RFC #431
NIC #13300
Updates: 122
Obsoletes: 399

Mark Krilanovich
UCSB
Dec. 15, 1972

Update on SMFS Login and Logout

This document replaces RFC 399, which introduced the Login and Logout commands for UCSB's SMFS, but was incomplete. RFC 399 is restated here, followed by a description of the nature of the response elicted by these commands.

Two new commands have been added to UCSB's Simple Minded File System (SMFS). They are described below.

Login (LGI)
The login command is the means whereby the user identifies himself and specifies the account number to which his use of SMFS is to be billed. The user should issue a LGI command directly after completing the ICP and before any command referencing a file. The user name and account number specified remain in effect until another LGI command is issued, a LGO command is issued, or the connection is closed.

At present, the use of SMFS is not billed, and therefore use of the accounting commands is optional. It is requested, however, that users and user processes begin to use this command as soon as possible, since we would like to collect statistics on SMFS utilization before implementing billing. Therefore, at present the user name can be any name that identfies the user, and the account number is completely arbitrary.

The format of the LGI command is given below. Note that the lengths of the fixed-length fields are given in bits. The op code for LGI is decimal 13.

8
<op code><user name><account number>

The <user name> and <account number> fields are further divided

as follows:

```
     8      8*length
<length><user name>
```

where <length> gives the length in 8-bit characters of the <user name> or <account number> subfield. The maximum length of <user name> is eight characters and of <account number> is four characters. The <user name> and <account number> fields must consist of characters chosen from the same character set as filenames. 6

Logout (LGO)

The logout command terminates the association between the user and the accounting information specified in the last LGI command issued, if any; it does not cause SMFS to close the connection. The user should then issue another LGI command before attempting any operation referencing a file. It is not necessary to issue a LGO command before issuing another LGI command, or before closing the connection. 7

Again, at the present time the LGO command is optional, and does not affect the user's ability to reference files. 8

The format of the LGO command is as follows:

```
     8
<op code>
```

The op code for LGO is decimal 14. 9

Login and Logout each elicit, as their only response, an eight-bit completion code. Like the other SMFS commands, the completion code is equal to the command's op code if the command was successful. The following error completion codes, given in decimal, are currently defined: 10

47	The length of <user name> is zero.
48	<user name> is too long.
49	<user name> contains invalid characters.
50	The length of <account number> is zero.
51	<account number> is too long.
52	<account number> contains invalid characters.
53	<user name> specifies an invalid user.
54	<account number> specifies an invalid account. 11

NWG/RFC# 431 MCK 15-DEC-72 12:39 13300
Update on SMFS Login and Logout

(J13300) 15-DEC-72 12:39; Title: Author(s): Krilanovich, Mark C./MCK; Distribution: Agent, Station, Wolfberg, Michael S., Feinroth, Yeshiah S., Hurt, James, Hearn, Anthony C., Stein, James H., Shoshani, Arie, Shure, Gerald, Harslem, Eric F., Metcalfe, Robert M. (Bob), Kantrowitz, William, Reussow, Bradley A., Reins, E. R. (Dick), Kadunce, Daniel L., McCutchen, Samuel P., Petregal, George N., Sundberg, Robert L., Madden, James M., Van Sylke, Richard M., Young, Michael B., Kantrowitz, William, Padlipsky, Michael A., Stevenson, Schuyler, Deutsch, L. Peter, Davidson, John, Millstein, Robert E., Lawrence, George, O'Sullivan, Thomas, Seroussi, Sol F., Bradner, Scott, Thomas, Robert H., Thomas, John C., Romanelli, Michael J., Stoughton, Ronald M., Owen, A. D. (Buz), Fink, Robert L., Meir, Jaacov, North, Jeanne B., Crocker, Steve D., Lawrence, Thomas F., McConnell, John W., Ollikainen, Ari A. J., White, James E. (Jim), Hathaway, A. Wayne, Foulk, Patrick W., Winter, Richard A., Van Zoeren, Harold R., McKenzie, Alex A., Winett, Joel M., Bhushan, Abhay K., Pyke, Thomas N., Wilber, B. Michael, Feigenbaum, Edward A., Braden, Robert T., Pepin, James M., Wessler, Barry D., Melvin, John T./SA NLG; Sub-Collections: NIC NLG; RFC# 431; Obsoletes Document(s): 11917; Updates Document(s): 5834; Clerk: MCK; Origin: <UCSB>SMFSMODU.NLS;6, 15-DEC-72 12:36 MCK ;

Hi Mike: 1

Here I am at UCLA learning good ole NLS. David Crocker is teaching me this stuff...the lucky devil 2

You, my friend, are the one I'm learning on...How's it feel.?. 3

Were you able to get to that hockey game? How come I wasn't invited? Who won? 4

How's your mother? You'll have to excuse my typing 'cause I'm not quite sure what I'm doing. 5

Untruly yours forever, 6

bryna 7

p.s. 8

Fred says hello 9

pee pee ess: 10

Please send me a note or two back so I can keep practicing...okay? 11

(J13361) 15-DEC-72 15:59; Title: Author(s): Lang, Bryna M./BML;
Distribution: Padlipsky, Michael A., Crocker, David H./MAP DHC;
Sub-Collections: NIC; Clerk: BML;

DSK 15-DEC-72 9:32 13362

Appreciation for Calculator Documentation

I appreciate very very much the fine job you did of rewriting and clarifying the calculator design document, espcially at a time when you were under several other pressures. It really makes a nice difference. THANKS 1

DSK 15-DEC-72 9:32 13362

Appreciation for Calculator Documentation

(J13362) 15-DEC-72 9:32; Title: Author(s): Kaye, Diane S./DSK; Distribution: Auerbach, Marilyn F./mfa ; Sub-Collections: SRI-ARC; Clerk: DSK;

JCN 15-DEC-72 7:15 13363

Response to (13297,): Expunging at logout time

Ken, I agree that we should have deleted files expunged at logout time as you suggest in (13297,). Im also interested in what others think. Let me know what you hear. 1

JCN 15-DEC-72 7:15 13363

Response to (13297,): Expunging at logout time

(J13363) 15-DEC-72 7:15; Title: Author(s): Norton, James C./JCN; Distribution: Victor, Kenneth E. (Ken), Wallace, Donald C. (Smokey), Ferguson, Ferg R., Irby, Charles H., Watson, Richard W./kev dcw wrf chi rww ; Sub-Collections: SRI-ARC; Clerk: JCN;

EHF 15-DEC-72 11:48 13364

(TOSTANCOHEN) To:Stan Cohen
I received a request for more documentation about SPEAKEASY from:

Jim Condie
Div. of Data Processing
Board of Governors
Federal Reserve System
Washington D.C.

737 4171 Ext. 7551.

He also asked if SPEAKEASY could be easily installed at another installation. I said it could. Would you like to contact him?

Ernie
11/28/72

EHF 15-DEC-72 11:48 13364

(J13364) 15-DEC-72 11:48; Author(s): Forman, Ernest H./EHF;
Distribution: Cohen, Stanley/SC; Sub-Collections: NIC; Clerk: JI;

KEV 14-DEC-72 18:44 13365

proposed new imlac protocol for transmission from imlac to tenex

this is the protocol that we will eventually implement when we get around to cleaning up more of the display code (within 6 months)

KEV 14-DEC-72 18:44 13365

proposed new imlac protocol for transmission from imlac to tenex

```
IF imlac crashes while in long input mode THEN                          1
   upon recovering send( esc esc esc esc );                             1a
IF keyboard input THEN                                                  2
   CASE char OF                                                         2a
      =CA, =CD, =CDOT, =↑D, =↑B, =↑X:                                   2a1
         send( esc 45B char+140B X X Y Y );                             2a1a
      =esc: send( esc 40B );                                            2a2
      <40B: send( esc 41B char+140B [ X X Y Y ] );                      2a3
      ENDCASE: send( char )                                             2a4
ELSE                                                                    3
   BEGIN                                                                3a
   IF mouse button input THEN send( esc 45B buttons+100B X X Y Y
   );                                                                   3b
   IF keyset input THEN send( keyset+140B );                            3c
   END;                                                                 3d

                                                                        4
KEY:                                                                    5
   esc = 34B (however, should be coded so this can be changed
   easily)                                                              5a
   CA = Command Accept (control-D)                                      5b
   CD = Command Delete (control-X)                                      5c
   CDOT = Center Dot (control-B)                                        5d
   ↑D = control-D                                                       5e
   ↑B = control-B                                                       5f
   ↑X = control-X                                                       5g
```

X X Y Y = x and y coordinates at time of input 5h

(Note that coordinates are optional with control characters in general. However, we prefer that you do not send them for the following two reasons: 5h1

there will be less traffic on the channel without them 5h1a

characters will take up less space within TENEX without them) 5h1b

KEV 14-DEC-72 18:44 13365
proposed new imlac protocol for transmission from imlac to tenex

(J13365) 14-DEC-72 18:44; Title: Author(s): Victor, Kenneth E. (Ken)/KEV; Distribution: Deutsch, L. Peter, Irby, Charles H., Wallace, Donald C. (Smokey), Ferguson, Ferg R./lpd chl dcw wrf ;
Sub-Collections: SRI-ARC; Clerk: KEV;
Origin: <VICTOR>NEW-IMLAC-PROTOCOL.NLS;2, 14-DEC-72 18:40 KEV ;

KEV 15-DEC-72 14:54 13366

tenex news

this is a copy of the document smokey and i received giving
current news about tenex (received from bbn)

KEV 15-DEC-72 14:54 13366

tenex news

ON NOV 6, TED STROLLO SENT A MEMO REGARDING DISC FILE CHANGES WHICH

IS PARTIALLY QUOTED "WE ARE PLANNING TO EXERCISE OUR TRADE-IN

OPTION ON OUR DISC PACK DRIVES TO UNITS WITH TWICE THE NUMBER OF

TRACKS (CYLINDERS) HENCE TWICE OUR CURRENT DISC FILE CAPACITY.

