JRP 1-MAY-74 10:06 30597

Grumble, grumble

Doesn't anyone read this? where is the response to my message re, RUNFIL????????????? 1

JRP 1-MAY-74 10:06 30597

Grumble, grumble

(J30597) 1-MAY-74 10:06; Title: Author(s): John R. Pickens/JRP;
Distribution: /FEED; Sub-Collections: NIC; Clerk: JRP;

Abstract - TR 67 thru 64

Controlled Information Sharing in a Computer Utility

Dean Hanawalt Vanderbilt

October 24, 1969 MAC TR-67 AD 699-501

A_B_S_T_R_A_C_T_

Abstract - TR 67 thru 64

A computer utility is envisioned as a large, multi-access computer system providing its users with the ability to store information and share its use with other system users. This thesis considers the nature of information sharing and how a computer utility can provide facilities allowing such sharing to take place in a controlled manner.

From a discussion of the goals of a computer utility, a set of requirements for the facilities of the utility is described. A model is developed which presents a method for structuring information. It is shown that the mechanisms of the model preserve certain structural characteristics of the information, and that these properties can be directly related to the requirements regarding the control of shared information. Extensions of the basic model are described which allow more selective types of control and which remove some of the limitations of the basic model.

Abstract - TR 67 thru 64

Recognition of Topological Invariants by Iterative Arrays

Wendall Terry Beyer

October 24, 1969 MAC TR-66 AD 699-502

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A study is made of the recognition and transformation of figures by iterative arrays of finite state automata. A figure is a finite rectangular two-dimensional array of symbols. The iterative arrays considered are also finite, rectangular, and two-dimensional. The automata comprising any given array are called cells and are assumed to be isomorphic and to operate synchronously with the state of a cell at time t+1 being a function of the states of it and its four nearest neighbors at time t. At time t=0 each cell is placed in one of a fixed number of initial states. The pattern of initial states thus introduced represents the figure to be processed. The resulting sequence of array states represents a computation based on the input figure. If one waits for a specially designated cell to indicate acceptance or rejection of the figure, the array is said to be working on a recognition problem. If one waits for the arrays to come to a stable configuration representing an output figure, the array is said to be working on a transformation problem.

In addition to the formal results, several open questions are presented and some iterative programming techniques are considered.

Abstract - TR 67 thru 64

Practical Translators for LR(k) Languages

DeRemer, Franklin L.

Abstract - TR 67 thru 64

October 24, 1969 MAC-TR-65

A_B_S_T_R_A_C_T_

A context-free syntactical translator (CFST) is a machine which defines a translation from one context-free language to another. A transduction grammar is a formal system based on a context-free grammar and it specifies a context-free syntactical translation. A simple suffix transduction grammar based on a context-free grammer which is LR(K) specifies a translation which can be defined by a deterministic push-down automation (DPDA).

A method is presented for automatically constructing CFSTs (DPDAs) from those simple sufix transduction grammars which are based on the LR(K) grammars. The method is developed by first

considering grammatical analysis from the string-manipulation viewpoint, then converting the resulting string-manipulation algorithms to DPDAs, and finally considering translation from automata-theoretic viewpoint.

The results are relevant to the automatic construction of compilers from formal specifications of programming languages. If the specifications are, at least in part, in part, based on CFSTs.

A Graph Model for Parallel Computations

Rodriguez, Jorge E.

September, 1969 MAC TR-64 AD 697 759

A_B_S_T_R_A_C_T_

Abstract - TR 67 thru 64

This report presents a computational model called _p_r_o_g_r_a_m _g_r_a_p_h_s which makes possible a precise description of parallel computations of arbitrary complexity on non-structured data. In the model, the computatiion steps are represented by the _n_o_d_e_s of a _d_i_r_e_c_t_e_d _g_r_a_p_h whose _l_i_n_k_s represent the elements of storage and transmission of _d_a_t_a and/or _c_o_n_t_r_o_l information. The activation of the compulation represented by a node depends only on the control information residing in each of the links incident into and out of the node. At any given time any number of nodes may be active, and there are no assumptions in the model regarding either the length of time required to perform the computation represented by a node or the length of time required to transmit data or control information from one node to another. Data dependent decisions are incorporated in the model in a novel way which makes a sharp istinction between the local sequencing requirements arising from the data dependency of the computation steps and the global sequencing requirements determined by the logical structure of the algorithm.

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Abstract - IR 67 thru 64

(J30598) 1-MAY-74 12:17; Title: Author(s): Herb S. Hughes/HSH;
Distribution: /HSH ; Sub-Collections: NIC; Clerk: HSH;

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Practical Translators for LR(K) Languages 115

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DeRemer, Franklin L. 120a

October 24, 1969 MAC-TR-65

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(J30599) 1-MAY-74 12:25; Title: Author(s): Herb S. Hughes/HSH;
Distribution: /HSH ; Sub-Collections: NIC; Clerk: HSH;

Abstract - TR 67 thru 64

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Abstract - IR 67 thru 64

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Abstract - TR 67 thru 64

(J30600) 1-MAY-74 12:46; Title: Author(s): Herb S. Hughes/HSH;
Distribution: /HSH ; Sub-Collections: NIC; Clerk: HSH;

BBN response to ELF User Questionnaire

DH-11 (16 lines) 7e

B, BBN-11X and BBN-11XB: 8

Kw-11P Programmable Clock 8a

BBN-SPEECH: 9

PDP-11/40 with EIS and Memory Management 9a

40-48K parity memory 9b

KW-11P Programmable Clock 9c

DL-77D EIA Interface 9d

SPS-41 9e

Telefile DC16H/DD213 disk 9f

A/D - D/A converters 9g

IMP Interface 9h

IV, A, 1 "full time" systems programmer 10

B, One hardware man with PDP-11 training 10a

C, 1-2 programmers 10b

D, Cross-Net debugger, bootstrap 10c

Kahn-Cerf TCP 10c1

E, Specs and Manuals for above, Willing to help with ELF documentation, 10d 10d1

V, B, New system releases, bug fixes etc, 11

VI, A, XNCP; for DDT experiment; ASAP 12

Virtual Memory; for same; ASAP 12a

Ability to run user code; for TCP; ASAP 12b

DH-11 drivers; for terminal support; ASAP 12c

Local File System; For MST, Speech; July '74 12d

Support of scope terminals; for MST; Oct, '74 12e

Multi-telnet; for MST; Oct, '74 12f

Server TELNET; for Speech system; July '74 12g

VII, We are willing to share in the developement work on 13

the system, 14

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DHC 1-MAY-74 12:58 30601

BBN response to ELF User Questionnaire

(J30601) 1-MAY-74 12:58; Title: Author(s): David H. Crocker/DHC;
Distribution: /DHC; Sub-Collections: NIC; Clerk: DHC;

NSA response to ELF User Questionnaire

- - - -

I, a, National Security Agency

b, NSA@office-1 Attn Dennis L, Mumaugh

II, a, Monitor ELF developments

b, Possible use as front end for net attachment (4Q Cy '74)

III, b, PDP-11/45 48K; 2 RK05's; DH11; DECtape; LS11

IV, Unknown

V, Undecided

VII, Want to maintain full contact with developments, Any postal mail

can be sent to the station agent for NSA, ATTN: Dennis Mumaugh,

Also, would like a copy of the ELF Status Report you outlined in

your letter to Dave Retz if possible

NSA response to ELF User Questionnaire

(J30603) 1-MAY-74 13:12; Title: Author(s): David H. Crocker/DHC; Distribution: /DHC; Sub-Collections: NIC; Clerk: DHC;

Stanford U, Digital Sys, response to ELF User Questionnaire

- - - - 1

I, A, Stanford University - Digital Systems Laboratory 2

B, Dr, John Wakerly 2a

ERL 226 2b

Stanford University 2c

Stanford, California 94305 2d

II, A, Terminal access to ARPA Net 3

Mail Drop (FTP) -- not operational yet 4

B, Basic Internetwork Protocol exp (May-June, '74) 4a

Gateway & transmission control control program for 4b

Internetwork host communication (June-Dec, '74) 4c

Host/Multi-Imp connection exp, (? still in thinking mode) 4d

III, A, PDP-11/20 with large system option/28K memory 5

1 RS64 Disk - 64K bytes 6

1 Diablo 44 5,6 Megaword disk (16 bit/word) 7

2 DECTapes 8

1 Line printer 9

1 Card reader 10

4 Terminal interfaces (up to 1800 baud) 11

1 Omron CRT terminal 12

3 TI Silent 700's 13

1 VDH Interface (to SRI-AI Imp) 14

1 General Purpose CRT (1024 x 1024) - not operational 15

B, No further additions planned, other than auto-answer 15a

data sets on some terminal interfaces, 16

DHC 1-MAY-74 13:24 30604

Stanford U, Digital Sys, response to ELF User Questionnaire

(J30604) 1-MAY-74 13:24; Title: Author(s): David H. Crocker/DHC; Distribution: /DHC; Sub-Collections: NIC; Clerk: DHC;

UC Berkely reponse to ELF User Questionnaire

- - - -

I, A, UCB

B, M, O'Malley (OMALLEY@BBN)

II, A, Speech research -- Net front end

B, DOS replacement (9-1-74)

Speech I/O & analysis

III, A, 16K -> 28K

GT40 with 8K

IMS Disk - 2 1/2 M words

Home-made speech I/O

EIS

VDH

B, More core

ELF II -- will need a minimum of 32K and really need 48K,

IV, B, Yes -- I hope

C, Yes

D, Graphics for speech

Command Language

E, What's that?

