DVN 2-JAN-75 09:34 24981

Mark Stack Overflow on loading sortalphabetic.sk;

I just tried several times to load <programs,sortalphabetic.sk;,> and got the error message, novel to me, "Mark stack overflow". Increasing buffer size did not help. I have several other subsystems and programs loaded. 1

DVN 2-JAN-75 09:34 24981

Mark Stack Overflow on loading sortalphabetic.sk;

(J24981) 2-JAN-75 09:34;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /FDBK([ACTION]) ; Sub-Collections: SRI-ARC FDBK; Clerk: DVN;

DVN 2-JAN-75 10:42 24982

Rejected Journa Item

The journal item cited has be returned for postage due.

DVN 2-JAN-75 10:42 24982

Rejected Journa Item

POOH test journal item 1

DVN 2-JAN-75 10:42 24982

Rejected Journa Item

(J24982) 2-JAN-75 10:42;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /POOH([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: DVN;

POOH 2-JAN-75 12:28 24983

test of sendmail commands

perhaps the time has come

POOH 2-JAN-75 12:28 24983

test of sendmail commands

this message is in code 1

POOH 2-JAN-75 12:28 24983

test of sendmail commands

(J24983) 2-JAN-75 12:28;;;; Title: (Unrecorded) Title: Author(s): Ann Weinberg/POOH; Distribution: /KIRK([ACTION]) DVN([INFO-ONLY]) ; Keywords: test; Sub-Collections: SRI-ARC; Obsoletes Document(s): 24982; Updates Document(s): 24861; Clerk: POOH;

POOH 2-JAN-75 12:15 24984

pooh on you

the overwhelming feeling of rejection that occurs when my journal items are sent back to me is indescribable. 1

POOH 2-JAN-75 12:15 24984

pooh on you

(J24984) 2-JAN-75 12:15;;;; Title: Author(s): Ann Weinberg/POOH;
Distribution: /DVN([ACTION]) ; Sub-Collections: SRI-ARC; Clerk:
POOH;

JMB 2-JAN-75 12:50 24985

P.S. to Yesterday's messages <31564> & <31565> re Useroptions bugs

Those items refer to Office-1 NLS as of 1-JAN-75 1

JMB 2-JAN-75 12:50 24985

P.S. to yesterday's messages <31564> & <31565> re Useroptions bugs

(J24985) 2-JAN-75 12:50;;;; Title: Author(s): Jeanne M. Beck/JMB; Distribution: /FEED([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JMB;

Quick Response to Crocker NSW Plan Input Request

Quick Response to Crocker NSW Plan Input Request 1

The following is a rough set of notes primarily organized in Crocker's Categories with a couple of additions. Unfortunately I haven't had time to think through timing for next years. After 18 months while general needs are clear, its hard to see detail until we get initial system up and running and see how its used, problems etc. For an actual long range plan to be submitted to DOD and ARPA management, it would seem to me that another approach to organizing the plan might be more politic, namely to organize it according to categories of concern to the prime buying constituencies (this categorization can undoubtedly be improved by the NSW steering committee,) At any rate an introduction or summary so organized would seem useful 2

For example, constituencies and some of their possible concerns are: 2a

DOD Management 2a1

Cost Effectiveness 2a1a

Technology transfer and use phasing strategy 2a1b

Impact of NSW and transfer strategy on organizational structure, management styles. 2a1c

Project Managers 2a2

Is high level management committed to NSW being there long run. 2a2a

Adequate resources available to do this job 2a2b

Reliability 2a2c

Mechanisms for allocation and control of resources 2a2d

Types of tools available 2a2e

Programmers, Documenters and others using the NSW 2a3

Reliability 2a3a

Availability 2a3b

Responsiveness 2a3c

Tools available 2a3d

Quick Response to Crocker NSW Plan Input Request

End Users of the Systems Produced Using NSW 2a4

Cost and technical quality of products produced 2a4a

Timeliness of delivery of all parts of system 2a4b

Ease of maintenance 2a4c

1. What are the operational objectives and on what dates? 3

a) What general capabilities? 3a

We are trying to create a coherent marketplace of tools and services with appropriate facilities for allocation and control of these resources on a project basis. By coherent we mean a consistent set of conventions for interacting with tools and other services of the NSW, ability to move results from tool to tool, the illusion of a single system etc. 3a1

b) What Tool Bearing Hosts? 3b

There is a question of TBH types as well as tools. We want to not only bring in TBHs of interest to DOD software developers but to be sure once we've brought in one type, like a 370, it is possible to utilize any software that had to be done for that installation on the next instance of that type. 3b1

TBH types 3b1a

Jul-75 3b1a1

Tenex 3b1a1a

Gunter B4700 (batch tool only) 3b1a1b

Jul-76 3b1a2

Specific host types: 3b1a2a

360/ 370/ (earlier?) 3b1a2a1

Multics 3b1a2a2

1108? 3b1a2a3

LATER others 3b1a3

c) What tools? 3c

Quick Response to Crocker NSW Plan Input Request

There are at least four main classes of tools: 3c1

1) For those involved in all phases of the software lifecycle, and its management (application and requirements analysis, system specification, design, review, coding, debugging-checkout, integration, installation, maintenance, evaluation, replacement. In our NSW planning meetings during the summer of 73 we made long lists of tools for each of these phases. Initially there will be concentration on documentation and coding for July 75. For July 76 we should have better debugging facilities and phase other tools as needed by selected user groups (these user groups need to be selected so tool planning can begin.) 3c1a

2) For those involved in setting up projects in the NSW system and allocating resources available. Tools here include setting up user profiles and other data bases on resource and communication rights etc. 3c1b

3) For those involved in various phases of the NSW system delivery and operation. 3c1c

Tools here include those to aid tool installation and checkout, resource procurement, accounting-billing, a tool and database to find out what tools and databases and other resources are available, etc. 3c1c1

4) For tool builders and suppliers. Tools here include the Control Meta Language Compiler, Help database to aid creation of online documentation, Frontend and Works Manager services, packages of PCP interface code that can be used by others, publically available specification of procedure packages available within the NSW, database record definitions etc. 3c1d

Besides tools we should not forget other resources like databases, training (tools like CAI to aid training) to effectively utilize new capabilities as part of the resources to be available. 3c2

Tool Installation 3c3

Jul-75 3c3a

One interactive tool (NLS) explicitly installed 3c3a1

Using PCP, consulting WM on file reference, using FE command language 3c3a1a

May appear as several separate tools 3c3a1b

One batch TBH and its set of tools (B 4700). 3c3a2

All TTY-oriented Tenex subsystem effectively installed. 3c3a3

Superior (JSYS trap) fork using PCP and consulting WM on file references. 3c3a3a

Problems with data-base and temporary files 3c3a3a1

Use of simple grammar in FE so FE services will be available to some extent, but basically passing strings on through. 3c3a3b

All Programs accessible via an ARPANET TELNET server accessible. 3c3a4

LATER 3c3b

Install tools of interest to planned user groups. 3c3b1

Build new tools and extend others as NSW management sees need. 3c3b2

Requirements: 3c3b2a

Specific Funding. 3c3b2a1

Coordination with NSW management. 3c3b2a2

(e.g. hooks sometimes required into WM) 3c3b2a2a

Specific tools (examples): 3c3b3

Message sending and management. 3c3b3a

Multi-host batch processing. 3c3b3b

Probably some ongoing document production and graphics work in NLS, source level debugging between NLS and TBH based compilers. 3c3b3c

d) What guarantees on the tools? 3d

We will probably need some sort of tool rating system and maybe later a consumer reports type function to indicate safety of tools. I'm not sure how you guarantee tools except by up time or bugs per hour of usage or some such thing. Maybe they can

be guaranteed by meantime to bug fix as its not only important to know that a tool is safe but even for safe tools, one wants to know someone is there to fix and respond to bugs or other suggestions. Clearly a tricky area. 3d1

e) Who will be the users? 3e

This question is really a key to many of the others. We need to select and stage the user population and to drive the TBH selection, tool need, and priorities on other developments from this selection. We will want to bring in users from each of the areas of the software life cycle. We want to start on July 75 with users who can get useful work done even though a new system is being shaken down. In other words, the initial users should not be in the critical path of high pressure projects. In the second and third year we can begin to have critical path users as confidence in the system builds. 3e1

f) How will scarce resources be allocated? 3f

We certainly need ways to utilize features like Tenex group allocation and pie slice scheduler. NSW may have to set standards in this area to achieve some unifority across TBH types. 3f1

g) What performance and/or efficiency should be expected? 3g

There are issues here involving, number of users supportable by a Frontend, speed of file movement, as well as number of users and tools supportable by the Works Manager, efficiencies of tools etc. It seems to me that it is premature to make specifications in this area except in a very general way. 3g1

Another view of performance is is terms of availability, crash recovery, reliability etc. Here we can probably state that by July 76 there should be multiple Works Managers. Addition of secondary storage to Frontend, possibly a switch at some point before Jul 78 to a different mini for the Frontend with larger memory space will probably be required. Present memory space limitations on PDP 11 is a worrisome critical area. When we get to the point where there are enough users in a local area to support more than one Frontend, then we can consider system organizations for them to back each other up and share resources etc. 3g2

h) What will the policy be for running the TBH needed for Works manager and initial Tenex based tools? Will it be by an independent supplier like Tymshare or by some DOD agency? 3h

We should probably show in our plans that we will be running on a standard DEC released operating system by July of 77 or on some other standard manufacturers released system. That is, the works Manager, tools like NLS etc. should plan to move. What do we know about DECs plans? What are the DODs preferred machines? 3h1

i) Market Functions 3i

How will billing take place so that there is incentive for tool suppliers to come in? Will it be on a one shot charge for each installation or by use etc. All these arrangements exist in the industry now, will NSW support all these or do government procurement procedures restrict what can be done? 3i1