THIS WILL MEAN AN INCREASE FROM 37 MILLION WORDS TO 74 MILLION WORDS OF

STORAGE CAPACITY "

IN ORDER TO ACCOMPLISH THIS THERE WILL BE A PERIOD OF DOWN TIME IN

DECEMBER FROM (PLEASE NOTE THE TIME) 1800 DECEMBER 15

TO 2400 DECEMBER 24TH. THERE IS A POSSIBILITY THAT WE MIGHT

GET THE SYSTEM BACK UP BY 2400 ON THE 18TH, BUT AGAIN THIS IS

JUST A POSSIBILITY.

ON NOV 10, BILL PLUMMER .....THE FORMATTING ROUTINE USED IN

THE EXEC FOR THE "LIST" COMMAND HAS BEEN CONVERTED INTO A GENERALLY

AVAILABLE SUBROUTINE. SEE BILL WITH ANY QUESTIONS.

ON NOV 10, BILL PLUMMER ....IDDT.....TTY MODE BUG FIXED,

.SAV ASSUMED BY "UNGET"

ON NOV 17, STEVE CHIPMAN ....."JEFF BOKOR IS NOW THE NEW TENEX WEEKEND COMPUTER OPERATOR, HIS HOURS ARE 9 - 5 E.S.T. SATURDAY AND SUNDAY. HE CAN BE REACHED BY THE USUAL RCC PHONE #AREA CODE 617 - 491-6169.

ON NOV 17, STEVE CHIPMAN .....THE FOLLOWING LINES ARE AVAILABLE

THROUGH DATASETS:

1 - 150 BAUD LINE

8 - 110 BAUD LINES

3 - 300 BAUD LINES

TO CALL IN FOR THESE THE FOLLOWING NUMBERS APPLY:

110 BAUD LINES ----- 491-8250

150 BAUD LINES ----- 491-8261

300 BAUD LINES ----- 491-8258

PAUL JOHNSON CREATED A NEW NETSTAT LAST WEDNESDAY, NOVEMBER 15

WHICH LETS YOU SPECIFY THE PARTICULAR INFORMATION YOU ARE INTERESTED

IN RATHER THAN GETTING THE WHOLE THING. FOR USE OF THIS NEW FEATURE

DO THE FOLLOWING:

@NETSTAT

*? (WHEN YOU TYPE THE QUESTION MARK TO NETSTAT

IT WILL THEN GIVE YOU INFORMATION ON HOW TO USE IT)

FROM Dan Murphy

November 27, 1972

- - - -

TENEX Version 1.30.00 will soon be placed in service at BBN and will be released to other TENEX sites. It has the following changes which are observable to user programs.

1. Deferred Terminal Interrupts

Deferred terminal interrupts are now optionally available. Previously, terminal interrupts always took effect immediately, i.e. upon receipt by the terminal service routine. Now, any enabled terminal interrupt may additionally be declared "deferred" by use of STIW as described below. When a character which has been declared to be a deferred interrupt character is received, it is placed in the input buffer in sequence with the other characters of the input stream. Only when the program reaches that point in the input stream and attempts to read the interrupt does the interrupt action occur. The interrupt character itself is not passed to the program in the input stream however.

The intent of this facility is to allow interrupt actions to occur in sequence with other actions specified by the input stream. It is therefore important to understand the interaction of multiple forks in this situation. Note that the deferred interrupt occurs when any fork of the job executes an input JSYS(BIN, etc.) which removes the interrupt character from the input buffer. This fork may or may not be the one which is enabled for that interrupt and which will be interrupted. The following statements cover all of the cases:

a. If the fork attempting the read which causes the interrupt is also the fork to be interrupted, then it is guaranteed that the interrupt will occur before any more characters are passed to the program.

b. If the fork to be interrupted is the top fork (usually the EXEC), then the interrupt will occur before any more characters are passed to the program unless a second fork is also attempting to read from the same source (normally an anamolous condition).

c. If neither of these cases apply, then the fork doing terminal input will continue to run and may succeed in receiving one or more characters before the interrupt can take effect. This is unavoidable since the input fork and the interrupted fork will logically be running in in parallel.

An otherwise deferred interrupt character will have immediate effect if two of the character are received with no intervening characters. There is no element of time involved here, rather it is required only that the character now being received is the same as the last previous character received and that that character is a deferred interrupt character. When this event occurs, the terminal input buffer is automatically cleared (simulated CFIBF). Note also that the system maintains a separate one-character buffer to detect this situation so that it will work even if the input buffer is otherwise full.

The terminal codes to be deferred are specified by a third argument to STIW as follows:

STIW JSYS 174

Set Terminal Interrupt Words

Accepts: 1/ Fork handle (or -5 for whole job)

2/ Terminal interrupt mask (as before)

3/ Deferred interrupt mask (new)

STIW

Returns: +1 always

A 1 in any bit of the deferred interrupt mask causes the corresponding character to be deferred. If multiple forks have enabled a particular interrupt character, it will be deferred if any of the forks have declared it deferred.

2. Terminal Binary Mode

Placing a terminal in binary mode now causes all characters to be passed unmodified and unfiltered including declared terminal interrupt characters. This has proved to be what is usually wanted when binary mode is used. It therefore is

now not necessary to explicitly turn off all terminal interrupts (and restore them) to achieve this effect. This mode should be used with caution, since a malfunctioning program cannot in general be interrupted by ↑C. If this should occur, the user may log into another terminal and logout the original job using the @LOGOUT jobno command of the EXEC.

The following is of direct relevance only to system programmers.

3. MDDT Changes

The regular reentrant TENEX user DDT has been adapted for use as MDDT. The shared portion now resides in a portion of the swappable storage area, and the private portion resides in the process-private area in one of the pages previously used by MDDT. The mini-exec attempts to read the new MDDT from <SYSTEM>MDDT2 to distinguish it from the old version. MDDT2 is an ordinary sequential file (although not exactly in .SAV format), so it can be copied to and from dectape with no loss. Instructions for building MDDT2 are contained in the regular DDT source file.

4. NHIPG - Swapper change.

The cell NHIPG is set by PGRINI to be the number of the highest page of real core found during the startup core sweep. Other routines which scan the core status tables (GCCOR,XGC) use this as the end point of their scan. This accomplishes two things:

a. Reduces the time spent scanning by eliminating the checking of all non-existent pages above the highest existing page.

b. Provides a means for preventing swapper use of "special" types of memory which may appear in the monitor real-core address space. If PGRINI is site-modified to stop its core scan before encountering any such memory, than all other swapper routines will work properly.

5. MSFRK JSYS 312

MSFRK (Monitor Start Fork) is exactly like SFORK except that it uses the entire contents of AC2, including user mode and other flags, for starting the fork. Thus a fork can be

started in monitor mode. This JSYS is legal only if:

a. It is called from monitor mode, or

b. Wheel or Operator capability is enabled.

This JSYS was implemented principally to allow job 0 to spawn multiple forks to handle various asynchronous monitor tasks.

Note that the starting context is undefined, so the fork being started should execute the following sequence:

```
FBGN:   MOVSI 1,UMODF     ; A FAKE USER PC
        MOVEM 1,FPC       ; SIMULATE JSYS CALL
        JSYS MENTR        ; ESTABLISH USUAL
                          ; MONITOR CONTEXT
```

This establishes the usual top-level JSYS context including stack, etc.

6. Network Operations.

IMPDV and NETWRK have been extensively rewritten to implement several new strategies for network operation. The following are principal features:

a. The software determines for each message being received or sent whether packing/unpacking by 36 or 32 bits is most efficient. The BBN interface hardware handles only 36 bit transfers, so the 32 bit transfers are simulated at interrupt level. Sites which have interfaces with 36/32 bit modes should find it easy to utilize both modes to advantage.

b. Various situations requiring interlocks have been eliminated, thereby eliminating cases where the entire NCP could be stalled by an inopportune event (e.g. incomplete transmission on a control link).

c. All message packing and unpacking (except control messages) is now done by the user fork, thereby eliminating the overhead formerly charged to the scheduler.

d. Resident storage has been greatly reduced by the elimination of the "little buffers" and some other

storage. Storage is now assigned as needed from a pool in the swappable area. Several queues have been eliminated because the queueing of messages by connection provides all necessary buffering.

Date: 28-NOV-72 1513

From: LEAVITT

- - - -

SRI Week at BBN

Representatives of SRI-ARC (Stanford Research Institute Augmentation Research Center) spent the week of Nov. 15-22 at BBN making their system improvements available to the BBN TENEX Staff. Representatives Don Wallace and Ken Victor of SRI stated that their intention was to bring together the BBN and SRI-ARC TENEX systems (which have been diverging for a year and a half) into a single distribution which provides all the features of both systems, and which also supports NLS. (The on-line text composing and editing system

developed by SRI-ARC.)

