JCN 17 APR 73 7:12AM 15721

Stanford Research Institute
Augmentation Research Center
333 Ravenswood Avenue
Menlo Park, California 94025

Bert R. Sutherland
Bolt, Beranek, and Newman, Inc.
50 Moulton Avenue
Cambridge, Mass.

Dear Bert:

I really enjoyed the time I spent with you and your people last week. Thanks for your hospitality. 1

The accounting data and some comments about what we are doing in that area are being pulled together--along with the things that stacked up while I was away--and I'll send them to you late this week. 2

In talking with Larry Roberts here 4/11, I find that he specifically wants (at least from ARC) data on the use of the ARC system by Network users for the month of March. This is in preparation. I'll send it to you and Bob Kahn at ARPA. 2a

I had a good discussion with Licklider after I left you. It appears that he and some of his people will become users of the Workshop Utility---personal support and/or expanded support for the Speech Understanding Research (SUR) community. 3

I hope that you can get the IMLAC working in DNLS mode thru a TIP as we discussed. The power is clearly far greater there. If you (with our help??) can find an area or two where use of NLS and its methodology would be of help to your operation, we hope you will request part of the service that Larry Roberts is buying for ARPA contractor use. We need to discuss this further. The area of document production as well as software engineering augmentation--thru community dialog--appear most suited for your initial use. 4

I really think that the ARC TNLS/DNLS documentation will improve to the point where it is not a barrier for new learners. The cue cards I left may help for now. 5

Thanks again for your ideas about the government auditing situation. I'm still sleeping nights anyway. 6

Sincerely,

James C. Norton
Augmentation Research Center

JCN/jcn

(J15721) 15-APR-73 17:28; Title: Author(s): Norton, James C. /JCN;
Distribution: /RWW DCE; Sub-Collections: SRI-ARC; Clerk: JCN;
Origin: <NORTON>TOBERT.NLS;1, 11-APR-73 20:55 JCN ;

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Bolt, Beranek, and Newman, Inc.
50 Moulton Avenue
Cambridge, Mass.

Dear Bert:

In response to your questions about what we are doing in the system use accounting area, I am sending you some recent documents that we have prepared for our internal use. We would be willing to produce more for you upon request. 1

There are two main sources of the data we use in accounting analysis. 2

1. The TENEX-gathered FACTFILES.....such as <accounts>fact.*;* @ SRI-ARC. 2a

These are based on the use according to default account numbers (or those otherwise entered by users) as shown in: <identfile>accounts-user.*;* @ SRI-ARC. 2a1

A listing of the ARC organizational structure as related to the above accounts is contained in (11824,). Copies of the above two documents are enclosed. 2a2

2. The ARC superwatch program gathered statistics files such as <accounts>*.st;* 2b

This is the subsystem I showed you when I visited last week. 2b1

From the TENEX accounting report generating programs we make a further breakdown of use by user group and individual ident. These are on a weekly basis. I have included those reports we made for the months of February and March 1973. They are: 3

14418 FEB 4-10, 1973 3a
14707 FEB 11-17, 1973 3b

FEB 18-24, 1973 is missing 3c
14926 FEB 25 - MAR 31, 973 3d
15104 MAR 4-10, 1973 3e
15223 MAR 11-17, 1973 3f
15396 MAR 18-24, 1973 3g
15626 MAR 25-31, 1973 3h

We made a study of Network use of the ARC machine and sent it to ARPA-IPT@USC-ISI at Larry Roberts' request. I am enclosing a copy of (15947,) which includes the IPT-requested data and some additional data on the use by local users--ARC and Xerox. 4

We are running at near capacity during the business day (as I guess you and usc-isi are also?). 5

Our recent study of our costs and usage is shown in (15066,). 5a

I had hoped to get this to you earlier, but.... visits, etc. got in the way. 6

(J15722) 17-APR-73 06:05; Title: Author(s): Norton, James C. /JCN ;
Distribution: /RWW WRS2 ; Sub-Collections: SRI-ARC; Clerk: JCN ;
Origin: <NORTON>ACCOUNTING.NLS;1, 17-APR-73 05:44 JCN ;

AAM 11-APR-73 12:18 15727

SENDPRINT doesn't work

I sent a journal message sometime last week, to BUGS and DCW (neither of which responded), commenting that SENDPRINT doesn't work at all when asked to send to a TIP. Since this is the only good way for me to get long Journal documents I would really like it to be fixed. Perhaps since you documented it, you are the right person to complain to?
Regards,
Alex McKenzie 1

AAM 11-APR-73 12:18 15727

SENDPRINT doesn't work

(J15727) 11-APR-73 12:18; Title: Author(s): McKenzie, Alex A. /AAM;
Distribution: /MFA; Sub-Collections: NIC; Clerk: AAM;

cards

May we have 15 Quick reference cards, a la rfc 496?
Thanks.

Eye the way, I just received the Status of Revisions note at a very, very old address. Would you please make sure that all lists match the information in my ident file (dhc) ?

Thanks again.

1

cards

(J15728) 11-APR-73 10:30; Title: Author(s): Crocker, David H. /DHC;
Distribution: /MLK; Sub-Collections: NIC; Clerk: DHC;

NMDT Meeting Report - April 9, 1973
Participants: CFD, CHI, JGM 1

Agenda: 1a

A variety of topics were discussed -- summarized below: 1a1

On the Extensibility of MPS: 1a2

CHI and CFD feel that one approach to simplifying the construction of NLS is by making MPS a higher level languge through the addition of NLS type primatives (terminal I/O, file I/O, pattern matching, etc). The present definition of MPS does not seem to embody sufficiently powerful constructs to permit this degree of extensibility. JGM proposed a possible user-defined compiler extension facility which would work along the lines of the INCLUDE facility and would permit significant extensions to MPS. JGM will investigate the implementation feasibility of such a facility. 1a2a

On a User-Programming language for NLS 1a3

If MPS may be sufficiently inhanced by the facility described above, it may suffice as the "User-Programing Language for NLS". 1a3a

On the definition of the "state" of NLS 1a4

The information desplayed on a user's screen is a portrayal of information contained in a file data base after a set (possibly NULL) of manipulaton and formatting operations have been applied to the information. There is no explicit requirement which says that modifications to the image on the screen must be immediately reflected by corresponding changes in the file data base. The modification of the data base must however, be invisible to the user. This sort of flexibility implies that many forms of editing and manipulation operations may be performed "locally" to the display buffers, permitting isolation and de-synchronization of some of the editing and file manipulation operations. The editing may be performed in a separate fork (or separate computer) from the file manipulation operations. 1a4a

On the design groundrules for NLS 1a5

Two more groundrules were added to the list compiled last week. 1a5a

1) Information consistency: 1a5a1

If the same piece of information appears simultaneously in more than one display area, then any modifications applied to one of the representations must be reflected in the other also. 1a5a1a

2) File modification restrictions: 1a5a2

we will not permit simultaneous modifications to the same data file by more than one user. 1a5a2a

Next Meeting: 1b

Thursday, April 12, 1:30 pm at PARC 1b1

15729 Distribution

Irby, Charles H. , Dornbush, Charles F. , Mitchell, James G. , Paxton, William H. , Deutsch, L. Peter , Wallace, Donald C. (Smokey) , Satterthwaite, Ed H. , Bass, Walt , Andrews, Don I. ,

NMDT Meeting Report - April 9, 1973

(J15729) 11-APR-73 12:07; Title: Author(s): Dornbush, Charles F.
/CFD ; Distribution: /NMDT NMRT ; Sub-Collections: SRI-ARC NMDT NMRT;
Clerk: CFD ;

