Proposed List Types to Model PCP Data Structures

Some conventions about how nls internally stores PCP data structures are needed to prevent loss of information during a transformation such as PCP format => NLS internal format => PCP format which should of course be an identity transformation. 1

Proposed additions to NLS List Element types to model PCP data structures. 1a

Boolean: 1a1

value field contains 18 bits the least significant bit of which determines whether this element is TRUE (=1) or FALSE (=0) 1a1a

Index: 1a2

value field contains an integer in the range 1 - (2**16-1). 1a2a

Bitstr: 1a3

value field contains the address of a block whose first word contains (by convention) a bit count, the next (count+35)/36 words contain a bit string. 1a3a

Keylist: 1a4

Like list except Keylist always contains two elements, the first of which is a key, the second is the data element for this key. Note that a Key can be any data type including list. 1a4a

With these additions the translation between PCPB36 format and an equivalent L10 data structure becomes straight forward, and invertable. 2

PCPB36 data type	L10 List element type	ELEM #list#[i]	
EMPTY	NULL	0	2c
BOOLEAN	BOOLEAN	integer	2d
INDEX	INDEX	integer	2e
INTEGER	INTEGER	integer	2f
BITSTR	BITSTR	addr of block	2g

CHRSTR	STRING	addr of string	2h
LIST	LIST	addr of list	2i
KEY,ELEMENT	KEYLIST	addr of keylist	2j

This defines the default argument conversion for any nls pcpcalable routines. Note that the NLS BE will have additional tranformations performed upon most of its arguements (i.e, LIST(windowid,stringid,charcount) => address of a nls text pointer). 3

This now makes a total of nine data types which is a problem because the PDP11 implementation of lists allows only three bits for type field. One solution would be to eliminate the indirect bit and use type index instead of an immediate integer. Another possible solution is to have index and empty be the same type, distinguished by the value field (0 for empty). 4

DSM 2-MAY-75 14:02 25820

Proposed List Types to Model PCP Data Structures

(J25820) 2-MAY-75 14:02;;; Title: Author(s): David S. Maynard/DSM; Distribution: /NPG([ACTION]) ; Sub-Collections: SRI-ARC NPG; Clerk: DSM;

Re: 25820, Proposed List Element Types

Gentlemen, your proposal will slide the NSW schedule by one two weeks of DIA's virtual time (assuming Jim White waits for the LIS stuff). 1

Since the language knows nothing of types boolean, index, b tstr, keylist, constructs must be invented so that those types co ld be set when list assignments are done. 2

Also, it appears to me to be unnecessary: 3

It seems to me that a boolean/integer and integer/boolean transformation is reversable: boolean = zero or non-zero in eger and an integer = one or zero depending on the boolean. Whats th fuss? 4

An index is also an integer. For sure. 5

A bitstring can easily be a block with the zeroth word indi ating the number of bits in it. Blocks are implemented with the value of such an element being the address of the first free word in the lock. Whats the fuss? 6

A keylist IS a list. The compiler and runtime package could care less! 7

I of course assume that arguments and results are pre-defin d! If that's not true we are in big trouble! 8

If I do not undestand the problem, please show me an exampl where it is impossible or very ineffecient to communicate without th se new types. I don't mind solving the world's problems, but I don t see any real prolems here and I feel that we are just postponing th dog work. LETS GET ON WITH IT!!! 9

Re: 25820, Proposed List Element Types

(J25821) 3-MAY-75 14:28;;; Title: Author(s): Don I, And ews/DIA;
Distribution: /RWW([ACTION]) NPG([ACTION]) ; Sub-Co lections:
SRI-ARC NPG; Clerk: DIA;

JEW 4-MAY-75 19:00 25822

Use of L10 LISTs in DPS, Re (25820,) and (25821,)

I have no need/plans to use the new list element types proposed in (25820,) in the DPS implementation, which is nearly coded. As far as I know, this is strictly a Backend controversy. --Jim 1

JEW 4-MAY-75 19:00 25822

Use of L10 LISTs in DPS, Re (25820,) and (25821,)

(J25822) 4-MAY-75 19:00;;;; Title: Author(s): James E. (Jim) White/JEW; Distribution: /RWW([ACTION]) NPG([ACTION]) ; Sub-Collections: SRI-ARC NPG; Clerk: JEW;

Re: (25820,) and (25821,) Proposed List Element Types

The problem is that of calling an external procedure. The arguments for this procedure must be encoded in PCP, which of course means they are fully typed. Note that for example in PCP arguments of type index have a different format than those of type integer. There are two choices as to who knows the types for the arguments . 1

A Table: 1a

This table would be indexed by process handle, package handle and procedure name, and would contain the legal type (or types) for each argument, and each result returned. Note that if an argument's type is list this table must also contain the type for each list element, and so on to arbitrary depth. Also certain procedures may allow more than one type for an argument, this may be conditionally dependent on the value of another argument. These problems, along with the problem of maintaining such a table seem to argue against such an approach. 1a1

The caller: 1b

The caller must either construct the proper PCP data structure for each argument or build a data structure which contains all the necessary type codes, and a general pupose routine would convert this to the corresponding PCP format data structure. My proposal for new list type elements was merely an attempt to isolate the programmer from PCP as much as possible, and allow him to construct arguments, and recieve results as L10 lists. This is possible only if we expand the set of valid list element types . The type code in the list element descriptor can then be used by a general purpose routine to translate the element into its corresponding PCP format. 1b1

My suggestion is merely to add the types I listed, that is provide a way of both testing and setting the type code of an element which includes the types necessary for PCP. I did not intend any more run time machinery to handle these new types. As DIA pointed Keylist is treated exactly as list by the Run Time Package, I would also expect that Boolean is treated exactly like Index which is exactly like integer. Also Bitstr is handled exactly like Block (In fact the type BITSTR is not needed, BLOCK can be used instead, this is because block is not a valid PCP element type). These new types are just psuedonyms for existing types, and provide a convenient place for a user to store the type information needed by the PCP encoding function. 1b2

In summary I am proposing adding types index and boolean to be

psuedonyms for list element type integer, and adding keylist to be a psuedonym for type list. 1b3

New language constructs for setting the type of an element would be nice, but they are not necessary. Something like: 1b4

```
#list#[i] _ USE makeitboolean(DESC #list#[1]);
```
1b4a

would serve our purposes. 1b5

DSM 5-MAY-75 18:51 25823

Re: (25820,) and (25821,) Proposed List Element Types

(J25823) 5-MAY-75 18:51;;; Title: Author(s): David S. Maynard/DSM; Distribution: /DIA([ACTION]) NPG([INFO-ONLY]) ; Sub-Collections: SRI-ARC NPG; Clerk: DSM;

JBP 5-MAY-75 20:28 25824

Re: Tenex Subsystem MSG

Sorry to tantalize you with unreachable goodies, i will investigate getting MSG installed at Office-1 and report back. --jon. 1

JBP 5-MAY-75 20:28 25824

Re: Tenex Subsystem MSG

(J25824) 5-MAY-75 20:28;;;; Title: Author(s): Jonathan B. Postel/JBP; Distribution: /DAP([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JBP;

Liaison and other ident changes

JAKE 5-MA -75 23:58 25825

Marcia, Here are some more changes for ident file. Jake

Liaison and other ident changes

1-MAY-75 1351-PDT NEELY at PARC-MAXC: New phone no.
Distribution: FEINLER AT BBN-TENEXB
Received at: 1-MAY-75 16:49:17-EDT 1

My new phone number is 494-4327. 1a

1-MAY-75 1215-PDT DALE at USC-ISIB: Re: ISIC Liaison
Distribution: FEINLER AT BBN-TENEXB
Received at: 1-MAY-75 15:15:57-EDT 2

In response to your message sent 30 APR 1975 0725-EDT 2a

The liaison for USC-ISIC is the same as for USC-ISI,
ISID is planned for, but will not be available for some ime.
--Dale 2b

2-MAY-75 0933-EDT KELLEY at BBN-TENEX: LIASON LIST
Distribution: FEINLER AT BBN-TENEXB, kelley
Received at: 2-MAY-75 09:33:00-EDT 3

YOUR IDEA IS A GOOD ONE, IT WILL ENABLE ME TO MONITOR
NETWORK LIASON ACTIVITIES AND STILL LET FRED GET
A COPY FOR HIMSELF TO ACT UPON INDEPENDANTLY. THEY SHOU D BE
SETTING UP HIS ACCOUNT AT BBN TODAY. IT MAKES NO REAL
DIFFERENCE WHICH OF US IS LIASON ON WHICH MACHINE SINCE
THEY ARE ADJACENT....SO CHANGE AS IT IS EASIEST FOR YOU.
THANK YOU.....KARL KELLEY 3a

** MARCIA, Make Fred Segovich (Seovich@BBN) liaison f r ILL-NTS
and Karl Kelley (Kelley@BBNB) liaison for ILL-CAC. N te Fred's
new network address change, J. 3a1

5-MAY-75 1719-PDT SDC at SRI-AI: CHANGE OF TECHNICAL LIA SON FOR
SDC-LAB
Distribution: FEINLER AT BBNB, kmv at sdc-lab
Received at: 5-MAY-75 20:15:31-EDT 4

THE TECHNICAL LIAISON FOR SDC IS NOW ROB LARSON. NETWOR MAIL MAY
CONTINUE TO BE ADDRESSED TO KMB@SDC-LAB, BUT WILL BE DEL VERED
TO HIM INSTEAD OF KEN BRANDON, THE PREVIOUS LIAISON. PO T OFFICE
TYPE MAIL SHOULD BE SENT TO ROB LARSON AT THE SAME SDC A DRESS AS
BEFORE. 4a

THE SDC-CC HOST (72) IS NO LONGER PLANNED AS AN ATTACHME T TO THE
370/158 RUNNING VS2. AS WE MAY OCCASIONALLY USE HOST 72 FOR
EXPERIMENTAL PURPOSES, THE NAME SHOULD REMAIN IN HOST TA LES. 4b

THERE IS AN ERROR IN OFFICE-1<NETINFO>HOSTS.TXT FOR LL-6 . THEY
ARE

DESCRIBED IN THE ARPANET DIRECTORY AS A SERVER, AND, IN ACT DO FUNCTION AS SUCH. HOSTS.TXT DESCRIBES THEM AS USER ONLY 4c

I FIND THAT MY FTP DOCUMENTATION IS OBSOLETE, AS IT DOES NOT INCLUDE
RFC 542. IS THERE A COPY OF IT AVAILABLE ONLINE ANYWHER ? IF NOT, COULD YOU DIRECT ME TO THE PROCEDURE FOR OBTAINING NOTHER COPY ? 4d

THANK YOU. 4e

ROB LARSON (NEWNET@SDC-LAB, KMB@SDC-LAB) 4f

Liaison and other ident changes

(J25825) 5-MAY-75 23:58;;; Title: Author(s): Elizabeth J. Feinler/JAKE; Distribution: /MLK([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: JAKE; Origin: < FEINLER, KEENEY.NLS 2, >, 5-MAY-75 23:55 JAKE ;;;;####;

Planning the July 75 Demo

We need to start planning for the July demo NOW. We can only do a reasonable job if we have some information about the following: 1

Who will be present 1a

What is the nature and interest level of the audience 1a1

How many will attend and in what sized groups 1a2

Where will it be 1b

What is the room(s) like 1b1

What audio visual equipment is available in addition to work stations 1b2

Which computers will be available 1c

We need to distribute all files needed for the demo to at least two and hopefully three machines 1c1

What Work Station equipment cAn we count on 1d

When will equipment be installed and ready for testing 1d1

How much time is allotted to NLS-8, Graphics, NLS-9 1e

When is the demo 1f

Do we have resources to prepare good, professional hard copy displays 1g

These are particularly important in the documentation and document production areas as it will be difficult to convey even a notion of the finished product with an on line demo. 1g1

Do we want slides 1h

Will we have a dress rehearsal with other contactors 1i

who is coordinating the effort 1i1

Planning the July 75 Demo

(J25826) 6-MAY-75 14:10;;; Title: Author(s): Elizabeth K. Michael/EKM; Distribution: /RWW([ACTION]) NPG([ACTION]) DVN([ACTION]) POOH([ACTION]) BEV([ACTION]) KIRK([ACTION]) EKM([INFO-ONLY]) ; Sub-Collections: SRI-ARC NPG; Clerk: EKM; Origin: < MICHAEL, DEMO.NLS;1, >, 6-MAY-75 13:10 EKM ;;;;####;

Introduction To The NLS Calculator

The help data base for the calculator is located at <help,calculator,> and is ready for users if there are no m jor changes to the calculator tool. The offline introduction (his journal item) will be printed soon. If you have any commen s or suggestions, please let me know.