The new system, which will be distributed as TENEX Version 1.31, incorporates all new SRI features of general interest in the source files. In addition, features which are specific to NLS support (for example, a display-NLS device) are assembled under conditional assembly switches and coded in a separate source file which will be maintained by SRI-ARC.

Wallace stated that this trip to transfer SRI's development efforts had been "successful beyond all expectations". He proposed that two additional meetings be held in the spring to discuss higher level system design issues: one for scheduling and statistics, and one for on-line displays.

About 50% of SRI's changes to the source code was accepted into TENEX with only minor modification, to integrate it properly with BBN changes. Another 20% provided new features which had already been independently incorporated into BBN TENEX. The remaining 30% was judged to provide desirable features, but not in a sufficiently general manner

to meet the needs of all TENEX sites. Accordingly, these features will be recoded by the BBN and SRI staffs before incorporation into TENEX.

One feature which will be recoded by SRI is the ADVIZ JSYS, which permits one user to "type into" the input buffer of another user for cooperative debugging, if the second user agrees.

Features which will be recoded by the TENEX staff include a SETAB JSYS which is in some sense the inverse of GETAB, a table for GETAB to identify which jobs have been inactive for some time, a table for initializing terminals and job states, an EFACT for errors which records binary data, versions of CRDIR and GTDIR which are available to ordinary users, means to discover file access capabilities of other users, and a SIN which terminates on any of a set of terminating characters.

JSYS changes which are now incorporated into Version 1.31 include a new fast JSYS, JOBTM, which returns job runtime; SWTCH, which reads the console switches; DELNF, which deletes all versions of a file except the N most recent; and

changed versions of the TTMSG and GTDAL JSYS's.

Other changes include two new switches which affect the control of the maximum allocation for directories: if USRSPC is nonzero, an OPENF for write will fail if the directory is over allocation. If SYSSPC is nonzero, all OPENF's for write will fail when the disc free storage falls below some threshold.

The startup procedure has been changed to lock out all users except two operator jobs until the disc consistency is confirmed by CHKDSK. Locked out users receive a "TENEX NOT AVAILABLE" message instead of a bell in response to ↑C. Also, after JOB0 is started, the system reads a list of SAV file names for autostartup. If the DEBUG switch is on, the names are taken from file <SYSTEM>AUTOJOBS.DBUG; otherwise from AUTOJOBS.SYS. This autostartup is done through a new entry point in the EXEC's RUN code.

A new switch, DCHKSW, will supress BUGCHK typeout during debugging sessions if zeroed. The table of disc addresses is now computed dynamically when restarting from a bughalt, permitting a change of disc packs during the halt. DDT can

now be dynamically flushed and reloaded to conserve resident core. When the line printer and magtape unblock, they now return to a low queue insted of the hi-priority queue.

In addition, a number of changes were made in the EXEC to support the new subsystem BSYS, which provides magtape archiving of disc files.

All these changes will be documented in detail in the writeup which will accompany distribution of TENEX Version 1.31.

Date: 29-NOV-72 1932

From: PLUMMER

- - - -

TECO now restores "." to its old value when a Search command fails. It now takes full advantage of terminals with mechanical tabs. Several bug fixes (contributed by CCA) have been installed.

Date: 30-NOV-72 1211

From: LEVIN

- - - -

.....from BBN TIP

As you know, the News service has been expanded into a more general facility incorporating the Host Status and Gripe subsystems. We would be glad to hear of any problems you encounter with the new News.

Due to some strangenesses of both TIPs and TENEXes, News runs in half-duplex mode. We think that for the time being this will not provide any great problems for the user.

Date: 4-DEC-72 1316

From: PLUMMER

- - - -

TECO has two new commands -- V and ED.

V (for "View") with no argument, simulates a 0T1T command, which types the current line without moving "." .

m,nV types the m-1 previous lines, the current one and the n-1 lines after the current one.

nV is short for n,nV.

V commands never change the character pointer.

ED is similar to EX except that ;D (Date mode) is used instead of ;U.

Date: 7-DEC-72 1058

From: TOMLINSON

- - - -

A new procedure has been instituted for message files. SNDMSG and FTP now write message files with date and length information before each entry. The subsystem "READMAIL" provides a facility for reading these files for every entry after a certain date. When run, READMAIL defaults its input file to MESSAGE.TXT and defaults the date to the date of last read of that file. These two defaults may be changed as well as the output file. The proper procedure when the EXEC says "you have a message" is to type READMAIL<cr><cr>. This defaults everything. Explanation of other options of READMAIL is available by typing "?" to READMAIL.

Two changes are needed to the EXEC to fully implement this facility. The login message will be printed via READMAIL and the condition uder which the "you have a message" is typed is no longer correct. These will be fixed shortly. Note that is no longer to ever necessary

to delete your MESSAGE.TXT file since READMAIL automatically and efficiently skips over the mail you have already read. This provides a convenient record of the message you have received.

Note that messages in the old format will always be printed by READMAIL. This can be bothersome. The way to correct this if you wish to keep the information is to rename the message file to be something temporary like FOO.;T and then sending a message to yourself via SNDMSG and inserting the file FOO.;T with the control-B feature of SNDMSG.

- - - -

Date: 5-DEC-72 0106

From: TOMLINSON

- - - -

NEW MONITOR VERSION 1.30.11 IN OPERATION. CHANGES MAY BE EXPERIENCED

IN THE FOLLOWING AREAS:

1) CONTROL-C MAY RESPOND WITH A MESSAGE INSTEAD OF A BELL IF SYSTEM

IS NOT AVAILABLE.

2) DISK SPACE CHECKS MAY BE PERFORMED AND, AT THE DISCRETION OF THE

OPERATOR, NO FILES MAY BE OPENED FOR WRITING IF YOU ARE OVER YOUR

DISC ALLOCATION OR IF THE SPACE LEFT IS BELOW SOME MINIMUM SUCH

AS 500 PAGES.

3) THE DISK FILE INFORMATION SOMETIMES REFERED TO AS "REFERENCE DATE"

WILL NOW BE KEPT AS "READ DATE". THE LAST REFERENCE IS THUS THE

MAX OF THE TWO. FILES THAT HAVE NEVER BEEN READ (ONLY WRITTEN)

WILL SHOW SOME RIDICULOUS OLD DATE IN 1858 UNTILL THE EXEC

IS MODIFIED TO PRINT SOMETHING MEANINGFUL INSTEAD.

PLEASE REPORT ANY PROBLEMS TO THE OPERATOR.

11-DEC-72 09:39:32,575

Date: 11-DEC-72 0939

From: CHIPMAN

Re: EXEC.148 (FROM PLUMMER)

- - - -

"DSKSTAT" NOW PRINTS SYSTEM TOTAL PAGES USED/LEFT. "SYSTAT"

PRINTS PENDING SHUTDOWN AND RESTART TIMES, IF ANY.

THE EXEC PRINTS "YOU HAVE A MESSAGE" ONLY IF YOU HAVE MAIL WHICH

YOU HAVE NOT READ. USE THE SUBSYSTEM "READMAIL" TO READ YOUR MAIL.

ALL LOGIN MESSAGES SINCE THE LAST LOGIN WILL BE PRINTED.

"REWIND" AND "UNLOAD" COMMANDS EXIST FOR MAG. TAPES ANDDECTAPES.

"QFD" AND VERBOSE "DIRECTORY" COMMANDS WILL TYPE "NEVER READ" AS THE

FILE'S READ DATE WHERE APPROPRIATE.

11-DEC-72 09:46:21,200

Date: 11-DEC-72 0946

From: CHIPMAN

Re: DISCUSE

- - - -

THE FUNCTION OF DISCUSE SUBSYSTEM HAS BEEN SUBSUMED BY THE EXEC

DSKSTAT COMMAND. THEREFORE, DISCUSE HAS BEEN DELETED.

KEV 15-DEC-72 14:54 13366

tenex news

(J13366) 15-DEC-72 14:54; Title: Author(s): Victor, Kenneth E. (Ken)/KEV; Distribution: Andrews, Don I., Bass, Walt, Dornbush, Charles F., Ferguson, Ferg R., Hopper, J. D., Irby, Charles H., Kaye, Diane S., Lehtman, Harvey G., Michael, Elizabeth K., Vallee, Jacques F., Victor, Kenneth E. (Ken), Wallace, Donald C. (Smokey), White, James E. (Jim), Watson, Richard W., Norton, James C./sri-prog rww jcn ;
Sub-Collections: TUG SRI-PROG; Clerk: KEV;
Origin: <VICTOR>TENEX-NEWS.NLS;1, 15-DEC-72 14:38 KEV ;

KIRK 14-DEC-72 21:17 13367

How to do control characters using only two keys on execuports.

For people who use execuports, I have discovered a way to input most all control characters using only the shift and one other key without using the control key. Here is the list. 1

control C = shift # 1a

control T = shift 4 1b

control D = shift 1c

TAB = shift > 1d

– = shift CR 1e

control W = something probably but I didn't find it 1f

KIRK 14-DEC-72 21:17 13367

How to do control characters using only two keys on execuports.