DIRK HOPE THIS GETS TO YOU. I HAVE BEEN TRYING TO ORIGINATE A MESSAGE TO YOU FOR WEEKS NOW. YOUR SYSTEM DOES NOT SEEM TO RESPOND TOO WELL THROUGH THE ARPA NET. PLEASE READ THE FILE <ALOHA>DVN IT CONTAINS THE MESSAGE I WAS GOING TO SEND. I AM IRYING TO TEACH YOUR SYSTEM TO A FEW PEOPLE OFVER HERE IN HAWAII BUT IT DOESN'T SEEM TO STAY UP LONG ENOUGH TO BE USEABLE??? WE ARE TRYING TO LOGIN ON THURSDAYS AND TUESDAYS AT 10:30 HNL TIME 12:30 YOUT TIME. BEEN TRYING TO LOOK AT MY MESSAGE FILE BUT YOUR SYSTEM SAYS I HAVE NOW SUCH FILE AND TO MAKE ONE. WHEN I TRY TO MAKE ONE I GET FATAL SYSTEM ERROR AT FREEZE BLOCK SOMETHING???.WHAT IS THE CHARACTER YOU CALL CENTER DOT? HOW ABOUT MY FILE ALLOCATION SPACE HOW DO I GET MORE?? I THOUGHT THE PARCIAL COPYS WERE SOPPOSE TO TAKE CARE OF THEMSELVES WHEN THE REAL FILES ARE DELETED?? 1

(J15730) 10-APR-73 23:41; Author(s): Harrison, Christopher G. /CGH;
Distribution: /DVN; Sub-Collections: NIC; Clerk: CGH;

CHI 11-APR-73 08:03 15731

comment on 15654

Dean, with respect to MAKEREF not checking TJCAT, you should talk to JDH -- There is more to this than you think. He should be able to show you a couple of routines to make life easier for you. -- Charles. 1

CHI 11-APR-73 08:03 15731

comment on 15654

(J15731) 11-APR-73 08:03; Title: Author(s): Irby, Charles H. /CHI;
Distribution: /NDM; Sub-Collections: SRI-ARC; Clerk: CHI;

CHI 11-APR-73 08:05 15732

Submit Statement is what you want

Walt, do you know that Execute Journal Submit Statement makes the statement get delivered just as though you had used the Submit Message command?? -- Charles. 1

CHI 11-APR-73 08:05 15732

Submit Statement is what you want

(J15732) 11-APR-73 08:05; Title: Author(s): Irby, Charles H. /CHI;
Distribution: /WLB; Sub-Collections: SRI-ARC; Clerk: CHI;

DHC 11-APR-73 12:01 15733

New viewpsec revisited

I just talked with Jeanne North, who told me that a viewspec to cause directives not to be printed would cost too much cpu.

Therefore I would like to suggest an alternative, and less clean, solution: A viewspec which shows no text beginning with '. nd ending with '; . This would admittedly allow errors, but would probably work 99 per cent of the time.

It seems to be a very unfortunate thing for Jeanne o have to manage two separate, but almost equal files (e.g., apranews). 1

DHC 11-APR-73 12:01 15733

New viewpsec revisited

(J15733) 11-APR-73 12:01; Title: Author(s): Crocker, David H. /DHC; Distribution: /NP; Sub-Collections: NIC NP; Clerk: DHC;

DLS 11-APR-73 09:26 15734

Cheap DNLS terminals--Superbee

Some general thoughts on a replacement for current DNLS terminals and some specifics on a particular terminal-the Super Bee.

Cheap DNLS terminals--Superbee

On the 9th of Apr. we spent the afternoon listening to and watching a demo of Beehive Terminals latest release the Superbee. It has a number of features which may make it fairly easy to modify for use with DNLS. 1

Some of the specs are: 2

2040 characters (25X80) 5X7 or 7X9 dot matrix 2a

blinking and reversed video 2b

memory -- can contain more than one screen of data 2c

cursor address and sence--by line and column 2d

interface controller--LSI Microprocessor/MOS ROM program 2e

transmission--to 9600 baud, switch selectable 2f

The cost is very attractive--about $3000 for a model with all kinds of built in editing features (which I feel are not need and would only be confusing to a NLS user), about $2500 for the standard unit. They will be available 1 JULY. 3

In talking with the Beehive rep, he felt that they could replicate the IMLAC functions in the microprocessor. It is a 7 bit machine with room for up to 15,000 instructions. I'm not sure we want to do this. 4

We spent some time in explaining the functions of the mouse to him. We did not explore the problems of interfacing a mouse, but he felt that these functions could be replicated with minor mods to the existing keyboard. 5

All of the keys have a repeat function, ie. when they are held down for more than a half second they repeat--including the left, right, up and down cursor positioning buttons. The cursor moves rapidly across the screen--I would judge about 1 sec to traverse the screen. I played with them for a few minutes and found it fairly easy to stop on a character. 5a

With the inclusion of three additional buttons on the cusor positioning pad to replicate the mouse buttons, one would have a "poor man's" mouse. 6

He also felt that it would be no problem to include a switch that would make invisibles visible. I feel this is very important when creating tabular data, charts and graphs. 7

With these type of mods there would be a one time engineering fee of a few thou, but the terminal itself would still be in the 2.5-3.0 K range. 8

Cost/Convenience tradeoffs 9

To make DNLS terminals competitive with TNLS terminals, we may have to sacrifice a little in the user interface area. 9a

Binary Keyset: 9b

If its a matter of really cutting dollars, I would say that the binary keyset would be the first to go. Its very seldom that the system is so fast that I can really make use of the keyset to speed up my interaction with the system. This may be because of my lack of skill in using the keyset and/or DNLS. However, there are cumulative delays introduced by the ARPANET and the comm lines between the terminal and the TIP, which are unavoidable for a remote DNLS user. 9b1

Mouse: 9c

The convenience of the mouse for rapidly pinpointing a character is undeniable. In practice we have found the mice to be less than reliable. I'm not sure whether ours came from a geneticly poor litter or whether its the crummy environment they have to live in. We have to have our mice cleaned every couple of weeks to prevent jittering and wrap around of the cursor. We now have four mice for three terminals, with one in the hospital most of the time. 9c1

There is also a problem of always bugging the right character the first time. If one is to be off the character, its best to be to the right and below. 9c2

If a mouse could be interfaced for say under $500, then I'd judge that it was well worth the cost. If its a matter of a thousand or more, then we should look closer at the the key controlled cursor approach. 9c3

The key controlled cursor is most limited when a specific character has to be rapidly bugged and it is some distance away from the current cursor location. Due to the incremental movement of the cursor, however, there is never any doubt about which character is being pointed at. 9c3a

What percentage of commands require identification of a specific character? Those involving text and character always; and in some cases word, number, invisible and visible. Paul Rech might be able to shed some light on this question with his frequency of command useage data. 9c3b

My frequency use table indicates that I used commands with character or word in them 52 times in creating and editing this note. I'm sure that I had to identify a specific character at least twice that many times. 9c3b1

Screen Size: 9d

It would be desireable to have the working area of the screen equal to or slightly larger than the maximum statement size. We have run into several instances where people could not view or edit an entire statement on the IMLAC without first breaking it up and then later appending it. 9d1

In practice this is not a serious problem, and may involve reeducation of people rather than a larger screen. It may be possible however, to get the effect of a larger screen by using the scroll capability built into a lot of terminals. 9d1a

The working area of a screen could also be effectively increased by decreasing the command feedback area. On the IMLAC for example, there are 32 lines available, with size 2 characters. 8 of these are used up for the command feedback. Of these 4 are essentially blank lines used only to separate lines. If the command feedback were compressed to 2-3 lines and some technique like reverse video used to differentiate the command feedback area from the working text area, one might recoup some additional working space. 9d1b

It is also desireable to have the screen at least 72 characters wide (preferably 80), so that "what you see is what you get". This is especially true when dealing with tabular data which will later be printed out. 9d2

I will be continuing preliminary talks with the East coast Beehive rep (Frank W Richins). I will send a brocure to RWW. Their address is: 10

Beehive Terminals

Cheap DNLS terminals--Superbee

870 West 2600 South
Salt Lake City, Utah 84119
Phone--801-487-0741
TWX--910-925-5271

10a

Cheap DNLS terminals--Superbee

(J15734) 11-APR-73 09:26; Title: Author(s): Stone, Duane L. /DLS;
Distribution: /rww dvn jcn tfl jhb ejk jlm dce ;
Sub-Collections: RADC; Clerk: DLS;
Origin: <STONE>SUPERBEE.NLS;2, 11-APR-73 09:22 DLS ;