DHC 1-MAY-74 13:25 30605

UC Berkely reponse to ELF User Questionnaire

(J30605) 1-MAY-74 13:25; Title: Author(s): David H. Crocker/DHC; Distribution: /DHC; Sub-Collections: NIC; Clerk: DHC;

DHC 1-MAY-74 13:26 30606

ISI-Speech response to ELF User Questionnaire

- - - -

I, A, USC-ISI Network Secure Communications

(alias speech compression) project

B, Paul Raveling: Raveling@ISI

II, A, Terminal access to the Network ... This is mainly a convenience

for using PDP-11 and SPS-41 support software which is

operational on TENEX at ISI,

B, Interactive debugging for SPS-41 programs ..

.. to be accomplished initially by quick

& dirty conversion of SPUD, May 1

Voice transmission using CVSD encoding --

mid May; CVSD protocol requires some facilities

of the XNCP,

Voice transmission using LPC --

.. to be completed by December, first

experimental transmissions by August,

III, A, PDP-11/45 System, serial number 772

KB11-A Central Processor, with the following options:

KT11-C Memory Management

FP11-B Floating Point Processor

Memory:

Size	Start addr	Speed	Type	
16K	0	900	Core -- DEC MF-11L	24
16K	100000	1250	MOS -- Monolithic Systems Corp,	25
1K	300000	300	Bipolar -- DEC MS11-C	26

Pseudo-peripherals: 28

KW11-P Programmable Clock 29

BM792-YB ROM boostrap for RK05 30

Genuine Peripherals: 32

Intfce/Vector locs	Cntrler	Device type, options	
777560 / 60	DL11-A	KSR-33 Teletype	34
777566 / 66			35
776500 / 300	DL11-B	** 2400 baud, EIA Rs232C	36
776510 / 310	DL11-B	** 2400 baud, EIA Rs232C	37
77516 / 316			38

** Niether DL11-B is dedicated to a particular device; 39

The devices most frequently used are PDP-10's and 39a

Beehive terminals, 39b

777550 / 70	PR11	PC05 Paper tape reader (no punch!)	39c
777552 / 72			39d
777400 / 220		RK11-D RK05 DECpack cartidge disk drive	39e
777416 / 222			39f
764000 / 170		ISI IMP Interface	39g

764016 / 176 39h

765000 / 174 SPS-41 (serial number 5) 39i

765016 / 176 ** internal memories at 740000 **
39j

40

B, Planned/possible hardware additions with schedule: 40a

Possibly 16K more core (not scheduled), 41

42

IV, A, Staff: The speech project can't commit staff specifically 43

to ELF support, In actual practice, it's possible 44

that we could have up to 2 people available this 45

summer for ELF support specifically required 46

by our project, but which is likely to be useful to 47

other sites, But we can't guarantee it!!! 48

B, Hardware maintenance: None, The only hardware this 48a

would seem to apply to would be Bob Parker's 49

IMP interface, ISI is willing to supply complete 50

documentation on it to anyone who wants to build 51

a copy, but that's all, 52

C, Software maintenance: ISI can supply maintenance for 52a

its own ELF systems in the sense of configuring 53

it to our particular hardware & application 54

requirements, installing new goodies, and 55

fixing routine bugs, We will continue to maintain 56

and upgrade publicly available support software 57

on TENEX for PDP-11s and SPS-41s,

D. 1. LPC speech transmission -- third level protocol implementation, SPS-41 interfacing, LPC algorithm on SPS-41

2. CVSD speech transmission -- quick & dirty third level protocol & SPS-41 code.

3. SPS-41 debugging support under ELF (son of SPUD?)

-- Since all of the above may be of interest to the NSC community, we will attempt to make the application code easily shareable among ELF sites.

4. General PDP-11 support --- File transfer programs to exchange files between TENEX and DOS via a local 2400 baud line.

E. Documentation: 1 Xerox Graphic Printer with support on TENEX, no humans attached. Whenever possible we'll keep documentation files online for software and for peculiar hardware (the SPS-41).

V. B. ** New code: Our applications require features not available in the currently released version of ELF. The ability to share application routines with other NSC sites using ELF requires a standard implementation of the new features (XNCP, address mapping, I/O facilities, etc.), which means we'll be dependent on Dave Retz & the SCRL gang for this.

64

** Routine maintenance -- It would be sufficient to 65
receive news (via the ELF user's group?) of bugs 65a
discovered by any of the ELF sites, fixes for 65b
bugs, and incremental improvements. Bug reports and 65c
their local fixes could be filed by any 65d
ELF user; incremental improvements would be cleared 65e
by Dave Retz, and would include the officially 65f
sanctioned versions of bug fixes. (see comment 65g
at the end for more on this) 65h

C. We do not require site specific software from an external 66
source, but it's virtually certain that other sites will 67
develop applications which could be of use to us. The 68
important point here is to have information made available 69
on useful applications and to insure that they are easily 70
portable via standardization of ELF. 71

D. Yes!!!!!!! 72
We need detailed documentation on system calls, 73
particularly for the still-unreleased version of ELF. 74
Information on I/O calls, other than for Network I/O, 75
is particularly important. <elfdev>elfdoc.doc @ SRI was 76
an excellent start toward this before it was read-protected. 77

78

VII. System maintenance and the joys of shared software could 79
benefit by improved communication among the Elf community. 80

A cople things I wouldn't mind seeing in the near future
are the following:

-- A catalog of ELF application code which may be of interest
to sites other than its originator. This could be as simple
as a file in the ELF users group account at SRI which each
site could append such descriptions to, or it could
be as elaborate as a genuine online catalog maintained
by a central ELF librarian.

-- A bug file, with descriptions of temporary fixes
or info on where to find such a description whenever one
exists. This could also be as simple as a
frequently-appended-to file, or some ambitious soul
could come up with a more organized scheme, such as IBM's
APAR/PTF scheme.

Our most troublesome problems with ELF at present
are ...

1. Waiting for calling sequences to ELF primitives to stabilize
(i.e., waiting for the next version of the system).

2. Waiting for the XNCP facilities
(i.e., waiting for the next version of the system).

3, Waiting for complete documentation of primitive calls,

-- Delay in availability of the XNCP has reached a critical point in our schedule for implementing CVSD; we'll have appears that we'll have to forgo waiting for it and modify the existing NCP this week,

-- At present the only well-defined I/O primitives in ELF are for network i/o, Lacking a well-defined, stable, and well-documented i/o structure for application processes, we're supplying one by writing an intermediate i/o interface, which appears to user processes as part of ELF and appears to ELF as part of the user processes, It provides TENEX-like calls (GTJFN, OPENF, SIN, SOUT, etc,) for user processes and will translate these into ELF system calls,

That list of problems shouldn't be taken to mean ELF is troublesome for us -- of all the systems available for our type of application ELF is the best, The problems arise from growth pains in expanding the system into a new application domain -- they'll vanish when the new superELF emerges from SCRL (with documentation),

ISI-Speech response to ELF User Questionnaire

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DHC 1-MAY-74 13:26 30606

ISI-Speech response to ELF User Questionnaire

(J30606) 1-MAY-74 13:26; Title: Author(s): David H. Crocker/DHC;
Distribution: /DHC; Sub-Collections: NIC; Clerk: DHC;

undeliveralbe mail

- - - -

Date: 30 APR 1974 1213-PDT

From: BEDFORD at OFFICE-1

Subject: this is a test of the ability to send messages to a group of individuals by addressing it to SENDERIDENT/RECEIVERIDENT@NIC, where SENDERIDENT is the ident of the sender, and RECEIVERIDENT is the ident of any individual or group.