Offline Introduction 1

The commands in the Calculator subsystem allow you to add, subtract, multiply, and divide, and to integrate your total into other files. This introduction describes some general feat res of the Calculator. For a complete description of the commands and concepts, go to the subsystem Calculator and type "H" for H lp. 1a

The Calculator subsystem can be useful in a variety of ways It can help in planning and preparing budget reports, filling ut forms that involve numbers such as an income tax form, and oing simple arithmetic procedures where the numbers keep changin . 1b

Below are listed four categories of things you can do with he Calculator. Below each category are listed the commands th t correspond to that category. At the end of this introducti n, you will find an alphabetical list of all the commands that are unique to the Calculator subsystem. You still have available the universal commands although they are not listed. 1c

A. Perform arithmetic operations:
Add, Divide, Evaluate, Multiply, Subtract, Total. 1c1

B. Format numbers with dollar signs, commas, and change the location of the decimal point:
Format Commas, Format Dollar, Format Left, Format Right, Format Places. 1c2

C. Make use of other totals from your present Calculato session or the most recent Calculator session, and erase totals you have stored:
Use Accumulator, Use Saved, Clear Accumulator, Clear Fil . 1c3

D. Write a total in another NLS file or edit the file t at contains the record of your calculations:
Insert Accumulator, Write File 1c4

Once you go to the Claculator subsystem, the prompt charact rs NUM/C: let you know that the calculator is waiting for a co mand. NUM: indicates you can type in a number while C: wants you o give a command word. 1d

A special file automatically keeps records of your running otal, the numbers you use, and the operations you perform. You c n have up to ten running totals at one time, and each total is sto ed in a numbered "accumulator." 1e

The Calculator subsystem is easy to use for simple arithmet c calculations. Here is a one way to do an arithmetic proble . 1f

1. At the herald, give an operator, either one of the c mmand words Add, Subtract, Multiply, or Divide or one of the s gns +,-,x,or/. (If you omit an operator, addition is assumed) 1f1

2. Follow the operator by a number. (See Number below. 1f2

3. Follow the number by OK. 1f3

4. The designated operation is performed on your number and the total in the accumulator you are using. The resulti g answer becomes your new total and you are ready to begin your next command. (See Using Totals below.) 1f4

Numbers: They can be entered in the following ways:
Typing them in;
Giving an address of a number;
Bugging in DNLS;
Specifying an accumulator where a number is stored. 1g

Using Totals: The total you have in an accumulator can be inserted following any STRING or STRUCTURE you designate in an NLS file. It can also replace any STRING or STRUCture you desi nate in an NLS file. 1h

Format: You can also specify a format for your numbers. Y u can indicate whether or not you want commas and/or dollar signs and where you want your decimal point to be. The Calculator su system has internal checks that prevent you from inputting numbers that do not fit your format or formats that cannot be used for n mbers that already exist. 1i

Alphabetical List of the commands that are found only in th Calculator subsystem: (You still have available any of the universal commands.) 1j

Add CONTENT OK 1j1

Clear Accumulator OK 1j2

Clear File OK 1j3

Divide CONTENT OK 1j4

Evaluate CONTENT OPERATOR OK 1j5

Format Commas ANSWER OK 1j6

Format Dollar (signs) ANSWER OK 1j7

Format Left (justify) OK 1j8

Format Places (to the) Right/Left CONTENT OK 1j9

Format Right (justify) OK 1j10

Insert (accum following) STRING DESTINATION OK 1j11

Insert (accum following) STRUCTURE DESTINATION LEVEL-ADJ ST OK 1j12

Multiply CONTENT OK 1j13

Replace STRING/STRUCTURE (at) DESTINATION (by accumulato) OK 1j14

Show Accumulator (Registers) OK 1j15

Show File (in window) DESTINATION OK 1j16

Subtract CONTENT OK 1j17

Total OK 1j18

Use Accumulator (number) CONTENT OK 1j19

Use Saved (Accumulators) OK 1j20

Write (new) File CONTENT OK 1j21

You may also use any of the following arithmetic signs a commands 1j22

x command (multiply): X 1j22a

star command (multiply): * 1j22b

plus command (add): + 1j22c

minus command (subtract): - 1j22d

slash command (divide): / 1j22e

Discursive Introduction to The Calculator

Augmentation Research Center

6 MAY 75

Stanford Research Institute
333 Ravenswood Avenue
Menlo Park, California 94025

(J25827) 6-MAY-75 14:14;;; Title: Author(s): Ann Weinbe g/POOH;
Distribution: /DMB([ACTION] dirt notebook please) DIRT(INFO-ONLY]
) ; Sub-Collections: SRI-ARC DIRT; Clerk: POOH; Or gin: <
WEINBERG, CALCINTRO.NLS;2, >, 5-MAY-75 18:18 POOH ;;;;
####;

POOH 6-MA -75 14:21 25828

sendmail insert status form bug

If i use the File command and then insert status, and then rocess sendmail form, the file name is no longer included. When I do the insert status form, the entire origin statement is copies a d when the form is processed, sendmail only wants a file name . I can't read the commas and comes back with an error message saying so.. thanks for listening..pooh 1

POOH 6-MA -75 14:21 25828

sendmail insert status form bug

(J25828) 6-MAY-75 14:21;;;; Title: Author(s): Ann Wein erg/POOH; Distribution: /FEED([ACTION]) ; Sub-Collections: SRI-A C; Clerk: POOH;

Rivendell Questions about ARC Jobs

Rivendell, the school where my children go has a special subject of study each month, e.g. transportation or China. This month it is jobs and they asked each parent to show some children her or his job. This morning I was host to six kids ages 8-11. They had prepared a questionaire for all the jobs they visisted. I put the questions online. Here are the questions and my answers. 1

What type of work do you do? 2

Make ways to use television screens instead of paper amd books. 2a

How many people work here? 3

About 4000 at SRI. 3a

Are your machines dangerous? 4

Not physcially, but they can easilly store information people could use for bad purposes. 4a

How old are the machines? 5

A couple of years. 5a

How many years have you worked here? 6

Four and a half. 6a

How many things do you make a day? 7

About one if you mean pieces of paper. 7a

Do you have bosses? 8

Yes, atleast two. 8a

Is your boss crabby? 9

Sometimes. 9a

Do you give free samples? 10

Sometimes. 10a

Rivendell Questions about ARC Jobs

(J25829) 6-MAY-75 14:47;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /SRI-ARC([INFO-ONLY]) LEG([INFO-ONLY]) DHC([INFO-ONLY]) NJN([INFO-ONLY]) DLS([INFO-ONLY]) EJK([INFO-ONLY]) PWO([INFO-ONLY]) PMK([INFO-ONLY]) ;
Sub-Collections: SRI-ARC; Clerk: JOAN; Origin: < HAMILTON, QUESTIONS.NLS;2, >, 6-MAY-75 14:39 JOAN ;;;;####;

KIRK 6-MAY-75 18:36 25830

Final Report intercepted. Final Proof editing glossary. New version of cue card started. Planning. Design. The Informal Documentation weekly Report.

Week Ending 5/2

Final Report intercepted. Final Proof editing glossary. New version of cue card started. Planning. Design. The Informal Documentation Weekly Report.

DvN 1

Final Report: It returned Tuesday from SRI editing. DCE has intercepted it and is reconsidering the organization. In the mean time Jeff has gotten together the files to support generate reference and I ave treid it out. We are, of couurse, lacking files past February, but that is OK for this report. 1a

Glossary: First pages have retutrned from SRI copy prooffing. We are fortunate in having PKA to put in these changes. We lost two days through confusion as to which file was the good file to be worked on. Pam should be done some time next week. We will then be ready for final printing. 1b

NSW: Drafted Introduction to DPCS, participated in reorganizing the scenarios into mutually supportive modules (What coulde be nicer). Printed and began to study (sattley, FE-cmnds,) as sourceof frontend documentation, reviewed work of others in documentation group. 1c

Recruiting: We picked two of the recent candidates and suggested Dick interview them both. 1d

Bev 2

Worked through Susan's scenarios on TNLS. Made notes on their future use for Preface and Sec. Functions guide. 2a

Planning meetings: for documentation between now and July; and for man-loading for 9-month proposal. 2b

One interview. Discussed applicants with rest of group. 2c

Almost completed rewrite of Preface and scenarios with Ann. 2d

POOH 3

Consulted with SRI Production on the cue card and reviewed first draft of the reprint 3a

Met with Bob Belleville and Dirk to discuss graphics and what will be ready for July 3b

Planning meetings for documentation between now and July 3c

Made changes on Calculator Help file after it had been reviwed by the rest of documentation 3d

KIRK 6-MAY-75 18:36 25830

Final Report intercepted. Final Proof editing glossary. New version of cue card started. Planning. Design. The Informal Documentation Weekly Report.

worked on rewrites of preface and scenarios with Bev 3e

KIRK 4

wrote "substitute space" command mostly. 4a

KIRK 6-MAY-75 18:36 25830

Final Report intercepted. Final Proof editing glossary. New version of cue card started. Planning. Design. The Informal Documentation Weekly Report.