DVN 11-APR-73 13:36 15735

Justifcation for Sole Source Lease of Hazeltine 2000

Sent To Otis Courntye in SRI Purchasing

DVN 11-APR-73 13:36 15735

Justifcation for Sole Source Lease of Hazeltine 2000

In the fall the NLS information system developed at ARC will become available to users of the ARPA Network as a utility. We anticipate users will ask us to name an inexpensive terminal that will support the display version of our system. We have surveyed video display terminals that rent for less than 200 dollars a month. All require small, similar hardware changes to operate our system. Of these the Hazelteen 2000 is the most difficult to adapt to our system. We are leasing the 2000 to try first because we believe that if we can make it work right, we can easily adapt others. 1

DVN 11-APR-73 13:36 15735

Justifcation for Sole Source Lease of Hazeltine 2000

(J15735) 11-APR-73 13:36; Title: Author(s): Van Nouhuys, Dirk H. /DVN; Distribution: /DIA(fyi); Sub-Collections: SRI-ARC; Clerk: DVN; Origin: <VANNOUHUYS>METI.NLS;3, 11-APR-73 12:58 KIRK ;

JBN 11-APR-73 18:17 15736

Reply to DHC Suggestions re NEWS

Dave -- Just to document the reply to your message (15656,) with the information we established by phone. 1

1. The statement names you suggested be eliminated occur only in the file which is accessed by Query (<nic-work>arpanews) where they are necessary. The file which is intended for TTY printout is in <nic>arpanews and does not have the statement names. If you hadn't been so resourceful in finding the source of the file you were accessing in Query, you wouldn't have printed out the offending names, nor the directives mentioned below. 2

2. I'm glad you mentioned the Ignore directives; I had forgotten there was no reason for the .IgS text now that the intent was to discourage the printing out of that file. I have deleted that text from those statements, and any lingering .PES statements as well. 3

3. Your suggestion that DNLS allow the suppression of directives echoes the requests of many if not all DNLS users. CHI's reply is that this suppression would be too costly in machine time. 4

15736 Distribution

Crocker, David H. , Iseli, Jean , Kudlick, Michael D. , North, Jeanne B. ,

JBN 11-APR-73 18:17 15736

Reply to DHC Suggestions re NEWS

(J15736) 11-APR-73 18:17; Title: Author(s): North, Jeanne B. /JBN;
Distribution: /dhc ji mdk nicsta ; Sub-Collections: SRI-ARC NICSTA;
Clerk: JBN;
Origin: <NORTH>DHCREPLY.NLS;2, 11-APR-73 18:11 JBN ;

JEW 11-APR-73 15:17 15737

SMFS Problems -- Response to (15632,)

In response to (15632,), the problem of garbagy NEWS files and LOCATE's being sensitive to USER NAME are not things that were written into the code, intentionally or otherwise: neither of those bugs is present when the subsystem runs on SRI-ARC's version of 1.31. Smokey Wallace tells me that the version of 1.31 that BBN's currently running has new Network code. There may be a bug in it which accounts for the problems you've observed. I'm going to SNDMSG a report of our problem to TOMLINSON and see if he has any comments. 1

In the mean time, I guess I can only suggest that you run SMFS at SRI-ARC. I really do appreciate your continued bug reports and will try to see that they yield some useful response. --Jim 2

15737 Distribution
Crocker, David H. ,

JEW 11-APR-73 15:17 15737

SMFS Problems -- Response to (15632,)

(J15737) 11-APR-73 15:17; Title: Author(s): White, James E. (Jim) /JEW; Distribution: /dhc ; Sub-Collections: SRI-ARC; Clerk: JEW; Origin: <WHITE>DHCMSG.NLS;3, 11-APR-73 15:16 JEW ;

JHM 11-APR-73 09:30 15738

interfacing a grafacon

We've been given a grafacon to add to our system and are in the process of designing the interface for it. Since your site has been active in graphics, we would like to know if there is someone there who might be able to give us a few pointers on the best way to go about this. For instance, should we build a very simple interface and make the software do all the work or is it better to make the interface smarter (eg. don't transmit the point if it's the same as the last one) in order to cut down the data rate from the grafacon. thanks for your help. 1

15738 Distribution
Hearn, Anthony C. , Wessler, Barry D. ,

JHM 11-APR-73 09:30 15738

interfacing a grafacon

(J15738) 11-APR-73 09:30; Title: Author(s): McAfee, JOHN H. /JHM;
Distribution: /ACH BDW; Sub-Collections: NIC; Clerk: JHM;

KIRK 11-APR-73 20:08 15739

TUG Formatted Files from BBN

Where are the TUG files from BBN? Have they already been incorporated in <TENEX-DOC>TUG.NLS? I could not find them. 1

KIRK 11-APR-73 20:08 15739

TUG Formatted Files from BBN

(J15739) 11-APR-73 20:08; Title: Author(s): Kelley, Kirk E. /KIRK;
Distribution: /mdk ; Sub-Collections: SRI-ARC; Clerk: KIRK;

Crash Recovery

This cookbook for recovering from a crash is written primarily for weekenders and nighttimers (like some of the NIC personnel) who may need it from time to time, but aren't familiar enough with the procedure without such a cookbook. Please use it at your own discretion. I would like to encourage BAH JEW and possibly othersto be familiar with this, unless you object.

INSTRUCTIONS FOR RESTARTING ARC TENEX AFTER A CRASH 1

OVERVIEW 2

There are two possible restart methods: from TAPE, and from DISK 2a

The important things to know are: 2b

1) How to use the PDP-10 console. 2b1

2) How to restart using tape or using disk. 2b2

3) What messages to look for on the system teletype console. 2b3

4) How to run one or two special system programs if necessary to clean up the disk. 2b4

PDP-10 CONSOLE 3

The four main buttons on the PDP-10 console that are needed are, from left to right,
READ-IN, START, STOP, RESET. 3a

The two rows of keys that may be needed are the "address" keys and the "data" keys. 3b

BEFORE BEGINNING, MAKE AN ENTRY IN THE CONSOLE LOG BOOK GIVING DATE, TIME, AND CAUSE OF CRASH. 3c

For the "cause", you may use the console teletype message "BUGHLT @ nnnn". 3c1

SCENARIOS FOR RESTARTING AFTER A CRASH 4

a) USING TAPE 4a

First, be sure that the DEC TAPE which is mounted on the tape drive above the PDP-10 console is the CURRENT tape. The number on the reel MUST MATCH the number on the plaque that is mounted alongside the console. 4a1

Second, be sure that the large toggle switches on the DEC tape unit are set to "write lock" and to "remote". 4a2

Third, be sure that the DEC tape UNIT is "8". 4a3

Then, on the PDP-10 console, hit STOP RESET READ-IN in that order. This starts the tape, to read the system into core. 4a4

When initial reading is completed, a carriage return will be output to the console teletype. Hit carriage return in response to this, to confirm that you want to proceed. 4a4a

After you respond with a carriage return, reading of the tape will continue for about one to two minutes more. 4a4b

When reading is finished, there will be a typeout (on the system teletype) which gives the status of the disk packs. These typeouts (and what to do about them) are discussed below under "SYSTEM TELETYPE MESSAGES". 4a4c

b) USING DISK 4b

It is quicker and more usual to reload the system from DISK, rather than from TAPE. The main difference is that the TAPE version has the latest monitor patches, if any, and so is more up to date than the DISK version. 4b1

To load from disk, set OCTAL 106 in the "address" keys (top right keys on PDP-10 console). 4b2

Then press STOP RESET START in that order. This loads the system from disk. 4b3

When reading is finished (it will only take a few seconds), there will be these typeouts on the system teletype: 4b3a

a) status of the disk packs, and 4b3a1

b) "TENEX RESTARTING ... WAIT". 4b3a2

These typeouts (and what to do about them) are discussed below under "SYSTEM TELETYPE MESSAGES". 4b3b

SYSTEM TELETYPE MESSAGES 5

The first message you get concerns disk pack status. 5a

The first five disk packs must be ON-LINE.
The sixth one must be OFF-LINE. 5a1

If this isn't what is typed out, then you cannot proceed. Get a systems programmer to help if it's urgent. If it's not urgent and it can wait till a systems programmer is available, then leave a clear note in the log book and go home. 5a2

The second message says
" TENEX RESTARTING, WAIT ... " 5b

This means that the system has automatically begun to run the program <SYSTEM>CHECKDSK, which checks and counts the number of file directories. 5b1

THIS WILL TAKE ABOUT 3 TO 4 MINUTES. 5b1a

A visible counter is kept in the lower right console area, to let you eyeball the progress. 5b2

