online System (NLS) has not been designed to solve a specific problem such as electrical circuit design, or chemical plant simulation. Instead NLS is designed to allow the creation, manipulation, and study of general symbolic

material. This symbolic material may be a design representation which could be shipped on or offline for processing by a special application oriented processor and the results fed back to NLS for further study. One useful way to view NLS is as an online office with capabilities for creating, storing, manipulating, retrieving, studying, communicating with coworkers, and obtaining outside specialized services. A 6A

The NLS file system allows structured information to be stored in form easy to manipulate and study interactively. The NLS Executive provides a command language for communication with the special NLS processors which can operate on the NLS file system and provides communication between the processors and terminals of different classes. Different classes of terminals and users can be allowed access to subsets of the NLS command set. The NLS Executive also allows access to other facilities local or remote such as other data management systems, and special and general purposes processors providing capabilities not in NLS. 6B

Introduction to the Network Information Center 7

The Network Information Center (NIC) is an on and offline Reference and Communication System which offers a subset of the ARC capabilities to the ARPA Network community, although in some case additional capabilities have been added to meet the requirements of a Network facility. We have established a "network" of R & C (Reference and Communication) Stations, one more per Network site, holding hard copy reference material that we supply (by mail and online), and served locally by a Reference and Communication Agent assigned by the site. We have set up a set of "Enterprise" telephone circuits covering the geographical areas of all sites connected to two incoming private lines at ARC that are attended by an answering service. The system provides toll-free around-the-clock communication for all sites. 7A

A selected sub-collection of our master document collection has been replicated and a set installed at each Reference and Communication station, together with a computer-generated hard-copy shelf list and author- and keyword out of context sorted index. 7B

The agent at each site is backed up by a technical person (liaison man) to field technical questions from outside about his site and from inside about the Network and NIC services. 7C

We support both online and offline the interchange of memos and messages. We catalog them for future retrieval and distribute copies to each site's collection to stimulate dialogue. 7D

Services initially to be available online include the following: automatic message sending and cataloging, interactive querying of the catalog, and other network information such as files of network participant personnel, network facilities, and documentation of NIC facilities, full text retrieval of computer-held information, private-collection management, documentation-development aids, publicaion support, etc. 7E

RWW 14-APR-71 14:36 6230

Introduction to ARC

<JOURNAL>6230.NLS;1, 14-APR-71 14:36 RWW ;
Title: Author(s): Richard W. Watson/RWW; Distribution: Marilyn F. Auerbach, Douglas C. Engelbart, Charles H. Irby, Jeanne B. North, James C. Norton, Richard W. Watson/MFA DCE CHI JBN JCN RWW; Clerk: RWW;
Origin: <WATSON>INTRO.NLS;1, 14-APR-71 14:01 BER ;

There seems to me to be a need for some brief introduction to ARC to place in our manuals that will go out to the network so that they will not make the mistake of thinking that the TNLS that they see is all of NLS .We do not want people to think that we just have a text editor as many do . Therefore I collected some material from ARC documents and added a little as a first crack at such an introduction. Comments for improvement are requested.

Proposal for Crash Recovery of Critical NLS files

There are a number of files which are used by the system, and may be left in an undetermined state as the result of a crash. 1

Among these are files used by the Journal system. 1A

It is proposed that a recovery procedure be written which is executed each time the system is brought up. 1B

It may be executed manually at first, and automatically after TENEX is modified to initiate jobs when it comes up. 1B1

The manual operation of the program should be considered a standard part of system recovery, and should be the responsibility of the person recovering the system. 1B2

The NLS file recovery system (called <subsys>Filerecover) will perform the following functions: 1C

Load a file named <subsys>nlsrecov. 1C1

Verify the file, and abort with a message to the operator if it is bad. 1C2

For each file on the list, perform the following: 1C3

Load the file 1C3A

If it is not locked, close it and proceed to next file. 1C3B

Verify the file, and if it is bad: 1C3C

If there is a Partial Copy, unlock the file, otherwise type a message to the operator. 1C3C1

If there is a partial copy, update the file. 1C3D

Close and unlock the file 1C3E

1D

The nlsrecov file will have one statement for each file to be recovered, and that statement will contain the full name of the file , minus the version if the most recent version is to be used. 1E

Example: 1F

<Journla>cnumbers.nls 1F1

WSD 14-APR-71 16:50 6231

Proposal for Crash Recovery of Critical NLS files

<JOURNAL>6231.NLS;1, 14-APR-71 16:51 WSD ;
(Expedite) Title: Author(s): William S. Duvall/WSD; Distribution: James C. Norton, Harvey G. Lehtman, Charles H. Irby, Ed K. Van De Riet, Kenneth E. Victor/JCN HGL CHI EKV KEV; Keywords: File Recovery Crash; Clerk: WSD;

I will assume acquiesence if I do not hear from people by the evening of Thurs, 15APR71.

JÖN 15-APR-71 8:18 6232

Character sets .. updated

Marilyn: Can you update the character sets for 33,37 TTY,TI, Execuport for the Primer next? I need to send a draft of the 37 TTY set to Duane Stone at RADC as soon as possible.. like today. OK?

1

JCN 15-APR-71 8:18 6232

Character sets .. updated

(J6232) 15-APR-71 8:18; Title: Author(s): James C. Norton/JCN; Clerk: JCN;

JCN 15-APR-71 8:38 6233

Current character set assignment list update request

Marilyn: Can you update the current assignment of the character sets for 33,37 TTY,TI, Execuport for the Primer next? I need to send a draft of the 37 TTY set to Duane Stone at RADC as soon as possible.. like today. OK? 1

JCN 15-APR-71 8:38 6233
Current character set assignment list update request

(J6233) 15-APR-71 8:38; (Expedite) Title:
Author(s): James C. Norton/JCN; Distribution: Marilyn F. Auerbach, Dirk H. Van Nouhuys/MFA DVN; Keywords: ; Clerk: JCN;

RWW 15-APR-71 9:57 6234

NIC telephone emergency numbers

Jean I just looked over the material you gave me on the NIC telephones. I noticed that the answering service was given a set of emergency phone numbers. Do these need to be up dated? 1

RWW 15-APR-71 9:57 6234

NIC telephone emergency numbers

(J6234) 15-APR-71 9:57; Title: Author(s): Richard W. Watson/RWW;
Distribution: Jeanne B. North, James C. Norton/JBN JCN; Clerk: RWW;