(J25830) 6-MAY-75 18:36;;; Title: Author(s): Kirk E. Kelley/KIRK; Distribution: /DIRT([INFO-ONLY]) DMB([INFO-ONLY] dirt) ; Sub-Collections: SRI-ARC DIRT; Clerk: KIRK;

Status Report of the NLS Group for the Week Ending 5/6/75 1

KJM: 2

Assignments 45 days assigned for 28 available 2a

Split 2a1

Grammar 5 2a1a

Signal 10 2a1b

Parse functions 22 2a1c

ISI 2a2

open/close file 1 2a2a

xrouting changes 4 2a2b

miscellaneous 3 2a2c

How Time was Spent 2b

1/2 time reviewing resumes and interviewing 2b1

Reading new NSW documents 2b2

Making changes in NSW sources that were made in NIC-NLS (bug fixes) 2b3

Began search through source code for places to change SIGNAL code 2b4

Elimination of tasks for ISI puts KJM on schedule for July 1 2b5

End of Week Status summary 2c

If time spent on recruiting is reduced substantially Karolyn is in good shape for meeting 7/1 deadlines because of the the elimination of ISI chores and the possibility that most of the parse functions are already written by CHI 2c1

EKM: 3

Assignments 56 days assigned for 35 available 3a

NLS-8 3a1

List types: resolve ambiguities between L10 compiler and PCP list types 4b2

Design L10 interfaces to VJSYS 4b3

Interviewed 3 applicants 4b4

Some work on July 1 and proposal estimates 4b5

Tutorial on VJSYS 4b6

How Time was Spent 4c

This area feels more behind schedule to me than any of the others. It looks as though Harvey and maybe Kaorlyn will have time to help out. The elimination of sequential files in NLS-9 and the ISI stuff makes thinvs look possible 4c1

RLB 5

Assignments 39 days assigned for 39 available 5a

Graphics 5a1

How Time was Spent 5b

Brought the beg techtronics up on line 5b1

Soom and pan implemented 5b2

Modified whole graphics system to create and use data structures in preparation for merging with new file system 5b3

End of Week Status summary 5c

On schedule 5c1

KIRK 6

Assignments 54 days assigned for 18 available 6a

NLS-8 6a1

Modify system 5 6a1a

Tabs 9 6a1b

Format Library 5 6a1c

NLS status 5/6/75

(J25831) 6-MAY-75 20:48;;; Title: Author(s): Elizabeth K. Michael/EKM; Distribution: /RWW([ACTION]) EKM([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: EKM; Origin: < MICHAEL, PROG5-6-75.NLS;1, >, 6-MAY-75 18:51 EKM ;;;;####;

JBP 6-MAY-75 23:56 25832

Mail Reading Tenex Subsystems

Due to the emphasis on use of NLS at Office-1 and to minimize performance degradation with the use of multiple subsystems by different users in parallel, a choice must be made as to which mail reading program is to be available. My recommendation is that you as an Office-1 user indicate to NORTON which mail reading program you would prefer to use. --jon. 1

JBP 6-MAY-75 23:56 25832

Mail Reading Tenex Subsystems

(J25832) 6-MAY-75 23:56;;;; Title: Author(s): Jonathan B. Postel/JBP; Distribution: /DAP([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JBP;

KIRK 7-MAY-75 00:24 25833

Design for a new 'Substitute' command in the Modify user subsystem

This has been implemented at BBNB. Please decide if it would be appropriate for Office-1.

Design for a new 'Substitute' command in the Modify user subsystem

Substitute (spaces in) [(Filtered:) VIEWSPECS] STRUCTURE (at)
DESTINATION
(number of spaces between sentences) CONTENT
(number of spaces after colon) CONTENT
(number of spaces after semicolon) CONTENT
(number of spaces after comma) CONTENT OK

The Modify command "Substitute" will place the number of spaces you specify for CONTENT after the punctuations indicated. "between sentences" means a period must be preceeded by more than one uppercase letter and followed by some or no spaces and an uppercase letter. No spaces will be placed after colons or commas surrounded by numbers. Specify NULL or zero for CONTENT if you do not want to change the spaces after a particular punctuation. Type your OPTION key to have the operation take place through a filter. 1

KIRK 7-MAY-75 00:24 25833

Design for a new 'Substitute' command in the Modify user subsystem

(J25833) 7-MAY-75 00:24;;;; Title: Author(s): Kirk E. Kelley/KIRK; Distribution: /RLL([ACTION]) JCN([ACTION]) EKM([ACTION]) JDH([ACTION]) JHB([ACTION]) SRL([ACTION]) SLJ([INFO-ONLY]) ARC-DEV([INFO-ONLY]) ; Sub-Collections: SRI-ARC ARC-DEV; Clerk: KIRK;

HGL 7-MAY-75 12:58 25834

Re: substitute spaces between sentences

WAS IT JUST AN OMISSION THAT YOU SAID THAT "BETWEEN SENTENCES" MEANS A PERIOD MUST BE PRECEEDED BY MORE THAN ONE UPPERCASE LETTER? IT STRIKES ME THAT MOST SENTENCES HAVE LOWERCASE LETTERS OR AT LEAST A MIX PRECEEDING THE FINAL PUNCTUATION WHICH IS IS OFTEN A QUESTION MARK AS WELL AS AN EXCLAMATION POINT AS WELL AS A PERIOD! 1

Re: substitute spaces between sentences

(J25834) 7-MAY-75 12:58;;;; Title: Author(s): Harvey G. Lehtman/HGL; Distribution: /KIRK([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: HGL;

KIRK 7-MAY-75 16:49 25835

Revised Modify Substitute command description

Revised in response to HGL noticing an omission in what described a sentence.

Revised Modify Substitute command description

Substitute (spaces in) [(Filtered:) VIEWSPECS] STRUCTURE (at)
DESTINATION
(number of spaces between sentences) CONTENT
(number of spaces after colon) CONTENT
(number of spaces after semicolon) CONTENT
(number of spaces after comma) CONTENT OK

The Modify command "Substitute" will place the number of spaces you specify for CONTENT after the punctuations indicated. "between sentences" means a period, exclamation point, or questionmark optionally followed by double quotes must be followed by some or no spaces and an uppercase letter. Periods after initials are not considered sentences. No spaces will be placed after colons or commas surrounded by numbers. Specify zero for CONTENT if you do not want to change the spaces after a particular punctuation. Type your OPTION key to have the operation take place through a filter. 1

Revised Modify Substitute command description

(J25835) 7-MAY-75 16:49;;;; Title: Author(s): Kirk E. Kelley/KIRK; Distribution: /ARC-DEV([INFO-ONLY]) JHB([INFO-ONLY]) JCN([INFO-ONLY]) SRL([INFO-ONLY]) SLJ([INFO-ONLY]) RLL([INFO-ONLY]) ; Sub-Collections: SRI-ARC ARC-DEV; Clerk: KIRK;

RLL 7-MAY-75 19:41 25836

Letter sent to Brynne of Alfa-Laval in Sweden

Documents and 16mm film will be sent under separate cover.

RLL 7-MAY-75 19:41 25836

Letter sent to Brynne of Alfa-Laval in Sweden

Dr. Bengt Brynne
Research and Development Group Staff
ALFA-LAVAL AB
Postfack S-14700
Tumba, Sweden

Re: TDB/Br/MT

Dear Dr. Brynne:

It was indeed a pleasure talking with you about our Knowledge Workshop concepts and giving you a brief demonstration of our NLS system.

The eventual incorporation of augmented techniques and methodology into operational environments will have very profound and quite different effects on people, organizations and work. It is our strategy to evolve these methods with participation from selected potential users (other than ourselves, of course).

Most of us here at ARC have been and still are as excited as you are about the benefits this technology will have.

We will be pleased to send you copies of the references you marked and loan the 16mm movie on our system.

please be aware that the movie represents the system of 1969 and thus is somewhat out of date.

The hardcopy reports and film are being shipped under separate cover. Feel free to keep the film 3-4 weeks before returning it, addressed to Dr. Douglas C. Engelbart at SRI. We would appreciate your returning the film via Air Parcel Post, insured for $200.00.

I have included additional material. Unfortunately, some copies are not available presently.

On a personal note, my wife and I sincerely appreciated your cordiality when you were in San Francisco as well as the lovely literature on Sweden that you sent.

Thank you again.

Regards,

RLL 7-MAY-75 19:41 25836

Letter sent to Brynne of Alfa-Laval in Sweden

Robert N. Lieberman 13

RLL 7-MAY-75 19:41 25836

Letter sent to Brynne of Alfa-Laval in Sweden

(J25836) 7-MAY-75 19:41;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /DCE([INFO-ONLY]) JCN([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: RLL;

Missing Question

Or, better yet, does the world profit from the things you do in your job? 1

Missing Question

(J25837) 7-MAY-75 20:22;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /PWO([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: DVN;

KIRK 8-MAY-75 05:17 25839

Design for tabs in July NLS-8.5

For your review.

Design for tabs in July NLS-8.5

TABS IN NLS

To quote from the NLS Help descriptions "use of tabs has not been known to give true satisfaction". The NSW contract has given us some money to implement an automatic right justification feature with tabs along with statement dependant tab stops. This design deals with the right justification issue towards entering tabular text that ends up looking in the file like it did when it was entered. It is hoped that this implementation when combined with statement-dependant tab stop settings will provide the typist with the capability of usefully entering tabular material online. 1

AUTOMATIC RIGHT JUSTIFICATION

Typing tables of columns where the information is automatically right justified to a tab stop is desirable for many textual applications such as listing sums of money. Typically the off-line typist must tab, backspace the number of characters to be typed, and then insert the characters or else go through other time consuming and error prone mental calculations. A further problem occurs for tables that are lined up perfectly when entered from the terminal but appear all wrong in the file due to a change in level or a change in medium, (DNLS -> TNLS -> quickprint -> Formatted, etc.) or a change in tabstop settings. 2

To solve these problems, a "Space (for tabs?)" command will be implemented in the useroptions tool. This command and the existing useroptions tab stop setting command could be copied to the editor tool if it is deamed useful. "Space (for tabs?)" would not only control the right justification feature, but it is hoped that with little extra implementation effort, we can provide the typist with the ability of entering the proper number of spaces in place of the tab character when entering standard left justified tabular material as well. This would ensure that what you type is what you get independent of 1) the medium you use or 2) where yours or your audiences tab stops are set. 3

It is worth noting here that many online implementations of tabs never insert a tab character into text, only the proper number of spaces. 3a

The following would be the help descriptions for the "Space (for tabs?)" command. 4

Space (for tabs?) Yes/No OK

After specifying the useroptions command "Space (for tabs?) Yes", the proper number of spaces to reach the next tab stop instead of a tab character will be entered into your file when you type the tab key. The next character typed after the tab will appear in the column containing the tab stop. It will thus be "left justified" to

the tab stop. Say "No" to "Space (for tabs?)" if you wish to have the actual tab character entered in your file. 5

BC, BW and right justification

BC and BW will backspace characters and words as if all the spaces and other characters had been entered without using tabs. Therefore, BC after typing a tab will cause your cursor or typing head to move back over one of the spaces entered by the tab. In this way, you can manually "right justify" tabular material such as sums of numbers by backspacing the number of characters to be typed before typing them. The "Space (for tabs?) Right (justified)" command will make this happen automatically, but does not easily allow left justification at the same time. 5a

Right: Space (for tabs?) Right (justified) OK

After confirming the useroptions command "Space (for tabs?) Right" the proper number of spaces to reach the next tab stop will be entered into your file when you type the tab key. Every character typed after the tab will backspace the cursor or typing head one space. The character is remembered, but not typed at this point. When another tab or a carriage return is typed, the characters you input since the last tab will be typed and you will be at the next tab stop or at the beginning of the next line. In this way, your tabular material will be right justified to the tab stop. 5b

BC, BW and column overflow

When you type enough characters to fill all the positions in front of the tab stop except one, your bell will ring. If you continue to type more characters, all of the characters you input since the last tab will be typed preceded by a space and they will, of course, not be right justified. If you type BC or BW after some characters after a tab while you are in the automatic back space mode, the character or word you just typed will be deleted and your cursor or print head will move forward one space or one word. Otherwise BC and BW will backspace as if all the spaces and other characters had been entered without using tabs. 5b1

Design for tabs in July NLS-8.5

(J25839) 8-MAY-75 05:17;;; Title: Author(s): Kirk E. Kelley/KIRK; Distribution: /RLL([INFO-ONLY]) JHB([INFO-ONLY]) SRL([INFO-ONLY]) SLJ([INFO-ONLY]) JCN([INFO-ONLY]) JDH([INFO-ONLY]) CHI([INFO-ONLY] do we need to talk about how this will work in the front end?) ; Sub-Collections: SRI-ARC; Clerk: KIRK;

Air Force COM Formats

This message from Liz Riddle and Betty Finney at the Pentagonis in response to my question about Air Force manual formats. I sent them the Format library sample book. 1

8-MAY-75 0850-PDT RIDDLE at OFFICE-1: Publication Format for AFM 66-1
Distribution: MICHAEL AT BBN, riddle, finney
Received at: 8-MAY-75 11:59:05-EDT 2