When the counter gets up to 265 (octal) then the program is finished. Take whatever action is required by the messages that were typed out (see next paragraph). 5b2a

If the counter goes crazy (like very fast counting, in a loop) then there is a locked directory and you can't proceed. As before, get a systems programmer if it's urgent, or leave a clear message in the log and go home. 5b2b

The next messages give 5c

a) the number of MDA's or "Multiple Disk Allocations" that were found in the check of system directories, and 5c1

b) the number of PTE's or "Page Table Errors" that were found. 5c2

These are followed either by the message "TENEX IN OPERATION" or "TENEX UNAVAILABLE ... DISK NEEDS FIXING". 5c3

IF THE MESSAGE IS "TENEX IS OPERATION", YOU'RE DONE. 5d

IF THE DISK NEEDS FIXING, you've got to run some special system programs. Be sure to note what you've done in the console log. . 5e

SPECIAL SYSTEM PROGRAMS 6

The scenario for running these programs is as follows: 6a

↑C
@OPERATOR [sp] RALPH [sp] [cr] 6b

This logs you in as user OPERATOR password RALPH. 6b1

@DEL [sp] <DIRECTORY>FILENAME [esc] [cr] 6c

This deletes the bad files that appeared in the MDA and PTE typeouts. The bad files --- the ones that you type in when doing this delete operation --- are those files with large numbers of MDA's and/or PTE's. DON'T delete ALL the files, just those with large numbers of MDA'S or PTE's. 6c1

@DELD [cr] 6d

This runs DELD to get the bad files off the disk. 6d1

@<SYSTEM>CHECKDSK [esc] [cr] 6e

This runs the same program that was run automatically earlier, after you had gotten the "TENEX RESTARTING .. WAIT" message. See above for comments and instructions. That's where you are now. 6e1

NOTE: This program takes 3 to 4 minutes to complete. See instructions above for how to tell if it's in an interminable loop or is just doing fine. 6e2

Crash Recovery

(J15740) 11-APR-73 14:14; Title: Author(s): Kudlick, Michael D. /MDK
; Distribution: /dcw jcp ; Sub-Collections: SRI-ARC; Clerk: MDK;
Origin: <KUDLICK>CRASH.NLS;6, 11-APR-73 14:05 MDK ;

NDM 11-APR-73 15:56 15741

Re: (15654,) TJCAT in MAKEREF

TJCAT gets merged into SPAREJOU1S (which MAKEREF checks) weekly. Since TJCAT is in a completely different format, to include it in the program would slow the program down significantly. I will leave the judgement up to you as to whether the maximum of one week lag calls for the effort. Give me a shout if you want me to go ahead. --Dean 1

NDM 11-APR-73 15:56 15741

Re: (15654,) TJCAT in MAKEREF

(J15741) 11-APR-73 15:56; Title: Author(s): Meyer, N. Dean /NDM;
Distribution: /DCE JCN(thought you might be interested);
Sub-Collections: SRI-ARC; Clerk: NDM;

NDM 11-APR-73 16:00 15742

Re: (15500,) Journal Headers on letters

Walt changed the Output Processor so that journal headers may be redefined (see --15674,). I will talk to him about this when he gets back. In the mean time, I suggest that the HJournal directive be deleted before journalization. Please accept that as a temporary measure until I talk to Walt. 1

NDM 11-APR-73 16:00 15742

Re: (15500,) Journal Headers on letters

(J15742) 11-APR-73 16:00; Title: Author(s): Meyer, N. Dean /NDM;
Distribution: /DCE; Sub-Collections: SRI-ARC; Clerk: NDM;

(J15743) 11-APR-73 04:37; Title: Author(s): Prather, Ralph /RP;
Distribution: /; Sub-Collections: SRI-ARC; Clerk: RP;

SRL 11-APR-73 14:39 15744

Network Tests of Text Insertion

We have been doing some tests at ARC over the past couple of months to determine the cost for inserting text under various conditions. We would like to expand these tests to include some data collected from people on the net. If you, or someone else at your site would be interested in such a project, let me know and I'll send a description of the test (via the journal). The amount of time needed for the testing will be less than an hour. Please let me know ASAP. Thanks. --Susan Lee 1

SRL 11-APR-73 14:39 15744

Network Tests of Text Insertion

(J15744) 11-APR-73 14:39; Title: Author(s): Lee, Susan R. /SRL;
Distribution: /NJN DHC SSP; Sub-Collections: SRI-ARC; Clerk: SRL;

RS2 12-APR-73 08:04 15745

request for nic doc. 10159.

jeanne,

would you be so kind as to send me nic 10159 - authored by farber, titled: ucsb imp interface specs., 1 dec. 1970.

thank you for your kind attention to this matter.

regards,
bob

1

request for nic doc. 10159.

(J15745) 12-APR-73 08:04; Title: Author(s): Silberski, Robert /RS2;
Distribution: /JBN; Sub-Collections: NIC; Clerk: RS2;

AAM 12-APR-73 14:26 15748

Jon,
About the Graphics meeting: I suppose its about time that I, in my capacity as some sort of protocol czar, learned something about the players and the ideas in the Network graphics world.. Also, I think it might be useful for Nancy to get more involved, at least as an observer. Therefore, I'm currently inclined to have both of us sign up (or at least try to). You, on the other hand, are not only roughly the same sort of czar that I am but also have been at previous graphics meetings and may even know something about the problems; this all makes it seem reasonable for you to go if you can spare the time. Does this sound like too much manpower to invest? Any other thoughts? Why don't you call me when you've thought about this for a minute or two.
Alex 1

15748 Distribution
Postel, Jonathan B. ,

(J15748) 12-APR-73 14:26; Title: Author(s): McKenzie, Alex A. /AAM;
Distribution: /JBP; Sub-Collections: NIC; Clerk: AAM;

ARCG NJN 12-APR-73 08:02 15749

sample message.

dont bother.

ARCG NJN 12-APR-73 08:02 15749

sample message.

this is a test. 1

15749 Distribution
Neigus, Nancy J. , Chipman, Steve G. ,

ARCG NJN 12-APR-73 08:02 15749

sample message.

(J15749) 12-APR-73 08:02; Title: Author(s): ARC, Guest O. , Neigus, Nancy J. /ARCG NJN; Distribution: /NJN SGC; Sub-Collections: SRI-ARC; Clerk: ARCG;

DAY 12-APR-73 13:48 15750

Yet Another .....

Since the FTP meeting I have had a chance to place some distance between what transpired there and myself and have made some startling revelations. (At least to me they are). 1

It appears that the forest-for-the trees syndrome has been slowly settling down on us. From the discussion at the meeting and from the various RFC's, it becomes apparent that we have come to view the network as a very sophisticated dial-in mechanism. It is as if the only users of the network were people sitting at terminals. The standard scenario for network use both present and future has become: "dial-up" the desired machine, log in, get or do what you need, log out, and "hang up". The only real advance over this is that we have automated the dial-up and log in procedure. Admittedly, we have been technically restricted to such a paradigm due to the pragmatics of writing and debugging NCP's and protocols. However, we should be careful not to let this scenario become the only way to use the net. But of most import we should not allow it to jade our designs of protocols to such a degree that we find ourselves at an evolutionary dead end and have to start from scratch. 2

Unfortunately, FTP, at present, represents such a dead end. It has already grown beyond the size of an adaptable mammal and is quickly becoming a dinosaur. Already there are signs in FTP of the protocol not allowing certain wide classes of operations which should eventually be possible in a Network Virtual File System. FTP is much more that a file transfer protocol. It is a file transfer and an interactive file maintenance protocol. There are uses of FTP I would like to make that don't fit these models. 3

I would like to propose the following be done: the present FTP be broken up into two parts 1) a file access protocol and 2) a file maintenance protocol. 4

First, the file access protocol would be oriented toward use by processes only. The protocol would be concerned only with the description of the file, the mechanics of transmission, and operations controlling the transfer. Ideally, this protocol's outward appearance would be sufficiently amorphous to allow the protocol to be incorporated into a local "high level" language. If this were possible the network could become virtually transparent to the user. In effect this

Yet Another.....

would implement network IO. I think this is much more along the lines of what many users want to be able to do. 4a