(J13367) 14-DEC-72 21:17; Title: Author(s): Kelley, Kirk E./KIRK; Distribution: Agent, Station, Hoffman, Carol B., Lee, Susan R., Michael, Elizabeth K., Dornbush, Charles F., ARC, Guest O., Feinler, Elizabeth J. (Jake), Handbook, Augmentation Research, Kelley, Kirk E., Meyer, N. Dean, Byrd, Kay F., Prather, Ralph, White, James E. (Jim), Vallee, Jacques F., Kaye, Diane S., Rech, Paul, Kudlick, Michael D., Ferguson, Ferg R., Lane, Linda L., Auerbach, Marilyn F., Bass, Walt, Engelbart, Douglas C., Hardeman, Beauregard A., Hardy, Martin E., Hopper, J. D., Irby, Charles H., Jernigan, Mil E., Lehtman, Harvey G., North, Jeanne B., Norton, James C., Page, Cindy, Paxton, William H., Peters, Jeffrey C., Ratliff, Jake, Row, Barbara E., Van De Riet, Edwin K. (Ed), Van Nouhuys, Dirk H., Victor, Kenneth E. (Ken), Wallace, Donald C. (Smokey), Watson, Richard W., Andrews, Don I./SRI-ARC ; Sub-Collections: SRI-ARC; Clerk: KIRK;
Origin: <KELLEY>EX.NLS;3, 14-DEC-72 18:44 KIRK ;

LMM 15-DEC-72 6:17 13368

message

hello, rem3. this is a message 1

LMM 15-DEC-72 6:17 13368

message

(J13368) 15-DEC-72 6:17; Title: Author(s): Masinter, Larry M./LMM;
Distribution: Maas, Robert E./REM3; Sub-Collections: NIC; Clerk: LMM;

LPD 15-DEC-72 10:06 13369

"15 local users" is silly

The "15 local users" limitation is silly, since local dialup users can always go through the TIP. A more sensible scheme would distinguish between DNLS users and all others (or perhaps DNLS, TNLS, and all others), since that is a better measure of system load. 1

LPD 15-DEC-72 10:06 13369

"15 local users" is silly

(J13369) 15-DEC-72 10:06; Title: Author(s): Deutsch, L. Peter/LPD;
Distribution: Norton, James C./JCN; Sub-Collections: NIC; Clerk: LPD;

Power Monitoring and Back-Up Facilities

* [MDK] Shell Info on AC line recording techniques. 1

When I received your journal item, I called an old colleague in Shell and asked him for information (sorry I had utterly forgotten about it till I got your item). 1a

He will send me some documentation on the monitoring device, but we won't get it till after the first of the year. I have no information of my own. 1b

There's a slight chance that he will be thwarted in his attempt to get me the info, as Shell plays the game of "company secrets". But I think he'll be abl to swing it. 1b1

* [MDK] Tymshare back-up for PG&E 2

Electrical power is provided to the Tymshare facilities through two separate sources, which provide back-up in the event of power failure. Additional safeguards are provided such as under/over voltage protection and modular distribution systems. 2a

I have no details on these items, but presume that we could get some if needed. 2b

Tymshare is also planning to install their own uninterruptible power source for emergency operations. I have no knowledge of when this might occur. 2c

MDK 15-DEC-72 14:41 13370

Power Monitoring and Back-Up Facilities

(J13370) 15-DEC-72 14:41; Title: Author(s): Kudlick, Michael D./MDK;
Distribution: Hardy, Martin E./meh ; Sub-Collections: SRI-ARC; Clerk:
MDK;
Origin: <KUDLICK>MEH.NLS;2, 15-DEC-72 14:40 MDK ;

NJN 15-DEC-72 12:26 13371

phone book memo 4

jon--I made a copy of the phone book file in my directory (bbn-net,phonebook, 1:w) and have worked it over. I made the following changes: 1

typos 1a

corrected your calculation of the decimal and hex equivalents of the TIP News socket 1b

added I4, CCA and BBN-B Tenexes, all of which I checked 1c

deleted sites with no host from statement 10; also the new ones I tested 1d

and found out that Tenex socket 7 is used for CPYNET, the Tenex predecessor to FTP. It may go away now that FTP is here, but that is for the future. 1e

CCA-Tenex socket 17 delivers dirty limericks, but I didn't think that needed to be included. 2

I will check into your question marks under CMU, and also look around at LL-67 and TX-2. 3

SDC is almost never up, but you might have better results on the West coast. 3a

NBS, RAND and LL-TSP are all user-only, so they may not provide any service. They can probably be ignored. 3b

NJN 15-DEC-72 12:26 13371

phone book memo 4

(J13371) 15-DEC-72 12:26; Title: Author(s): Neigus, Nancy J./NJN; Distribution: Postel, Jonathan B./JBP(got your prospectus, will read it soon); Sub-Collections: NIC; Clerk: NJN;

NJN 15-DEC-72 6:12 13372

It is hard to follow a link when you type the wrong number

I never heard of a "pushup" stack. Is that a pile of avid exercisers? 1

NJN 15-DEC-72 6:12 13372

It is hard to follow a link when you type the wrong number

(J13372) 15-DEC-72 6:12; Title: Author(s): Neigus, Nancy J./NJN; Distribution: Van Nouhuys, Dirk H./DVN(ingenuity prevailed; I agree with dhc); Sub-Collections: NIC; Clerk: NJN;

RDB2 15-DEC-72 11:21 13373

Vint, Farber claimed to be sending you a copy of their in house protocol paper on why they chose the "ring protocol" that they did. Did you ever get that paper? If so, can you send me a copy? tnx. Bob. 1

(J13373) 15-DEC-72 11:21; Author(s): Bressler, Robert D. (Bob)/RDB2; Distribution: Cerf, Dr. Vinton G./VGC; Sub-Collections: NIC; Clerk: RDB2;

RS2 15-DEC-72 12:43 13374

ernie here is a test message. 1

(J13374) 15-DEC-72 12:43; Author(s): SILBERSKI, ROBERT/RS2;
Distribution: Forman, Ernest H./EHF; Sub-Collections: NIC; Clerk: RS2;

RWW 15-DEC-72 10:12 13375

Some Questions for the Planning of the Conversion of NLS in MPS

As we move toward the long anticipated conversion to MPS there are a number of questions I have which I want to see answered before we actually go ahead with implementation. Others probably also have questions to add or better ways to phrase and group the questions. The first step in beginning to plan for the conversion is to prepare the list of questions which we feel need to be answered. Therefore please feed your additions or comments on this list to Charles and myself, Charles will be leading the conversion effort from the ARC side. 1

After some dialog seminars and meetings, when we have a list of questions then we will organize ourselves with Xerox participation to get them answered and a design document prepared with the answers. I feel quite firm in not wanting to proceed with the conversion until all the types of issues raised by these questions others which people may have are well understood. It probably wlll take some time to get answers, but I feel the effort will be more than repaid in the quality of the resulting MPS version of NLS we will have at the end. 2

In the process of this conversion we have an excellent opportunity to not only take advantage in a gross way of the modularity of MPS, but to also solve other problems and clean up in many areas. 3

Questions in random order which have been on my mind: 4

- What new features or other changes do we want to have implemented before the conversion begins? 4a
- What is the split in responsibility between Xerox and our conversion efforts? 4b
- How do the Xerox guys who will be involved in the conversion get trained? 4c
- Is there a user manual written for the MPS system? 4d
- Have we made a detailed survey of the present system and indicated where we have redundant code which can be consolidated during the transition? 4e
- What developments if any are going to be going on in the L 10 version during the conversion? 4f
- What documentation and other commenting etc conventions need to be established and how do we get people trained? 4g

Some Questions for the Planning of the Conversion of NLS in MPS

What measurements do we need to aid the design conversion process and to check on how our design decisions are coming out. 4h

What measurement capabilities do we want to build into the new system as it is redesigned? 4i

Is a running MPS version of NLS going to be less equal or more expensive to run than the present version? 4j

What programming conventions need to be establised such as: 4k

What sorts of things deserve their own modules? 4k1

What are the module creation conventions? 4k2

How can we handle error conditions and signals better than in the L 10 version so it is easy to write both batch type subsystem (dex cpp etc) and intractive systems? 4k3

How do we retrain our programming staff? 4k4

What parts of the system should we not convert? 4l

One of the keys to long term success of any system is the ability to get rid of the old marginal unused stuff which just takes space has to be maintained gets in the way etc.. It takes energy to separate oneself from emotional atachments to commands features etc, but we should be very firm with ourselves in this area. Some examples might be the old baseline record system, markers etc. 4l1

When we convert, how much major redesign are we going to do, or are we just going to go across with the minimum changes possible. 4m

For example Walt says the output processor is just creaking along and getting harder and harder to modify, when we convert are we going to redesign it? The Journal would seem another candidate for redesign; with better error handling the CPP is probably another candidate. 4m1

How many people are going to be required during the conversion? 4n

Where do our goals differ if any from those of Xerox? 4o

Some Questions for the Planning of the Conversion of NLS in MPS

Can we maintain some energy in longer range design studies in other areas for the future during the conversion? 4p

Can we maintain system evolution flexibility and yet speed up the most commonly used parts of the system significantly. 4q

What trial implementations on MPS and measurements of them are needed before we start? 4r

What state does MPS have to be in before we start? 4s

How is the future evolution, maintanence etc of MPS to be handled with Xerox? 4t

What are the longer term relationships between ARC and Xerox going to be with respect to NLS evolution? 4u

Where do our goals differ if any for the conversion from those of Xerox? 4v

A useful approach would probably be to group the above questions and form small teams to make recommendations (the teams could have 1-3 people). 5