- - - -

oops, I got carried away and put the message where the title should be, If anyone doesn't get this message, let me know.

----

undeliveralbe mail

(J30607) 1-MAY-74 13:41; Title: Author(s): Michael T. Bedford/MIKE; Distribution: /BELL-CANADA; Sub-Collections: NIC BELL-CANADA; Clerk: MIKE;

DHC 1-MAY-74 13:50 30608

SRI-ARC response to ELF User Questionnaire

- - - -

I, A, SRI-ARC

B, ANDREWS@SRI-ARC

II, A, no current applications

B, intended applications:

(We expect our PDP-11 will be delivered early MAY),

We intend to use ELF at first as a terminal concentrator/ARPANET

access device for Line Processor terminals,

Mainly, we intend to develop a NLS-frontend command parser in BCPL

to run under ELF and drive 16 or so Line Processor terminals,

III, A, currently we have a PDP-10 connected to am IMP

B, intiially we will have (A,) plus a PDP-11 connected to the PDP-10

via the data line scanner and a DL-11 on the PDP-11, We hope to load

programs and do debugging with this configuration,

In about 6 mo, we will just have the PDP-11 connected to the IMP

via an ANTS interface, We then hope to run NLS ina

frontend/backend mode using a PDP-10 connected to the network

(such as OFFICE-1),

The PDP-11 will be an 11/40 with 96K memory and a DJ-11 terminal

mux,

IV, We will have a few programmers working on the frontend system,

Probably only one or one and a half will be familiar with ELF,

B, We plan to send one of our hardward wizards to PDP-11 maintenance 5b

school, 5c

C, We expect to do some messing around with some parts of ELF, but 5d

only out of absolute and dire necessity, 5e

D, We will be developing the NLS frontend thing with some parts 5f

possibly useful to others, We may do some work in the debugging aids 5g

field since there is not much there now, 5h

E, We will document our own developments, 5i

V, A, no hardware maintenance required, 6

B, We hope ELF will be maintained and that simple requests for 6a

changes/additions will be heard, 6b

C, We would like to see a transparent mode in the ELF equivalent of 6c

TELNET, This is required for the Line Processor stuff, Also, we are 6d

very anxious to see the cross net depugger working, 6e

VI,A, It would be nice if ELF would work either over the ANTS interface 7

to the network or over the TTY connection to hte PDp-10, This would 7a

allow us to checkout all part of our system before actual use of the 7b

ANTS interface, but at a lower bandwidth, We don't really expect 7c

this, but would be willing to put up some software work to make it 7d

possible,,, 7e

------- 8

DHC 1-MAY-74 13:50 30608

SRI-ARC response to ELF User Questionnaire

(J30608) 1-MAY-74 13:50; Title: Author(s): David H. Crocker/DHC;
Distribution: /DHC; Sub-Collections: NIC; Clerk: DHC;

Basic ELF User Questionnaire

10

DHC 1-MAY-74 16:10 30609

Basic ELF User Questionnaire

(J30609) 1-MAY-74 16:10; Title: Author(s): David H. Crocker/DHC;
Distribution: /DHC; Sub-Collections: NIC; Clerk: DHC;

AAM 16-NOV-1858 16:25 30610

Scheduled Software Maintenance

This is a reminder that Network Software Maintenance is scheduled between the hours of 0700 and 0900 (Eastern Time) on Tuesday, 7 May 1974. Although software releases are checked out as much as possible in the BBN test cell, there are sometimes problems of scale which are not detected until after a release; hence there is a small but finite possibility that the software will be troublesome for a few hours after the scheduled release.

Sincerely,
Alex McKenzie (for the Network Control Center)

1

Scheduled Software Maintenance

(J30610) 16-NOV-1858 16:25; Title: Author(s): Alex A. McKenzie/AAM;
Distribution: /NLG RADC; Sub-Collections: NIC NLG RADC; Clerk: AAM;

EJK 2-MAY-74 08:32 30616

Test

This a test tto see if I can wake up the Journal to tthe fact tthat there is a Nelson Directory, (from EJK) 1

EJK 2-MAY-74 08:32 30616

Test

(J30616) 2-MAY-74 08:32; Title: Author(s): Edmund J. Kennedy/EJK;
Distribution: /EJK RN2 DLS; Sub-Collections: RADC; Clerk: RN2;

DMS EVALUATION and TEST METHODOLOGIES 1

The purpose of this program is to develope a set of tools and methodologies for evaluating and testing data Management Systems (DMS). The approach involves study of existing DMS features, and, existing test and evaluation techniques to formulate a stepwise methodology for critiquing any DMS. Further, this effort seeks to enhance those test tools developed in earlier studies specifically identified as requiring further developement. A consolidated methodology is being developed using reports and individually developed test tools which have their own utility as singular products. 2

The methodologies developed to date resulted in the identification of several efforts which included; 1) Developement of Imbedded Software Monitors for data collection (callable by user batch DMS programs), 2) Methods of stating user requirements consistent with DMS terminology so that judgements can be made of a system's ability to meet the requirements, and 3) Developement of methods of testing for security and restart/recovery features of a DMS. Additionally, there exist a definite need for a general purpose DMS simulation model to be used in evaluation and fine tuning of a DMS. Such a model would be parameter driven and modular in concept; that is, each of the DMS's functional operations could be modeled using the appropriate simulation technique. SUbsequently, all models could be operated together to simulate the total DMS environment. The user would manipulate the modeling system to determine what DMS configuration best suits his needs. 3

The three efforts discussed above will have a definite impact on a community such as the WWMCCS users. The method of imbedding software monitors in a DMS allows the user to collect data about the frequency of DMS module use, module CPU execution times, and Input/Output channel times when reading large files. this product allows the user to collect data down to the level of the operating system routines. the final report by PRC information sciences Corporation of this effort will be distributed by the end of FY-74. The SAI Corporation's tool for associating user requirements with DMS capabilities will be distributed in the same time-frame. WWMCCS users will be able to analyze the DMS functional attribute requirements (as Operational Capabilities Descriptions) and evaluate the capabilities of WWDMS to meet the stated requirements. the methodology will also assist in further definition of requirements to be subsequently transformed into DMS specifications that do not bias or constrain the user defined needs. Finally, the third task completed by the Systems Developement Corporation (SDC) to define methods of testing for security and recovery features of a DMS such as WWDMS will assist WWMCCS users in evaluating the proposed operating system capabilities. 4

DLD2 2-MAY-74 08:47 30620

DMS EVALUATION and TEST METHODOLOGIES impact on WWMCCS

(J30620) 2-MAY-74 08:47; Title: Author(s): David L. Daughtry/DLD2;
Distribution: /RFI DLD2 RBP; Sub-Collections: NIC; Clerk: DLD2;
Origin: <DAUGHTRY>MAY02-JTSA-EFFORTS.NLS;1, 2-MAY-74 08:40 DLD2 ;

RJC 2-MAY-74 11:55 30622

PSO Office Concerning Absences for Friday - 3 May 74

This concerns the PSO office,,,Just for your own information, Duayna will be out all day tomorrow (Friday) and I plan on taking the whole afternoon off unless it rains,,,Bobbie 1

RJC 2-MAY-74 11:55 30622

PSO Office Concerning Absences for Friday - 3 May 74

(J30622) 2-MAY-74 11:55; Title: Author(s): Roberta J. Carrier/RJC; Distribution: /RADC; Sub-Collections: NIC RADC; Clerk: RJC;

CAS 2-MAY-74 16:34 30623

test message

this is a test message from Carl submitted at 4:30 thursday 1

CAS 2-MAY-74 16:34 30623

test message

(J30623) 2-MAY-74 16:34; Title: Author(s): Carl A. Sunshine/CAS;
Distribution: /YKD RCC2; Sub-Collections: NIC; Clerk: CAS;