Second, the remaining commands of the present file transfer protocol would form a file maintenance protocol for interactive users who wish to manipulate their files. If the user wished to transfer a file from one place to another the file maintenance protocol would use the above FTP to do it for him. 4b

This approach is much more flexible. It also makes each protocol simpler and therefore easier to implement , debug, and maintain. Having a file access protocol consisting of a small set of general primitives could make the process of extension much cleaner and easier. 4c

Since the subject of process oriented protocols has been broached I would like to encourage discussion of protocols to allow processes to initiate processes on another host (NETRJE is a very special case of this) and the related problems of control and cooperation. A protocol or protocols to allow these facilities would provide the network with the basic system facilities to compose some very sophisticated programs. 5

Now to more mundane questions. I already hear the anguished cries of the mini-hosts. And it seems that the problem must be faced. First, let me note that the above design is to a large degree the approach being taken on ANTS, a system running on a PDP-11/20 within the framework of the present protocol. If a mini-host cannot implement a protocol then they should use a larger machine to accomplish the work. This is not unfair since most will be using a larger machine for most of thier computation anyway. If necessary special arrangements could be made between the mini and its primary host to achieve the necessary goals. 6

The above discussion constitutes my main objections to FTP as it stands. Below I have roughed out the lines upon which I would make the division and a few comments on extensions it would allow. Read it with some imagination. I would appreciate any comments, curses, etc. to be directed to me by one of the following methods: via MAIL at ISI (user code is DAY), or by journal mail (ident is DAY), or you may call me at work at (217)-333-6544. 7

Yet Another.....

Addendum 8

I would partion the present FTP along the following lines: 8a

Network Access Parameters:
USER
PASS
ACCT 8a1

File Access Protocol 8a2

FTP Transmission Parameters:
MODE
BYTE
SOCK
PSVE 8a2a

FAP File Parameters:
STRU
ALLO 8a2b

FAP operations:
RETR
STOR
ABOR 8a2c

File Maintenance Protocol 8a3

FMP Parameters:
FORM
TYPE 8a3a

FMP Operations:
DELE
RNFR
RNTO
ABOR
LIST
NLST

Yet Another.....

REST
STAT
REIN
HELP
BYE

8a3b

Presently, one may use FTP to move an entire file from host A to host B. This is, in the context of normal programming, very similar to a program reading an entire file from tape or disk into data structures declared in the program. Very few people do this thank goodness. Most programs are written to access part of the data, compute for awhile, and then get some more data. This effect can be achieved with the present protocol as long as the access to the data is sequential. If the program wishes to compute the next place in the file to get or send data, then too bad. Also if the program does not wish to see anymore data and an end of file condition has not been met, the transfer must be aborted. Not a very elegant solution. (To me, abort implies termination due to some error condition; not merely the user has seen enough). Further, it is presently "impossible" to allow a program at host A to open an FAP connection to host B and get its input from a program there or vice versa. (I admit that if one was determined enough (or masochistic enough) it could be done, but the avoidance of such torture is why we have protocols). 8b

Below are some suggested changes and extensions to FTP which could form a basis to accomplish the features described above. First, a few comments are necessary to set up the framework for discussing this:

1)The word "file" should not be taken to mean "disk file" or "tape" exclusively.

2)The word "pathname" should not be taken to mean "the name of a disk file or tape" exclusively.

3)I would propose the distinction between logical and physical byte size be adopted. The latter is a hardware constraint, a parameter of transmission. The former is an indication to the server or user of the quantum (or glumping) of the data to be sent indicating to the user or server how it is to be stored.

4)I would propose the existence of a byte pointer for purposes of addressing specific places in a file. This byte pointer would refer to bytes of size, logical byte size. This approach appears to be the most general and could be implemented with little difficulty on record oriented

machines.

5) Any command not explicitly mentioned below should be assumed to be unaffected by this proposal. 8c

The following are commands which should be interpreted as describing the file that one wishes to move and the parameters for the mechanics of the transfer: 8d

PBYT <num> - This determines the physical byte size for transmission of the data. This parameter is a reflection of local hardware constraints. Eight bit bytes should be the default. The choice should be negotiated by the FTP processes involved and shouldn't have to specified by the user, whether process or human. This command subsumes the present BYTE command in FTP. 8d1

LBYT <num> - This determines the logical byte size for the transmission of the data. This parameter is meant as an indication of the quantum in which data is to be packed by the reciever to reconcil word boundary problems, etc. This would allow each host to store the data appropriate to his word size. Each host should publish his packing algorithm for the normal range of byte sizes. This would avert the proliferation at sites of programs that take so and so's word size and unpack the data according to the logical quantum the user put in. 8d2

PATH <pathname> - This command notifies the FAP processes involved what path is being requested for the operations to follow. This command is more or less specifying what file is to be "opened". 8d3

DIRECTION <arg> - This command determines the direction of the data connection. The values of <arg> are: METOYOU, YOUTOME, and BOTH. The value of this command is in specifying in advance which directions data will flow, so that the connections can be made ahead of time. 8d4

The following are operations that may be performed on FTP they are very general and meant to be adapted to the local system. The definitions are very cursory: 8e

Yet Another.....

STBP <arg> - This command causes the server to set the file byte pointer to the specified place. The possible values are: BEGIN, which specifies the beginning of the file; END, which specifies the end of the file; and <num>, which is a byte count in terms of LBYT. The default is BEGIN. 8e1

RDBP - This command causes a reply which gives the present position of the byte pointer. 8e2

RETR <arg> - This command causes the specified amount of data to flow on the data connection from server to user. The values of <arg> are ALL, implying the entire file and <num>, implying an integer number of bytes of size LBYT starting from where the byte pointer points. 8e3

STOR <arg> - This command causes the specified amount of data to flow on the data connection from user to server. The values of <arg> are ALL, implying the entire file and <num>, implying that that number of bytes of size LBYT are to be moved to the server to be stored starting at where the byte pointer points. If Byte Pointer=END then this is an append. The operation causes the byte pointer to be updated by the number of bytes moved. 8e4

CONN <my pathname><your pathname> - This command is exchanged by the two FAP processes to indicated that the output of one is the input of the other or vice versa. The connection is directed. The affect of this command is to connect the input of one file supposedly owned by a local process to the output of another file supposedly owned by a process on the distant host. This would allow the two processes to communicate directly. There is a problem with this: If there are two copies of one of the jobs running at one of the hosts, it becomes impossible to tell who is to get the information. I suggest this be declared an error condition and the programmer must reconcile the problem. 8e5

There are some details to be ironed out, in the realm of end of file conditions and reading partial records, etc. However, I don't believe there are any gross contradictions in the proposal. The details of implementation could be worked out

Yet Another.....

in any of a number of ways, but these are not of primary importance here. 8f

15750 Distribution

Kudlick, Michael D. , Day, John D. , Bressler, Robert D. (Bob) , Deutsch, L. Peter , Ryan, Neal D. , Winter, Richard A. , Watson, Richard W. , Hicks, Gregory P. , White, James E. (Jim) , Wolfe, Stephen M. , Neigus, Nancy J. , Pogran, Kenneth T. , Hathaway, A. Wayne , Clements, Robert C. , Seriff, Marc S. , Knight, Thomas F. (Tom) , Bhushan, Abhay K. , Braden, Robert T. , Chan, Arvolo , Crocker, Steve D. , Harslem, Eric F. , Heafner, John F. , Fitzsimmons, Jerry , McKenzie, Alex A. , Melvin, John T. , Metcalfe, Robert M. (Bob) , Postel, Jonathan B. , Tomlinson, Ray S. ,

DAY 12-APR-73 13:48 15750

Yet Another .....

(J15750) 12-APR-73 13:48; Title: Author(s): Day, John D. /DAY;
Distribution: /FTPIG; Sub-Collections: NIC FTPIG; Clerk: DAY;
Origin: <ILLINOIS>E.NLS;2, 12-APR-73 11:08 DAY ;

DHC 11-APR-73 21:31 15751

response to (,15744,)

Glad to submit to unholy textual examination. Just send instructions, etc.

(Also glad to see effort to optimize.) 1

DHC 11-APR-73 21:31 15751

response to (,15744,)

(J15751) 11-APR-73 21:31; Title: Author(s): Crocker, David H. /DHC;
Distribution: /SRL; Sub-Collections: NIC; Clerk: DHC;

DHC 12-APR-73 17:22 15752

more GRRR

In the (nic,locator,) (USER-progs,-solicitation,1:wyn), the link after [USER PROGRAMS] gave 'file not online'.