RWW 15-DEC-72 10:12 13375

Some Questions for the Planning of the Conversion of NLS in MPS

(J13375) 15-DEC-72 10:12; Title: Author(s): Watson, Richard W./RWW; Distribution: Agent, Station, Hoffman, Carol B., Lee, Susan R., Michael, Elizabeth K., Dornbush, Charles F., ARC, Guest O., Feinler, Elizabeth J. (Jake), Handbook, Augmentation Research, Kelley, Kirk E., Meyer, N. Dean, Byrd, Kay F., Prather, Ralph, White, James E. (Jim), Vallee, Jacques F., Kaye, Diane S., Rech, Paul, Kudlick, Michael D., Ferguson, Ferg R., Lane, Linda L., Auerbach, Marilyn F., Bass, Walt, Engelbart, Douglas C., Hardeman, Beauregard A., Hardy, Martin E., Hopper, J. D., Irby, Charles H., Jernigan, Mil E., Lehtman, Harvey G., North, Jeanne B., Norton, James C., Page, Cindy, Paxton, William H., Peters, Jeffrey C., Ratliff, Jake, Row, Barbara E., Van De Riet, Edwin K. (Ed), Van Nouhuys, Dirk H., Victor, Kenneth E. (Ken), Wallace, Donald C. (Smokey), Watson, Richard W., Andrews, Don I., Mitchell, James G., Deutsch, L. Peter, Lampson, Butler W./sri-arc jgm lpd bwl ; Sub-Collections: SRI-ARC SRI-ARC; Clerk: RWW;

CHI 17-DEC-72 11:39 13402

Comment on new IMLAC input protocol

Ken, in your new imlac input protocol you specified that upon recovering from a crash, the imlac should send ESC ESC ESC ESC. Will this reset info get to the user program??? If not, how are we going to remain consistent in, for example, viewspec input (mouse buttons down)? In addition to the specs you wrote, I think we need a write up of what the user program will receive.
-- Charles

CHI 17-DEC-72 11:39 13402

Comment on new IMLAC input protocol

(J13402) 17-DEC-72 11:39; Title: Author(s): Irby, Charles H./CHI;
Distribution: Deutsch, L. Peter, Victor, Kenneth E. (Ken), Wallace,
Donald C. (Smokey), Ferguson, Ferg R./lpd kev dcw wrf ;
Sub-Collections: SRI-ARC; Clerk: CHI;

CHI 17-DEC-72 11:53 13403

Comment on (Journal,13297,): Expunging at logout time

KEn, as long as we have AUTO-LOGOUT I do not think deleted files should be expunged at logout time (perhaps it could happen if the user types logout and not if it is an auto-logout). -- Charles 1

CHI 17-DEC-72 11:53 13403
Comment on (Journal,13297,): Expunging at logout time

(J13403) 17-DEC-72 11:53; Title: Author(s): Irby, Charles H./CHI;
Distribution: Victor, Kenneth E. (Ken)/kev ; Sub-Collections: SRI-ARC;
Clerk: CHI;

DIA 17-DEC-72 12:56 13404

Some new things in the new superwatch subsystem

The current superwatch is somewhat new. Some changes are: 1

The Print Direct command, with print option PARAMS, will tell you the current setting of the Compute-Bound-OK-LoaD parameter (CBOKLD). This parameter determines when the suspend-Q4-processes feature is in effect. 1a

If the five minute load average goes above this value, compute-bound processes will be removed from running, otherwise not. 1a1

Also, the names for the Login Cutoff Load parameters have been changed from RCTU and RCTL to LCLU and LCLL. (The old names had something to do with response cutoff). 1a2

There is a new set of commands (Run), which function like the RUNFIL subsystem. It can be used to check out a new system, or to put a standard load on the system. 1b

The user specifies any number of terminals to use. The same "runfil" text is sent to all of them. 1b1

In the runfil text: A control-uparrow followed by an upper case letter results in a control character for the terminals. 1b2

No preliminary action is taken such as loggin in the terminal. 1b3

If a terminal is "hung" for more than 10 seconds (i.e. the input buffer does not empty), the input buffer is emptied before the character is sent. 1b4

DIA 17-DEC-72 12:56 13404

Some new things in the new superwatch subsystem

(J13404) 17-DEC-72 12:56; Title: Author(s): Andrews, Don I./DIA;
Distribution: Rech, Paul, Norton, James C., Irby, Charles H., Peters,
Jeffrey C., Prather, Ralph, Wallace, Donald C. (Smokey), Victor, Kenneth
E. (Ken), Ferguson, Ferg R., Engelbart, Douglas C./PR JCN CHI JCP RP DCW
KEV WRF DCE; Sub-Collections: SRI-ARC; Clerk: DIA;
Origin: <ANDREWS>BLURB.NLS;1, 17-DEC-72 12:39 DIA ;

DIA 17-DEC-72 13:03 13405

Response to 13375 about MPS conversion

A very good collection of questions about the MPS conversion. You and I should form a list of (perhaps more organized) questions about the MPS system for the Xerox people and give it to them at the next MPS meeting. I have several questions for them which fit in with yours. 1

DIA 17-DEC-72 13:03 13405

Response to 13375 about MPS conversion

(J13405) 17-DEC-72 13:03; Title: Author(s): Andrews, Don I./DIA; Distribution: Watson, Richard W./RWW; Sub-Collections: SRI-ARC; Clerk: DIA;

DIA 17-DEC-72 22:37 13406

new meta

There is a new META subsystem that should compile your divide right side up now. 1

DIA 17-DEC-72 22:37 13406

new meta

(J13406) 17-DEC-72 22:37; Title: Author(s): Andrews, Don I./DIA; Distribution: Bass, Walt/WLB; Sub-Collections: SRI-ARC; Clerk: DIA;

DIA 17-DEC-72 22:41 13407

HELP

I have been having a strange problem while working on L10 -
Perhpas I have Paxton's think about getting stabbed by NLS now...
Load file <paxton>l10.nls;62 and do a nothing edit and update it.
I get MACH SIZE EXCEEDED AT blah. Do you know where that is
coming from. Also, it screws up both copies somewhat, although
deleting the PC, etc. gets the old one back. I can't seem to
edit that file any longer... HELP 1

DIA 17-DEC-72 22:41 13407

HELP

(J13407) 17-DEC-72 22:41; Title: Author(s): Andrews, Don I./DIA; Distribution: Irby, Charles H./CHI; Sub-Collections: SRI-ARC; Clerk: DIA;

DVN 18-DEC-72 10:34 13408

Resource Allocation: Being Poor Doesn't Teach You How to be Rich

This note responds to Paul Rech's Proposal for resource allocation (13227,), Jim' Norton's Comments on Pauls Proposal (13282,) and Charles Irby's Propossal that Doug have a terminal at home and a secretary (13264,)(13265,). 1

I found Paul's proposal full of useful information and found that it flowed with unusual lucidity from his premise that it is desirable to preserve a certain work mix and to divide competition for terminals among small groups. 2

But following Don Andrew's comments (13221,) it doesn't seem to me at all clear that we should preserve a certain work mix. In fact there are some situations where it is better for groups to work at the same time. 2a

I also mistrust the alledged advanatges of allocating terminals internally within small groups. 2b

I don't feel bad about the present availabilyt of terminals, consdiering the resources and people's inclination to work fromm 9:00-5:00. 2b1

I do feel that smaller groups would do harm by confining my maneuvers to get my work done. more than they would do good by easing planning. 2b2

The juxtaposition of Jim Norton's comments (13282,) and Kirk's report that limiting local users has moved work into PSO (13216,) on the one hand as against Charle's suggestion(13265,) that Doug have an Imlac at home the other hand raises this question. Are we bootstapping toward sufficiency or poverty? 3

Jim implies that we should find out how to live with poverty. If Doug were to have a terminal at home and presumably the resources to use it, he, at least, would be learning how to live with riches. 3a

Poverty and sufficiency teach very different lessons. 3b

Let me take a concrete example. A few months ago Marilyn devised an arm rest for the hand using the keyset. At first I used her devise only in the daytime, and did not find it useful. Later I used it at off hours and found it very useful. Indeed, since it has disappeared I have been jury rigging things with the backs of chairs to serve the same function when I am the only user on the system. 3c

In the daytime the extra speed of putting a larger percentage of your inputs in through the keyset doesn't matter. You may as well use the keyboard a lot of the time. At night an entirely different ratio of keyset to keyboard is comfortable to me. 3c1

In this and other ways people bootstrapping in an environment of poverty will move in different directions than people working in an environment of rich computer resources. 3c2

Since we are poor and since we are trying to gather the background to teach other organizations how to use NLS when those other organizations (Rome or the possible ARPA office) will be poor in the near future, I guess we have to learn how to be poor. 3d

But in the long run we are interested in knowing what it means to have sufficient resources, and emphasis on poverty in planning and atttude to the near exclusion of the image of sufficiency will lead us astray. 3e

DVN 18-DEC-72 10:34 13408

Resource Allocation: Being Poor Doesn't Teach You How to be Rich

(J13408) 18-DEC-72 10:34; Title: Author(s): Van Nouhuys, Dirk H./DVN; Distribution: Rech, Paul, Norton, James C., Kelley, Kirk E., Auerbach, Marilyn F., Andrews, Don I., Irby, Charles H./pr jcn kirk mfa dia chi ; Sub-Collections: SRI-ARC; Clerk: DVN;
Origin: <VANNOUHUYS>RESOURCES.NLS;1, 18-DEC-72 10:31 DVN ;

DVN 18-DEC-72 9:01 13409

Restore Expunge (support for (,13291))

I agree 1

DVN 18-DEC-72 9:01 13409

Restore Expunge (support for (,13291))