DHC 3-MAY-74 05:20 30624

NMC response to ELF User Questionnaire

- - - - 1

I, A, UCLA Network Measurement Center 2

B, Mark Kampe KAMPE;BIN(1200)@UCLA-CCN 2a

II, A, Only have a single-console ELF right now, 3

B, Network Terminal Access ASAP 3a

Protocol Access (FTP,RJE) ASAP 4

Base for Net Measurement experiments ASAP 5

small scale local computation and Front-ending 6

III, A, Gould 5000 (going away) 7

RF11 8

2 TM11 9

2 DECtape drives 10

ANTS Interface 11

LA30 12

11/45 w/virtual machiine kit 13

32K of 1 mic core 14

1 DH11 w/ DM11B 15

4 modems (0 - 1200 baud) (voice-grade line) 16

KW11 real-time clock 17

line clock 17a

Terminal: 18

2 IMLAC PDS1 w/mouse & keyset & interrupts 19

2 Datapoint 3300 20

2 ASR 37 (!) 21

4 TI 700 22

NMC response to ELF User Questionnaire

1 Terminet 300 (going away) 23

B, Terminals - 6 months 23a

48 K of core 1 year? 24

1 - 2 Meg of moving head disk 1 year? 25

Impact upper/lower case Line printer 6 months 26

IV, A, Tentatively, we can supply 1/4 - 1/2 people 27

B, We will arrange for our own hardware (in general) 27a

C, We will maintain anything we write (but not necessarily 27b

modify it for other people), 28

D, Commands and drivers (general interest) + Measurement 28a

stuff (local interest) 29

E, We will provide to "some responsible person" technical 29a

and user documentation for software we produce, We will 30

not accept responsibility for production or distribution, 31

V, A, None 32

B, Little 32a

C, No None anticipated 32b

D, "Adequate" documentation for all non-local software, 32c

Certainly technical documentation and hoepfully, 32d

user documentation, 32e

VI, Unclear, My attitude is if ELF can't ddeliver what we need, 33

we will do it ourselves, That is much easier than fighting, 34

------- 35

36

DHC 3-MAY-74 05:20 30624

NMC response to ELF User Questionnaire

(J30624) 3-MAY-74 05:20; Title: Author(s): David H. Crocker/DHC;
Distribution: /DHC; Sub-Collections: NIC; Clerk: DHC;

MIKE 3-MAY-74 05:28 30625

Copy of a SNDMES from Hardy to Bedford re DEX prob's.

(J30625) 3-MAY-74 05:28; Title: Author(s): Michael T. Bedford/MIKE;
Distribution: /IMM; Sub-Collections: NIC; Clerk: MIKE;

MIKE 3-MAY-74 05:28 30625

Copy of a SNDMES from Hardy to Bedford re DEX prob's.

Could you answer this one for me, since you're more familiar with the routine that the girls have been using? Thanks.

Copy of a SNDMES from Hardy to Bedford re DEX prob's.

2-MAY-74 1259-PDT HARDY at SRI-ARC: Cassette/Multiplexor Problem
Distribution: BEDFORD, feedback, norton, bair
Received at: 2-MAY-74 12:59:33 1

Mike:
Last month (April 26) Jim Bair asked me if I could help you with your cassette/multiplexor problem. Are you still have problems? If so, could someone answer the following:
1) What speed, or speeds, are you having trouble with?
2) When recording a DEX tape, does the typest always type (CR)(LF) at the end of each line, or let the terminal do it automatically?
-- martin. 1a

NJN 3-MAY-74 06:59 30626

Thanks for ARC HELP info

Dirk--
Thanks for the pointers. I will try to take a look at that stuff if I can get onto ARC for any length of time. I don't think I want to be on the distribution list for working journal items; I am much too busy these days and after May will not be doing as much network stuff.
Are you developing a new way of signing notes (i.e. "Best")? If so, you share that style with Craig Fields (it might interest you to know.)
--Nancy

1

NJN 3-MAY-74 06:59 30626

Thanks for ARC HELP info

(J30626) 3-MAY-74 06:59; Title: Author(s): Nancy J. Neigus/NJN;
Distribution: /DVN; Sub-Collections: NIC; Clerk: NJN;

NJN 3-MAY-74 07:09 30627

Secondary Distribution

Hi, I forgot something. I sent a note to Kudlick many weeks ago, asking how one does a secondary distribution; I have never heard from him. Maybe I shold of asked you in the first place. How does one do Secondary distribution of a journal item? Do you have to have special capabilities (as a computer user that is)? Thanks, Nancy 1

Secondary Distribution

(J30627) 3-MAY-74 07:09; Title: Author(s): Nancy J. Neigus/NJN;
Distribution: /DVN; Sub-Collections: NIC; Clerk: NJN;

Liz's Output

How's the weather over there? Is Liz doing anything at all or is she being normal? 1

Liz's Output

(J30628) 3-MAY-74 07:45; Title: Author(s): Elizabeth F. Finney/EFF;
Distribution: /WEC EAR; Sub-Collections: NIC; Clerk: EFF;

WEC 3-MAY-74 07:45 30629

test message

hi you nut, too bad you have't gotten to play racket ball for two days,

1

WEC 3-MAY-74 07:45 30629

test message

(J30629) 3-MAY-74 07:45; Title: Author(s): William E. Carlson/WEC;
Distribution: /WEC EFF; Sub-Collections: NIC; Clerk: WEC;

course comments

Betty's Comment

course comments

TO: JAMES H, BAIR
RESEARCH ANALYST
Augmentation center

1

We feel that Day 1 session was necessary to be able to use the system, For secretaries, it might be necessary to use a full day and then go as slow as we did, However, we know more to start with and therefore could go faster at the start, The first three hours could be done in two or maybe less, and then do Day 2 the rest of the morning and early afternoon,

2

It is somewhat disconcerting to get used to the mechanics of working with the network and the "echo" feature of feeding back your input, NLS at the level we have seen so far seems to be fairly easy learn, The carriage return which automatically occurs is a little hard to get used to initially,

3

It is maddening to not be able to hit a CR after 'N', Emphasize that a 'u' should be entered to save files, It was only mentioned in passing,

4

'Space' is a bad command to use,!

5

don't like having to do two carriage returns in a row all the time for certain commands

Doug and Betty

6

course comments

(J30631) 3-MAY-74 08:26; Title: Author(s): Elizabeth F. Finney/EFF;
Distribution: /FEED EAR WEC DRW; Sub-Collections: NIC; Clerk: EFF;
Origin: <FINNEY>QUIT.NLS;5, 3-MAY-74 07:18 EFF ;

LAC 3-MAY-74 08:28 30632

Remarks on nls course

these are a few comments and observations on the NLScourse given 2-3 May at SRI-Wash

Remarks on nls course

946 Crane
Menlo Park, Cal
May 3, 1974

Dear Jim,

I think the first day went pretty good; I especially liked the idea of using the analogies to actual office furniture, That sort of thing will really help our 'non-computer people' to understand what they are doing,

It sort of bothered me to know that there were things that you "couldn't" tell us, but I realize the problem,I'm glad that there will be some time later to really get into the power of the system, We have sort of a conflict here in trying to both evaluate a course for the 'uninitiated' and to try to evaluate the system itself,

I really feel that there should be some mention of the structure somewhere in the course, That is one of the big strong points of NLS, and something that we will use a lot,

I think it would be a good idea to have the exercises a little more structured, If you would have a 'demo' file out on disk(with readable protection) which could serve as a demonstration/drill in the basic operations, you could concentrate more on teaching people and have them concentrate more on learning instead of creating file names, thinking up cool things to put in them, etc,

There are some human factor changes, such as old text first, and only one replacement Unless asked for, a carriage return after the "n" in the "finished", and statements addressed as a number with a point addressed by ",n" instead of the other way around, that I'd like to see,We have mentioned some others too, I think that NLS could be much better if some more human engineering went into this interface,

Sincerely,
Larry Crain

Remarks on nls course

(J30632) 3-MAY-74 08:28; Title: Author(s): Lawrence A. Crain/LAC;
Distribution: /FEED WEC EAR EFF DRW AAB; Sub-Collections: NIC; Clerk:
LAC;
Origin: <CRAIN>BAIRMESS.NLS;8, 3-MAY-74 07:30 LAC ;

WEC 3-MAY-74 08:34 30633

Critique of Introductory NLS Course

This is a letter of about 50 lines so it can be printed at your terminal.