How do users find out about tools and try them out? 3i2

2. What technical developments are required? 4

a) Of the Works Manager 4a

WM features 4a1

JUL-75 4a1a

Distributed file system 4a1a1

Access controls 4a1a1a

Directory structure 4a1a1b

Accounting systems 4a1a2

Charging on per user/project basis 4a1a2a

User profile 4a1a3

Allowed tools 4a1a3a

File access rights 4a1a3b

FE parameters 4a1a3c

Tool Profile 4a1a4

List of hosts which support it 4a1a4a

TBH profile 4a1a5

User-password-account combinations 4a1a5a

The need for multiple cooperating Works Managers is clear for speed and reliability. (Jul 76?) 4a1b

Improved Error recovery and restart 4a1c

Ability to deal with multi-process tools 4a1d

b) Of the Front-End 4b

FE-WM Features 4b1

Jul 75 4b1a

Command Language Interpreter driven by grammar data structure and user profile. 4b1a1

Built on ELF, implemented in higher level language L 10. 4b1a2

Operating System Interface for portability. 4b1a3

Support for several classes of terminals, line at a time-half duplex, ASCII Network Virtual Terminal types, Alpha CRTs, Alpha CRTs with Line Processor, Tekronix Graphics. 4b1a4

Linking of terminals at least in typewriter mode. 4b1a5

Coordination with WM, full use of PCP. 4b1a6

LATER 4b1b

Error recovery, restart, etc. This entire area will need considerable work and will encompass developments in protocol area, WM and Frontend. It will be crucial to long run success of NSW. There will be some facilities to handle crashes and restarts initially but nothing like what should be there for smooth operation over long haul. 4b1b1

Multi-process tool interaction 4b1b2

Coordination of related tool activities 4b1b3

Tool execution in the user's absence 4b1b3a

Parallel tool execution 4b1b3b

Execution of one tool upon completion of another etc. 4b1b3c

Macro facilities on NSW wide basis. 4b1b4

Ability to have local file system and to run parts or all of some tools requiring high interaction rate. 4b1b5

Support new interaction and language forms and interface to other user support processes. As it will be important to explore other forms for specifying the user interface than initial CML to make it even easier for tool builders or installers. 4b1b6

Improved support for more powerful graphics terminals to come along. 4b1b7

Interface to an active state saver and facilities to use it. 4b1b8

Interface to AIish processes to support the user. 4b1b9

Full screen linking and advise (probable by Jul 75) 4b1b10

Movement to a different mini than PDP 11. 4b1b11

Consideration of Frontend machines for backup reliability and other functions when local user population large enough to support. 4b1b12

Evolution to take advantage of useful results of other ARPA research programs such as Intelligent Terminal Program under planning digital speech. Involved here will be extensions to Multi-Media tools. AI processes etc. 4b1b13

c) Of the Protocols 4c

Protocols and standards is the name of the game here at several levels. Right now we are working at fairly low level Protocols, interhost, interprocess with some specification of packages for specific functions. In the future there will be ongoing need to standardize more little things (that are not big in and of themselves, but collectively will have large impact) and on some larger things primarily in informaion structure representation such as document and formatting representation. What will be important is distinguishing those things where of the n competing ways what is importat is picking one and standardizing on it recognizing there is no real research or other issue between them and distinguishing those things where there are real issues between them and avoiding any premature standardization. 4c1

Quick Response to Crocker NSW Plan Input Request

Long term goal of low level protocols is efficient, reliable host level communication and efficient effective procedure oriented process level communication. Associated goal is standardized set of operating system interface calls. 4c2

There will arise higher level standards needs at funds transfer, procurement, marketing levels as well. 4c3

Ultimately we have to get the guage of all the rail lines at all levels to match. 4c4

Inter-host 4c5

JUL-75 4c5a

Standard ARPANET Host-Host Protocol 4c5a1

LATER 4c5b

Evaluate performance, keep tabs on TCP, possibly recommend it or subset for NSW use. 4c5b1

Crash recovery. 4c5b2

Inter-process 4c6

JUL-75 4c6a

PCP Version 2. 4c6a1

LATER 4c6b

Evaluate performance and implementations, add features and change implementation as required. 4c6b1

Develop mechanisms and standards for dealing with crash recovery in the NSW Multi process environment. 4c6b2

Standard packages (File, Batch Job, and Exec Packages) 4c7

JUL-75 4c7a

Version 2 4c7a1

LATER 4c7b

Evaluate performance, add features as required 4c7b1

File package: support manipulation of elements of file. 4c7b1a

Specification of other new protocols and standards, extensions and improvements in initial packages as experience indicates. 4c7b2

d) Of the tools. 4d

Continue to study how to simplify the tool installation process while yet maintaining higher level goals for a coherent marketplace. 4d1

Tool Communication. There is much to be learned about the problems of tools communicating with each other and using each others results. New protocol and other needs will show up as instances of such needed communications increase. 4d2

Crash recovery 4d3

More cooperation among tool components, i.e., future tools based on parts of existing tools. 4d4

Encourage use of NSW services such as those available in Frontend, Works Manager for more consistent tool use. 4d5

Tutorial help tool 4d6

Improved message tools. 4d7

Project and resource management tools. 4d8

Big database management tools. 4d9

3. What organizational developments are required? 5

a) Among the sponsors (does this include actual users also or is something else needed here?) 5a

Need to establish an NSW operational entity to contract with suppliers, users etc, perform billing and other functions so that there is an NSW organization to deal with. 5a1

Need governing body to set operational, development, research policy. 5a2

b) Among contractors 5b

c) Within government 5c

What changes are required in government procurement and internal billing procedures? 5c1

Would like to see NSW results spread to non DOD government and industry, 5c2

d) In industry 5c2a

e) Within ARPA 5d

There are a number of programs or planned programs with a lot of overlap, NSW, COTCO, Intelligent Terminal, Large Database, Datacomputer etc, that need to be sure they are making best use of each other's results and are being conducted in a way that will enable each other's results to be used, 5d1

RWW 2-JAN-75 17:09 24986

Quick Response to Crocker NSW Plan Input Request

(J24986) 2-JAN-75 17:09;;;; Title: Author(s): Richard W. Watson/RWW;
Distribution: /SRI-ARC([INFO-ONLY]) ; Sub-Collections: SRI-ARC;
Clerk: RWW; Origin: < WATSON, NSWPLAN.NLS;5, >, 2-JAN-75 17:07
RWW ;;;;####;

DVN 2-JAN-75 20:07 24987

Rejected Journa Item

The journal item cited has beeen cherished here and returned so you may see how handsomely it flies back home.

DVN 2-JAN-75 20:07 24987

Rejected Journa Item

POOH 2-JAN-75 12:28 24983
test of sendmail commands
Message: this message is in code
*****Note: [INFO-ONLY] *****

1

DVN 2-JAN-75 20:07 24987

Rejected Journa Item

(J24987) 2-JAN-75 20:07;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /POOH([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: DVN;

DVN 2-JAN-75 20:32 24988

Rejected Journa Item

The journal item cited has rejected because I do not care to knon about this subject.

DVN 2-JAN-75 20:32 24988

Rejected Journa Item

POOH 2-JAN-75 12:28 24983
Fake Title Includng "Tabs"
Message: this message is in code
*****Note: [INFO-ONLY] *****

1

DVN 2-JAN-75 20:32 24988

Rejected Journa Item

(J24988) 2-JAN-75 20:32;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /POOH([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: DVN;

DVN 2-JAN-75 21:09 24989

Second Output processor Class

On Tuesday January 7th at 10:30 in the Conference Room (J2077) I will continue the exposition of the Output Processor from the User's point of view that I began December 17. We will take up with the layout of a page, including certain errors in the figure I handed out at the last meeting, and continue with dicussion of the directives most often used and a few typical problems having to do with the interaction of directives. All are welcome.

1

DVN 2-JAN-75 21:09 24989

Second Output Processor Class

(J24989) 2-JAN-75 21:09;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /JOAN([ACTION] dpcs notebook please) DPCS([INFO-ONLY]) PWO([INFO-ONLY]) MAP2([INFO-ONLY]) ;
Sub-Collections: DPCS SRI-ARC; Clerk: DVN;

SLJ 3-JAN-75 15:07 24990

return of seedy coupler

Would whoever has the brown squarish anderson-jacobsen coupler at home please bring it in to me.....we have to return it. thanks. sandy. 1

SLJ 3-JAN-75 15:07 24990

return of seedy coupler

(J24990) 3-JAN-75 15:07;;;; Title: Author(s): Sandy L. Johnson/SLJ;
Distribution: /SRI-ARC([ACTION]) ; Sub-Collections: SRI-ARC; Clerk:
SLJ;

JCN MEH 3-JAN-75 16:02 24992

Current ARC Project and Overhead Charge Numbers

To: The ARC Staff 1

This document contains the current ARC accounting numbers to be used for timesheets, materials and other purchases. This document replaces (11824,) of 19 Sept 1972. 1a

PROJECT NUMBERS: 2

There are four project numbers to which we will charge most of our time: 2a

1868-801 ; SRI-ARC TENEX Facility Operation 2a1

This number is to be used for charges associated with the operation of our PDP-10 until March 1975. Martin Hardy is the project leader for this project and all charges to this number must be approved by him. 2a1a

9229 ; NSW (Contingent Project Number) 2a2

This is a contingent project number recently established to accumulate charges that support our NSW work. Most of the Development people will charge their time here. People who formerly used the overhead number 750571 should charge 9229. Dick Watson is the project leader for the NSW project and all charges to this number must be approved by him. 2a2a

3803 ; Network Information Center 2a3

This is the NIC project number. Jake Feinler is the project leader. Any charges to this number should be approved by her. Jake and Adrian charge most of their time here. Also some equipment and supplies that have been contracted for are charged to this number. 2a3a

3074 ; Workshop Utility Service 2a4

This is Applications' basic project number. It was established to accumulate charges for across-the-board Office-1 support that is directly applicable to all Workshop Utility Service clients. Our Tymshare PDP-10 computer costs will be charged here. Project administration, hardware and software work and some of our training, documentation, and lineprocessor development efforts will also be charged here when more general than specific to particular clients. 2a4a

In addition to 3074, the Workshop Utility basic project number, we have established a project number for each Office-1 client which we will use to accumulate direct service costs. We will charge our

efforts to these numbers when we do things specificilly for these clients. Examples: Visits to Hudson to help train their users for specific tasks they require; Visits to BRL to repair a Lineprocessor, or help debug their line; Equipment costs, such as: TI terminals, Lineprocessors or supplies to be provided under contracts.