(J13409) 18-DEC-72 9:01; Title: Author(s): Van Nouhuys, Dirk H./DVN; Distribution: Victor, Kenneth E. (Ken)/kev ; Sub-Collections: SRI-ARC; Clerk: DVN;

JCN 18-DEC-72 12:25 13410
VISITOR LOG: FCC Steering Committee on CATV Technical Standards

December 11, 1972: 1

via Bob Peters and Steve Miller (SRI) 1a

The FCC Steering Committee on CATV Technical Standards group were visiting other SRI locations and arrived at ARC over an hour late at 4:20 pm and in two sub-groups about 15 minutes apart. This caused some confusion and probably encouraged some of the original sub-group to leave after 15 minutes when a brief re-introduction summary was attempted. I got the feeling that the group had already had a hard day and found it difficult to get very interested, although there were a few good questions. 1b

I mentioned and showed some editing, browsing, index-Journal document linking capabilities and discussed the ARPANET and the NIC, plus K-W Workshop ideas and our goals. 1b1

I also mentioned the RADC work and our starting remote collaboration via linked screens. 1b2

MEH and JCN did a linked screen thing that went over fairly well... but they were tired. 1b2a

People on the Committee: (8 of these people - marked with an * - were present) 1c

* Arthur R. O'Neil
South Bend Tribune 1c1

South Bend, Indiana 46626 1c1a

* Arthur S. Taylor
Malarkey, Taylor and Associates 1c2

1225 Connecticut Avenue, N.W.
Washington, D.C. 20036 1c2a

* Delmer Ports
National Cable Television Association 1c3

918 16th Street, N.W.
Washington, D.C. 20006 1c3a

* Herbert Michels
Time-Life Broadcast, Inc. 1c4

Time-Life Building,
Rockefeller Center
New York, New York 10020 1c4a

* Issac S. Blonder
Blonder-Tongue Laboratories 1c5

One Jake Brown Road
Old Bridge, New Jersey 08857 1c5a

* Joe E. Hale
Western Communications, Inc. 1c6

Suite 403
501 North Broadway
Walnut Creek, California 94596 1c6a

* Kenneth A. Simons
Jerrold Electronics Corporation 1c7

P.O. Box 37
Hatboro, Pennsylvania 19040 1c7a

* Robert W. Peters
Stanford Research Institute 1c8

Menlo Park, California 94025 1c8a

George W. Bartlett
National Association of Broadcasters 1c9

1771 N Street, N.W.
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Harold Katz
Vicom Manufacturing Co. 1c10

P.O. Box 320
Ann Arbor, Michigan 48107 1c10a

Hubert Schlafley
TeleprompTer Corporation 1c11

50 W. 44th Street
New York, New York 10036 1c11a

Jacob W. Mayer
FCC representative 1c12

1919 M Street, N.W.
Washington, D.C. 20554 1c12a

Joseph L. Stern
Goldmark Communication Corporation 1c13

One Automation Plaza
Norwalk, Connecticut 06850 1c13a

Oscar Reed
Jansky & Bailey, Atlantic Research Corporation 1c14

Shirley Highway & Edsall Road
Alexandria, Virginia 22314 1c14a

R. W. Behringer
Theta-Com 1c15

9320 Lincoln Boulevard
Los Angeles, California 90045 1c15a

Theodore S. Ledbetter
Urban Communications Group 1c16

Suite 405
1730 H Street, N.W.
Washington, D.C. 20036 1c16a

Walter S. Wydro
Walter S. Wydro Consultants 1c17

P.O. Box 285
Pineville, Pennsylvania 18946 1c17a

JCN 18-DEC-72 12:25 13410

VISITOR LOG: FCC Steering Committee on CATV Technical Standards

(J13410) 18-DEC-72 12:25; Title: Author(s): Norton, James C./JCN; Distribution: Engelbart, Douglas C., Watson, Richard W., Norton, James C., Byrd, Kay F./emc kfb ; Sub-Collections: SRI-ARC EMC; Clerk: JCN; Origin: <NORTON>FCCCOM.NLS;1, 15-DEC-72 7:24 JCN ; HJOURNAL="
JCN 19 DEC 72 4:27AM";

JCN 18-DEC-72 14:59 13411
Request for Time Extension on RADC Project 1894

TO: George Kasolas, SRI Contracts via Jim Hillhouse 1

FROM: Jim Norton, ARC cc:Dirk van Nouhuys, Dick Watson
---------- 2

Please request a time extension of about eight weeks for completion of work on the RADC project 1894. The time extension should take us to 1 March 1973. 2a

We presently have $ 14,483 cost funding left (as of 9 December 1972) and anticipate that it will be sufficient to continue the engineering services we are providing to RADC as at present. 2b

A cost to complete estimate is as follows: 2b1

Personnel Costs 2b2

2b2a

Proj Supv	80	hrs.		2b2a1
Prof	600	hrs.		2b2a2
Clerical	30	hrs.		2b2a3
Total Direct Labor				2b2b
Payroll Burden @ 28%				2b2c
Total Labor and Burden				2b2d
Overhead @ 105% w				2b2e
Total Personnel Costs			13,534	2b2f

2b2g

Direct Costs 2b3

Travel			897	2b3a
2 trips East @ $318 =		$ 636		2b3a1
6 Days Subsistence @ $31 =		186		2b3a2
Auto Rental 5 days @ $15 =		75		2b3a3

Communications	50	2b3b
Total Direct Costs	947	2b3c
Total Cost to Complete	14,481	2b4

we anticipate submitting a proposal for additional funding for similar services to be forthcoming soon. 2c

JCN 18-DEC-72 14:59 13411
Request for Time Extension on RADC Project 1894

(J13411) 18-DEC-72 14:59; Title: Author(s): Norton, James C./JCN;
Distribution: Van Nouhuys, Dirk H., Watson, Richard W./DVN RWW ;
Sub-Collections: SRI-ARC; Clerk: JCN;
Origin: <NORTON>TIMEX.NLS;1, 15-DEC-72 17:33 JCN ; HJOURNAL="
JCN 19 DEC 72 4:28AM";

question

Are you really the Coordinator for Stanford University? 1

LMM 18-DEC-72 20:31 13413

question

(J13413) 18-DEC-72 20:31; Title: Author(s): Masinter, Larry M./LMM; Distribution: Atkinson, Richard/RA; Sub-Collections: NIC; Clerk: LMM;

LPD 16-DEC-72 21:52 13414

Reply on proposed new IMLAC protocol

reply to 13365

LPD 16-DEC-72 21:52 13414

Reply on proposed new IMLAC protocol

In general, I agree with your proposed changes in IMLAC input protocol. However, I hope you will take the following points into consideration before implementing the changes: 1

There is now a proposed Level 0 Network Graphics Protocol. It is not clear how the IMLAC protocol should relate to this. 1a

Personally, I think the proposed protocol is entirely in the wrong direction, since it is not embeddable in the TELNET protocol. 1a1

This implies that a single device operating over a single connection pair cannot be both a display terminal and a keyboard terminal in the usual way, unless the host is prepared to deal with keyboard characters sent under the graphics protocol. 1a2

Xerox is formulating an input protocol for its display terminals, whose capabilities will include those of the present IMLAC arrangement as a subset. 1b

This protocol or some future development of it will eventually receive official blessing (or something) as an output of our ARPA contract. 1b1

It behooves us to move cautiously since the resulting protocol will be inextricably embedded in the TENEX monitor (assuming Smokey has done his sales work well at BBN). 1c

Perhaps we should convene a meeting between myself, someone from ARC (CHI, KEV, DCW?), Bill Duvall (who is doing the PARC display terminal software), and maybe other people at PARC who have an interest in such things. 2

LPD 16-DEC-72 21:52 13414

Reply on proposed new IMLAC protocol

(J13414) 16-DEC-72 21:52; Title: Author(s): Deutsch, L. Peter/LPD;
Distribution: Victor, Kenneth E. (Ken), Irby, Charles H., Wallace,
Donald C. (Smokey)/KEV CHI DCW; Keywords: IMLAC; Sub-Collections: NIC;
Clerk: LPD;
Origin: <DEUTSCH>PREP.NLS;2, 16-DEC-72 21:50 LPD ;

LPD 17-DEC-72 16:40 13415

I'm done with READC and LSGFRMT

I have finished tuning FECHC1, READC, and LSGFRMT. The responsible party can extract them from <DEUTSCH>UTILTY and <DEUTSCH>DSPGEN. 1

These routines have been tried out in the current NLS and appear to work. 1a

Comments marked *** Changes at the head of the respective files tell exactly what edits to make. 1b

LSGFRMT incorporates the changed end-test which (as far as I can tell) is the only difference between the NLS and NIC-NLS versions. 1c

Otherwise, the new routines were made by editing the NIC-NLS sources (this was so I could patch them into the running system). 1d

READC has been reduced from 10 instructions to 6 for the usual case (reading forward, not end of string). 1e

The main loop in LSGFRMT is 13 instructions including one byte instruction; formerly 30 instructions including 7 byte instructions. 1f

LPD 17-DEC-72 16:40 13415

I'm done with READC and LSGFRMT

(J13415) 17-DEC-72 16:40; Title: Author(s): Deutsch, L. Peter/LPD ; Distribution: Andrews, Don I., Kaye, Diane S., Lehtman, Harvey G., Irby, Charles H., Dornbush, Charles F., Michael, Elizabeth K./DIA DSK HGL CHI CFD EKM ; Sub-Collections: NIC; Clerk: LPD ;