Critique of Introductory NLS Course

946 RAVENSWOOD AVENUE
MENLO PARK, CALIFORNIA 94025

3 MAY 1974

Dear Jim,

The introductory course has surprised me because i now believe that a secretary can relatively easily be taught to type documents into nls,i still question the cost effectiveness of doing it on-line, i am also trying to evaluate whether a pure keyboard to cassette is the right compromise, or if you want more intelligence in the terminal so that you can send relatively clean text to nls, i think that the selection of the correct combination depends a lot on whether the same person will enter the text, correct it, and then retrieve it and correct it at a later date, if there is a clear differentiation of tasks and who will do them, then having a homogeneous system is not so important,

I also have some reactions to the part of NLS which I have learned this far, I wish that a null file was called a New file since that is probably more natural for non-programmers, It would fit in very naturally with the filing cabinet containing folders analogy which is very helpful, A second comment is that it would often be better not to renumber the statements during editing so that the numbers on a hard copy will agree with the file,

Using a carriage return as command accept may make it difficult for a secretary to go back to a regular typewriter, I personally would rather have some key like the escape which is not a normal typing character and have carriage returns completely ignored, ie, carriage returns would be throw-aways which would never be put on the file,

there are two assumptions made in the user interface which seem to make it more difficult to use than ordinary tenex, The first is that NLS always completes words based on the first letter, That means that people who are unfamiliar with the system don't get a chance to provide the kind of information which is redundant if the command is correct but very helpful in identifying errors, It is very annoying when the system takes the completion of a word to be the initial letters of more command words, an example is responding "no" instead of "n", A relaed problem is that for non-command words like filenames, the user isn't able to request completion, In tenex, I frequently can remember the beginning of a filename(enough to make it unique) but not the rest and rely on escape to finish it, The second

design philosophy which causes beginners problems is the automatic prompting for the more complicated forms of the commands. I think the system should require a positive action before it prompts the user with a complicated option. For people who want to have options suggested to them, a question mark might be a good deal.

6

My critique will not be so sophisticated as Bill's portion was, I see some difficulties in getting secretaries accustomed to the practice of not hitting carriage returns at the end of each line. Perhaps in time and experience with the system this is not a problem. I wish that we could get more into NLS capabilities including the commands in the output processor, other means of referencing text than by line number. Just looking at the substitute command, I don't like not being able to perform a substitution with a single command line entry.

7

Bill and Liz

8

Critique of Introductory NLS Course

(J30633) 3-MAY-74 08:34; Title: Author(s): William E. Carlson/WEC;
Distribution: /FEED; Sub-Collections: NIC; Clerk: WEC;
Origin: <CARLSON>COURSE-EVALUATION.NLS;4, 3-MAY-74 08:26 WEC ;

EJK 3-MAY-74 12:33 30635

One of the formats we have in the system for use on-line.

INFORMATION SUMMARY 1

1a

(Put title of subject on this line in lower case type) 1b

1. The purpose of an information summary is to provide data which can be placed in a Conference Brochure for information and possible discussion. 1c

2. The body of the Summary should contain all information necessary to present a clear picture of the subject suitable for use by top management. It should provide a complete story so that it stands alone. Since it provides information only, it should not include recommendations. 1d

3. The information summary should be clear, concise, complete and timely. It should be written in the third person and normally be confined to one page. 1e

4. The title should be underscored as shown above. 1f

5. Margins should be at least one and one-half inches at the top, bottom, and left side, and one inch at the right side. 1g

6. Paper should be typed single spaced on plain bond paper, size 8 x 10 1/2. 1h

7. The symbol of the organization preparing the information summary should be placed in the lower right corner of the page as shown below. RADC staff offices should we a 2 or 3 letter symbol. 1i

1j

1k

As of Prepared by 1l

EJK 3-MAY-74 12:33 30635

One of the formats we have in the system for use on-line.

(J30635) 3-MAY-74 12:33; Title: Author(s): Edmund J. Kennedy/EJK;
Distribution: /ARB(info) ELF(This is the one Al was talking about);
Sub-Collections: RADC; Clerk: EJK;

ELF 3-MAY-74 12:45 30636

Notes for Dan Richards through Dave Craig

2 may 74-----RADC's support to the 427m program at the current time is in a state of flux, We have been reviewing System Design Notificaton changes to the WWMCCS software as part of our general support to ESD, however it appears that it is more desirable to comment on requested changes as they come down for official commment from Hq, USAF, This would be consistent with RADC's support agreements with the JTSA office, 1

The general nature of the request for fy 75 support dated 13 march 74, received in ISIM on 15 May 74 is too vague for planning purposes, particularly with respect to supporting Divisions, The SPO has requested only four man-months of support for FY-75 and much of this effort is directed towards evaluating such things as the SDN's and impacts on the system as a result of implementing such changes, As noted above, revue of recommended changes to the existing WWMCCS software is being accomplished by RADC under direct support to the JTSA office, 2

The nature of RADC's support to they 427m SPO at the present time and in the foreseeable future is considered to be on a brushfire , non-continuing basis, With the exception of the reliability aspects of the program, there would appear to be little risk in considering this system to be one requiring only token monitoring, 3

ELF 3-MAY-74 12:45 30636

Notes for Dan Richards through Dave Craig

(J30636) 3-MAY-74 12:45; Title: Author(s): Edward F. LaForge/ELF; Distribution: /ELF; Sub-Collections: RADC; Clerk: ELF;

DHC 4-MAY-74 13:23 30637

SRI-AI response to ELF User Questionnaire

- - - -

I, A, SRI-AI

B, Daniel C, Lynch or Earl Craighill

II, A, Speech Compression Networking

B, 1) ELF operating system with DOS Compatibility code (July 1)

2) Special NCP calls for real time speech transmission over ARPA NET (August 1)

3) Fortran interface with SPS-41 signal processor (August 15)

4) A/D, D/A spooling program (high speed data storage and retrieval up to 20,000 words per second) (July 15)

III, A, PDP 11/40 with 32K core memory (memory management)

2 RK05 moveable head discs

VT05 CRT console terminal

3 DLH asynchronous line

Home brew A/D, D/A (2 high speed channels of each)

SPS-41 signal processor with 8K shared core memory

B, GT40 Display System

More core

Lineprinter

IV, A, E, Craighill, B, Sifford, and D, Ellis

B, Hardware maintenance: Either DEC or SRI

C, OWn programs limited operating system & NCP

D, Real time LPC analysis and synthesis techniques

Fortran links with SPS-41

E, Reports, NSC notes

V, B, Operating system, SPS-41, NCP 12

C, DOS compatibility code 12a

Special NCP 12b

SPS-41 Fortran links 12c

D, Program lisings & user guides, manuals 12d

VI, A, Real time demonstration scheduled for December 1974 using 13

ARPA NET for transmission of compressed speech, 13a

VII, We intend to be working quite closely with ISI and SCRL 14

during the remainder of 1974 to do the Network speech 14a

transmission, This should be a good shakedown and test case 14b

for the ELF operating system, not only for compression 14c

needs but for data acquisition and processing tasks in 14d

general, 14e

15

--- 16

17

DHC 4-MAY-74 13:23 30637

SRI-AI response to ELF User Questionnaire

(J30637) 4-MAY-74 13:23; Title: Author(s): David H. Crocker/DHC;
Distribution: /DHC; Sub-Collections: NIC; Clerk: DHC;

SRI-AI response to ELF User Questionnaire

- - - - 1

I. A. SRI-AI 2

B. Daniel C. Lynch or Earl Craighill 2a

II. A. Speech Compression Networking 3

B. 1) ELF operating system with DOS Compatibility code (July 1) 3a

2) Special NCP calls for real time speech transmission over 3b

ARPA NET (August 1) 3b1

3) Fortran interface with SPS-41 signal processor (August 15) 4

4) A/D, D/A spooling program (high speed data storage and 5

retrieval up to 20,000 words per second) (July 15) 5a

III. A. PDP 11/40 with 32K core memory (memory management) 6

2 RK05 moveable head discs 6a

VT05 CRT console terminal 6b

3 DLH asynchronous line 6c

Home brew A/D, D/A (2 high speed channels of each) 6d

SPS-41 signal processor with 8K shared core memory 6e

B. GT40 Display System 6f

More core 6g

Lineprinter 6h

IV. A. E. Craighill, B. Sifford, and D. Ellis 7

B. Hardware maintenance: Either DEC or SRI 7a

C. Own programs limited operating system & NCP 8

D. Real time LPC analysis and synthesis techniques 9

Fortran links with SPS-41 10

E. Reports, NSC notes 11

SRI-AI response to ELF User Questionnaire

V, B, Operating system, SPS-41, NCP 12

C, DOS compatibility code 12a

Special NCP 12b

SPS-41 Fortran links 12c

D, Program lisings & user guides, manuals 12d

VI, A, Real time demonstration scheduled for December 1974 using 13

ARPA NET for transmission of compressed speech, 13a

VII, We intend to be working quite closely with ISI and SCRL 14

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for the ELF operating system, not only for compression 14c

needs but for data acquisition and processing tasks in 14d

general, 14e

15

------- 16

17

DHC 4-MAY-74 13:37 30638

SRI-AI response to ELF User Questionnaire

(J30638) 4-MAY-74 13:37; Title: Author(s): David H. Crocker/DHC; Distribution: /DHC; Sub-Collections: NIC; Clerk: DHC;