2b

3075 ; BELL CANADA 2b1

3619 ; Hudson Institute 2b2

3749-1 ; ARPA/RADC combined 2b3

3749-2 ; SEISMIC-MIT 2b4

3749-3 ; SRI ENERGY PROJECT 2b5

3749-4 ; BRL 2b6

3749-5 ; NSRDC 2b7

3749-6 ; JOVIAL Manual for RADC 2b8

3749-7 ; NSA 2b9

930561 work order 329 ; SRI (Placko) 2b10

Current ARC Project and Overhead Charge Numbers

OVERHEAD NUMBERS: 3

The following are the present SRI overhead subnumbers: 3a

(prefix these with our org code 750 such as: 750D11,
+W,O means plus work order; see Sandy Johnson for these) 3a1

NOTE: As of 12/18/74, the fourth character in a six figure overhead number is changed in all cases to a "D", i.e., 750D61 instead of 750561. This "D" stands for "domestic" and indicates that the charge relates to a non-international item. 3a1a

3a2

Administration and Planning 3b

D11 ; Administration duties 3b1

(Such as: time cards, requisitions, personnel actions, etc) 3b1a

Information Dissemination 3c

D21 (+W,C,) ; Institute Publication 3c1

D22 ; Technical articles and papers 3c2

D23 ; Participation in Symposia and Seminars 3c3

D25 ; Client Liaison and tours 3c4

Institute Research and Development 3d

D32 (+Sub Num,) ; Division IR&D tasks 3d1

D35 (+Sub Num,) ; ORO IR&D tasks 3d2

Staff Development 3e

D41 ; Formal Education Courses 3e1

D42 ; Orientation and Staff Training 3e2

D43 ; Staff Development - Attending Symposia 3e3

D44 ; Overseas Travel ,pes; 3e4

Staffing 3f

Current ARC Project and Overhead Charge Numbers

D51	; Recruiting	3f1
D52	; Relocations and Transfers	3f2
Facilities Expense		3g
D61	; Support Services by Central staff	3g1
(periodicals, books, tools, small parts, etc)		3g1a
D62	; Laboratory Equipment Calibration and Repair	3g2
D63	; Minor Laboratory and office moving costs	3g3
D64 (+W,C,)	; Minor Construction Work Orders	3g4
Interim Technical Study		3h
D71	; Informal study and reading of journals	3h1
Bid and Proposal Expense		3i
D81 (+W,C,)	; Proposal Liaison	3i1
D82 (+W,C,)	; Concept Formulation	3i2
D83 (+W,C,)	; Proposal Preparation	3i3

JCN MEH 3-JAN-75 16:02 24992

Current ARC Project and Overhead Charge Numbers

(J24992) 3-JAN-75 16:02;;;; Title: Author(s): James C. Norton, Martin E. Hardy/JCN MEH; Distribution: /SRI-ARC([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: SLJ; Origin: < HARDY, CHARGES.NLS;23, >, 19-DEC-74 10:58 SLJ ;;;;
####;

DVN POOH KIRK JHB 4-JAN-75 17:19 24993

Informal Documentation Report for Week Ending Jan 3

DVN: 1

Lineprocessor Usuer's Guide: Journalized and sent to SRI printing. 1a

Preface to NLS: Waiting for Application's Review 1b

Introduction to NLS (replacing the Howto branch of help):Waiting to br written. 1c

TNLS Addressing: It is on me to repsond to RWW's review. 1d

COM: 1e

Viewspec cards Printed (on yellow paper to prevent confusion with previous versions) and distributed. See Ann Weinberg for more cards. 1e1

Martin Hardy's paper on Microprocessor Techology: DDSI has called to say Stick fonts are working. They have asked me to make a new copy of this file so they can try out he refurbished software. 1e2

Awaiting return of revised Command Summary from DDSI. 1e3

The TNLS-8 Primer awaits my attention for COM printing. 1e4

Awaiting a second run of Ken Victor's paper on a CML for NLS from DDSI. 1e5

Talked on the phone to a number of possible aplicants for documentation work here; asked several to fill in applications. 1f

Worked on organizing and editing the final report. 1g

JMB: Completed TNLS examples for Help in a separate file. Moved most of them into appropriate places in Help. 2

pooh: continued work on glossary learning such wonderful things about obsoletes and updates..celebrated new years...continued work on glossary or rather redid work that was all lost on tuesday. 3

kirk: 4

> Established procedures and followed them for culling through all of the changes in nls as reported in <nls,tasks,nic-nls-changes> 4a

> Initiated discussion towards a periodical (monthly?) publishing

of the changes in NLS. Mostly bug fixes at this stage of the game, but quite a few altered features. See -- documentation, manual, done> for the list. 4b

> Created a notebook containing all category 1 userprograms documentation; grouped by program. 4c

> User-programs help descriptions still in review process. 4d

> finished help descriptions for proposed letter, sndmsg (mailbox), and US (post) commands <kelley,task-areas,>. 4e

> Reviewed POOH's help work. 4f

> Fixed some bugs in help. 4g

DVN POOH KIRK JHB 4-JAN-75 17:19 24993
Informal Documentation Report for Week Ending Jan 3

(J24993) 4-JAN-75 17:19;;;; Title: Author(s): Dirk H. Van Nouhuys, Ann Weinberg, Kirk E. Kelley, James H. Bair/DVN POOH KIRK JHB; Distribution: /JOAN([ACTION] dirt notebook please) DVN([ACTION] did you get this in your journal or author branch?) POOH([ACTION] did you get this in your journal or author branch?) JHB([ACTION] did you get this in your journal or author branch?) DIRT([INFO-ONLY]) ; Sub-Collections: SRI-ARC DIRT; Clerk: KIRK;

KIRK 4-JAN-75 17:23 24994

JHB accidentally made author

JMB not JHB should be listed as an author of "Informal Documentation Report for Week Ending Jan 3". 1

KIRK 4-JAN-75 17:23 24994

JHB accidentally made author

(J24994) 4-JAN-75 17:23;;;; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /DIRT([INFO-ONLY]) ; Sub-Collections: SRI-ARC DIRT;
Clerk: KIRK;

JHB 5-JAN-75 10:01 24996

Add FEEDBACK to NP Group

Currently, NP includes CHI and RWW. Shouuldn't it also contain FEEDBACK? 1

JHB 5-JAN-75 10:01 24996

Add FEEDBACK to NP Group

(J24996) 5-JAN-75 10:01;;;; Title: Author(s): James H. Bair/JHB;
Distribution: /NP([ACTION]) JCN([INFO-ONLY]) RLL([INFO-ONLY]
) FEED([INFO-ONLY]) ; Sub-Collections: SRI-ARC NP; Clerk: JHB;

JHB 5-JAN-75 10:25 24997

Re 24769 and 24819: FEEDBACK as the contact point for documentation requests

In response to Dirk's request for a permanent ident for documentation requests (24769,) and Doug's recommendation that it be Feedback (24819,), I am setting up a branch called DOCREQ in the feedback master file: (office-1,feedback,feed,docreq). All incoming requests for documentation will be moved to this branch and forwarded to the Utility secretary for mailing (addresses will be added if necessary). Requests should be coordinated with the respective architect if not from an architect. 1

JHB 5-JAN-75 10:25 24997

Re 24769 and 24819: FEEDBACK as the contact point for documentation requests

(J24997) 5-JAN-75 10:25;;;; Title: Author(s): James H. Bair/JHB; Distribution: /DVN([ACTION]) KIRK([ACTION]) POOH([ACTION]) KWAC([INFO-ONLY]) SRL([INFO-ONLY]) RLL([INFO-ONLY]) JMB([INFO-ONLY]) ; Sub-Collections: SRI-ARC KWAC; Clerk: JHB;

JHB 5-JAN-75 11:18 24998

re 31523, ident request

did we get it right? I've even got a bar in mind: The Infirmry....
Pretty good if we did considering I was on the road in the East! 1

JHB 5-JAN-75 11:18 24998

re 31523, ident request

(J24998) 5-JAN-75 11:18;;;; Title: (Unrecorded) Title: Author(s): James H. Bair/JHB; Distribution: /FGB([ACTION]) FEED([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JHB;

JHB 5-JAN-75 11:33 24999

Re 31515, visit and slot at ETS

Hope Col. Kibler decides positively! I am very happy about your pending role as architect. As our visit showed, you have become an expert on NLS in a very short time, AND bring with you a psychological perpsective that's clear and consequently promises some valuable insights about the NLS/AKW people system. I have found your proposal to NIE to be facinating reading and perceptive.
I'll look forward to working further with you and hopefully hosting you at the next Architect's Seminar.
Best in the new year, Jim

1

JHB 5-JAN-75 11:33 24999

Re 31515, visit and slot at ETS

(J24999) 5-JAN-75 11:33;;;; Title: Author(s): James H. Bair/JHB;
Distribution: /DAP([ACTION]) JCN([INFO-ONLY]) ; Sub-Collections:
SRI-ARC; Clerk: JHB;

JHB 5-JAN-75 11:44 25000

re 31514 request for ident

Jess, I noticed that you sent your request to a bunch of people for action, so I guess that you didn't know who should really do it. We are trying to set up a single communication channel for all requests, etc., that will always be manned regardless of personnel fluctuations. This mechanism is FEEDBACK for either sndmsg or Sendmail (its an ident too). I works better for us and I think for users too.