GRRR. 1

DHC 12-APR-73 17:22 15752

more GRRR

(J15752) 12-APR-73 17:22; Title: Author(s): Crocker, David H. /DHC;
Distribution: /BUGS; Sub-Collections: NIC BUGS; Clerk: DHC;

Difficulty in Retrieving Offline Journal Files

Another Journal-related problem: retrieving offline Journal files. 1

The following set of conditions seems to hinder dialogue: 2

> Journalized items more than a few weeks old are not online, and sometimes to read and always to copy, must be retrieved from Archive. 2a
>
> Interrogate Archive does not recognize a Journal reference without the complete specification of its division. (MJournal, KJournal, etc.) 2b
>
> Hardcopy, and most links, fail to specify which division of the Journal a document is in. 2c
>
> Therefore, before a Journal item can be requested for retrieval from Archive, JCat must be loaded and the reference to the item found, to determine the full Journal reference. 2d

There needs to be some way in which one can retrieve a Journal item from the link in a document or from the information given in the printed text of the document itself. 3

JBN 12-APR-73 11:29 15753

Difficulty in Retrieving Offline Journal Files

(J15753) 12-APR-73 11:29; Title: Author(s): North, Jeanne B. /JBN;
Distribution: /jdh sri ; Sub-Collections: SRI-ARC; Clerk: JBN;
Origin: <NIC-WORK>JOURARCH.NLS;1, 12-APR-73 10:49 JBN ;

alex - do you have an account on a tenex anywhere that you look at often enough that sendmsg and readmail would be a useful way to communicate?

i have had some interaction with crocker about the state of graphics protocols. he urges that there be a definite person charged with doing something about graphics protocols, and that the following three places/people be included in any committee that is set up: tom ellis at isi, john mccarthy at stanford, and ed fredkin at mit. these peopl are developing new graphics systems (terminals) and should use a common standard protocol (if only one existed) do you have any thoughts on this matter ? crocker also indicates that he thinks of cerf (vint) as being a protocol leader. --jon.

daam 1

(J15754) 12-APR-73 14:56; Author(s): Postel, Jonathan B. /JBP;
Distribution: /AAM; Sub-Collections: NIC; Clerk: JBP;

JCN 11-APR-73 21:58 15755

Response (sort of) to (15494,)

Mike: Your document (15494,) on the Journal and its needs is a great thing. I am particularly impressed with the use you put other stuff to. I took the liberty of running the MAKEREF reference program against it. Below are the rough results. Good stuff. I also agree with your ideas. 1

Response (sort of) to (15494,)

ARC Journal References 2

(12329,) Michael D. Kudlick. Annotating Journal Files with Footnotes. Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025. 19-OCT-72. 2a

(12712,) Jeanne B. North. Request for New Heading Provision for Journal. Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025. 13-NOV-72. 2b

(12866,) H. Charles Irby. BACKLINKS in the Journal. Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025. 15-NOV-72. 2c

(12871,) James E. (Jim) White. NEW PHONE NUMBER for AMES TIP. Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025. 16-NOV-72. 2d

(13247,) Jeanne B. North. Agreement with AAM That NIC Will Not Send Him Hardcopy of Journal Messages He Has Authored. Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025. 11-DEC-72. 2e

(14039,) Michael D. Kudlick. Exec-Level Journal Commands. Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025. 22-JAN-73. 2f

(14087,) Jeanne B. North. Request for Current Journal Hardcopy for NIC, and ARC. Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025. 26-JAN-73. 2g

(14262,) James E. (Jim) White. Proposed Mechanism for Network Journal Delivery. Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025. 2-FEB-73. 2h

(14312,) James E. (Jim) White. On Making NLS, the Journal, and the Network the Best of Friends. Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025. 5-FEB-73. 2i

Response (sort of) to (15494,)

(14317,) Michael D. Kudlick. NWG/RFC 453 #1 Meeting Announcement to Discuss a Network Mail System. Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025. 6-FEB-73. 2j

(14798,) Michael D. Kudlick. NWG/RFC 469 #1 Network Mail Meeting Summary. Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025. 8-MAR-73. 2k

(14910,) J. D. Hopper. Journal Subcollection Field. Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025. 6-MAR-73. 2l

(14919,) Abhay K. Bhushan. NWG/RFC 475 #1 FTP AND NETWORK MAIL SYSTEM. Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025. 7-MAR-73. 2m

(14948,) James E. (Jim) White. NWG/RFC 479 #1 Use of FTP by the NIC Journal. Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025. 8-MAR-73. 2n

(15333,) ****Document not in catalog****
[Cited in 5B:-- 15333,1:w)] 2o

(15366,) Michael D. Kudlick. On Entering Documents and/or Abstracts into the NIC Collection. Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025. 28-MAR-73. 2p

(15370,) Mil E. Jernigan. Cataloging and the ARC/NIC Collections. Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025. 29-MAR-73. 2q

(15407,) J. D. Hopper. . Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025. 31-MAR-73. 2r

(15439,) ****Document not in catalog****
[Cited in 5B:-- 15439,1:w)] 2s

(15440,) ****Document not in catalog****
[Cited in 1:(15440,)]
[Cited in 11A] 2t

Response (sort of) to (15494,)

(15469,) ****Document not in catalog****
[Cited in 1:(15469,)]
[Cited in 11A] 2u

Response (sort of) to (15494,)

(J15755) 11-APR-73 21:58; Title: Author(s): Norton, James C. /JCN;
Distribution: /MDK DCE RWW ; Sub-Collections: SRI-ARC; Clerk: JCN;
Origin: <NORTON>MIKE.NLS;1, 11-APR-73 21:45 JCN ;

JHB 12-APR-73 08:41 15756

Question about Journal vs Dialog Support

As I work along on the paper, some issues that need clarication are suffacing in addition to those you and Dirk pointed out (which have been extremely helpful). What is the difference between the terms "Dialog Support System" and Journal see (bair,ch1,1g2c:wg for an example of the "confusion". 1

JHB 12-APR-73 08:41 15756

Question about Journal vs Dialog Support

(J15756) 12-APR-73 08:41; Title: Author(s): Bair, James H. /JHB;
Distribution: /jcn dvn ; Sub-Collections: RADC; Clerk: JHB;

A SERIES OF OPERATIONS RESEARCH SEMINARS

A SERIES OF OPERATIONS RESEARCH SEMINARS 1

To build up a stronger and more effective analysis function within ARC it would be useful that some of the basic concepts of economic analysis and operations research methodology be better understood by those involved in analysis, applications, and development. By focussing for awhile on these basic principles, it would help us to develop a common understanding of the environment in which we are operating and thus be better prepared for some of the tasks ahead of us. 1a

If there is enough interest within ARC I would be willing to give a series of introductory seminars on these subjects. I have in mind a series of a maximum of four to five sessions of about an hour each. I would survey the whole field and illustrate through typical examples how the various techniques could be utilized. I would also point out some of the pitfalls to be avoided and indicate "en passant" the kind of impact I believe the NLS technology will have on operations research. 1b

What I would like to know is how many people within ARC would be seriously interested in such a series, and whether or not they would be willing to commit themselves for the whole series. If there is enough interest I will go ahead, organize the series and begin as soon as possible. Please let me know whether or not you would be personally interested in such a series. 1c

PR 12-APR-73 13:58 15757

A SERIES OF OPERATIONS RESEARCH SEMINARS

(J15757) 12-APR-73 13:58; Title: Author(s): Rech, Paul /PR;
Distribution: /SRI-ARC; Sub-Collections: SRI-ARC; Clerk: LLL;
Origin: <LANE>SORS.NLS;3, 12-APR-73 13:54 LLL ;

Comments on NMDT stuff

3) On NLS programmability: 1

Trying to enhance MPS to make it a programmable NLS is a mistake. This was tried with L10 and requires considerable sophistication, not to mention digestion of a large reference manual. 1a

I favor something more like the LISP editor, which essentially extends the command language by adding programming-language ideas to it (conditionals, loops, variables). 1b

This approach does not require the user to learn a second set of ways to describe his familiar editing operations. 1b1