Li(z,
Of the formats you sent, Format 3 seems closest to standard AF manual and regulation format. TThe following additions must be made to the program:
(1) center chapter title, print in 12 pt bold Times Roman
(2) skip one line between chapter # and chapter title
(3) print "Chapter #" in 12 pt bold Times Roman and center
(4) print main paragraph numbers and titles in 10 pt Times Roman bold. Note in Format 3 Sample that two # signs were used to designate the end of boldface paragraph title. Main paragraphs are
numbered 9-1, 9-2, etc.
(5) print body text in 10 pt Times Roman
(6) indent first line only of subparagraphs 3 spaces (1/6 in.)
(7) do not skip lines between subparagraphs, main paragraph and subparagraphs. Only skip a line before the start of a main paragraph.
8) text should be output in justified (straignt right margin) double columnswhich are 19 picas (3 1/6 in.) wide and 56 picas (8 5/6 in). Intercolumn gap = 1/4 inch.
(9) Headers on odd numbered pages should be as follows: 2a

AFM 66-1 VOL IV 1 May 1974 Effective 1 June 1974 9-1 2b

where AFM is left justified flush with body text left margin and page number 9-1 is right justified flush with body text right margin. Pages are numbered 9-1, 9-2, etc where 9=chapter # and 1,2,3,etc, are consecutive page numbers within the chapter.
(10) headers on even numbered pages should be as follows: 2c

9-2 AFM 66-1 VOL IV 1 May 1974 Effective 1 June 1974 2d

where 9-2 is left justified and Effective 1 June 1974 is right justified.
(11) headers are in 12 pt boldTimes Roman. 2e

I am mailing you several pages from Volume I of AFM 66-1 which contain graphs and tables. Would like your opinion as toth these pages present any problems. Most of the tables and graphs in Volume I would be submitted as hardcopy to be photographed and

inserted in the proper place in the manual. AFR 5-1 and 5-2, which Bill Carlson sent you some months ago, might be of some help in showing you the format for a typical AF manual. Please call me if above is insufficient info. 2f

Another message regarding tab fix progra will followthis PM.
Liz Riddle 2a

Air Force COM Formats

(J25840) 8-MAY-75 13:26;;; Title: Author(s): Elizabeth K. Michael/EKM; Distribution: /DPCS([ACTION]) KIRK([ACTION]) EKM([INFO-ONLY]) ; Sub-Collections: SRI-ARC DPCS; Clerk: EKM; Origin: < MICHAEL, FINNEY.NLS;1, >, 8-MAY-75 12:56 EKM ;;;;####;

DSM 8-MAY-75 14:07 25841

Substitute Command in Modify Subsystem

Does the Substitute command in the Modify subsystem add the number spaces you indicate after the punctuation, or does it change the number of spaces to the number specified? I think it should do the latter. If it does do the latter then you have a problem with using the number zero to indicate not to change the spacing. Suppose someone really wants to remove all spaces after semicolons. 1

Substitute Command in Modify Subsystem

(J25841) 8-MAY-75 14:07;;;; Title: Author(s): David S. Maynard/DSM; Distribution: /KIRK([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: DSM;

Goutes Chinoise

It will be good to see you.

DVN 8-MAY-75 15:39 25842

Goutes Chinoise

These days an Antioch student working at Rivendell is staying with us. She is American but brought up in Taiwan and very into things Chinese. We were considering another big Chinese dinner and when Susan told me you were comming back next week I thought you might be interested. Are you? If yes then when? Monday, Tuesday, and EWednesday are out for us. 1

Goutes Chinoise

DVN 8-MAY-75 15:39 25842

(J25842) 8-MAY-75 15:39;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /JMB([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: DVN;

Preface to NLS

This preface is an introductory document for NSW users who will have access to tools in the NLS environment. The section How Commands are organized may change if the command syntax is changed. There are two offline figures that go with this document and I can give you copies of those. Please review and give me any comments you have.

PREFACE TO NLS 1

INTRODUCTION 2

As you work with the various tools of this computer system, you will need to learn some terminology and ways to do things that may be quite new and different. This Preface gives you simple definitions of some basic "jargon" terms (which are shown in quotes). It also explains how files are organized, how commands are organized, how to get more help and how to move around among tools. In addition, there is a section on addressing (which is particularly helpful for the typewritter version), and a list of some special characters. 2a

HOW FILES ARE ORGANIZED 3

To work easily and productively, it is important to understand something about how information is organized. Let's start by defining what a character is and build from there. Please refer to Figure 1 while reading this section. 3a

"CHARACTERS" are single elements that can be visible or invisible such as letters, numbers, punctuation marks, spaces, and carriage returns. Holding down "<CTRL>" key while typing a letter can also produce a character. <CTRL> stands for control. For example, to type <CTRL-X>, you hold down the control key while you type "X." (On some terminals, this key varies slightly.) 3a1

"WORDS" are a continuous group of letters and/or numbers bound by spaces and/or punctuation marks. The system recognizes that punctuation marks are not part of a word. 3a2

"TEXT" is a group of continuous characters that you define by indicating the first and last character. 3a3

A "STATEMENT" may be a single character, a word, a title, some text, or a paragraph. Statements are whole units which you can move or copy to some new place, or delete. 3a4

As you write, edit, organize, distribute, and print information, your work will be done on something called a "file" which you create and name. The files you create are kept in your personal "directory." Each user has a directory which contains all of her files. 3a5

As you work, you will encounter many references to "structure," or the relationships between statements in a file. They refer to an outline form such as the example shown in Figure 1. Writing

things in this basic outline form will be very helpful later on. Statements are automatically numbered (as shown) when they are entered in a file. They will be renumbered accordingly when new statements are added or editing is done. Each file begins with a special statement called the "origin" statement. (the line numbered 0 in Figure 1). The system makes the origin statement which includes the name of the directory, the name of the file, and some other housekeeping information. The origin statement statement is called Statement 0 and is above all the rest of the file outline. 3b

Moving from statement 1 to 1a is called going "down" a "level" so 1a is a "substatement" of 1. Moving from statement 1b3 to 1b is going "up" a "level" so 1b is higher in the outline that 1b3. As you add to a file, you will be able to indicate at what "level" you wish to write. 3c

In this outline, there are several examples of the structure called "BRANCH." A BRANCH is a statement and all its substatements, plus all their substatements and so on . In the example, the branch defined by 1 (Elephants) consists of 1, 1a, 1b, 1b1, 1b2, 1b3, and 1c. Branch 1c consists of statement 1c (Likes peanuts). 3d

HOW COMMANDS ARE ORGANIZED 4

After logging in and deciding to work with a specific tool, you manipulate the computer system by issuing "commands." (See "Introduction to Using the NSW" for information on how to log in and access tools.) Commands are the way you specify what you want to be done, such as which word you want deleted. A symbol (called a "prompt") is printed that tells you what is expected from you. For example, "C:" is the general prompt for a command word such as "Delete." 4a

The general form of a command is called its "syntax." The syntax shows you the steps needed to complete that command. When you use the "Help" facility to learn more about a word used in a command, you will see the syntax for that command. (For more about Help, see below.) Figure 2 shows two annotated examples of syntax. These explanations are for commands where the user has chosen to see all the prompts available (known as "full prompting"). Some users chose to see only the basic prompts (known as "partial prompting"). you may have prompts that are slightly different from the explanations on Figure 2. 4b

HOW TO GET MORE HELP 5

The time may come when you want more information or the answer to a question and there is no one around to ask (or you have already asked too many questions). Well, there are several internal aids that you should know about. The two described below are the "?" and "Help." 5a

You may find that sometimes you are not sure what you can do next. If you type a "?" at any point, you will get a list of all your immediate alternatives. For example, if you type "i" for insert and then a "?," you will see a list of all the tihhngs you can insert. If you type the first character (or in some cases a space and the first character) of one of the alternatives you see, it will become part of your command. 5a1

"Help" provides the most complete information about all aspects of the tool you are using. It gives you definitions of all the "jargon" terms and explains each term in context such as showing you the syntax of a command word. Help points out the unexpected consequences of a command term under the heading called "effects," and Help also refers you to related terms. 5a2

To use Help, type a <CTRL-Q> at any point and you will get information about what you were doing before you typed <CTRL-Q>. For a complete description on how to use Help, see the "Sample Help Session,". 5a3

SPECIAL CHARACTERS 6

"Control characters" are single characters with special functions. The notation for control characters is <CTRL-(some letter)>. To produce a control character, you hold down the control key (CTRL on most terminals) and type the letter that follows the dash. Below is a list of some of the more common control characters and their functions: 6a

<CTRL-A>- Backspace Character <BC> 6a1

<CTRL-B>- OKREPEAT 6a2

<CTRL-D>- Command Accept <CA> 6a3

<CTRL-E>- OKINSERT 6a4

<CTRL-M>- Carriage Return <CR> 6a5

<CTRL-N>- <NULL> 6a6

<CTRL-O>- Stop Process 6a7

<CTRL-Q>- Help Signal 6a8

<CTRL-S>- Show this command's syntax notation 6a9

<CTRL-U>- OPTION character 6a10

<CTRL-V>- Literal escape 6a11

<CTRL-W>- Backspace Word <BW> 6a12

<CTRL-X>- Command Delete <CD> 6a13

TNLS ADDRESSING 7

While using a typewriter terminal, you need to keep track of where you are. With most commands, you work within a file. As the command is being carried out, you move from place to place following the directions you type after the prompt A: (which stands for "address"). No matter what the form of the address, you always go to a single character. 7a

All the examples below refer to the outline in Figure 1. 7b

The Most Common Forms of Address 7c

Statement Numbers: 7c1

All statements have numbers which place them in an outline as on Chart 1. When you type a statement number after A:, you move to the first character of that statement. Thus, if you give instructions to delete statement A:1c, the statement "Likes peanuts" is erased. If you say delete word at A:1a, then "large" is erased. If you say delete character at A:1a, then "L" is removed. 7c1a

SID's and Statment Names 7c2

Two other kinds of address work exaclty like statement numbers: SID's and Statement names. For more information on these forms of address, use Help or see the User's Glossary. 7c2a

Content Addresses 7d

You may be wondering how you can make anything happen at a character other than the first character of a statement. The easiest way is to type in the statement number, and then the text (in quotes) that contains the character you want. This takes you to the last character of the string you put in quotation marks. To delete the character "p" in statement 1, you could say Delete Character at A:1 "lep". The last character in the string you wrote would then be erased. 7d1

Other Addresses Within Statements 7e

You may also search a word, and restrict the search to a given statement, or move by counting words or characters. A special symbol (+e) exists for the character at the end of a statement. Use Help (type infileaddress) to find more information. 7e1

Putting Addresses Together 7f

As you may have noticed, you can string out addresses after the A:, and each step will be followed. Thus, if you want to specify the second "ears" in the example, you could type A:3b1 "ears." This would move you first to the right statement (3b1), and then to the right word ("ears"). 7f1

Links 7g

If someone sends you a journal item of any length, the system delivers to you a link to that item instead of the actual item, which may be very long. A link is like a bibliographic citation. It gives the name of the directory which is always the word "journal" with some letter preceeding it, the name of the file which is the journal number, and statement one <xjournal, 12345,1:w>. You may read the document by addressing the statement where it was written in your initial file and asking the system to use the link by adding ".1.". For example, if the journal delivers to branch 2 of your initial file and this is the top journal item, you could use the address A:2a .1. Then the system reads the citation and gets the real document for you. 7g1

Viewspecs in Links 7g2

Besides an address a link may include viewspecs. You may insert them at the end of the link following a colon as in the preceeding example. The journal inserted a "w" viewspec to make sure you saw all of the item. For information about viewspecs, see Help (type "viewspecs"). 7g2a