Jim

1

JHB 5-JAN-75 11:44 25000

re 31514 request for ident

(J25000) 5-JAN-75 11:44;;;; Title: Author(s): James H. Bair/JHB;
Distribution: /JNH([ACTION]) JCN([INFO-ONLY]) MLK([INFO-ONLY]
) BOBM([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JHB;

DVN 5-JAN-75 20:35 25001

Internet Study goes to COM

On Saturday afternoon I put on tape 003 at ISI for DDSI pickup the files of the Internet report (as Internettit.com;1 internetsec.com;1 and internetappp.com;1 along with a rerun of Martin Hardy's paper to allow DDSI to test stick fonts (hardyfreep.com;1). DDSI planned to pick them up Sunday morning. 1

DVN 5-JAN-75 20:35 25001

Internet Study goes to COM

(J25001) 5-JAN-75 20:35;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /JOAN([ACTION] dpcs notebook please) NDM([INFO-ONLY]) REL2([INFO-ONLY]) MEH([INFO-ONLY]) JCN([INFO-ONLY]) SRL([INFO-ONLY]) ; Sub-Collections: DPCS SRI-ARC; Clerk: DVN;

KIRK 6-JAN-75 01:52 25002

Update File Compact Bug

The Update File Compact command changes the name delimiters of the origin to the user's default even if he wanted them to be something different. (A bug that doesn't have anything to do with NULL delimiters). The reason the delimiters of the origin are important is that they define the delimiters of any subsequent statements entered at level 1.

1

KIRK 6-JAN-75 01:52 25002

Update File Compact Bug

(J25002) 6-JAN-75 01:52;;;; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /FDBK([ACTION]) JDH([INFO-ONLY]) ;
Sub-Collections: SRI-ARC FDBK; Clerk: KIRK;

JMB 6-JAN-75 10:56 25003

A DIRT collection

I have a complete citation list of all journal items concerning documentation (dirt), as well as stuff on last year's implementation of the new NLS as it concerned documenters, that came through me (received or authored) from Aug 1973 through Dec 1974, in--beck, oldmail, dirt;wg>. If you can think of some use for such a collection, you may use it for any purpose or send it to anybody. 1

JMB 6-JAN-75 10:56 25003

A DIRT collection

(J25003) 6-JAN-75 10:56;;;; Title: Author(s): Jeanne M. Beck/JMB;
Distribution: /DVN([INFO-ONLY]) DCE([INFO-ONLY]) ;
Sub-Collections: SRI-ARC; Clerk: JMB;

JMB 6-JAN-75 11:07 25004

Residence of the Line Processor Users' Guide

Is <documentation, LP=user'sguide.print;*,> the permanent residence of a print file of the Line Processor Users' Guide? Where is an online NLS version going to reside? 1

JMB 6-JAN-75 11:07 25004

Residence of the Line Processor Users' Guide

(J25004) 6-JAN-75 11:07;;;; Title: Author(s): Jeanne M. Beck/JMB; Distribution: /DVN([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: JMB;

CHI 6-JAN-75 12:18 25005

NP group update

FEEDBACK has been added to NP 1

CHI 6-JAN-75 12:18 25005

NP group update

(J25005) 6-JAN-75 12:18;;;; Title: Author(s): Charles H. Irby/CHI;
Distribution: /JHB([ACTION]) RWW([INFO-ONLY]) ; Sub-Collections:
SRI-ARC; Clerk: CHI;

DCE 6-JAN-75 12:28 25006

Al Dean of Logicon to visit ARC 7 Jan 74 re data-base access

Al Dean of Logicon heads a project from NSA to study the alternatives for accessing multiple data bases. George Hicken at NSA, who assigned the project, has quite a bit of money to spend on this problem, and is the one whom we'd probably have mostluck with in getting funds to support exploratory developments in NLS for working it multiple data bases. Hicken recommended that Dean get together with us (as result of my last visit to NSA with Steve Walker, early December). Dean seems eager to visit us, and will be happy to include any new approaches we suggest in his study. He's planning on staying most of the day -- it would be worth our while to exchange as much information with him as possible. 1

I'd like for Dick Watson to assign a Development person to be chief host for the day. 2

Note: he once worked on Multics with Peter Neuman (at Bell Labs??). 3

DCE 6-JAN-75 12:28 25006

Al Dean of Logicon to visit ARC 7 Jan 74 re data-base access

(J25006) 6-JAN-75 12:28;;;; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /RWW([ACTION]) JCN([INFO-ONLY]) CHI([INFO-ONLY]) DSM([INFO-ONLY]) EKM([INFO-ONLY]) JCN([INFO-ONLY]) JAKE([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DCE;

HGL 6-JAN-75 13:49 25007

Recent Messages from ISI

These messages from Jeff Rothenberg and Ron Tugender were received recently. I have answered several or prrovided the information requested. I have consulted others at ARC for advice on some of the requests.

Recent Messages from ISI

3-JAN-75 1022-PST ROTHENBERG at USC-ISIB: Charles' NLS procedure guide.
Distribution: NLS-HELP:
Received at: 3-JAN-75 10:24:55 1

Some time ago, Charles made up a file for us of NLS routines organized by function. We still have a hardcopy of it, but since we'd like to generate some more copies (and also access it on-line)
could you do the necessary stuff to FTP it down here ? 1a

If you have a place to send it, just send it on its own and include some instructions under Sndmsg-separate-cover for how to re-NLS it when it gets here. Thank you. 1b

Jeff 1c

28-DEC-74 1603-PST TUGENDER at USC-ISIB: Bit usage in ring elements
Distribution: LEHTMAN AT SRI-ARC, arc/c:
Received at: 28-DEC-74 16:08:20 2

Harvey, 2a

Thanks for your info. I've got another question regarding the structure of the ring blocks for statements. How fixed is the format for the ring elements, i.e., can I expect any changes in the allocation and use of certain bits. In particular, there are bits such as RNULL (2 bits) which I could probably put to good use (and save unnecessary information from being stored in the statement itself), but I would only employ such fields if I were given assurance that those bits would not be interpreted in future versions of NLS. If such assurances cannot be made, then would it be
possible for us to get an allocation of some bits somewhere in the overhead structure for our very own, to be otherwise uninterpreted by NLS? 2b

Ron 2c

29-DEC-74 1530-PST ROTHENBERG at USC-ISIB: NLS "process" feature problem.
Distribution: NLS-HELP:
Received at: 29-DEC-74 15:30:28 3

Could you send an example of how to use the "process" feature to write macros in NLS ? We seem to get an illegal JSYS when we attempt something like: 3a

"insert statement: g u ^V^D 3b

Recent Messages from ISI

25-DEC-74 1432-PST ROTHENBERG at USC-ISIB: Making an NLS file public for WRITE ?
Distribution: NLS-HELP:
Received at: 25-DEC-74 18:30:40 7

We (Dick Mandell and I) seem to be having some trouble interfacing to the Tenex protection stuff. In particular, how do you make an NLS file public for WRITE ? Neither Setting Tenex protection from within NLS nor going out and doing it in EXEC seemed to do the trick. Advice ? 7a

process statement." 3c

Not urgent, but would be useful. 3d

30-DEC-74 1020-PST ROTHENBERG at USC-ISIB: File transers over net in NLS (again).
Distribution: NLS-HELP:
Received at: 30-DEC-74 10:20:49 4

NLS addresses now include full net-addressing capability, but that is (I gather) not yet implemented. Do you have any hard estimates on when that will become operational ? 4a

As far as our short-term use of NLS goes, we will be using PCP. Is there any way to manipulate files directly in PCP ? (e.g., moving files over the net) ? Will we have to use the NLSFXR/FTP or Telnet methods of moving files ? 4b

31-DEC-74 1208-PST ROTHENBERG at USC-ISIB: Assorted NLS stuff
Distribution: NLS-HELP:
Received at: 31 DEC 1974 1208-PST 5

What would be involved in firing up Journal to work here ? 5a

Also, there must be a neater way of inserting/moving something to the beginning of a statement than the ways we have yet tried. 5b

Also couldn't seem to figure out "Break Statement". 5c

24-DEC-74 1025-PST ROTHENBERG at USC-ISIB: special characters in NLS ??
Distribution: NLS-HELP:
Received at: 24-DEC-74 10:26:31 6

We have noticed that "/" (slash) is considered some sort of special character in NLS text -- that is, when entered as a single slash it disappears, whereas entering two slashes produces one in the resulting text. I assume there's a reason for this, but it isn't
obvious what it is. 6a

What other characters behave this way or in other special ways that
require special handling in text, What characters have to be doubled,
quoted, or otherwise escaped, and what are the required quoting or escaping conventions ?? 6b

Jeff 6c

HGL 6-JAN-75 13:49 25007

Recent Messages from ISI

(J25007) 6-JAN-75 13:49;;;; Title: Author(s): Harvey G. Lehtman/HGL;
Distribution: /CHI([INFO-ONLY]) RWW([INFO-ONLY]) JEW([
INFO-ONLY]) JBP([INFO-ONLY]) RLB2([INFO-ONLY]) ;
Sub-Collections: SRI-ARC; Clerk: HGL;