Notes on NLS/MPS development, wrt NMDT meetings of April 2 and 9 2

1) Function of NMRT 3

While I am reasonably happy taking pot-shots at things I don't like in the NMDT Journal items, I wonder what the rest of the NMRT is thinking. 3a

I'd like to encourage the rest of the NMRT to read the NMDT minutes assiduously and speak up if they have anything to say. 3b

I assume that relevant comments by NMRT members will be addressed to NMRT as well as NMDT. 3c

2) Comments on NLS design criteria 4

I would qualify one of the 8 criteria and object to another. 4a

On "NLS must support a wide range of terminal types": 4b

I believe some of NLS's problems arise from wanting to "shoehorn" capabilities designed for displays into the constraints of typewriter terminals. 4b1

I would like one of the following alternatives clearly adopted as a design criterion: 4b2

A) NLS is designed specifically for displays (even displays with pointing devices) and it may be very awkward to access certain capabilities from typewriter terminals. 4b2a

B) NLS is designed with two quite different command interfaces, one for displays, one for typewriters;

either may be used with relative ease, but it is not necessarily the case that there is an easy transfer of learning from one to the other. 4b2b

C) The present state of affairs: NLS's command language is essentially the same for displays and typewriters. 4b2c

I favor alternative A, followed by B and C in that order. 4b3

On "we will not permit simultaneous modifications to the same data file by more than one user": 4c

This restriction assumes that we keep the present somewhat arbitrary idea of "file" unchanged, and places severe coordination restrictions on distributing files around a network. 4c1

If this criterion is necessary at all at such a global level of enumeration, it should refer to the ability to selectively lock parts of the total information structure for exclusive use in a controlled way. 4c2

15758 Distribution

Irby, Charles H. , Dornbush, Charles F. , Mitchell, James G. , Paxton, William H. , Deutsch, L. Peter , Wallace, Donald C. (Smokey) , Satterthwaite, Ed H. , Bass, Walt , Andrews, Don I. ,

Comments on NMDT stuff

(J15758) 11-APR-73 21:42; Title: Author(s): Deutsch, L. Peter /LPD;
Distribution: /NMDT NMRT; Sub-Collections: NIC NMDT NMRT; Clerk: LPD;
Origin: <DEUTSCH>NOTE.NLS;2, 11-APR-73 21:41 LPD ;

MBY 12-APR-73 12:20 15759

PROBLEM WITH JOURNAL MAIL

JEANNE..I DON'T UNDERSTAND WHY I KEEP GETTING SOMETHING CALLED
..HJOURNAL=IWC ......CATALOG NUMBER 15126 WHEN I TRY TO CALL UP
<AAM>'S 15394 CAN YOU EXPLAIN TO ME VIA JOURNAL MAIL...THANKS
MIKE 1

15759 Distribution
North, Jeanne B. , Young, Michael B. ,

MBY 12-APR-73 12:20 15759

PROBLEM WITH JOURNAL MAIL

(J15759) 12-APR-73 12:20; Title: Author(s): Young, Michael B. /MBY;
Distribution: /JBN MBY; Sub-Collections: NIC; Clerk: MBY;

MDK 12-APR-73 08:39 15760

tug

Kirk ... The TUG files from BBN are in <BBN-TENEX> directory (at ARC, of course). There are several of them, divided alphabetically as before. Please move what you need to <TENEX-DOC>. Thanks. ... Mike 1

tug

(J15760) 12-APR-73 08:39; Title: Author(s): Kudlick, Michael D. /MDK; Distribution: /kirk ; Sub-Collections: SRI-ARC; Clerk: MDK;

PR 12-APR-73 14:04 15761

WHY DON'T WE WRITE BETTER?

For your information and comments if you wish.

WHY DON'T WE WRITE BETTER? 1

INTRODUCTION 2

Recently again, the point was made that our documents are dull reading. I suppose that we all agree that our writing could be improved and the real question we ought to ask ourselves is not how bad we really are but what prevents us from writing better. This question is not only an academic one but a very practical one since through the use of the new NLS utility new organizations will begin to compose their documents with NLS and therefore it is really important to find out what is really going on in that area. What are the facts? What can be done about them? And what general recommendations should we give to those who are contemplating using our system? 2a

SOME CONJECTURES 3

The following points came up during a recent lunch time discussion involving Larry Roberts, D.C. Engelbart, D.C. Wallace, C.H. Irby, R.W. Watson, J.C. Norton, M.D. Kudlick, and Paul Rech. 3a

It was generally recognized that our average documents are indeed not easily readable for people outside ARC. The first question which came up is whether or not the structuring of our documents into NLS forms and our conspicuous displays of these forms in hardcopy are responsible for that. 3b

Opinions on that point varied. It has been pointed out that the requirements of on-line reading with the use of viewspecs are different from those of hardcopy sequential reading. If that is true it means that new reading habits must be acquired. 3c

This will imply both that we must be aware of the difficulty and make an effort to cast our external documents in readable forms if we do want to optimize our communications with the outside world. We will have to set up writing standards and a control mechanism for outside communications. 3c1

Another stated point of view was that all the potential is there for better more legible writing and that we must simply learn how to use the system to achieve that better writing style. 3d

In that case it remains to analyse why improved writing

does not come naturally and what steps ought to be taken to get to that point of better writing. 3d1

A few probable explanations of the present state of affairs have been advanced. They are worth noting here. 3e

The ease with which we can compose rough drafts and write notes with NLS relaxes writing standards. 3e1

It has both good effects because notes do get written instead of remaining at their intention stage and bad effects because their general standards have been relaxed. - these are only speculations which ought to be verified by a closer analysis of facts - Furthermore, much less time is required, the information is easily retrievable and communicable, and it can be kept up to date without undue efforts. Clearly there seems to be a trade-off between advantages and disadvantages. More efforts might simply be required to put certain documents into more readable forms. 3e1a

A similar explanation might be the following. The usual difficulty in writing forces people to think very hard before beginning their writing and therefore much of the organization and style is composed in the heads of people where natural transitions are found easily. Once the material is out it is much more difficult to be aware of its extent, of its form, and of its organization. 3e2

I recall having read in one of Norbert Wiener's book a comment he made about writing. He said that if a rough draft of a paper, or any document does not meet a minimal critical standard of organization and content it is foolish to try to salvage it. He suggests that one is better off starting the paper all over again. This is a conjecture we might have to consider. 3e2a

Along the same line it has been pointed out that the ease with which we can assimilate parts of other documents is also responsible for the dullness of our documents. 3e3

This seems right. Probably careful rereading and retailoring is required in those cases. A little more work; that is all that is required. 3e3a

Another point of view says that the use of NLS alters style and organization very gradually to the detriment of generally accepted standards. 3e4

If this is true there is a danger for those organizations that need to communicate with outside organizations, and controls and stricter writing standards must be instituted to protect against these undesirable effects. 3e4a

It has also been stated that the use of NLS allows a much improved writing style. 3e5

The only stumbling blocks being relaxed standards, a general disregard of the cardinal rules of communication and a lack of awareness of the readers needs. This is my belief. 3e5a

WHAT ARE THE NEEDS OF CLEAR COMMUNICATION 4

I read somewhere that communication is not what the writer or the speaker writes or says but what the reader or listener gets. Therefore, it is important to keep the audience in mind and to clearly be aware of the possible pitfalls of communication. The following are a few principles which seem to be of primary importance. 4a

1) Clear communication requires the intent to communicate. The name of the communication game is to attempt to maximize what the readers get. This is done through acceptable formatting, pleasant, easily understood style, and proper organization. 4b

All these are functions of the reader and, therefore, the wider the audience the closer to commonly accepted standards one has to remain. 4b1

This does not exclude experimentation and new forms, but care must be taken in these cases to assess the real effects of these forms on the audience. Also, one must be ready to accept the consequences of potentially poor communication or be able to supplement the written communication by some other reinforcing means. 4b2

2) Needs of communication are not those of personal notes and minutes of meetings for instance. These are almost exclusively designed as mnemonics for record purposes only. 4c

They have meaning for their authors and for those who are intimately tuned in to the topic discussed. Short cuts can be taken, in-words can be used, and, in general, a very

streamlined style can be adopted. But such notes are not for general consumption. 4c1

If this principle is disregarded, chaos, confusion and frustrations are bound to creep in. It is the Babel Tower problem all over again. And the ease with which we communicate through our system makes us very vulnerable in that respect. 4c2