You can always find out where you are with the command "/". Just type the key "/" when the system says BASE C:. 7h

Preface to NLS

(J25843) 8-MAY-75 15:49;;; Title: Author(s): Ann Weinberg/POOH;
Distribution: /DMB([ACTION] dirt notebook please,see me for two
charts) DIRT([INFO-ONLY]) ; Sub-Collections: SRI-ARC DIRT; Clerk:
POOH; Origin: < WEINBERG, PREFACE.NLS;5, >, 8-MAY-75 15:40 POOH
;;;;####;

Returning of results from externally callable procedures

feedback invited

DSM 8-MAY-75 19:59 25844

Returning of results from externally callable procedures

The dispatch routines for the NLS Tool has the problem of detecting how many arguments are returned by a local procedure which has been remotely called. The following are some possible solutions to this delema of the day. Note that this problem exists not only for the NLS Back End , but for any dispatcher running in an L10 or L1011 environment. 1

Change the Language to allow the caller to find out how many results were returned. This is probably a bad idea both because it takes up DIA's time, and would undoubtably increase the cost of an L10 call . 1a

Establish a conventin for returning arguments from externally callable procedures such as one of the following. 1b

Have the number of results returned be an entry in the dispatch table for each procedure. 1b1

Make these procedures always return the address of a globally allocated list which contains the results. 1b2

Have the dispatcher pass as the final argument to the externally callable the address of a list onto which the procedure will append his results. 1b3

I am currently in favor of the last approach because it simplifies the storage management problem, however I realize that such an approach is not very good from a structured programming viewpoint. Do any of you have any strong feelings on this? 1c

DSM 8-MAY-75 19:59 25844

Returning of results from externally callable procedures

(J25844) 8-MAY-75 19:59;;; Title: Author(s): David S. Maynard/DSM;
Distribution: /EKM([ACTION]) HGL([ACTION]) KJM([ACTION])
KIRK([ACTION]) RLB2([ACTION]) CHI([ACTION]) ;
Sub-Collections: SRI-ARC; Clerk: DSM;

JBP 8-MAY-75 20:01 25845

Beating the archive at bbn

After talking with KEV i have come to the conclusion that the right thing to do about the archive status bits in nls files is to copy the dont archive bit on updating the file to the new version and to reset the bit in the old version. This would be a change to nls's Update File command. 1

The problem with archive at bbnb arises because bbn dosent follow the same procedure arc used in the archive process. At arc we did the dump, then a trim (which deleted old versions) then ran the archiver. This was appropriate with our tight online storage situation. At bbn trim is seldom run as appropriate to a large online storage capability. 2

JBP 8-MAY-75 20:01 25845

Beating the archive at bbn

(J25845) 8-MAY-75 20:01;;; Title: Author(s): Jonathan B. Postel/JBP;
Distribution: /JCN([ACTION]) RWW([ACTION]) NPG([INFO-ONLY])
; Sub-Collections: SRI-ARC NPG; Clerk: JBP;

DVN 8-MAY-75 23:09 25846

Problems Getting Rid of Carriage returns?

Jeanne, Sandy refered to me an item you wrote about various peoples problems with carriage returns. I know it sounds eveil to say, but I don't understandthe problem. I have no trouble substituting for <CR>s in display or in TNLS if I have deactivated <CR> as a command confirmation character ei:her with the Useroptions command or <CTRL-V>. It would be easey to write a little cntent analyser program of the tupe to be found in <vannouhuys,edprogs,spacecoloni> if necessary and if I hear from you I would be glad to do it, but first off I would try Subsitute character ples...or do I misunderstand something? 1

DVN 8-MAY-75 23:09 25846

Problems Getting Rid of Carriage returns?

(J25846) 8-MAY-75 23:09;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /JMB([ACTION]) FEED([INFO-ONLY]) SGR([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DVN;

DVN 9-MAY-75 00:15 25847

Appologies and Carriage Returns

Kirk has explained the problem to me. It has to do with terminals and <EOL>'s. Every time I have tried to do it I have been lucky in the kind of terminal I used. There are two solutions. One is a program as I mentioned, Probably simpler is to use the substitute command, but point to the character with an address expression rather than typing it in from the Keyboard. If you point to the right thing in the file the substitute will work, the problem lies in giving from the keyboard the right characte for subsitute to work with. Try that, OK?

1

Appologies and Carriage Returns

(J25847) 9-MAY-75 00:15;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /JMB([ACTION]) FEED([INFO-ONLY]) SGR([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DVN;

DVN 9-MAY-75 00:23 25848

Thnaks for Group, Please Rename it

The formal name of DOCPLAN should be "Documentation Development Production and Control Planning Group". Please alos add NDM to it. 1

DVN 9-MAY-75 00:23 25848

Thnaks for Group, Please Rename it

(J25848) 9-MAY-75 00:23;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /MLK([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: DVN;

RLL 9-MAY-75 03:46 25849

execuport at home

rene: my Execuport model 302 has serial number 1823. Ps it has a brokkn space bar. Rob 1

execuport at home

(J25849) 9-MAY-75 03:46;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /RCO([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: RLL;

The File Package 1

Introduction 1a

This definition of the file package stems from a reconsideration of the needs and constraints of the NSW implementation. The main protion of these conclusions were reached at a meeting in late March. 1a1

The file package was examined and the essential features abstracted. This resulted in a small set of procedures, and the elimination of the access control aspects of the earlier specification. Also the abliity to access portions of files and route the file data on various paths was eliminated. 1a2

The relation between file package directories and Tenex directories is one to one. The access rights to directories and files that a caller on a file package has are exactly those of the user-password-account that the process containing the file package is logged in with. 1a3

The file package is an interface to the regular operating system file system and uses its access controls. 1a4

That is this definition to say that there is no attempt to build up a virtual file system at the file package level. 1a5

Definitions: 1b

The following arguments are used in the subsequent prodcedure definitions: 1b1

name - the complete name of a file in host dependent syntax 1b2

name - CHARSTR

In Tenex this includes the version number.

class - a partially specified file name that indicates a set of files in host dependent syntax. 1b3

class - CHARSTR

This is really only a special type of "name" as defined above.

In Tenex this is the star (*) notation.

directory - the name of a directory (or directory hierarchy) in host dependent syntax 1b4

directory - CHARSTR

Directory = EMPTY should default to the login directory.

Note that in Tenex the directory is not enclosed in angle brackets <>. The WM has to be able to use the same string for a login argument.

password - the secret word that gives access. 1b5

password - CHARSTR

workspace - a directory password pair 1b6

workspace - LIST (directory, password)

filename - the fully qualified name of a file 1b7

filename - LIST (workspace, name)

classname - the fully qualified name of a class of files 1b8

classname - LIST (workspace, class)

filelist - a list of file names 1b9

filelist - LIST (filename, ...)

classlist - a list of file classes 1b10

classlist - LIST (classname, ...)

srclist - list of source files 1b11

srclist - filelist

disp - the disposition of the source files, either DELETE or RETAIN, 1b12

disp - BOOLEAN [DELETE = FALSE / RETAIN = TRUE]

Note that DELETE makes the operation a rename, while RETAIN makes the operation a copy.

chnl - a port handle. 1b13

chnl - INDEX

If chnl is an argument of a procedure the data generated by (or received by) the procedure is transmitted on that physical channel .

Chnl is the name or handle of a physical channel which was previously established between the called procedure (for example Listdir) and the destination of the results (usually the calling procedure). Chnl is an argument to procedures in the file package, it is supplied by the caller.

filetypelist - a list of file types associated with the filelist that indicate the physical type of the file and the format of the pcp encoded transmission of the file. The type is represented by a small integer. 1b14

filetypelist - LIST (INDEX, ...)

These file types must be enumerated soon.

Procedures: 1c

Listdir (classlist, EMPTY -> filelist) 1c1

The names of the set of files indicated by CLASSLIST are returned in the result FILELIST.

This routine would accept (workspace, name) pairs of the following variety: (workspace, fileclass) which would do the TENEX star thing for that workspace, (workspace, name) which really asks if that file exists, (workspace, empty) which lists all files in that workspace, (empty, empty) which lists all files in the connected workspace, (empty, fileclass) which does the star thing for the connected workspace, etc. etc.

Listdir (classlist, chnl -> EMPTY) 1c2

The names of the set of files indicated by CLASSLIST are transmitted via the physical channel indicated by CHNL.

Deletefiles (filelist -> EMPTY) 1c3

The files specified in FILELIST are deleted.

Deletefiles (classlist -> filelist) 1c4

The files specified in CLASSLIST are deleted, the names of the deleted files are reported in in FILELIST.

Some interesting classes are: (workspace, *.*) might clear the entire workspace, as might (workspace, empty).

Localxfer (srclist, disp, classlist -> filelist) 1c5

The files specified by SRCLIST are assigned names and stored as indicated in CLASSLIST, when a name in CLASSLIST is incomplete a new unique name is generated to complete the name. The actual names used to store the files are returned in the FILELIST result.

The retention or deletion of the source files is indicated by DISP. All files in SRCLIST have the same DISP.

Localxfer (srclist, disp, filelist -> EMPTY) 1c6

The files specified by SRCLIST are stored as indicated by FILELIST.

The retention or deletion of the source files is indicated by DISP. All files in SRCLIST have the same DISP.

Getfiles (srclist, filetypelist, disp, chnl) 1c7

The files are sent on the physical channel indicated by CHNL as specified by SRCLIST.

The type information in FILETYPELIST is used to determine the mapping from storage format to transmission format for the files.

The retention or deletion of the source files is indicated by DISP. All files in SRCLIST have the same DISP.

Putfile (filelist, filetypelist, chnl -> EMPTY) 1c8

The files received on the physical channel indicated by CHNL are assigned the names and entered into workspaces as indicated by FILELIST.

The type information in FILETYPELIST is used to determine the storage format for the files.

Putfile (classlist, filetypelist, chnl -> filelist) 1c9

The files received on the physical channel indicated by CHNL are assigned names as indicated by CLASSLIST. When an entry in CLASSLIST is not complete a unique name is assigned to complete the name. The list of new file names is reported in the FILELIST result.

The type information in FILETYPELIST is used to determine the storage format for the file.

Discussion: 1d

A convention to be followed whenever two parallel lists are supplied as arguments is that if the second list runs out before the first list, then the last element of the second list is to repeated for every remaining element of the first list. 1d1

Whenever an input argument specifies a class of files or incompletely specifies a file name, then the procedure is to return the complete list of actual file names. Only when the input argument completely specifies all file names completely does the procedure return the EMPTY result. 1d2

Another convention is that the procedures of the file package are to make help returns to their caller on any error. 1d3

Examples of errors tha could be so reported:

Source file does not exist

Access control prevent your use of that file

Unrecoverable I/O error

The intent of the help return is to have the file package procedures report the failure of an operation on a per file basis, that is, the help return can indicate the specific file in error. This then allows the caller to resume or abort the procedure with full knowledge of how far it got, or which files were not processed.

We can identify three possibilities after error detection and a help call:

1) skip that element and proceed on to next one,

2) abort the whole call, with or without trying to undo what you've already done,

and 3) try same element again with newly specified parameters.

The exact nature of these help calls will become clearer as the implementations proceed.