PREFACE 1

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

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

The MPSS is implemented by: 1c

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

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

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

4) user packages in each process. 1c4

INTRODUCTION 2

The NSW Tool Package (package name=NTP) contains the NSW-specific procedures and data stores required of a process for use as a tool within the NSW. NTP contains procedures for identifying the Works Manager (WM) and Frontend (FE) to the local process, and data stores that contain current Tool Bearing Host (TBH) usage information. 2a

Subtools 2b

At present, a tool will consist of a single process, created by the WM. The WM must introduce the process to the FE and initialize it for NSW use by calling its BGNNSW procedure (described below). 2b1

In the future, a tool will be permitted to use other NSW tools as "subtools". In such cases, the tool must introduce each subtool it creates to both the FE and the WM, and initialize the subtool for NSW use by calling its BGNNSW procedure. 2b2

At present, there is no clean, secure mechanism by which the FE can associate a subtool with the user on whose behalf it has been created; subtools are therefore prohibited initially. 2b3

PROCEDURES 3

Begin NSW operation 3a

BGNNSW (wmph, feph) 3a1

This procedure initializes the local process for use as an NSW tool (or subtool), obligates it to negotiate all subsequent file access attempts with the process known to the local process via the handle WMPH (the WM), and communicates to it the handle FEPH by which the FE has been made known to the local process. 3a2

If the local process is the tool proper, WMPH will have the value SUPER. If the local process is a subtool, the WM must previously have been made known to the local process via the handle WMPH, using PMP's ITDPRCS procedure. In either case, the FE must have been previously made known to the local process via the handle FEPH using ITDPRCS, and the corresponding handle by which the tool is known to the FE communicated to the FE by the WM. 3a3

Argument/result types: 3a4

wmph- INTEGER 3a4a
feph- INTEGER 3a4b

End NSW operation 3b

ENDNSW () 3b1

This procedure terminates the local process' use as an NSW tool or subtool, and frees it from its obligation to negotiate file references with the WM. After invoking this procedure, the calling process is free to separate the local process from the FE and WM, as appropriate. 3b2

DATA STORES 4

USAGE Usage statistics 4a

This read-only data store contains the current usage statistics for the local process's host system. It contains, specifically, the number USERS of active users, the percentage DSKSPC of available disk space, a measure LOAD of CPU utilization, and the number UPEST of minutes before the next known down time. 4a1

Data structure type: 4a2

<usage> LIST (%users% INTEGER, %dskspc% INTEGER, %load% INTEGER, %upest% INTEGER) 4a2a

JEW 10-JAN-75 17:25 25008

The NSW Tool Package
NTP Version 2

10-JAN-75

James E. White
Augmentation Research Center

Stanford Research Institute
Menlo Park, California 94025

NTP contains the NSW-specific procedures and data stores required of a tool, and operates within the setting provided by the Procedure Call Protocol (PCP -- 24459,), with which the reader of the present document is assumed familiar.

(J25008) 10-JAN-75 17:25;;;; Title: Author(s): James E. (Jim) White/JEW; Distribution: /SRI-ARC([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JEW; Origin: < WHITE, NTP.NLS;3, >, 10-JAN-75 17:18 JEW ;;;; ####;

PREFACE 1

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

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

The MPSS is implemented by: 1c

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

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

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

4) user packages in each process. 1c4

INTRODUCTION 2

This document defines the PCP process structure of the NSW. 2a

SYSTEM STRUCTURE 3

Introduction 3a

The NSW consists of a "FE tree", with a Frontend process (FE) in the Frontend machine (FEM) at its root; and an independent "WM tree" with a Works Manager process (WM) in some other machine (in general) at ITS root. All other processes in the NSW are explicitly created (via PMP's CRTPRC procedure) and ultimately subordinate, in the PMP sense, to either the FE or the WM. 3a1

As root processes, the FE and WM have the following special characteristics: 3a2

1) the process handle SUPER is undefined, and an attempt by the FE or WM to call a procedure or manipulate a data store using it will elicit an error, and 3a2a

2) the subroutine USROOT, provided by the FE and WM implementers and addressed by each process' user descriptor (see PCPTNXINT == 24792,6c1), will be called automatically by the FE's and WM's PCP environments when the processes first receive control from their monitors, thus breathing life into the trees. 3a2b

FE Tree Structure 3b

The FE tree consists of a single process, the FE itself. The FE is a multi-processor process, with one processor allotted to each FEM user, zero or more assigned to internal FEM background functions, and one or more available for execution of remote calls upon FE-provided procedures. 3b1

WM Tree Structure 3c

At any point in time, the WM tree consists of the WM and zero or more tools as its direct inferiors. 3c1

The Works Manager 3c2

The WM is a multi-processor process, with zero or more processors assigned to internal background functions, and one or more available for execution of remote calls upon WM-provided procedures. 3c2a

The FE or WM assigns a background function to a processor simply by calling out-of-line via PCP the desired procedure within itself (i.e. using the PH SELF). 3c2a1

As the root of its own tree and therefore pre-existent and self-sufficient, the WM is capable of supporting detached tools. 3c2b

Tools 3c3

A tool may be either a single- or multi-processor process, at the discretion of its implementer. A separate process is created for each tool invokation; tools are never expected to multiplex requests from several users simultaneously. 3c3a

Since the two acts are indistinguishable (both accomplished with a call to PMP's CRTPRC procedure), starting a tool either creates a new process or splices to an existing process, depending upon the tool. Tools may therefore, like the FE and WM, be continuously-running processes in independent trees. SENDMAIL, for example, might be implemented as such a tool, and thus be able to perform periodic mail delivery independently of the frequency with which it is invoked by users. 3c3b

System Creation 3d

Interconnecting the FE and WM 3d1

Both FE and WM are pre-existent, but initially unadressable by one another. Using PMP's CRTPRC procedure, the FE splices its tree to the WM's, thereby becoming its active associate. The FE does this only once, not once per user, and the WM must therefore be prepared to multiplex requests from the FE for several users by means of a "userid" required as an argument to each procedure it makes available to the FE (FE procedures require a similar argument). 3d1a

The WM probably must make available to the FE at least one processor for each user the FEM can support (which the FE may wish to allocate to itself via PMP's ALOPCRS procedure). 3d1a1

The FE may employ any of a number of strategies for splicing to the WM. It may do so when the FEM is powered up, and unsplice itself only before it is powered down. Or, it may splice to and unsplice from the WM whenever the number of FEM users goes from zero to one and one to zero, respectively. 3d1b

Creating Tools 3d2

Each tool invoked by the user is created by the WM as its direct inferior, at the FE's request. The tool is later deleted by the WM, again at the FE's request (tools never terminate of their own accord). 3d2a

The login parameters which the WM passes to the tool via the CRTPRC procedure are never compromised by transmission to or through the FEM. 3d2a1

The WM is responsible for introducing the tool and the FE using PMP's ITDPRCS procedure, and for notifying the tool (by means of a call to its NTP BGNNSW procedure) that it has been created for NSW use, and for communicating to it its process handle for the FE. The FE's handle for the tool is returned to the FE as a result of its tool-invokation request. 3d2b

Tools must be informed at runtime that their current invokation is in an NSW context, since the same processes will, in general, be implemented to function in non-NSW contexts as well. 3d2b1

Subtools, though prohibited in the initial NSW implementation, will when present be indirect inferiors of the WM, and a part of its tree. 3d2c

Multiple Works Managers and Frontends 3e

In the interests of load sharing, the FE will eventually be replicated on several FEMs, and each will splice its tree to the same WM. This fact makes the implementation of inter-FEM terminal linking straightforward, requiring of the WM little more than a table lookup to locate the target user and a call to PMP's ITDPRCS procedure to give the appropriate FEs process handles for one another. 3e1

In the interests of both reliability and load sharing, the WM too will eventually be replicated on several hosts. A list of WM process addresses will then be provided each FE at compile time, and it will attempt to splice to a WM at successive addresses until one is found up. 3e2

The WMs must maintain a distributed data base and properly synchronize its manipulation. Knowing their process addresses, one WM can easily splice its tree to those of its companions and thereby put itself in touch with them. Once that is done, however, the WM requires a strategy for maintaining its distributed data base. It is precisely here that BBN's RSEXEC research should pay off, and it would be madness to implement what is in effect a distributed WM without taking advantage of that work. 3e3

System Restart 3f

The whole area of restart and error recovery requires much more attention than it has so far received; for the moment, some simple observations are offered below. The design of a satisfactory restart facility will probably require changes to PCP, the WM, and the FE; and may not be implementable by July of 1975. 3f1

The FE and WM are independent and self-sufficient processes, neither of whose continued existence depends upon that of the other, or upon the existence of a PCP channel between them. Tools, on the other hand, are (in general) created processes which cannot function except while attached to their direct superior (i.e. the WM). 3f2

When the physical channel that links a process to either its direct superior or its active associate is involuntarily severed, e.g. by the failure of a host, the process is detached rather than deleted and is therefore potentially restartable. 3f3

JEW 10-JAN-75 17:28 25009

NSW Process Structure
NSWSTRUC Version 2

10-JAN-75

James E. White
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NSWSTRUC defines the PCP process structure of the National Software Works. The reader is assumed familiar with the Procedure Call Protocol (PCP -- 24459,).