3) Thus, "know your audience" still remains one of the cardinal rules of communication and its violation in our environment might even prove to be more harmful than in any other environment. A corollary therefore is "restrict the distribution of your documents accordingly." Another consequence is that not everyone should have access to everything. There is a time and place for everything. 4d

WHEN SHOULD WE BE CONCERNED ABOUT CLEAR WRITING 5

1) When our main sponsor complains about it. 5a

2) When this sponsor is considering adopting NLS in his own offices and is concerned about whether or not it is going to affect their own output in a detrimental fashion. 5b

3) When we really want to communicate. 5c

4) When we want to get a message accross to someone who is not used to our style and procedures. 5d

WHEN CAN WE CONTINUE AS BEFORE 6

1) Clearly, there are better forms of communications than the ones which are presently universally accepted. 6a

We should continue very actively our experimentations in that domain because they are an integral part of our research program. 6a1

I am convinced that gradually some of these forms will impose themselves naturally to other users of our sytem. 6a2

2) For informal communication among ourselves the present system seems quite satisfactory and it appears essential that we remain as unconstrained as possible untill the best procedures can be identified. 6b

3) For personal notes and personal work neither the form, nor the style, nor the organization are very important. 6c

That is one of the main areas where the NLS system pays off very handsome dividends. 6c1

4) For informal group communication the presently free form of communication seems highly advantageous also. 6d

WHAT SHOULD WE BE DOING ABOUT IT 7

That's the big question. A good beginning would certainly be to acknoledge the problem openly and begin to look frankly at what is so. I am convinced that very interesting aspects of the problem will come up which will help us in the long run to design both a better system and better procedures. What I am saying also is that it is in our best interest to do that. 7a

I would like to get some feedback from those who feel strongly about this subject and I would welcome any comments or suggestions about how to proceed next in the analysis of this problem. 7b

ACKNOWLEDGEMENT 8

I have discussed this topic with Mike Kudlick and I wish to acknowledge that his very perceptive comments have inspired me to write this note. Thanks for your help, old Buddy. 8a

I have discussed that subject with Smokey also. I acknowledge his contribution and admit that I envy his style which is anything but dull. 8b

PR 12-APR-73 14:04 15761

WHY DON'T WE WRITE BETTER?

(J15761) 12-APR-73 14:04; Title: Author(s): Rech, Paul /PR ;
Distribution: /sri-arc ; Sub-Collections: SRI-ARC; Clerk: PR;
Origin: <RECH>DULL.NLS;6, 12-APR-73 12:12 PR ;

Graph of %U for 4/10/73

1

superwatch version 433 2

FILE <ACCOUNTS>4/10/73.ST;2 detail 3

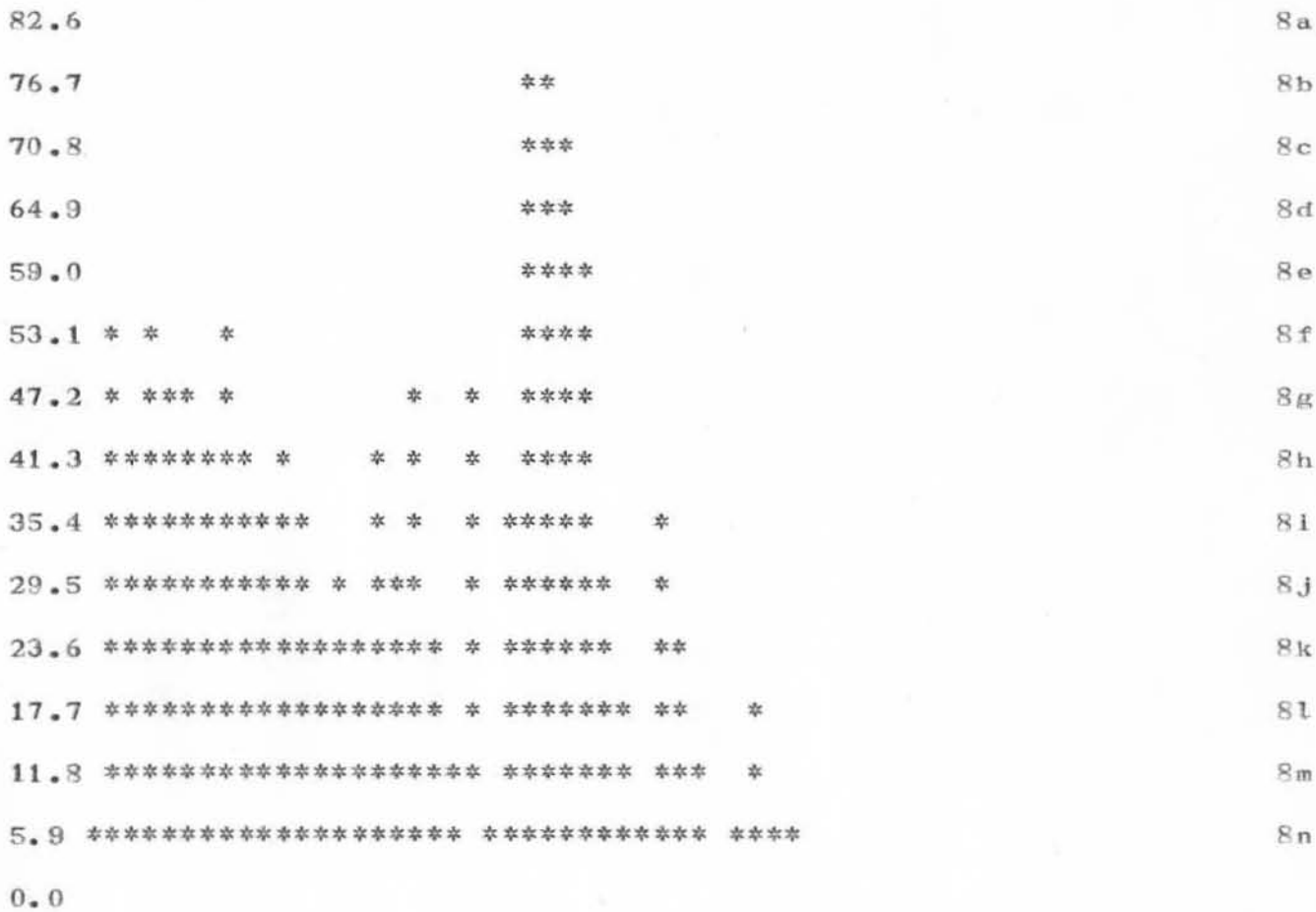
date: 4/10/73 time at start: 1423:05 4

interval (sec) 900 test runtime (min) 1440 actual duration (min) 585 5

system version: TENEX 1.31.10, ARC/NIC 6

7

TIME PLOT OF %U from 14:38 to 0:08 4/10/73 x axis labeled in units of hr:min 8



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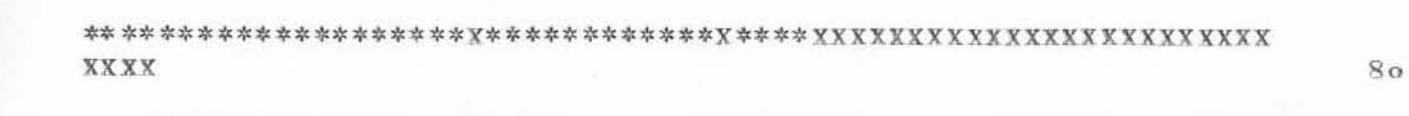

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29:38

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900 sec.

Graph of %U for 4/10/73

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Distribution: /pr srl ; Sub-Collections: SRI-ARC; Clerk: SRL;
Origin: <LEE>GRAPH-4/10.NLS;1, 12-APR-73 17:15 SRL ;

birds of a feather ii

jeanne, i have given up trying to type my compcon 73 report via nic as i have only an uppercase 33 to use and nls doesn't give me any feedback as to upper and lower case -- there is a glitch in nls. so i am having my sec'y here type it up for you in ms. form. sorry. vint.

1

VGC 12-APR-73 09:10 15763

birds of a feather ii

(J15763) 12-APR-73 09:10; Title: Author(s): Cerf, Dr. Vinton G. /VGC; Distribution: /JBN; Sub-Collections: NIC; Clerk: VGC;