Response to (13408,) Group Allocation Scheme Comments

More in reference to the proposed Group Allocation scheme (13327,) and in particular to DVN's comments in (13408,). 1

re (13408,3), I think we should view our resource situation as being a choice between getting increasingly effective, efficient use of possibly "adequate" system resources across broad service/task spectrums as opposed to getting inefficient, ineffective use of possibly adequate resources. 2

This seems a little different from a choice between "sufficiency" (perhaps from wasteful over-provision?) and "poverty" (perhaps resulting from wasted unused resources AND/OR insufficient resources). 2a

Where we think about our present situation depends mainly on what one thinks about how we use the resources we have and how much room for improvement there still is within their capacity. I feel there is still much room left. 2b

re (13408,3d), until we use our resources more fully (even just 8am - 5pm WITH deferred processing where we can), I'm not ready to agree we are poor. 3

On the other hand, I do feel cautious about how much more we expand our staff without having done a better job with the use of or the amount of our resources. 3a

The one more software slot (a user for sure) and the hardware technician slot (a non-user) are the only ones I see now open at ARC. 3a1

The NLS on ISI TENEX effort should help get us more resources at least from a raw power standpoint. 3b

When the MPS NLS-recoding effort begins, the pressure will be even greater, particularly with Xerox people I assume will be more active. 3c

re (13408,3e), What it means to have sufficient resources should be judged in terms of what we're trying to do. 4

Performing some tasks as we now do in DNLS that would be better or just as well done in DEX/TNLS with PSO help means to me that our "insufficiency" is not necessarily in terms of DNLS power, but in the state of development of our user-system methodology and training. 4a

I'm just saying that we should save our DNLS power investment for use where it can really do the most good. 4a1

Providing sufficiency in methodology and training areas is the greater challenge, I think, and is where we can really help other future using organizations - and the broad augmentation system development itself. 4b

JCN 19-DEC-72 15:26 13416
Response to (13408,) Group Allocation Scheme Comments

(J13416) 19-DEC-72 15:26; Title: Author(s): Norton, James C./JCN ; Distribution: Agent, Station, Hoffman, Carol B., Lee, Susan R., Michael, Elizabeth K., Dornbush, Charles F., ARC, Guest O., Feinler, Elizabeth J. (Jake), Handbook, Augmentation Research, Kelley, Kirk E., Meyer, N. Dean, Byrd, Kay F., Prather, Ralph, White, James E. (Jim), Vallee, Jacques F., Kaye, Diane S., Rech, Paul, Kudlick, Michael D., Ferguson, Ferg R., Lane, Linda L., Auerbach, Marilyn F., Bass, Walt, Engelbart, Douglas C., Hardeman, Beauregard A., Hardy, Martin E., Hopper, J. D., Irby, Charles H., Jernigan, Mil E., Lehtman, Harvey G., North, Jeanne B., Norton, James C., Page, Cindy, Paxton, William H., Peters, Jeffrey C., Ratliff, Jake, Row, Barbara E., Van De Riet, Edwin K. (Ed), Van Nouhuys, Dirk H., Victor, Kenneth E. (Ken), Wallace, Donald C. (Smokey), Watson, Richard W., Andrews, Don I./SRI-ARC ; Sub-Collections: SRI-ARC; Clerk: JCN ;
Origin: <NORTON>B.NLS;8, 19-DEC-72 15:23 JCN ; HJOURNAL="JCN 20 DEC 72 5:44AM 13416";

JCN 19-DEC-72 16:23 13417
NIC Information Request from the University of Washington

Dick: Here's an action item concerning the NIC. 1

Jerre Noe, who heads up the Computer Science Department at the University of Washington (I think that's his job now) and who is an old friend of ours - he was in Bart Cox's job for many years - pointed one of his people toward Elmer Shapiro to see about the possibility of someone from SRI holding a seminar at UWASH in the near future. 1a

They are interested in ARPANET protocols, how chosen (?), rationale, etc - to quote the note I got from Elmer. 1a1

The man who contacted Elmer is: 1a2

Helmut Golde,
Dept. of Computer Science,
University of Washington,
Seattle, Wash. (206) 543-2668 1a2a

Elmer was to call 19 or 20 December or after 6 January. I agreed that we would do something about it for Elmer. 1a3

I just heard about it today and felt it could wait for your return. 1a3a

It seems to me that there may well be other people in the ARPANET that they should talk with besides us - like Steve Crocker? On the other hand, it might be a useful trip for someone from here to take. Let me know what you do? 1a4

JCN 19-DEC-72 16:23 13417
NIC Information Request from the University of Washington

(J13417) 19-DEC-72 16:23; Title: Author(s): Norton, James C./JCN ;
Distribution: Watson, Richard W., Kudlick, Michael D./RWW MDK ;
Sub-Collections: SRI-ARC; Clerk: JCN ;
Origin: <NORTON>B.NLS;8, 19-DEC-72 15:28 JCN ; HJOURNAL="JCN 20
DEC 72 5:46AM 13417";

JCN 1-FEB-73 14:46 13419

Re: Net Port Availability - Response to (14124,)

This is in response to questions raised about net port (un)availability by Jim Bair in (14124,). 1

We agree that NLS should be accessable to RADC users as much as possible - but within the resources we have to use. Our westcoast early morning period can now stand an additional load and we should find ways to use the resource more effectively -- particularly when there are appropriate users who want and need it. 1a

As we discussed today, there is a real need for additional network ports into the ARC machine, particularly before about 8:30am Pacific time. 2

We have been limiting the number to 8 ports at all times of the day. 2a

We plan to increase this to 16 ports during the early morning hours, cutting back to 8 after 8:30 PT. This may happen about 2/9. 2b

The RADC/ARC contract we are working under and our own verbal agreements have assumed an upper limit of 4 simultaneous RADC users on the ARC system. 3

The average number RADC users on has been well below that, of course, although there have been many instances where 4 RADC users have been on at the same time. 3a

In anticipation of the increase to perhaps an upper limit of 10 simultaneous (early morning) RADC users during the next 7 months in our forthcoming proposal, we agree that RADC may have more users on in the early morning hours until 8:30 PT as soon as we can handle the increased number of Network users. 3b

If adding users really creates problems for us, we will have to re-examine the situation. Also, if the USC-ISI PDP-10 use by ARC does not materialize, we will have to again look at the number of RADC people we can support. 3b1

When we have effected these changes, we will let you know, so that you may increase the number of users from RADC then. 4

We certainly do want to encourage RADC (and other) users who want to get on the system. We hope these changes will help with that objective. 5

Re: Net Port Availability - Response to (14124,)

(J13419) 1-FEB-73 14:46; Title: Author(s): Norton, James C./JCN;
Distribution: Stone, Duane L., Bair, James H., Watson, Richard W., Van
Nouhuys, Dirk H., Kudlick, Michael D., Wallace, Donald C. (Smokey)/DLS
JHB RWW DVN MDK DCW; Sub-Collections: SRI-ARC; Clerk: JCN;
Origin: <NORTON>PORTS.NLS;1, 1-FEB-73 14:32 JCN ;HJOURNAL="JCN 2
FEB 73 5:44AM 13419";

DVN 19-DEC-72 13:16 13422

Printing by COM (Computer Output to Microfilm)

On Friday morning (12/15) Walter and I had a somewhat traumatic conversation with Paul Johnson at DDSI. 1

We first mentioned to him that in the most recent version of The 1972 Final Report returned to us from DDSI lines had been missing. 2

The DDSI system had been dropping lines in September; we thought it was a fixed bug, but it has reappeared. 2a

Paul said the difficulty was in their hardware. 2b

He said they have gone back with the problem to the hardware maker, Information International Incorporated. 2b1

III had been fixing their handware, but DDSI has now demanded redesign. 2b2

DDSI is not paying any rent until this problem is fixed, which is nice for them. 2b2a

We asked Paul when "proportional spacing" would really be available. He replied that the code had been written but not put in the machine (compiled?). 3

It was not clear to me whether the code he called "written" changed the spacing between letters or merely justified lines by diddling the spacing between words. (WLB told him to do interword spacing only in order to get the system up with option of adding intercharacter spacing later if needed.) 3a

We then turned to the most recent offset printing version of the COM User Guide Appendix D. 4

We pointed out that there was no difference between dark and bold and in most faces between medium and light. 4a

Walter said he planned to give up the notion of dark and merely have three levels of impression: bold, medium, and light. 4a1

We further pointed out that below 10 points the painted faces (News Gothic and Times Roman) ran together to a degree that made them nearly unreadable. Paul replied that they were going to have to vary the size of the strokes with the type size. He said to do so they would have to go back to III to get hardware changes (13047,2). We certainly agreed that they would have to vary the size of the strokes. 4b

Printing by COM (Computer Output to Microfilm)

I asked Paul how acceptance testing was coming on with the flasher (12792,). 5

He said, as I understand it, that they had accepted the flasher but the quality was not good enough. 6

> Essentially he wants to give up the plan of flashing our halftones on to the screen (12612,) for which we sent him all those tiny screen halftones (12549,) and instead shoot full sized halftones, that we would supply, directly on to the printing plate at DiLine. I said we had such halftones left over from the process of making the small halftones and would supply them when certain of his plan. 6a

All this makes clear that DDSI will have not printing of the quality we hope for the final report in a month at best. Therefore, we intend to print at least a first edition on our line printer and reproduce it through SRI as we have done in the past. I am going to print out a copy of the file tonight (12/18) and with luck (underlined) will be ready to go to the printer in a day or two. 7