(J25009) 10-JAN-75 17:28;;;; Title: Author(s): James E. (Jim) White/JEW; Distribution: /SRI-ARC([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JEW; Origin: < WHITE, NSWSTRUC,NLS;16, >, 10-JAN-75 17:18 JEW ;;;; ####;

The Installation of Tools into the NSW

This note (JOURNAL # 25010) is an attempt to answer questions raised by Steve Warshall regarding the installation of tools into the NSW. The following questions appeared explicitly or implicitly in Steve's message: 1

1) What does one do to make a tool backend look like packages in a PCP process? 1a

2) How does one associate a CML grammar with such packages? 1b

3) What instructions can we give the guy with an extant tool, including the guy who wants to use the "transparent Grammar"? 1c

4) What software do we have to support the process of "assembling" a collection of procedures and a grammar into an NSW tool? 1d

5) How do we expect to handle tool termination, since this can be done via commands to the tool itself? Who should tell the Works Manager? 1e

We are in the process of writing a document (JOURNAL # 25009) describing the NSW process structure, which should be released in the next few days. 2

1) What does one do to make a tool backend look like packages in a PCP process? 3

Any particular PCP implementation may differ with regard to how it acquires information about what packages exist in the process, what procedures exist within the packages, what arguments and results to these procedures look like, etc. However, one might expect that this would most generally be done via tables that the process supplies to PCP containing package names and attributes, procedure names, entry points, argument types, result types, etc. Assuming this type of implementation then, one would load his procedures and supporting code, data structures, etc. together with PCP and the communication tables and store this as a program in a TBH file system. PCP will also allow the specification of initialization and termination code to be called by PCP when the process is created and deleted, respectively (see (24792,) for a description of the Tenex implementation of this). 3a

2) How does one associate a CML grammar with such packages? 4

CML makes available a declaration statement of the form 4a

DECLARE FUNCTION 4a1

PROCESS = "<simple-process-name>", PACKAGE = "<package-name>": 4a1a

proc1, proc2, proc3, ... , procn; 4a1a1

Note: an arbitrary number of processes and packages can be so declared. 4a2

When a grammar is loaded into the Frontend (it may already be there, but if not, it is retrieved from the WM), the data structures that result from this declaration are examined by the Command Language Interpreter (CLI) and a function in the Works Manager is called to: 4b

a) verify that this user is allowed to access this process 4b1

(This may not be necessary since the only tools the user can talk about are those listed in the user-profile, and only his project supervisor can change this list.), 4b1a

b) create the process as an inferior to the WM, 4b2

c) instruct the process to introduce itself to the FE, and 4b3

d) associate this process with the tool. 4b4

Please note that crash recovery of the WM implies that the process structure can somehow be put back together so that the user can continue interacting with the tool process. Much thought and discussion between SRI and MCA is needed regarding crash recovery. 4c

After the process handle is obtained, the specified packages are opened in the tool process. 4d

In addition to the process initialization and termination provided via CRTPRC and DELPRC, the command language designer can specify initialization and termination rules to execute when the tool is begun and terminated, respectively. These rules may interact with the user and call functions in the tool process. 4e

Whenever, in the course of parsing a command, the command language interpreter encounters an instruction to call a procedure in the tool process, it uses a data structure the CML compiler produced that allows the FE to locate the process handles for the process and package that contain the specified procedure. 4f

To allow for the case where two or more packages have procedures with identical names, the command language designer may invent new names (called pseudonyms) for such procedures

(and data structures) and use the invented names to avoid ambiguity. 4f1

To allow for the case of remote functions that can be called in parallel with continued interaction with the user (a PCP "out-of-line" call), the CML permits these functions to be so declared. In this case the user may also specify that a variable is to be set to EMPTY when the function is called and to be set to TRUE or the function's results, thereafter. This variable can be tested and the CLI can be instructed to suspend execution for this user until the function returns and/or to execute a CML rule when it returns. 4f2

When a tool is terminated (via a command in the WM grammar) a WM routine is called to delete the tool process (after instructing the tool process to separate from the FE via SEPPRC) and obtain accounting info to report to the user. 4g

3) What instructions can we give the guy with an extant tool, including the guy who wants to use the "transparent Grammar"? 5

Here we suggest that you read the recently puplished NVTPackage ([SRI-ARC]<nls>nvtp.txt). It describes a Package containing primitives for driving extant, user-interacting tools. The NVTP talks telnet to the extant program and PCP to the FE. The installer of such an extant program might do well to write a simple grammar tailored for his tool, although a single grammar (changed to run the correct program) will probably suffice to service most such tools, albeit somewhat clumsily. 5a

Please note that by tool, I mean a grammar, at least one tool process and a help file structured according to the rules prescribed by the NSW help tool. 5a1

How a tool purveyer informs the WM of the existence of the new tool is as yet unspecified but is undoubtedly just a matter of making entries in files somewhere. The right to make such tool installations is an administrative problem that should be augmented by safeguards built into the WM (which might just be the access safeguards present for all files in the NSW). 5b

In order for any users to actually use this new tool the list of allowed tools in their user-profile must be changed to include this new tool. How far up in the structure one must reach to find someone with sufficient authority to release a new tool is an interesting question for which I have no answer, since it seems unreasonable for a project leader to allow his project personnel to use a new tool if he, himself, does not have access to it because his project leader has not granted him access, etc. 5c

The Installation of Tools into the NSW

4) What software do we have to support the process of "assembling" a collection of procedures and a grammar into an NSW tool? 6

a) CML compiler and loader 6a

The CML compiler can be run from NLS or as a stand-alone subsystem under the TENEX EXEC. It takes formal CML and produces a relocatable binary file of CML instructions which must be loaded using TENLDR or LOADER together with the CLI rel file and the rel files for any parse functions that are to be used in conjunction with this grammar. The CML grammar (the CML instructions plus the parse functions) must then be written onto a file for later loading by the PDP-11 or PDP-10 FE. 6a1

Parse functions are simply a way of extending the CML language to do tool-dependant interaction with the user. For first year NSW they will have to be written in L10. 6a1a

b) PCP rel files 6b

These can be loaded with other application program code to produce a PCP process. The tables used to inform PCP of the external packages and procedures, etc, must be present in the application code and must have standard names in order to be properly bound by TENLDR or LOADER. Again, see (24792,). 6b1

c) NLS for Help data bases 6c

NLS can be used to create and checkout help data bases for use with new tools. 6c1

We expect in the second year of NSW development to provide assistance in tool installation and to train NSW operational staff to carry on thereafter. 6d

5) How do we expect to handle tool termination, since this can be done via commands to the tool itself? Who should tell the Works Manager? 7

a) Extant tools which are only partially (if at all) aware of NSW 7a

Extant, unchanged tools will always be run under the jurisdiction of something like the NVTP and can thus terminate in such a way that their environment is destroyed, but the NVTP must never do this. It is the real tool as far as the NSW is concerned and it must be terminated properly by PCP and the WM's tables must be properly updated. 7a1

b) Tools that are fully aware of NSW 7b

These tools (including NVTP) should be terminated via a PCP DELPRC. The WM must DELPRC it and report the accounting info to the FE so it can be shown to the user. 7b1

Ultimatly, manuals will have to be written to specify all of this. What are probable timing plans from your standpoint and how should we partition the work between SRI and MCA? 7c

CHI 6-JAN-75 16:25 25010

The Installation of Tools into the NSW

(J25010) 6-JAN-75 16:25;;;; Title: Author(s): Charles H. Irby/CHI;
Distribution: /NPG([INFO-ONLY]) RWW([INFO-ONLY]) ;
Sub-Collections: SRI-ARC NPG; Clerk: CHI; Origin: <
NSW-SOURCES, WARSHALL,NLS;1, >, 6-JAN-75 16:22 CHI ;;;;####;

KIRK 6-JAN-75 14:50 25011

Future possibilities extracted from <kelley, task-areas,>

These should be considered in the new NSW proposal. They fit as 'task areas' in the categories of 'NLS for the inexperienced user' and 'Secretaries interface'. However, most of them would be generally usefull tools in the NLS Knowledge Workshop.

KIRK 6-JAN-75 14:50 25011

Future possibilities extracted from <kelley, task-areas,>

Automatic Spelling Correction 1

Budgeting: Automatically calculating credits, debits, balances, keeping track of past expenses and income, and projecting future budjets from schedule (see scheduling). 2

Scheduling: 3

Calendar Maintenance and automatic Reminder system. 3a

Planning Future Activities 3b

Telephone call placing, answering, switching and recording. 4

Automatic dialing, re-try if busy 4a

Automatic switching of calls to your scheduled location (see scheduling) 4b

Database management 5

Entering a Record into the Database 5a

Name of record 5a1

Content of record 5a2

Location of record 5a3

Locations referencing record 5a4

Locations record references. 5a5

Modifying a Record in the Database 5b

Retrieving Information from the Database 5c

Bibliographic searching: 6

Possibile addition to the sending mail task-area 1 week
> Memo Command: Would do the same thing as the letter command but prompt and format for a memo. 7

KIRK 6-JAN-75 14:50 25011

Future possibilities extracted from <kelley, task-areas,>

(J25011) 6-JAN-75 14:50;;;; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /RWW([ACTION]) NPG([INFO-ONLY]) ; Sub-Collections:
SRI-ARC NPG; Clerk: KIRK;

JBP 6-JAN-75 16:23 25012

Regarding 25007

About (gjournal, 25007,) what are the answers ???
--jon,

1

JBP 6-JAN-75 16:23 25012

Regarding 25007

(J25012) 6-JAN-75 16:23;;;; Title: Author(s): Jonathan B. Postel/JBP; Distribution: /HGL([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: JBP;

this is a test message to vgc. 1

(J25013) 6-JAN-75 18:11;;;; Title: Author(s): Vinton G. Cerf/VGC;
Distribution: /VGC([INFO-ONLY]) HG([INFO-ONLY]) ;
Sub-Collections: NIC; Clerk: VGC;

JCN 6-JAN-75 20:52 25014

Cavano Trip to ARC re Accounting System

Joe: Sure come on out next week. How about Wednesday and/or Thursday.
Lots of potentials in the Accounting applications you suggest. Jim 1

JCN 6-JAN-75 20:52 25014

Cavano Trip to ARC re Accounting System

(J25014) 6-JAN-75 20:52;;;; Title: Author(s): James C. Norton/JCN; Distribution: /JPC([ACTION]) RWW([INFO-ONLY]) JHB([INFO-ONLY]) DLS([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JCN;