AJR 4-MAY-74 19:21 30639

Msg to IC

Hi gang,

Just wanted to let you all know that I am still alive and well,
Sorry
that I haven't been able to communicate as often as before,

Peace,
Rosy

1

AJR 4-MAY-74 19:21 30639

Msg to IC

(J30639) 4-MAY-74 19:21; Title: Author(s): Al J. Rosenfeld/AJR;
Distribution: /I; Sub-Collections: NIC; Clerk: AJR;

ANSWERS TO ELF QUESTIONNAIRE

- - - -

I,

A, SYSTEM DEVELOPMENT CORPORATION

SPEECH UNDERSTANDING RESEARCH STAFF

B, DOUGLAS L, PINTAR

SDC@BBN (SOON DLP@SDC)

II,

A, NONE

B, SPEECH UNDERSTANDING RESEARCH, SPS-41 SUPPORT,

III,

A, NONE

B, HARDWARE SCHEDULED FOR ARRIVAL JULY 1974:

PDP-11/35 (AN OEM 11/40) WITH EIS, FLOATING POINT, MEMORY MANAGEMENT, BOOTSTRAP ROM, PROGRAMMABLE CLOCK

32K DEC CORE

RK11-DE DISC CARTRIDGE DRIVE AND CONTROLLER

TU10-EE 9-TRACK TAPE DRIVE AND CONTROLLER

DL11-D LINE INTERFACE (FOR EXISTING TERMINAL)

SPS-41 WITH 8K DUAL-PORT MEMORY OPTION

UNTIL WE GET ELF, WE WILL PROBABLY RUN DOS/BATCH VERSION 9,

ANSWERS TO ELF QUESTIONNAIRE

HARDWARE SCHEDULED FOR ARRIVAL AFTER SEPTEMBER 1974: 15a

16

ADDITIONAL 16K DEC CORE (48K TOTAL + 8K DUAL-PORT) 16a

SDC "HSI-11" LOCAL IMP INTERFACE 16b

RJS04-BA FIXED-HEAD DISC AND CONTROLLER (512K WORDS) 16c

SDC-DESIGNED 12-BIT ADC/DAC SYSTEM BASED ON DEC-PACKAGED 16d

ANALOGIC ADC/DAC AND DEC DR11-B DMA HARDWARE 16d1

TEKTRONIX 4014-1 TERMINAL AND 4610/2 HARD COPIER 17

DA11-BD UNIBUS LINK TO THE PDP 11/05 WHICH CONNECTS TO SDC'S 18

IBM 370/145 AND THE ARPANET 18a

19

IV, 20

A, NONE 20a

B, NONE 20b

C, NONE 20c

D, DEVICE DRIVERS FOR HSI-11,DA11-BD,RJS04-BA,ADC/DAC, ETC, 20d

SPS-41 PROGRAMS 20d1

SPEECH UNDERSTANDING SYSTEM COMPONENTS 20d2

E, FOR DEVICE DRIVERS AND SYSTEM SOFTWARE IN (D) 21

22

V, 23

A, NONE; WE WILL HAVE FULL DEC MAINTENANCE CONTRACT 23a

B, ANY ELF CHANGES/FIXES AND REVISION CONTROL 23b

C, COMMUNITY-SHARED SPS-41 PROGRAMS (E,G, SPS-PROVIDED LIBRARY) 23c

D, ANY AND ALL THAT'S AVAILABLE ON ANY ASPECT OF ELF 23d

23e

VI, 24

A, ELF MEMORY MANAGEMENT VERSION; FOR USER PROGRAMS; JULY 1974 24a

DOS EMULATOR PACKAGE; FOR USER PROGRAMS; JULY 1974 24a1

SPS-41 DRIVER/LOADER; FOR SPEECH SYSTEM; JULY 1974 24a2

DEVICE DRIVER STANDARDIZATION INFO; FOR SITE-DEPENDENT DRIVERS; 24a3

ASAP 24a3a

25

VII, 26

PLEASE SEND US A MESSAGE SUMMARIZING THE ACTION ITEMS RESULTING FROM 26a

THIS QUESTIONNAIRE. THANX. 26b

------- 27

28

DHC 6-MAY-74 18:55 30640

ANSWERS TO ELF QUESTIONNAIRE

(J30640) 6-MAY-74 18:55; Title: Author(s): David H. Crocker/DHC;
Distribution: /DHC; Sub-Collections: NIC; Clerk: DHC;

Farewell

To the ARPANET News Readers -

Change is the essence of being...and the ARPANET is rapidly changing. One of the changes to come is that there will no longer be an ARPANET News online in the same way and approached in the same manner as heretofore.

The News has from its inception been an informal operation, collected, written, and distributed on the contributed time of the Editor and Staff. It has been possible because of generous contributions of computer space and network access. With the coming tightening up of budgets, online access, and contributed computer storage space, and continued lack of funding, the ARPANET News cannot continue.

The April issue of the ARPANET News was the last one to be produced by the founding group, either in online or hardcopy versions.

The Editor and the Staff of the ARPANET News thank the readers and contributors to the News effort. We wish all of you the very best of everything, and happy networking.

.....Jean Iseli, Editor
Mil Jernigan
Mike Padlipsky

JI MEJ MAP 6-MAY-74 20:03 30641

Farewell

(J30641) 6-MAY-74 20:03; Title: Author(s): Jean Iseli, Mil E. Jernigan, Michael A. Padlipsky/JI MEJ MAP; Distribution: /I NAG NLG USING NSAG PI; Keywords: News Farewell; Sub-Collections: MITRE-TIP NEWS NAG NLG USING NSAG PI; Clerk: JI;

DLS 7-MAY-74 05:22 30642

Initial test of journal mail to FND, DIC, JWH

Craig, ident= DIC and Hyde, ident= JWH are also recognized under the dirrrectory <dimaggio>.

DLS 7-MAY-74 05:22 30642

Initial test of journal mail to FND, DIC, JWH

Welcome aboard,,,,hope you enjoy the flight,,,,link to me if any questions,,,,push Kennedy for some formal training sessions. 1

DLS 7-MAY-74 05:22 30642

Initial test of journal mail to FND, DTC, JWH

(J30642) 7-MAY-74 05:22; Title: Author(s): Duane L. Stone/DLS;
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USING Note xx
NIC xxxxx
April 29, 1974

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Draft

Network Help Facility
A Discussion of Requirements and Potentials

1

The approach used in this discussion of a Network Help Facility is a global one in which the facility is network-resident, network-accessible, and, as a network facility, interfaces to appropriate site help systems through a common access mechanism with a unified interface to the user. Although the facility must be individually interfaced to the different sites because of their multiple differences in access and use, the user will view the Network Help Facility the same whether it is approached from a site, a TIP, an ANIS, an ELF, or from some pre-login access mechanism.

1a

It is to be noted that in this paper no attempt is made to design the detailed specifications of such a system. Rather every effort is made to present a generic approach, listing parameters of such a system and leaving the actual design specifications for those who may implement it.

1b

It is recognized that some capabilities listed here will probably not be implemented in the first prototypical system brought up on the Network. No attempt has been made here to limit the desired capabilities by what will probably be a systems programmer's "trade-off" between his desire to get a system up and running and the desire to furnish an ideal system. Instead, this report comprises an "ideal" set of parameters and functions that would be found in a network resident, network callable, network-wide system, capable of handling information databases of many kinds and at many sites -- all in a uniform manner insofar as the user is concerned.