DVN 19-DEC-72 13:16 13422
Printing by COM (Computer Output to Microfilm)

(J13422) 19-DEC-72 13:16; Title: Author(s): Van Nouhuys, Dirk H./DVN; Distribution: Bass, Walt, Meyer, N. Dean, Norton, James C., Stone, Duane L., Engelbart, Douglas C./WLB NDM JCN DLS DCE;
Sub-Collections: DPCS SRI-ARC; Clerk: BER;
Origin: <VANNOUHUYS>COM.NLS;4, 19-DEC-72 13:12 BER ;

DIA 19-DEC-72 16:45 13423

Measure of CPU time spent converting characters for our line printer

Notes about a PC sample of the printer character conversion code. 1

On 12/18/72 from 11:50 to 15:35 I did a PC sample of the line printer character conversion code. 1a

The sample included code in the range LPTSQO through BUFWAT+2. This includes the character conversion for our funny printer, but does not include the interrupt handling routine, which is elswhere in memory. 1a1

I don't know just how much the printer was actually printing during that period, but it appeared to be typical. 1a2

About 1.02% of the CPU time was spent in that code over the specified time period. 1a3

Over that same time period 4.9% of CPU time was eaten up by SYSJOB. 1a3a

Hence I would guess that just under 1/4 of SYSJOB's time is spent in that character formatting loop. 1a4

If we use the 1/4 factor for character formatting, and look at SYSJOB when it is printing, when it gets getween 5 and 10 percent of the CPU time, we can estimate that we spend about 1 to 2% of CPU time just for our printer. 1b

Portions of the PC sample indicate that this is not the worst case: In the 15 minute period ending at 12:35, 3.69% of CPU time was spent in the character conversion code, and 8.7% of CPU time was spent in the SYSJOB subsystem. 1b1

SYSJOB gets up to 20% when printing if the load is light. Normally it is cut down to the 5-8% range, but then the printer does not run at full speed. 1c

On closer inspection, I discovered that a good deal of the line printer character conversion code is in literals, which means that it escaped the PC sample. Hence this PC sample is a lower bound. 1d

So, in round figures, if we got the special printer conversion device, we could gain from 2 to 4% of our CPU time, and have the printer run faster, perhaps at full speed, even when the system is loaded. 1e

If averaged over the entire working day, the gain would be

Measure of CPU time spent converting characters for our line printer

between 1 and 2% of CPU time. The gains during the times when the printer use is high may be as high as 5% of CPU time. 1e1

DIA 19-DEC-72 16:45 13423

Measure of CPU time spent converting characters for our line printer

(J13423) 19-DEC-72 16:45; Title: Author(s): Andrews, Don I./DIA; Distribution: Hardy, Martin E., Norton, James C., Wallace, Donald C. (Smokey), Victor, Kenneth E. (Ken), Irby, Charles H., Rech, Paul, Watson, Richard W., Engelbart, Douglas C./meh jcn dcw kev chi pr rww dce ; Sub-Collections: SRI-ARC; Clerk: DIA;
Origin: <ANDREWS>BLURB.NLS;6, 19-DEC-72 16:34 DIA ;

DVN 19-DEC-72 17:04 13424

Reminder to review the all purpose handout (13066,)

Late last month I sent each of you a DRAFT of an all-purpose handout on ARC. Only Jim Norton has responded. If I do not hear from you this year, I will begin to assume you like the draft as it stands and will start work toward printing. 1

DVN 19-DEC-72 17:04 13424

Reminder to review the all purpose handout (13066,)

(J13424) 19-DEC-72 17:04; Title: Author(s): Van Nouhuys, Dirk H./DVN; Distribution: Norton, James C., Irby, Charles H., Watson, Richard W., Engelbart, Douglas C., North, Jeanne B., Auerbach, Marilyn F., Bass, Walt/jcn chi rww dce jbn mfa wlb ; Sub-Collections: SRI-ARC; Clerk: DVN;

EHF 19-DEC-72 13:08 13425

Jeanne,

I have had an in-house request for the following documents which are missing from our library of the NIC collection:

RFC's: 333,338,352,365,369,

and NIC #10916.

Would it be too much to ask for copies of these?

Thanks,

Ernie Forman

1

EHF 19-DEC-72 13:08 13425

(J13425) 19-DEC-72 13:08; Author(s): Forman, Ernest H./EHF;
Distribution: North, Jeanne B./JBN; Sub-Collections: NIC; Clerk: EHF;

JCN 19-DEC-72 10:48 13426

Additional Details for: Request for Time Extension on RADC Project 1894

TO: George Kasolas, SRI Contracts via Jim Hillhouse 1

FROM: Jim Norton, ARC cc: Dirk van Nouhuys, Dick Watson

2

Please request a time extension of about eight weeks for completion of work on the RADC project 1894. The time extension should take us to 1 March 1973. 2a

This extension is needed primarily due to earlier to postponement of RADC personnel training in use of the ARC online system (NLS) from IMLAC display terminals and delay of the start of work on the online calculator. 2a1

RADC IMLAC terminals are now operative and may be used by RADC people in their daily work after further training and RADC user-system development. 2a1a

The availability of appropriate personnel for the online calculator development effort also delayed that work. The calculator work is progressing well now. 2a1b

We presently have adequate funding left (as of 9 December 1972) and anticipate that it will be sufficient to continue the engineering services we are providing to RADC as at present. A cost to complete estimate is as follows: 2b

Personnel Costs				2b1
Proj Supv	80 hrs.			2b1a
Prof	530 hrs.			2b1b
Clerical	30 hrs.			2b1c
Total Direct Labor			4,674	2b1d
Payroll Burden @ 28%			1,309	2b1e
Total Labor and Burden			5,983	2b1f
Overhead @ 105%			6,282	2b1g
Total Personnel Costs			12,265	2b1h
Direct Costs				2b2
Travel			897	2b2a
2 trips East @ $318 =		$ 636		2b2a1
6 Days Subsistence @ $31 =		186		2b2a2
Auto Rental 5 days @ $15 =		75		2b2a3
Communications			50	2b2b
Total Direct Costs			947	2b2c
Total Cost to Complete			13,212	2b3

Additional Details for: Request for Time Extension on RADC Project 1894

We present below a comparision of the labor hours now expected to be delivered under this contract with the estimated contract amounts. 2c

Category	CONTRACT hrs	ACTUAL (12/9) TO DATE hrs	EST TO COMPLETE hrs	TOTAL hrs	VARIANCE hrs	
						2d
Supv	50	80	80	160	110	2e
Sr Prof	600	689	0	689	89	2f
Prof	1700	1440	530	1970	270	2g
Cler/Tech	612	124	30	154	-458	2h
Total	2962	2333	640	2973	11	2i

The above variances are explained by the following factors: 2j

One contributing project staff member's labor classification changed from Professional in July to Senior Professional and in late November to Supervisory. This shifted his hours from Professional to the other two catogories for appropriate periods of the contract and in the estimate to complete. 2j1

Providing the necessary technical assistance to RADC personnel required us to expend more professional hours and less clerical hours than were originally estimated. 2j2

We found that much of the clerical work we anticipated earlier was performed by RADC people themselves, while our services for technical consultation and training were utilized more than anticipated. 2j2a

An additional cost-related factor is that salary rates have been slightly lower in all categories than originally estimated, due primarily to the choices of specific people needed in the performance of the contract work as it progressed. 2j3

We plan the following activities during the remainder of the extended contract period. 2k

We will continue 2k1

- to provide RADC users access to the ARC online system (NLS) under the currently agreed upon schedules and loads. 2k2

- to cooperate with RADC personnel in development of software that allows RADC users to access our system in display mode over the ARPA Network. 2k3

- development of an online calculator package as requested by RADC technical personnel. A design specification has recently been released (13141,). 2k4

- to give formal and informal training courses in the use of NLS using display terminals at RADC and from SRI-ARC over the ARPA Network. 2k5

- discussions concerning selection of apppropriate terminal and printer equipment by RADC technical personnel. 2k6

We anticipate submitting a proposal for additional funding for similar services to cover the period from 1 March 1973 to 31 July 1973 to be forthcoming soon. 2l

JCN 19-DEC-72 10:48 13426
Additional Details for: Request for Time Extension on RADC Project 1894

(J13426) 19-DEC-72 10:48; Title: Author(s): Norton, James C./JCN ; Distribution: Van Nouhuys, Dirk H., Cox, Bonnar, Watson, Richard W., Stone, Duane L./DVN BC RWW DLS ; Sub-Collections: SRI-ARC; Clerk: JCN ;
Origin: <NORTON>TIMEX.NLS;2, 19-DEC-72 8:13 JCN ; HJOURNAL=" JCN 20 DEC 72 5:33AM";

JCN 19-DEC-72 13:19 13427

Catalog Operational Maintenance: Who will handle?

Dick, I thiink we should discuss the operational task assignment of our combined NIC and ARC catalog software effort soon, so that Walter can become less attached to the pprocess. It would be good to get new blood into the area and, of course, WLB is more than eager to depart to DPCS.. Whacha think? cc to CHI 1

JCN 19-DEC-72 13:19 13427

Catalog Operational Maintenance: Who will handle?

(J13427) 19-DEC-72 13:19; Title: Author(s): Norton, James C./JCN;
Distribution: Watson, Richard W., Irby, Charles H./rww chi ;
Sub-Collections: SRI-ARC; Clerk: JCN;