RLL 6-JAN-75 22:31 25015

Viewpspec Q not working

viewspec Q does not function in curretn version of NLS8 but it is advertised in latest yellow viewspec card. Whixh is the bug? the card or the system 1

RLL 6-JAN-75 22:31 25015

Viewpspec Q not working

(J25015) 6-JAN-75 22:31;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /FEED([ACTION]) KIRK([INFO-ONLY]) POOH([INFO-ONLY]) JHB([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: RLL;

RLL 6-JAN-75 22:39 25016

Sug: more meaningful prompts

I am sure this suggestion has been mentioned many time before but for the record: i believe the prompts wuld be better if they related to the user rather than the system. e.g. "C" should be plit between Commandverb (C) and Noun (N). this would help in such subsystems wher th verb is not needed. (Sendmail: where the noun actually means submit NOUN).
"T" should be replaced by something indicating LINK or text or FILeetc. (this is most likely a bit harder to impplement than the first split) Well I am sure other examples can be found. Robert 1

RLL 6-JAN-75 22:39 25016

Sug: more meaningful prompts

(J25016) 6-JAN-75 22:39;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /FEED([ACTION]) NP([INFO-ONLY]) ; Keywords: suggestion prompts; Sub-Collections: SRI-ARC NP; Clerk: RLL;

SRL 7-JAN-75 08:14 25017

NEW NAME: Not Lee but Roetter

I have a new name - Roetter instead of Lee - pronounced like rotor. 1

My network address will be roetter@sri-arc or office-1 and my ident sgr as of Wednesday, January 8. 2

The old directory will be around for awhile to catch any messages sent to the old name. 3

SRL 7-JAN-75 08:14 25017

NEW NAME: Not Lee but Roetter

(J25017) 7-JAN-75 08:14;;;; Title: Author(s): Susan R. Lee/SRL;
Distribution: /SRI-ARC([INFO-ONLY]) JCN([INFO-ONLY] how about
sending a copy of this to RADC and ARPA?) ; Sub-Collections: SRI-ARC;
Clerk: SRL; Origin: < LEE, NAM,NLS;1, >, 7-JAN-75 08:12 SRL
;;;;####;

DVN 7-JAN-75 08:48 25018

Re 24997: Proposed Documentation Request Branch in Feed

Sounds very good to me. 1

DVN 7-JAN-75 08:48 25018

Re 24997: Proposed Documentation Request Branch in Feed

(J25018) 7-JAN-75 08:48;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /JOAN([ACTION] dirtnotebook please) DIRT([INFO-ONLY]) ; Sub-Collections: SRI-ARC DIRT; Clerk: DVN;

JAKE 7-JAN-75 10:49 25019

Al Dean Visit

I would like to sit in on main presentation by Al Dean. Would like to know what they have in mind as I think some of NSAs problems are similar to NIC ones judging from past dicussions with Jesse Hill. Let me know what schedule is (I have anotrher visitor also). Thanks. Jake

1

JAKE 7-JAN-75 10:49 25019

Al Dean Visit

(J25019) 7-JAN-75 10:49;;;; Title: Author(s): Elizabeth J. (Jake) Feinler/JAKE; Distribution: /RWW([ACTION]) DCE([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: JAKE;

HGL 7-JAN-75 13:33 25020

ISI Questions: Markers and Statement Names

6-JAN-75 2215-PST ROTHENBERG at USC-ISIB: Markers
Distribution: NLS-HELP:
Received at: 6-JAN-75 22:15:57 1

Is the limit of 10 markers a hard one ? How difficult would it be to extend this ? 1a

Do markers adhere to a user or to a file ? (base or PC ?) 1b

When do they go away (if ever) except when deleted ? 1c

Why aren't they handled right when deleting characters in the statement containing the marker ? (They seem to do funny things in this case). 1d

If they adhere to the user, are they attached to a user by login directory, initials, or some other means ? 1e

It seems easier to ask than to continue playing with them, as I've been doing all evening. There are a couple of uses we might put them to, but the limit of 10 is hard to live with. 1f

Also, I gather the name-length is limited. Is that a hard limit ? 1g

Thanks, 1h

Jeff 1i

Jeff- 2

The marker limit is currently a hard one because of the implementation used. Markers live in the file header in a limited space. They were not implemented properly and have several bugs. They adhere to the file, not the user. While they should do the right thing when deleting characters (this should be handled by the correspondence list and their not working for you may indicate a fixable bug), they run into problems on updates. 2a

Several people in the past have requested that markers be fixed (Doug Engelbart in particular, Dirk van Nouhuys, etc.) They have not been expanded or fixed due to limitations in resources and in the file structure. 2b

While we have no immediate plans to expand the facility, the new file system could at least provide space for marker tables. It is certainly something which could be considered. 2c

ISI Questions: Markers and Statement Names

As for statement names: the limit is not hard. In fact, someone recently enlarged it from 40 to 100 characters. This "limit" is not a function of the file structure, but rather of the code. (A local string declaration in the ESC (end string construction) procedure.) To have a truly flexible length would not be impossible. 2d

Harvey 2e

HGL 7-JAN-75 13:33 25020

ISI Questions: Markers and Statement Names

(J25020) 7-JAN-75 13:33;;;; Title: Author(s): Harvey G. Lehtman/HGL;
Distribution: /RWW([INFO-ONLY]) CHI([INFO-ONLY]) RLB2([
INFO-ONLY]) DVN([INFO-ONLY]) DSM([INFO-ONLY]) EKM([INFO-ONLY
]) ; Sub-Collections: SRI-ARC; Clerk: HGL;

POOH 7-JAN-75 14:11 25021

Businss Cards

Please turn in your orders for business cards by Wednesday afternoon (jan. 8) so I can order them. Thanks. 1

POOH 7-JAN-75 14:11 25021

Businss Cards

(J25021) 7-JAN-75 14:11;;;; Title: Author(s): Ann Weinberg/POOH;
Distribution: /SRI-ARC([ACTION]) ; Sub-Collections: SRI-ARC; Clerk:
POOH;

DVN 7-JAN-75 21:00 25022

The System Should Know When You Have Brought Yourself Below Your Page Allocation

When you have exceeded your file space allocation, the system tells you you cannot write on a file. if you then delete and expunge to bring yorself within limits it will still! not let you write on it. Some times it will let you work if you jump to the same spot as a link, sometimes if you reload the file, and some tiems you have to reset. This has got to be one of the most maddening bugs in the system.

DVN 7-JAN-75 21:00 25022

The System Should Know When You Have Brought Yourself Below Your Page Allocation

(J25022) 7-JAN-75 21:00;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /FDBK([ACTION]) ; Sub-Collections: SRI-ARC FDBK; Clerk: DVN;

RLL 7-JAN-75 22:37 25023

SUG: action/info change to 'to/copy to'

How about changing the distribute for action/information only to distribute to/copy to in the sendmail subsystem, this conforms with the way most organizations split their distribution list (TO and CC) It also conforms to the sndmsg split. More importantly I think it is the recepient that must decide whether action is needed. 1

RLL 7-JAN-75 22:37 25023

SUG: action/info change to 'to/copy to'

(J25023) 7-JAN-75 22:37;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /FEED([ACTION]) NP([ACTION]) NDM([INFO-ONLY]) ; Keywords: suggestion sendmail; Sub-Collections: SRI-ARC NP; Clerk: RLL;

SGR 8-JAN-75 09:33 25025

name change

The directory Lee will be around until people stop sending messages to that directory name. I'll fix up th ident srl so it will work as a group as you suggested. I'm moving files when I have time - hopefully by the end of this week. I'll send a copy of the message to ARPA, RADC and probably NSA since I di deal with those groups. Hope things are going well in Wash.!!

1

SGR 8-JAN-75 09:33 25025

name change

(J25025) 8-JAN-75 09:33;;;; Title: Author(s): Susan Gail Roetter/SGR; Distribution: /JCN([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: SGR;

KEV 8-JAN-75 10:41 25026

division of labor for frontend tasks

At a meeting the other morning between Charles, Don and myself, we agreed to the following division of labor for taking prime responsibility for the following frontend task areas. 1

CHI DIA KEV 1a

Memory Management 1a1

CHI 1b

FE Grammars 1b1

CLI 1b2

Loading Grammars, Parse-Functions, And User-Profiles 1b3

DIA 1c

L10 Runtime 1c1

Terminal Support 1c2

KEV 1d

ELF Maintainance 1d1

Debugger 1d2

PCP 1d3

Reload Roms 1d4

Crash Recovery 1d5

Undecided 1e

Other OSI Stuff 1e1

File Stuff 1e1a

User Interface To File Stuff 1e1b

Date And Time 1e1c

KEV 8-JAN-75 10:41 25026

division of labor for frontend tasks

(J25026) 8-JAN-75 10:41;;;; Title: Author(s): Kenneth E. (Ken) Victor/KEV; Distribution: /NPG([INFO-ONLY]) RWW([INFO-ONLY]) ; Sub-Collections: SRI-ARC NPG; Clerk: KEV;

JAKE 8-JAN-75 12:05 25027

Listings from Tymshare for KWAC clients

At present KWAC listings from Tymshare are not being distributed. Mike Placko and presumably others are concerned about this. My understanding is that Tymshare packages are to be delivered to Sandy and she is to distribute the listings and pass the journal stuff on to Adrian for filing. If this is not the procedure, please let me know what it is. Thanks, Jake

Listings from Tymshare for KWAC clients

(J25027) 8-JAN-75 12:05;;;; Title: Author(s): Elizabeth J. (Jake) Feinler/JAKE; Distribution: /FEEDBACK([ACTION]) JCN([ACTION]) SLJ([ACTION]) JHB([ACTION]) ; Sub-Collections: SRI-ARC FEEDBACK; Clerk: JAKE;

RWW 8-JAN-75 15:58 25028

NOTES ON NLS BACKEND ON OTHER MACHINES

Notes compiled at request of Bill Carlson.