1c

The User's Needs for Help 2

Generally speaking, when a user requires online assistance and information, the information he needs is quite specific, he does not have a great deal of time to spend hunting it, and his immediate motivation for searching for help is usually a "crisis situation", an immediate need to solve a problem. Often the information he needs is best presented to him in short and structured form, such as a portion of a tutorial or a list, and is best approached through an indexing mechanism, allowing for (1) the program to approach the database from a searchable macro-viewpoint, and (2) the user to see an index-type listing as the first feedback, rather than an entire (probably large) printout, thereby enabling him to choose what he wishes to see. 2a

In the case of a novice user who is not attempting to do immediate and useful work, but rather to learn about the system, the approach will sometimes be under the tutelage of a knowledgeable instructor, sometimes through being referred to a particular tutorial or database known to contain a large amount of general information applicable to his needs. The user here needs a large amount of general information presented in a form amenable to study. 2b

Thus, two distinct types of needs for information can be seen: (1) A quick and specific answer to an immediate problem; (2) a learning situation, with no working problems and no crisis situation. 2c

In the former situation the user needs to approach the help facilities online, quickly, and for a specific point; he may or may not have a login ability. In the latter case, the user needs a large amount of information of a more general nature and almost certainly will be logged in at a site, often with hardcopy documentation to supplement his learning process. 2d

Status of Present Documentation on the Network 3

There is a large amount of documentation on the Network at the various sites on a multitude of subjects, written in all degrees of sophistication and "in-languages". Many sites have highly developed systems for help material, others have organized help databases with a system-like approach for access. Each of these help mechanisms is very different in its approach to handling the data and to the user interface, although certain characteristics seem to be present in all of them. Most of these databases are informative even to the beginning user, and would serve as very valuable basis for a Network wide help facility. 3a

The variety of information databases and their accessibility on the Network is not in any way seen as a weakness of the Network, but rather as a strength, enabling a properly designed Network Help Facility to have a wide range of both access capability and of content for presentation to the user. The approach taken here to the Network Help Facility is not a rigid one, enforcing one limited standard, but rather a device to allow (hopefully, in time to come) the presentation to the user of the wealth of material now extant and that which is still to be developed. 3b

Since the sites have a motivation for keeping up these help facilities at their own sites and for adding to these facilities from whatever Network sources are available (hence benefiting their own users), the creation of a Network wide help facility with ability to interface to these local facilities, linking them into a network wide help system, is entirely feasible from a practical user-site motivation standpoint. 3c

It is recognized that there are now both duplications of information in the various site-to-site databases and specific, one-of-a-kind information facilities that might have much wider usage and application if there were some means for their wider access. A Network wide approach to documentation, such as is discussed below, is predicated on a recognition and use of the following factors in the present Network wide documentation environment: 3d

, Duplicated information from site to site, 3d1

, Valuable information available at only one site,

3d2

, Differences in databases from one site to another, whether through information differences, or through depth of coverage or approach to the information,

3d3

, A developing user preference for one database over another depending on the information sought,

3d4

, A user access need covering a 7-day week and 24-hour day,

3d5

, A variety of local site down times making their databases unavailable,

3d6

, System failures which affect access from one cause or another,

3d7

Parameters for a Network Help Facility 4

Glossary of terms employed: 4a

Network Help Facility - The system designed to present information and help to a network user. This Facility includes the Network Help program, the Site Provider(s) program, the Site User Programs, the Site Databases, and such replicated databases as are necessary to be network resident and accessed by the Network Help Program when the home site for a specific database-content is unavailable. 4a1

Network Help Program - The vehicle that provides help facilities to users regardless of their entry points. The program understands how to access data from cooperating sites (interfaces to site providers), understands how to interpret user requests (interfaces to user programs at whatever sites), contains intelligence relative to which sites provide information, the information they can provide, and also has access to its own databases (either locally resident or archived in the datacomputer) which are of a network level nature (like help on network protocols (FTP, TELNET, etc.), help on network resources that live at multiple sites (like REDUCE, etc)). 4a2

Site provider(s) - Each cooperating site develops a provider program which maps locally resident data into the structure and format required by the network help program. A provider has the ability to provide index, text, or other levels of data that may be requested by the network help program. 4a3

User programs - These programs reside at a sufficient number of sites that any network user can, through one of them, access the capabilities of the Network Help Facility. For example, entry to such a user program should be possible through any ANTS, TIP or ELF, and also through the BBN RSEXEC capability. The function of the user program is to be a command interpreter for the user interface language, a submitter of user requests to the network help program and a buffer to the user for information returned to him from the Network Help Facility. (NOTE: The term "user program(s)", when used in this report, refers to the portion of the Network Help Facility which the user accesses to use that Facility; it does not in any instance

refer to the myriad programs existant on the Network commonly referred to as "user programs".)

4a4

Site Database - That collection of local site data (information) files that are provided to the network help program.

4a5

Network-resident databases - Frequently used information that may or may not be also resident at various sites, such information as help on Network wide facilities (TELNET, RSEXEC, SNDMSG, etc), frequently used systems (REDUCE, RJS, etc.), may be replicated at sites such as datacomputer, or Office-1. This would enable users to obtain needed information when a site-resident database is unavailable for some reason.

4a6

Because of the inherent differences in the databases, differences in system availability, and possible development of user preferences for presentation approach, it is recognized that the following parameters should be considered when designing a Network-wide help system:

4b

The Network Help Facility system should consist of:

4b1

User Program - Providing user access to the network help program facilities to the user, developed by participating sites and maintained by them, and complying to a network help program interface specification.

4b1a

A site provider program - Resident at "server" sites, which "maps" the data in the databases known to it into (a) a form usable by the network help program in order that the latter can find what it is looking for (i.e., some indexing-type format), and (b) a format requested by the human-user for his perusal purposes which may be to find a specific item, to browse through a series of informational subjects, or possibly to intensively study one large portion.

4b1b

The portion of the network help program accessed by the human-user (through the user program) presents data to the human-user in the way he asks: i.e., indexed items only, glossary type items only, full text, portion of

text containing wanted item; on demand, copies out item(s) wanted into an ephemeral holding file for use in compiling parts of various databases, manipulating them to some extent, and diverting to a printing device or to a regular file at another (or any) site; etc.

4b1b1

The site provider program has in-built "hooks" or links to the databases existing on its site. It knows the means of their access, their structural attributes and to some extent what is in them; i.e., something like a list or an index forms a "table-lookup" mechanism which is accessible on demand by the network help program.

4b1b2

Distributed databases - Resident at various sites, which the owners (operaters or managers of the sites) have contributed toward the overall Network-wide Help Facility. These databases are prepared for access by the site installing an index-like mechanism which the site provider program accesses.

4b1c

Note that these databases may be multiple, one-of-a-kind, held only at one site, reproduced at other sites, and all shades and variations in between. At the time the "hooks" are built into the site provider program whereby the site provider program may intelligently inquire what is there and which particular portion of the database will answer the human-user's question [which has been given to the site provider program by the network help program], these databases are recognized as potentially highly changeable; therefore, care should be taken that the system is designed so that the site provider program accesses the databases in such manner that changes to the database itself will not require a re-writing of the site provider program access mechanism.

4b1c1

The Network Help Facility should be a callable program that the human-user can enter in a similar manner to techniques used by RSEXEC (i.e., as when RSEXEC accesses its RSSER programs resident at multiple sites).

4b2

The Network Help Facility should have a uniform user interface regardless of human-user reference point.