Transmission Format 2

Files are transmitted between file packages in the format of PCP data structures. Each file is transmitted as a list of two structures: a file descriptor block, and the actual file datastructure. 2a

transfile - LIST (filedesc, filedata) 2a1

The file descriptor block is a list of the filetype, the actual file length in bits, the number of records in the file, and the maximum length of a record. 2b

filedescr - LIST (filetype, bitlen, numrec, maxrec) 2b1

filetype - INDEX

bitlen - INTEGER

numrec - INTEGER

maxrec - INTEGER

If the actual number of bits in the file is unknown then this field is set to zero. 2c

The file descriptor block is not frozen, and as needs arise additional information may be included. 2d

For this pass at the file system the descriptor block will not be stored with the file, to require that the descriptor block be stored with the file would force the file package to implement a virtual file system on top of whatever native file system it is interfacing to. This would make the file package much harder. 2e

File Types 3

This section specifies the currently defined physical file types within the NSW, and specifies the PCP encodings used to communicate the files among various PCP processes. The actual PCP format , i.e. PCPB36 , PCPB8 or PCPTXT, used on the connection must be agreed upon between the PCP IPC modules at the two ends of a physical channel but is irrelevent to this discussion. 3a

Physical File Attributes: 3b

The Physical file type is specified by three attributes: 3b1

DATA TYPE:

This attribute has the value CHARACTER or BINARY and specifies whether the file is comprised of character strings or bit strings. Since it is clearly possible to encode any file as either data type this attribute is not an absolute constraint on the contents of the file but rather an indication of the most advantageous encoding to use.

CHARACTER always means 7 bit ASCII (1968) in an 8 bit byte, with the high order bit set to zero. When a host send data it must convert characters from its local character set to ASCII and when a host receives characters it must convert from ASCII to its local character set. This is the standard ARPANET Telnet convention.

RECORD TYPE:

Record type indicates the record structure of the file in the originating process. It has the following legal values.

FIXED: The file consists of records of fixed size.

VARIABLE: The file consists of records of variable size.

STRUCTURE TYpE:

This attribute specifies whether the file is a simple sequence of records or whether there is a more complex record structure. The legal values are:

SEQUENTIAL: The file is transmitted as a sequence of records.

SPARSE: Each record carries a record number along with it. The list of pairs (record number,record data) are simply ordered on record number. That is the record number of each record is greater than that of its predecessor. The record number of the first record cannot be less than zero.

RANDOM: Each record carries a record number along with it. The constraints on record numbers are that they are unique, and that record numbers are non-negative.

PCP encodings of files 3c

CHARACTER (FIXED / VARIABLE) SEQUENTIAL 3c1

LIST (%datarecord% CHARSTR, ...)

CHARACTER (FIXED / VARIABLE) (SPARSE / RANDOM) 3c2

LIST (LIST (%recordnumber% INTEGER, %datarecord% CHARSTR), ...)

BINARY (FIXED / VARIABLE) SEQUENTIAL 3c3

LIST (%datarecord% BITSTR, ...)

BINARY (FIXED / VARIABLE) (SPARSE / RANDOM) 3c4

LIST (LIST (%recordnumber% INTEGER, %datarecord% BITSTR), ...)

Use Types: 3d

In addition to Physical File Type each NSW file also has an attribute called use type which is assigned at creation time by the creating tool. This attribute is used to give an indication of the semantic content of the file. It is our intention that the WM will store a matrix whose entries are of the form (process name, package name, procedure name) and that is indexed by (source file physical type, source file use type, destination file physical file type, destination file use type). The procedure thus indexed has as parameters (source file name, destination file name) and will either return TRUE indicating the destination file has been successfully created and entered into the NSW file system or FALSE indicating failure of the conversion procedure. 3d1

In the initial phases of the NSW it is expected that this conversion matrix will be extremely sparse. Indeed many of the elements of this matrix will never be implemented, for example the task of converting a 360 cobol object file into a fortran source file seems well beyond the initial design goals. However some of the entries in this conversion matrix will be supplied by the utility packages of each TBH (NSW Tool Bearing Host). In addition tool purveyers may find it in their interest to supply elements of the matrix corresponding to the use types most commonly created or requested by their tool. This allows a potential user to integrate the use of this tool more easily with other tools he uses. 3d2

In the case where the use type of a file is undefined or where the element of the conversion matrix needed is empty it seems advantages to supply default conversions based soely on physical file type. In fact the set of conversions based solely upon physical file type should form the minimum set of conversions provided by the file package of each TBH. 3d3

The following is a first cut at defining the conversions based solely on physical file type. 3d4

Physical File Type conversions: 3d5

The following conversions are defined separately for each physical file attribute. Conversion between physical file types is accomplished by performing each of the three possible translations (one for each attribute) concurrently.

Some of the following conversions take arguements which specify conversion parameters. I am as yet unclear exactly who specifies these , how and when. It seems that the requestor and supplier of the file must negotiate the proper values for these parameters. In the case where the requestor is a user this is fairly straight forward, however the case in which the requestor is a tool which in turn might want to consult the user is less clear.

Attribute conversion primitives:

CHARACTER -> BINARY

Each Character is simply converted to an eight bit byte containing the ASCII character code in the low order 7 bits.

BINARY -> CHARACTER

Treat each 8 bit bite as containing one ASCII character in the low order 7 bits.

FIXED -> VARIABLE

preceed each record by the character/bit count for the record.

VARIABLE -> FIXED

PARAMETERS (fixedrecordlength %INTEGER%, fillCharacter %CHARSTR%, break %BOOLEAN%, append %BOOLEAN)

If the input record is shorter than the requested fixedrecordlength and append is FALSE the record is padded with the fill character/bit . If however append is TRUE a new input record is fetched and is inserted in the current output record beginning with the next unused character/bit position. This continues until the current output record is full at which point a new record is begun if break is true, otherwise the unused portion of the input buffer is discarded.

If the input record is longer than the fixedrecordlength and break is FALSE the record is truncated with the truncated portion being lost. If However break is TRUE a next record is begun. This is repeated until the entire input record has been processed. If append is FALSE then the last fixed record is padded, otherwise the next input record continues filling this current fixed length record and this process is continued until the last input record is processed at which point the last output record is padded if necessary.

SEQUENTIAL -> SPARSE and SEQUENTIAL -> RANDOM

Parameters (initrecnum, recinc)

Each input record is assigned a record number beginning with initrecnum and incrementing by recinc.

SPARSE -> SEQUENTIAL

Record numbers are simply discarded.

RANDOM -> SEQUENTIAL

The receiving process collects all the input records, sorts them by record number if necessary and then discards the record numbers.

SPARSE -> RANDOM

no conversion needed SPARSE is a proper subset of RANDOM

RANDOM -> SPARSE

The receiving process collects all the input records and sorts them by record number if necessary.

Declarative Specifications 3e

The file type is encoded into a small integer specified using the PCP data type INDEX when passed as an argument. 3e1

File Types 3e2

Type 1

CHARACTER FIXED SEQUENTIAL

Type 2

CHARACTER VARIABLE SEQUENTIAL

Type 3

CHARACTER FIXED SPARSE

Type 4

CHARACTER FIXED RANDOM

Type 5

CHARACTER VARIABLE SPARSE

Type 6

CHARACTER VARIABLE RANDOM

Type 7

BINARY FIXED SEQUENTIAL

Type 8

BINARY VARIABLE SEQUENTIAL

Type 9

BINARY FIXED SPARSE

Type 10

BINARY FIXED RANDOM

Type 11

BINARY VARIABLE SPARSE

Type 12

BINARY VARIABLE RANDOM

Type 13

Card Image

CHARACTER FIXED SEQUENTIAL

where each CHARSTR is of length 80 (and does not include <CR> <LF> to signal end of card). In this type of file there are no format effectors at all.

Type 14

Text Line

CHARACTER VARIABLE SEQUENTIAL

where each CHARSTR ends with the character pair <CR> <LF>, all the ASCII format effectors [<FF>, <CR>, <LF>, <HT>, <VT>, <BS>] are allowed (See document format 2, RFC 678 -- 31524,).

Type 15

Tenex Page

BINARY VARIABLE SPARSE

where each BITSTR is a maximum of 18432 (512*36) bits, and missing records are 18432 bit chunks.

Type 16

Print Line

CHARACTER VARIABLE SEQUENTIAL

where each CHARSTR ends with the character pair <CR> <LF>, and printer format is directed by the ASCII format effectors <FF>, <CR>, and <LF> (See document format 3, RFC 678 -- 31524,).

Type 17

Print ASA

CHARACTER VARIABLE SEQUENTIAL

where each CHARSTR contains as its first character an ASA carriage control character, the remaing characters in the CHARSTR consist only of the printable characters and blank.

Type 18

Print Noformat

CHARACTER VARIABLE SEQUENTIAL

where each CHARSTR consist only of the printable characters and blank.

Type 19

Storage

BINARY VARIABLE SEQUENTIAL

store (or reterive) these bits without interpretation such that the stored file is retérived exactly as sent including the file descriptor block.

This is a description of how files are copied (or moved) both inside the NSW and across the NSW boundary. 4a1

Copying Files Within the NSW 4b

Introduction 4b1

This is a description of my model of the procedures involved in moving a NSW file from one file package controlled location to another file package controlled location.

This package is designed to support the implementation of the Works Manager primitive COPY.

COPY is NOT part of the file package. COPY is part of a utility package that should live close to the Works Manager.

The Model 4b2

COPY (srchost, srcfilelist, srctypelist, disp, dsthost, dstfilelist, dsttypelist)

A file is specified by three character strings: the directory, the password, and the name.

filename - LIST (workspace, name)

workspace - LIST (directory, password)

File names may be collected together in lists and the list passed as an argument if the same function is to be applied to that set of files.

filelist - LIST (filename, ...)

This routine looks up the two host references and determines the source and destination processes.

ph1 - source process

ph2 - destination process

The process handles ph1 and ph2 were assumed to come from a table of correspondences built up from the opening of file packages at various hosts. That is either initially or when necessary the utility package would create processes and open file packages recording the correspondence between the host and the process handle (ph). Alternatively the copy procedure could be recast to accept as arguments the process handles ph1 and ph2 instead of srchost and dsthost, but in this case the copy procedure will have to be in the same process as its caller (or some elaborate scheme of introductions will be needed).

This routine creates a channel between the source and destination file packages (which are already open) by calling on the local (to the this process) process management package (PMP).

CRTPHYCHN (ph1, ph2 -> poh1, poh2, pcn)

poh1 - handle by which ph1 knows the channel

poh2 - handle by which ph2 knows the channel

pcn - handle by which the this routine knows the channel

This routine calls the GETFILES procedure in the file package at the source location.

disp - RETAIN for copy, or DELETE for move

Getfiles (srcfilelist, srctypelist, disp, poh1)

The files are sent on the physical channel indicated by poh1 as specified by srcfilelist.

The type information in srctypelist is used to determine the mapping from storage format to transmission format for the files.

The retention or deletion of the source files is indicated by disp. All files in srcfilelist have the same disp.

The file access parameters are checked.

Getfiles actually reads the files from the local file system and send the files in the PCP format indicated by srctypelist via the IPC procedure SNDMSG, generally this will require a series of file reads and sndmsgs.

message - a portion of a file

SNDMSG (poh1, message)

This routine calls the putfiles procedure in the file package at the destination location.

Putfiles (dstfilelist, dsttypelist, poh2 -> EMPTY)

The files received on the physical channel indicated by poh2 are assigned the names and entered into directories as indicated by dstfilelist.

The type information in dsttypelist is used to determine the storage format for the files.

The file access parameters are checked.

Putfiles actually receives the files via the IPC procedure RCVMSG and stores the files to the local file system, generally this will require a series of rcvmsgs and file stores.

message - a portion of a file

RCVMSG (poh2, message)

Comments 4b3

The procedures Getfiles and Putfiles must be implemented such that there is careful consideration of the asynchronous timing of the calls.