NOTES ON NLS BACKEND ON OTHER MACHINES 1

INTRODUCTION 2

NLS or any interactive system can be viewed as consisting of two major pieces, a Frontend (FE) containing all facilities for handling the user interaction and terminal control, and a Backend (BE) containing the basic information processing and file manipulation operations. These two parts can reside on the same or different machines. The discussion in this note only refers to the NLS BE part. It is assumed that the FE functions be supported in an appropriate mini-computer environment as to be supplied by NSW FE. 2a

REQUIREMENTS 3

Requirements on a system, in hardware and operating system, for effectively running the NLS Backend are the following: 3a

1) File System 3a1

Support of efficient random access files. 3a1a

File access control and protection capabilities. 3a1b

2) Operating system environment that supports shared reentrant subsystems. 3a2

3) Good byte or character manipulation instructions (not absolutely essential but valuable for efficiency.) 3a3

4) Ability to implement an L-10 runtime package and either L-10 compiler debugging tools or be the target for cross compiler from system with L-10 compiler and debugging support across ARPANET. 3a4

Main implication here is ability to perform stack operations efficiently. 3a4a

MACHINES WE KNOW ABOUT 4

Within ARC we have people who have done system programming on IBM 360's, Multics, Burroughs 6700. 4a

To the best of our knowledge all three of these systems could be used for an NLS BE. We are particularly interested in studying in more detail what would be involved for a move to 360/370 world, but are interested to try move to others as well. If it can be moved to an IBM environment it can be moved anywhere (tongue in

cheek), although we hear that new IBM VS VSAM environment could be very close to present NLS file structure, but we would need to look into this more closely. From what we hear, it should go to a VS environment rather than an OS one if it were to go to IBM system. 4b

TASKS 5

The basic tasks involved in such a movement of NLS would be: 5a

1) Create L-10 programming-debugging environment including PCP facilities on target machine. 5a1

2) Implement operating system interface that we are creating to facilitate portability. 5a2

3) Any modifications to NLs code as needed. 5a3

The level of effort required for the first BE move probably bounded at 3-4 man year level. Depending on debugging, and operating system facilities available it could be considerably less. 5b

IMMEDIATE RECOMMENDATIONS 6

Participation by ARC in any study and procurement specifications contemplated by end user communities. From an R & D point of view it would be particularly useful to perform the move to two different systems to allow experimentation on performance and to yield more generality in portability techniques used. 6a

NOTES ON NLS BACKEND ON OTHER MACHINES

(J25028) 8-JAN-75 15:58;;;; Title: Author(s): Richard W. Watson/RWW;
Distribution: /WEC([ACTION]) SRI-ARC([INFO-ONLY]) ;
Sub-Collections: SRI-ARC; Clerk: RWW; Origin: < WATSON,
BE.NLS;2, >, 8-JAN-75 11:59 RWW ;;;;####;

JAKE 8-JAN-75 16:27 25029

Reply to Major Kanter

8-JAN-75 1534-PST FEINLER: Nicnotes at Office-1
Distribution: AFWL-PRP AT ISI, feinler
Received at: 8-JAN-75 15:34:31 1

Dear Major Kanter, 1a

Your message was turned over to me as Manager of the NIC and I apologize for being so tardy with an answer...Christmas and the flu ganged up on me. 1b

The Nicnotes memo was left at Office-1 until it was automatically archived. This happens after 21 days if the file is not accessed. Since it was sent to all Liaison and they were the principal ones interested, I presume no one was accessing it and it disappeared. 1c

I can retrieve it for you if it is of particular interest. At present there is no 'general status' message. I tend to send out infrequent memos to the Liaison from time to time, but there is no formal news item at this time. We hope to have one in the future. 1d

If you would like that particular memo called back or if you have specific questions I could answer for you please let me know. 1e

Regards, Jake (FEINLER@SRI-ARC) 1f

JAKE 8-JAN-75 16:27 25029

Reply to Major Kanter

(J25029) 8-JAN-75 16:27;;;; Title: Author(s): Elizabeth J. (Jake) Feinler/JAKE; Distribution: /FEEDBACK([INFO-ONLY]) ;
Sub-Collections: SRI-ARC FEEDBACK; Clerk: JAKE;

DCE 8-JAN-75 16:48 25030

Visit notes, 8 Jan 75: Don Atkinon, Bell of Canada

JCN, I'd like to talk about this when you return.

DCE 8-JAN-75 16:48 25030

Visit notes, 8 Jan 75: Don Atkinon, Bell of Canada

Don Atkinson, of Bell Canada, dropped by. He has been on vacation, I gather. We talked for about an hour. Following are the misclianeous notes we generated. 1

Don reminded me about a prior discussion concerning multiple sponsorship of special developments. 2

I told him that Jim and I had discussed the matter, and agreed upon the value of having quck an easy ways for groups of our clients to sign up in common support of "multi-client" development tasks; for government clients we can't arrange this setup (for this next year), but we'd like to keep evolving the buying arrangement toward that end. 2a

They would be interested in cooperating in any special development required for a Frontend system that could provide better support economy for a remote cluster of terminals. 2b

Raises an interesting question -- for a client that is wired directly to the Backend, not using the Net, would there be much difference in the (NSW) Frontend configuration, efficiency, etc.? 2c

E.g., would he need ELF? Could he have less core tied up in basic support software, leaving more for user support? Would there be a special problem in setting this up? 2c1

They have rearranged their office a bit toward facilitating clerical support, especially their off-line input stations. 3

ALso, special note -- he thinks that DEX doesn't work with NLS8. This needs checking. 3a

He mentions their moving toward (or wanting to??) doing some local user programming. 4

I showed him the (NLS, XPROCS,) file, for support procedures to a user programmer. Also, demonstrated my user progremer <Engelbart>in. 4a

Have some "innovative" inclinations, partly towards showing results from their investments. Don's boss seems to want to be having some products that help justify their expenditure. 4b

Discuss the problems and possible stategies of their follow-on handling of AKW stuff. 5

We once discussed the possibilty of their getting a TENEX for the Bell system, part of which could support NLS. Don doesn't have

Visit notes, 8 Jan 75: Don Atkinon, Bell of Canada

any new input about this, but we did review the possibile stages of downstream NLS support they might be watching for: 5a

Last visit, we discussed the advantage of a Frontend mini. This could be their next stage. Then the potential successor of this is to get more and more of the NLS execution done in the mini, toward a stand-alone configuration. 5a1

Now, can mention the growing probability of NLS Backend being moved onto other machines, one of which might be locally accessible for them. 5a2

Also mentioned Farber's multi-machine operating systems, and the new types of minis that could make such a modular-growth system of considerable interest. 5a3

Discuss the transition to larger user communities. 6

Like, would you have to cut-over the whole of a large group into working in the AKW mode, in one step? (Answer -- no, no. He agreed. I said that as far as we were concerned, the same mode that they've been using, of having an architect, of doing gradual transitions, etc., would be the bes bet we'd know of.) 6a

Raised the question with him about the extapolation of their experiment into other Bell application domains. 7

Assume that his group (Business Planning Group) would have two kinds of interest, represnting Bell Canada: 7a

For future application wihin the Bell organization, and 7a1

For the business opportunities and challenges of their organization, foreseeing the way AKW-like stuff will be used, its service needs, etc. 7a2

He has to make a study in the next three weeks, as one cut of this, for the immediate purpose of satisfying his boss that they should continue. Mentions that his current total investment rate in this AKW stuff is of the order of what it would cost to double his group's salary load (I gather that he is speaking of about a six-person group). 7b

I was curious about the active, voice/video teleconferencng set up that seemed to be being used among their distributed cmpanies, whether his group had made any direct study of the application of NLS, especially shared-screen dialogue, to this end. (Apparenty not). 7b1

DCE 8-JAN-75 16:48 25030

Visit notes, 8 Jan 75: Don Atkinon, Bell of Canada

I was extremely interested in this topic, and pressed hard at the end of our discussion to try to understand the problem. For instance, were they really looking outside their group and assessing the higher-payoff application possibilities within the Bell organization? (Didn't appear that they were, although Don acknowledged that this was one of the legitimate goals). 7c

He will be back at SRI in May, for a LRPS-client meeting (I think that's the occasion), and we agreed to discuss the matter further then. 7c1

As a parting shot, I asked him if Bell might be interested in having a sort of Canadian franchise for serving exploratory AKW users -- something that would do double duty of 1) providing economies of scale for Bell's own AKW service, while at the same time 2) providing prototype experience in running a type of "information utility" of the sort that his group's publications strongly argue for as the target business for today's telephone industry. 7d

He thought that it sounded like a feasible thing to discuss. 7d1

Basically, I felt that smething seemed amiss in his statement of their position. I can understand what he expressed regarding the corporation's hard look at expenditures (for instance, that competition for these same dollars exists in the development of Bell's banking-support sytem, where Bell has announced open competition with IBM); 7e

What puzzled me was the absence of any substantial framework for their experimnt with AKW, or of relatedness to serious long-range planning for the corporation. 7e1

Jim and I will talk about this, I expect. 7e2

NOTE: It occured to me that Bell would benefit considerably if we could shift their NLS support to the BBN TENEX (with the same "slot-buy" arrangement). I didn't bring the question up with Don, but I'd like to talk it over with you, Jim. 8

DCE 8-JAN-75 16:48 25030

Visit notes, 8 Jan 75: Don Atkinon, Bell of Canada

(J25030) 8-JAN-75 16:48;;;; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /JCN([ACTION]) JHB([INFO-ONLY]) RLL([INFO-ONLY]) NDM([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DCE;