4b3

The human-user need not know from what site his information comes unless he wishes to know, in which case he should have the ability both to ask for and receive this information, and to request access to a specifically named database. 4b4

There should be the ability to call up a particular portion of that database. 4b5

The Network Help Facility should be able to access a specific database for specific information when the human-user does not specify the database, but does specify the information needed [the facility will need to know what is available to it and choose between possible sources on some (to be specified by the designers) criteria of choice]. 4b6

The user should be able to see a glossary and/or index created by the Network Help Facility (such as that created by the current ARPANET News program). 4b7

There should be the ability to search specified files (and certain internally, system-recognized associative files) for keyword existence (this may be desired of the respective site provider programs). 4b8

The Network Help Facility should contain internal, within-the-system, links between related files and sufficient "intelligence" to accept and use ratings, within itself, in its search of these files according to order of specificity; i.e., a user-guide would be more use-of-a-system specific than a yearly or quarterly report. 4b9

The human-user should be able to ask the system how much data the system is about to present to him in answer to his inquiry; i.e., in some understandable unit of measurement like: less than 1 disk page, 10 lines, 3 files of 10, 2, and 43 printer pages respectively, etc. (this enables the human-user to have some idea of how much printout time might be required at his terminal). 4b10

Inasmuch as the site user programs will furnish the feedback to the human-user concerning the material about to be

presented, the feedback should be in terms appropriate to the user's site; i.e., TENEX disk pages at a TENEX site, normal printer pages, number of lines, etc. Preferable would be some unit of time for printing, but with the very large fluctuation in system loads and response/printing times, and differences in printing times between various terminals, a unit of measurement based on time would not be really useful in the present state of the Network. Some research toward determining a practical unit of measurement may be necessary. 4b10a

On learning how much material the system has found in answer to his inquiry, the human-user should be able to inquire as to some identification-attribute of each of the items (file name, character of file: user guide, programmer's guide, tutorial, scenario, quarterly report, etc.) and then should be able to choose between/among them in his own stated sequence of access. 4b11

The user interface should "remember" the found material, and jump to any item in the sequence, either forward or return. The sequence-memory should persist during any one working session, and on demand from the human-user, should have the ability to print out the identification attributes of the sequence into an ephemeral file for conversion and/or transmittal to a regular file at some site or a printing device. Conceivably some searches requested by the human-user might require some considerable time and cpu power; the results of such a search should not be lost, requiring a repetition of the effort in case the human-user must terminate his session before he feels he is completely finished with his work. 4b12

There should exist the ability to present information to the user in units acceptable by his terminal viewing device (like specifying width and length of acceptable displays). A user initiated restart should be provided to obtain any subsequent units inherent in the current "total-unit" being provided to him. 4b13

The Network Help Facility should be accessible as a pre-login facility if requested, especially for the purpose of informing the human-user of how to login and receive accounts and information at any site he requests. A concept of metered CPU utilization may be required to allow experimental use of

described resources. 4b14

The Network Help Facility should take advantage of existing "traditions" in help facilities (i.e., the use of meaningful commands such as "?" and "help" to access help information at any given point). 4b15

The Network Help Facility should allow, with no user charge, access to information describing login procedures and possibly information concerning how to acquire an account at the site of interest. A reference to the Resource Notebook could give information on site facilities. There should possibly be some free cpu time for investigation of tutorials and hands-on experience with the systems described; a factor involving monitored use-time and automatic logout at pre-specified times. 4b16

There should be free access to the site databases and systems by the Network Help Facility itself. 4b17

There should be the ability to duplicate frequently used databases at some to be determined site(s) for some to be determined variety of access (to allow access to a database if the home site for that database is down). Possibly use of the datacomputer for archival and retrieval of site replicated, stable, and unchanging files is indicated. 4b18

There should be the ability for a responsible site person, on pre-agreement with whoever is responsible for the Network Help Facility (persumably the PML), to submit additional databases, changed information, system notices concerning the site's help facilities, and allied information to the Network Help Facility system for subsequent viewing by the user-public. Likewise, the ability will be needed for removal of previously submitted files and databases. 4b19

There should be a temporary repository facility within the Network Help Facility, within which such databases as mentioned immediately above may be placed pending their approval for final placement for viewing by the user-public. This allows for a review and approval mechanism before information is considered qualified for viewing. (This review and approval is required as a function of the PML, see USING PML Committee

report.)

4b20

There should be a feedback mechanism to allow the persons responsible for the care and upkeep of the Network Help Facility to be aware of the usage of the system, kind of usage, and response of the human-user to the facilities offered. (Such a mechanism now exists on the Network, designed and implemented by the USING Feedback Committee, see USING Note 10, NIC 21683. It is assumed that the proposed PML would be responsible for this operation.)

4b21

There should be the facility within the feedback mechanism to prompt the human-user to use the feedback facility to give comments about his experiences with the system. Included in this prompting should be the opportunity to request the development of help databases on specifically named and described systems or subjects. The human-user should be requested to supply his name and network address in order that he may receive acknowledgement of his comments.

4b22

A person or group should be designated as responsible for the upkeep and care of the Network Help Facility. This group, with some to be decided upon supervision, should maintain a knowledge of and response to the Network's users and their needs. The suggested source for this care and upkeep is the Performance Measurements Laboratory proposed in the report of the USING PML Committee.

4b23

Systems Interfaces

5

The User Interface

5a

The Network Help Facility, as seen by the user, should be simple, clear and specific. The user interface and system feedback should be in simple English, with a deliberate attempt made to avoid "in-language", buzz words and phrases, and the necessity for any sophisticated knowledge on the part of the user.

5a1

It is recognized that the user will range in knowledge and background all the way from systems designers and systems programmers to secretaries, file clerks, inventory clerks, and typists, both civilian and military. It should be remembered that even though a user may possibly be quite knowledgeable in some systems, he may be in need of the simplest instructions in some others; therefore, the simple, direct approach toward the user interface is most useful.

5a2

The requirement of simplicity and ease of use and understanding is so vital that it is worthy of repetition and special attention. A Facility which requires any knowledge of computers or computer networks or computer systems is not an efficient one and is not needed on the Network. The true elegance of simplicity, with sophistication used in its internal mechanisms and not required of the user is the design criterion demanded here.

5a3

The demands on the user for decisions requiring special knowledge of either a system, site, or the Network should be carefully avoided. The Facility should make those choices within its own mechanism, requiring only of the user that he express his personal choices as to what information he wishes to see, and whether or not he is ready to halt the system output at any given point (frequent browse pauses for continuance should be made, and ability to halt output in mid-stream should be given).

5a4

On the other hand, it is recognized that part of this Facility's user-public will indeed be highly knowledgeable concerning systems and the Network. Therefore, there should

exist within the Network Help Facility the ability for the user to make inquiries of the Facility on an interactive basis, allowing for considerable freedom of manipulative search, if the user chooses to do so,

5a5

The Facility/Site Interface

5b

It seems most reasonable and economical to follow the precedent set by the TELNET, FTP, RSEXEC and other Network wide facility protocols in the design of this Network Help Facility. As with FTP et al, the interface between the Network Help Facility and the server site should be written by the server site. The Network Help Facility accepts data in a standard way, and the individual server sites write servers that "map" the data from their material into an internal physical and logical structure that is expected by the Network Help Facility.

5b1

The interface between the Network Help Facility and the individual sites will have to be individually done -- there is no avoiding this problem. No two sites are exactly alike.

5b2

Two things which will go far toward alleviating this problem and keeping it from being prohibitive with relation to time and effort are:

5b3

The majority of the sites on the ARPANET are PDP-10's with TENEX, and except for SRI-ARC and OFFICE-1, are relatively similar. An installation done for one TENEX site should require very little change to be installed for other TENEX sites. The changes to the TENEX JSYS at SRI-ARC and OFFICE-1 are such that there still should be little problem in utilizing a standard, TENEX-oriented system.

5b3a

The majority of the non-TENEX sites already have well-established systems for handling their help databases and, although the interface will need tailoring to fit the site, the Network Help Facility should be written in such manner that this site-tailoring will be at a minimum.

5b3b

Possible Implementation Approaches 6

It is suggested that the Network Help Facility be written and completely implemented at two prototypical PDP-10 TENEX sites; checked out for adequacy and ease of operation, and from these sites, "canned" copies of these programs be made available to other TENEX sites. From these prototypical implementations, a workable "pattern" may be seen by the new sites to be added. The tailoring of this fundamental implementation should not be difficult. 6a

As the installation of the original prototype reaches a reasonable workability, the implementations for non-typical sites, such as UCSD's B6700, UCLA-CCN's 360/91, Harvard's non-TENEX PDP-10, MIT-Multics, etc., may then be approached with some assurance that the necessary work will be, not so much of original design, but of adaptation of a workable design to the peculiarities of a specific machine. 6b

In the meantime, the Network-resident portion of the Network Help Facility can be up and running, and gathering additional experience with added databases, techniques of access, and rapid search capabilities. 6c

USING Group, NETHELP Committee Report -
Network Help Facility

(J30643) 7-MAY-74 08:04; Title: Author(s): Alan R. Hill/ARH;
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MLK2 7-MAY-74 08:53 30644

Test of Journal system and MLK2 Ident.

This is a test to see if your "Initials File" is functioning properly. I put in a few headings to getyou started communicating. (EJK) 1

MLK2 7-MAY-74 08:53 30644

Test of Journal system and MLK2 Ident.

(J30644) 7-MAY-74 08:53; Title: Author(s): Murray L. Kesselman/MLK2; Distribution: /MLK2 EJK; Sub-Collections: NIC; Clerk: MLK2;