If parallel calls are made to a pair of file packages the caller must be careful to provide a distinct channel for each simultaneous transfer requested.

Copying Files Across the NSW Boundary 4c

Introduction 4c1

This describes the package that is called on by the Works Manager to move files between an NSW file location and an arbitrary ARPANET file location (or between two arbitrary ARPANET file locations). This package Presents a DPS (PCP) interface to its callers and utilizes the FPTFRK program (23649,).

This package is designed to support the implementation of the Works Manager primitives EXPORT, IMPORT, and TRANSPORT.

The Model 4c2

COPY (srchost, srclog, srcfilelist, dsthost, dstlog, dstfilelist)

where srclog = LIST (srclname, srclpass, srclacct)

and dstlog = LIST (dstlname, dstlpass, dstlacct)

and srcfilelist = LIST (srcfile, ...)

where srcfile = the source file's pathname in host dependent syntax

and dstfilelist = LIST (dstfile, ...)

where dstfile = the destination file's pathname in host dependent syntax

This routine calls on its inferior FTpFRK to transfer the files.

Begin ()

Open (srchost)

Login (srclname, srclpass, srclacct)

Shelv (srcstate)

Open (dsthost)

Login (dstlname, dstlpass, dstlacct)

Lbl (dststate)

Ncpy (srcstate, srcfile, dststate, dstfile, xfermode)

where xfermode = APPROPRIATE

This step may be repeated until the srcfilelist is exhausted.

Close ()

Mount (srcstate)

Close ()

End ()

Comments 4c3

If the source file is in a file package controlled location and the destination file is not this is the Works manager Export action.

If the source file is not in a file package controlled location and the destination file is this is the Works manager Import action.

If neither the source file or the destination file are in file package controlled locations this is the Works Manager Transport action.

If the source file and destination file are both in file package controlled locations this transfer will still work but the knowledge of types will be lost and type conversions will not occur except for the limited conversions embodied in ARPANET File Transfer Protocol.

It will be generally useful to provide a Procedure Call interface to all of the routines of the FTPFRK.

ConVersions 5

There is an opertunity for the caller of the copy procedure to cause conversions on a structural basis by supplying different file types for the source file type and the destination file type. In such a case the destination file package would receive a file with a file header indicating its transmission format and would have received as an argument of the putfiles call a different file type to be used for storing the file, thus it must do a conversion. (The conversion may be impossible in which case an error results.) 5a

There is also to be a separate conversion procedure (not part of the file package) that is modeled after the CNVFIL procedure of the orignally proposed file package (24582,) that takes as arguments oldfile, oldtype, olduse, newtype, newuse and returns newfile. 5b

JBP 9-MAY-75 04:36 25850

NSW Files -- Package, Format,Types, Movement, Convesrsion

(J25850) 9-MAY-75 04:36;;; Title: Author(s): Jonathan B. Postel/JBP; Distribution: /JBP([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JBP; Origin: < POSTEL, NSW-FILES.NLS;3, >, 9-MAY-75 04:34 JBP
;;;;####;

RLL 9-MAY-75 14:04 25851

SUG: don't clear TYPEIN line until address is verified.

It would be nice if the typed in address remained visible on the CRT screen while the system searched for it instead of the current clearing of the command address(TYPEIN) line. It could be cleared after the address is verified (internally) and as is indicated (usually) by the viewspec prompt(the next prompt). I think this is more than just nice but very desireable. 1

SUG: don't clear TYPEIN line until address is verified.

(J25851) 9-MAY-75 14:04;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /FEED([ACTION]) JHB([INFO-ONLY]) JCN([INFO-ONLY]) RA3Y([INFO-ONLY]) NDM([INFO-ONLY]) SGR([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: RLL;

Record of Bell Canada Files Going to DDSI

9-MAY-75 1457-PDT SRI-ARC at USC-ISI: COM RUN
Distribution: MATTIUZ AT OFFICE-1, vannouhuys at bbnb
Received at: 9-MAY-75 17:58:42-EDT 1

I JUST PUT CC/OVERVIEW.COM;1 AND WFS.COM;1 OFF ONTO TAPE 0001 AT ISI A few minutes later I phoned Ted Spires at DDSI who sad he would pick up the tape this afternoon and send copy flows to Larry Day at Bell Canada.. 1a

DVN 9-MAY-75 19:23 25852

Record of Bell Canada Files Going to DDSI

(J25852) 9-MAY-75 19:23;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /DMB([ACTION] dpcs notebook pleasee) &DPCS([INFO-ONLY]) IMM([INFO-ONLY]) ; Sub-Collections: SRI-ARC DPCS; Clerk: DVN;

JAKE 9-MAY-75 19:50 25853

TELEX CONTACT: Herren Paap and Skowronek, GMD, Germany

Two representatives, Paap and SkoWronek, of GMD which is the official research center of the German government will visit the NIC on May 15, 1975 in the afternoon. Their letter states: We are involved in many EDP projects and most recently in some projects concerning computer networks. It is the task of our department to evaluate some of those projects and co-ordinate their activities...we are interested in gaining a better understanding of this subject from the experience your institution has accumulated. If anyone would like to talk to these gentlemen or demo NLS or whatever, please let me know. (GMD=Gesellschaft für Mathematik und Datenverarbeitung) 1

JAKE 9-MAY-75 19:50 25853

TELEX CONTACT: Herren Paap and Skowronek, GMD, Germany

(J25853) 9-MAY-75 19:50;;;; Title: Author(s): Elizabeth J. Feinler/JAKE; Distribution: /RLL([ACTION]) SRI-ARC([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JAKE;

DVN 9-MAY-75 19:55 25854

Documentation Development Production and Control Community Planning Group

You are a member of a new journal distribution group called Docplan. It includes RLL, DCE, JCN, RWW, EKM, RLB2, NDM, NRN,, PWO, TLH, and KLM. I have formed this group of people I believe interested in Documentation Development Production and Control Community Planning. 1

I am coordinator. If you are NOT interested in information about this activity, please let me know and I will remove you from the distribution. If you have journal items relevant to this group, please use it for distribution and subcollection purposes. I have asked Kathy Mabrey to establish a hardcopy notebook of all items sent to this distribution. Please send items to her for action with a note in parentheses after her ident to indicate that the item should go in the Docplan notebook as I have done with this item. 2

The longstanding journal distribution group DPCS is still functioning. It accumulates items about the present state of documentation work, working records, technical proposals, etc and is available as a hardcopy notebook maintained by Dee Brooks (DMB). It includes people outside of SRI. 3

DVN 9-MAY-75 19:55 25854

Documentation Development Production and Control Community Planning Group

(J25854) 9-MAY-75 19:55;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /DOCPLAN([ACTION]) KLM([ACTION] docplan notebook please) &DPCS([INFO-ONLY]) ; Sub-Collections: SRI-ARC DOCPLAN DPCS; Clerk: DVN; Origin: < DBROOKS, NEWGROUP.NLS;2, >, 9-MAY-75 19:48 DVN ;;;#####;

DVN 9-MAY-75 20:30 25855

My Feelings about Restriction of Elf Login Names

Doug's instruction for people to identify themselves when logging in to Elf in (32434,) seems to me out of step with ARC's longterm goals. 1

As I suppose happens to everyone here, people often speak to me of the dangers of computers reducing the quality of life by imposing conformity particularly by exposing people's lives to pressures from organizations they have no power to oppose. I always answer to the effect that computers are like fire, that the dangerous power is present, but the threat is only real because of people may abuse them. I argue further that in fact by their capacity to handle varying detail rapidly, computers inherently tend to allow diversity. When people are, for example, forced to fill out forms in rigid ways they do not understand with accompanying frustration, humiliation, and feelings of isolation, it is because some programmer or her boss has been lazy or totalitarian minded. 2

I know of two reasons why people may be logged into Elf under unrecognizable names. For ammusement and because some one has thoughtfully left a terminal logged in...since all we use Efl for is Telnet to some other machine. Both reasons seem to me good. In the first case I have enojyed reading the lists. The strange names are a good way to communicat about our environment. In the second case I have always felt grateful to the previous user. 3

I may differ with Doug on this point because I have never wanted to know who was in on an Elf port. Nor have I ever met nayone else looking for that information. It would be helpful if Doug had added why he need the information. 4

At the very least let me report that for me allowing people to log in as whaterver they want would be be well worth the price of looking for some one occasionally. 5

DVN 9-MAY-75 20:30 25855

My Feelings about Restriction of Elf Login Names

(J25855) 9-MAY-75 20:30;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /SRI-ARC([INFO-ONLY]) DLR([INFO-ONLY]) DCE([INFO-ONLY] I must add that I am stating more or less politely what a number of people felt quit angery about) ; Sub-Collections: SRI-ARC; Clerk: DVN; Origin: < VANNOUHUYS, PLUDGE.NLS;1, >, 9-MAY-75 20:15 DVN ;;;#####;

PDP-11 Bootstrap Procedures

This document describes how to perform cross-network bootstrapping of files into either the ARCTSP or ARCDEV machines.

PDP-11 Bootstrap Procedures

Introduction 1

This document describes the procedures to be employed when it becomes necessary to re-load either of our two PDP-11's. The procedure should be literally correct for the case of the terminal support processor, since that system operates in the context of an unchanging role. Therefore, questions regarding the name of the file to be loaded will rarely (if ever) arise as only one file is generally loaded. On the other hand, the role of the development machine dictates that a number of files may be interchangeably loaded as the testing of various subsystems is underway. In any case, the procedures are similar with the exception of the address of the host that is being loaded and the name of the file to be transmitted. 1a

Loading the Terminal Support Processor (TSP) 2

Re-start or Re-load? 2a

Before one actually begins re-loading the TSP machine, it is appropriate that one consider whether or not performing the entire re-loading procedure is necessary. Quite possibly ELF is simply hung up in some way or other and all that is needed to resume terminal support service is that it be re-started. If this seems to be the case, then perform the re-start procedure without re-loading ELF (see -- 2D). If this does not work or seems otherwise contrary to your intentions (e.g., loading a new version of the ARCTSP system), then proceed with re-loading the system (see -- 2B). 2a1

Starting the PDP-11 Listening Process 2b

1. Depress the HALT switch of the console switch panel 2b1

2. Enter the start address (773000B) of the PDP-11 listening process (stored in read-only memory so as not to be destroyed) by raising or lowering each switch as indicated below: 2b2

17	16	15	14	13	12	11	10	09	08	07	06	05	04	03	02	01	00
R	R	R	R	R	R	L	R	R	L	L	L	L	L	L	L	L	L
1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0
7			7			3			0			0			0		

2b2a

3. Depress the LOAD ADDRESS switch. The address 773000B should now appear in the top row of lights labeled ADDRESS. 2b3

4. Raise the HALT switch to the ENABLE position. 2b4

5. Depress the START switch to cause the PDP-11 to begin execution of the listening process. 2b5

Starting the PDP-10 Sending Process 2c

1. Log in to the SRI-AI PDP-10 as user ARCELF password ELF. (This is important since one must be a netwizard to run this process and this special user account will permit the cross-network bootstrap program to run.) Access to the PDP-10 is most convenient when using the teletype KSR37 located next to the PDP-11. Phone numbers of various lines on the AMES-TIP and TYMSHARE-TIP are prominently displayed on the nearby acoustic coupler. 2c1

2. Run the program named NBOOT.SAV. This program will respond by interrogating the user for the number of the host that should be loaded. The proper response is 202 followed by carriage return. The user is then interrogated for the name of the input file that should be loaded into the specified host. The proper response to this question is ARCTSP.BIN followed by 2 carriage returns. Loading of this file will now begin. After approximately 1 minute (this is dependent upon the load factor of the PDP-10), NBOOT.SAV will type the phrase "loaded" and then request the name of the next input file. At this point the user should simply enter CONTROL-C to terminate the program. 2c2

Summary. The overall sequence looks as follows:

```
@LOG ARCELF (password) ELF <CR>
@RUN NBOOT.SAV <CR>

 PDP-11 network bootstrap
 host number: 202 <CR>
 input file: ARCTSp.BIN <CR> (old version) <CR>
 loaded.

 input file:  <CNTL-C>

@LOGOUT <CR>
```

2c3

(Note: In the preceding example, lower-case letters represent information that is presented to the user and upper-case letters represent information that is typed by the user.) 2c4

Starting (and Re-starting) the PDP-11 ELF TSP System 2d

1. Depress the HALT switch of the console switch panel 2d1

2. Enter the start address (157206B) of the ARCTSP ELF system by raising or lowering each switch as indicated below: 2d2

17	16	15	14	13	12	11	10	09	08	07	06	05	04	03	02	01	00
L	L	R	R	L	R	R	R	R	L	R	L	L	L	L	R	R	L
0	0	1	1	0	1	1	1	1	0	1	0	0	0	0	1	1	0
1			5			7			2			0			6		2d2a

3. Depress the LOAD ADDRESS switch. The address 157206B should now appear in the top row of lights labeled ADDRESS. 2d3

4. Raise the HALT switch to the ENABLE position. 2d4

5. Depress the START switch to cause the PDP-11 to begin execution of the ARCTSP ELF system. 2d5

Loading the Development Processor (DEV) 3

Starting the PDP-11 Listening Process 3a

1. Depress the HALT switch of the console switch panel 3a1

2. Enter the start address (773000B) of the PDP-11 listening process (stored in read-only memory so as not to be destroyed) by raising or lowering each switch as indicated below: 3a2

17	16	15	14	13	12	11	10	09	08	07	06	05	04	03	02	01	00
R	R	R	R	R	R	L	R	R	L	L	L	L	L	L	L	L	L
1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0
7			7			3			0			0			0		3a2a

3. Depress the LOAD ADDRESS switch. The address 773000B should now appear in the top row of lights labeled ADDRESS. 3a3

4. Raise the HALT switch to the ENABLE position. 3a4

5. Depress the START switch to cause the PDP-11 to begin execution of the listening process. 3a5

Starting the PDP-10 Sending Process 3b

1. Log in to the SRI-AI PDP-10 as user ARCELF password ELF. (This is important since one must be a netwizard to run this process and this special user account will permit the cross-network bootstrap program to run.) Access to the PDP-10 is most convenient when using the teletype KSR37 located next to the PDP-11. Phone numbers of various lines on the AMES-TIP and TYMSHARE-TIP are prominently displayed on the nearby acoustic coupler. 3b1

2. Run the program named NBOOT.SAV. This program will respond by interrogating the user for the number of the host that should be loaded. The proper response is 002 followed by carriage return. The user is then interrogated for the name of the input file that should be loaded into the specified host. The proper response to this question is the name of the appropriate file, followed by 2 carriage returns. Loading of this file will now begin. After approximately 1 minute (this is dependent upon the load factor of the PDP-10 and the size of the file), NBOOT.SAV will type the phrase "loaded" and then request the name of the next input file. At this point the user should simply enter CONTROL-C to terminate the program. 3b2

Summary. The overall sequence looks as follows:

```
@LOG ARCELF (password) ELF <CR>
@RUN NBOOT.SAV <CR>

 PDP-11 network bootstrap
 host number: 002 <CR>
 input file: FILENAME.EXTENSION <CR> (old version) <CR>
 loaded.

 input file:  <CNTL-C>

@LOGOUT <CR>
```

3b3

(Note: In the preceding example, lower-case letters represent information that is presented to the user and upper-case letters represent information that is typed by the user.) 3b4

Starting the Loaded File 3c

1. Depress the HALT switch of the console switch panel. 3c1

2. Enter the start address of the loaded file by raising or lowering each switch to form the binary number of the start address. 3c2

3. Depress the LOAD ADDRESS switch. The address should now appear in the top row of lights labeled ADDRESS. 3c3

4. Raise the HALT switch to the ENABLE position. 3c4

5. Depress the START switch to cause the PDP-11 to begin execution of the loaded file. 3c5

PDP-11 Bootstrap Procedures

(J25856) 9-MAY-75 20:51;;; Title: Author(s): Joseph L. Ehardt/JLE;
Distribution: /NPG([INFO-ONLY]) MEH([INFO-ONLY]) RCO([
INFO-ONLY]) JCP([INFO-ONLY]) ; Sub-Collections: SRI-ARC NPG;
Clerk: JLE; Origin: < EHARDT, BOOTSTRAP-PROCEDURES.NLS;10, >,
9-MAY-75 19:49 JLE ;;;;####;

DIA 10-MAY-75 00:45 25857

Question on LIST implementation detail. What do you think?

Consider the following: A list element #list#[i] is a list, created by 1

```
#list#[i] _ LIST(1,2,3,"string");
```
1a

The inferior list is allocated. If "list" is set to null, the inferior list will go away too. OK. 2

Now suppose that the inferior list is NOT allocated, but declared. The asignment is tricky, but possible and perhaps sometimes desirable. But if the superior list is set to null, what should happen to the inferior list, and its elements? Should it be set to null also, or left alone. 3

As currently implemented, it is left alone. Majority vote is fine by me. Sndmsg to andrews and give a reason for your vote. 4

DIA 10-MAY-75 00:45 25857

Question on LIST implementation detail. What do you think?

(J25857) 10-MAY-75 00:45;;; Title: Author(s): Don I. Andrews/DIA;
Distribution: /NPG([ACTION]) ; Sub-Collections: SRI-ARC NPG; Clerk:
DIA;

JEW 12-MAY-75 13:23 25858

An L10 Suggestion for Making Global Catchphrases Useful

Unless I'm missing something, one can in practice rarely declare frequently-used catchphrases global because most require access to some resource pointer (e.g. a JFN, the address of an allocated storage block) stored in a local. For example, the DPS code contains what I would guess to be about 100 such local catchphrases that could be replaced by about 4 global catchphrases (with the obvious accompanying reduction in program size), provided there existed a way by which they could access the context-dependent resource pointer. 1

Putting it another way, one should be able to pass arguments to a catchphrase when it's created (i.e. via INVOKE), as well as when it's dispatched (e.g. via ABORT). 2

One possible implementation. Define a global SIGNALPARM a la SIGNALTYPE and SIGNAL, set upon entry to a catchphrase with a full-word value (defaulting to zero) specified and computed when the catchphrase was invoked: 3

```
INVOKE (reljfn, jfn);                                    3a
```

JEW 12-MAY-75 13:23 25858

An L10 Suggestion for Making Global Catchphrases Useful

(J25858) 12-MAY-75 13:23;;; Title: Author(s): James E. (Jim) White/JEW; Distribution: /NPG([INFO-ONLY]) RWW([INFO-ONLY]) ; Sub-Collections: SRI-ARC NPG; Clerk: JEW;

DVN 12-MAY-75 13:45 25859

Visit from Representatives of the Proposal Production Group at General Electric Nuclear Engineering of San Jose

On Wednesday April 23, Elizabeth Michael, Robert Belleville and Pat Whiting-O'Keefe from the Information Sciences Laboratory met with Moe Whittaker and Martin Nick of General Electric Reactor Power Engineering and Ron Feria of George Lithograph in San Jose, California. 1

These people perform miracles of productivity. The Nuclear Reactor Group makes roughly 3 3000-page proposals a month for projects of 100 million dollars or more. Whittaker and a small group of others largely assemble these proposals with typewriters, scissors, and tape. More than half the pages are unchanged from previous proposals. They feel that increses they foresee in their work load demand switching to some more automated medium of production. 2

ARC came to their attention through Ron Feria, who is involved in George's effort to print from our files that have passed through the Output Processor. 3

It is not clear what if anything will come of this meeting. The G.E. effort is a very large-scale, high pressure plant relative to any present use of NLS. Whittaker has no background in word processing let alone computer science. It was very hard for him to evaluate the advantages and dangers to his operation. On the other hand scale makes NLS look less expensive. My rough calculation indicates that the compaction to be gained by changing from monospace to proportional fonts would save them more than $40,000 a year in the cost of paper. 4

Elizabeth, Pat and I agreed that to be used seriously for their proposal shop, G.E. would need a dedicated computer and would need reliability far beyond the present system. Their management must feel a 99.9% guarantee that such proposals are never late at all. 5

We suggested that Whitaker look around at other word processing systems. We suggested other people from their group visit us including whoever above him would need to buy off. We suggested that the best scenario we could imagine would be for G.E. to get a slot to use for some defined part of their work (Nick suggested certain lenghty qualification documents that have to be submitted to the AEC and constantly updated) and at the same time some one from the Information Sciences Laboratory should analyze their operation and form plans to deal with the scaling-up problem, reliability, and the general effect of what would be a radical change of media in a stressful environment. 6

On May 6th I chatted on the phone with Ron Ferria. He had independently come to the conclusion that the most useful next step would be for hgigherups at G. E. to come here and he is going to try

to make that happen. He told me a little about organizational conflicts with in G.E. He asserted that talking with the G.E. data processing organization wold not be userful. Ron is an experienced slaesman who knows this customer well; we are fortuante to have his cooperation. 7

DVN 12-MAY-75 13:45 25859

Visit from Representatives of the Proposal Production Group at General Electric Nuclear Engineering of San Jose

(J25859) 12-MAY-75 13:45;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /KLM([ACTION] Docplan Notebook Please) DOCPLAN([INFO-ONLY]) ; Sub-Collections: SRI-ARC DOCPLAN; Clerk: DVN; Origin: < HAMILTON, DVNTHEUSUAL.NLS;2, >, 12-MAY-75 13:12 DVN ;;;;####;

DVN 12-MAY-75 13:50 25860

Priscilla Wold added to DIRT

Marcia, would you please add Priscilla Wold, PAW2, to the DIRT Distribution. She is going to be doing training for the Applications group. 1

DVN 12-MAY-75 13:50 25860

Priscilla Wold added to DIRT

(J25860) 12-MAY-75 13:50;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /MLK([ACTION]) DNB([ACTION] Dirt notebook please) DIRT([INFO-ONLY]) ; Sub-Collections: SRI-ARC DIRT; Clerk: DVN;

CHI 12-MAY-75 14:18 25861

NSW file names

NSW file names can be passed among the FE, WM, and tool in several forms. Two forms seem most reasonable:
CHRSTR (where the whole filename is a single string) and
LIST (absolute BOOLEAN %use NSW project tree to resolve name%, (LIST (CHARSTR %field name%/ EMPTY %...%, ...) / EMPTY %no field names%), (LIST (CHRSTR %attribute name%/ EMPTY %...%, ...)/ EMPTY %no attributes%)), where the attributes may have to be attribute name and value if the WM has switched to that scheme. IF the FE is collecting the filename it can build either form (or others). The former approach has the advantage of simplicity and compact storage.. The latter has the advantage ofkeeping the exact syntax in the FE and suupplying WM and tools with already-parsed filenames. In addition to the above the FE will supply a BOOLEAN indicating old (copy)/ new (entry) filename. What are your reactions to all this??
-- Charles.

1

CHI 12-MAY-75 14:18 25861

NSW file names

(J25861) 12-MAY-75 14:18;;;; Title: Author(s): Charles H. Irby/CHI; Distribution: /NPG([ACTION]) JBP([ACTION]) KS([ACTION]) RWW([INFO-ONLY]) ; Sub-Collections: SRI-ARC NPG; Clerk: CHI;