

DVN 28-FEB-74 17:00 22140

Publishing a JOVIAL Manual through COM, Comments and Questions

responds to 30111

Publishing a JOVIAL Manual through COM, Comments and Questions

A Couple of Questions

- How many copies do you need? 1
- How many users would be satisfied with microfilm? 1a
- Affects what type of printing plates we make 1a1
- How many users would be satisfied with microfilm? 1b
- What's your deadline? 1c
- I can imagine several ways of typing in the text (via Dex I presume): 2
- No directives (directives added later by hand or by program). 2a
- Typist puts in directives when they are needed according to a manual we work out 2b
- Tough typing 2b1
- It might be wiser for the typist to put in keys that are replaced by directives via substitute later 2b2
- I expect if we analyse the text we will find some directives can be put in via program and others via typist with hand revision later 2c
- I have made a quick print, output processor, and COM test file of (pelell, nelson). They are at Office 1, <van Nouhuys> Jovial.qtxt; txt; and contx; respectively. The COM test prints out with many CR's, i.e. only a few line segments to a page -- I haven't figured out why yet. Maybe a single instance of printer malfunction. 3
- Answers to (30111,7) 4
- The only things useful about entering large documents I can think of are our proposal to you of last year (journal,14567,) and my soon-to-be-journalized memo on DEIS problem (journal,22124,). Both of these have to be with writing from scratch rather than copying. I will try to find some more references. There are various report production plans e.g. (journal,10088,). 4a
- At present we have to buy the microfilm step. DDSI is planning to get a new camera which would allow us to skip the microfilm. I will ask them about it. 4b
- A spelling checker is available in TENEX with a dictionary of 12,000 words and the capacity to extend its dictionary through use. There are problems using it with NLS, but we have been thinking about working them out. Maybe this is the occasion. 4c

Publishing a JOVIAL Manual through COM, Comments and Questions

I will talk to Jim about business matters this week. Dean will be back next week for a while and then perhaps we should have a computer based dialogue.

5

I'm really interested in this.

6

DVN 28-FEB-74 17:00 22140

Publishing a JOVIAL Manual through CCM, Comments and Questions

(J22140) 28-FEB-74 17:00; Title: Author(s): Dirk H. Van Nouhuys/DVN;
Distribution: /DPCS(fyi) COM(fyi) DLS PR TLH DDSI(fyi); Sub-Collections:
SRI-ARC DPCS COM DDSI; Clerk: DVN;

Document Request

Marcia:

Thanks for the prompt despatch of the documents I requested earlier. Could you please send me a copy of NIC 14689 also as we cannot find it in our collection,

Thanks .. Steve

1

Document Request

(J22141) 1-MAR-74 02:42; Title: Author(s): Stephen R. Wilbur/SRW;
Distribution: /MLK; Sub-Collections: NIC; Clerk: SRW;

Archived files

Mike Kudlick:

Recently, about the time of the NIC move to OFFICE-1 I noticed that we had lost all our archived files (uk-ics). I wrote a note to Ferguson but have not had a reply. I wondered whether this was an accidental deletion of archived files or whether it is your policy to delete archived files after a certain time? The files are I think all in (uk-ics,srw,archive) in terms of their names and dates they were submitted to the archive process, but I have not recorded the tape number there,

I would be grateful if these can be recovered from the depths of the system

Thanks .. Steve Wilbur

1

SRW 1-MAR-74 02:50 22142

Archived files

(J22142) 1-MAR-74 02:50; Title: Author(s): Stephen R. Wilbur/SRW;
Distribution: /MDK; Sub-Collections: NIC; Clerk: SRW;

Temporary Use of SRI-ARC by ADR Users in the Early Morning Hours

SRI-ARC has offered to aid IPT in their attempt to provide relief to ADR users of the overloaded USC-ISI TENEX by providing early morning (PST) service to ADR users. The following information was sent to Mike Wolfsberg of ADR today:

We view this arrangement as being temporary until IPT can find a suitable longer term solution to their TENEX resource problem. In the meantime, we will try to co-exist and hope that both ARC and ADR users get reasonable service. Our other processes that run in the early hours aren't too heavy normally, although there are two or three systems programmers and other assorted users who make good use of those hours (Irby, Wallace, Norton etc.).

We have received the list of directories and groups from Mike Wolfsberg (thanks, Mike). We are now in the process of reconfiguring our diskpack system to provide the added pages needed to handle ADR users.

A 6th drive is in place now and all that needs to be done is a complete disk dump and reload on a reconfigured monitor with some subsequent checkout. We plan to complete this by sometime Saturday, 3/2.

We are hoping to be ready Monday morning for ADR users and I'm still assuming that they will FTP over their own files and programs at that time. The login account number will probably be 3, but just a CR will force the default (3) to be assumed.

The initial startoff password will be as agreed. Passwords may be changed by your users with the CHANGE PASSWORD command at the exec level.

We will set an initial allocation of 8 ADR user jobs having guaranteed access to the ARC machine from 5am to 8am (PST) with a zero allocation after 8am. As we discussed, users will get a 5 minute warning at 8am before being automatically logged off. This is the normal convention under our allocation system. Users must be ready at that time or may lose their investment in then-running compilations. Be careful.

As usual there may be complications..at least the first day..so please bear with us. Problems should be communicated to FERGUSGN@SRI-ARC and NORTON@SRI-ARC or by calling or linking to our operator in the 5am to 8am period who will be logged in as OPERATOR and is Mark Beach. After 8am our operator is Jeff PETERS. The ARC computer room number is: (415) 327-4990 or 329-0740. SRI-ARC is host 2.

Either Bill Ferguson or I will send a message when the system is

JCN 28-FEB-74 19:21 22143

Temporary Use of SRI-ARC by ADR Users in the Early Morning Hours

ready for your use. If there are questions you need answered, send
me a message..ok? Jim Norton

1h

JCN 28-FEB-74 19:21 22143

Temporary Use of SRI-ARC by ADR Users in the Early Morning Hours

(J22143) 28-FEB-74 19:21; Title: Author(s): James C. Norton/JCN;
Distribution: /SRI-ARC JSP JCRL; Sub-Collections: SRI-ARC; Clerk: JCN;

links in xnl's

this document describes some of the new procedures available in xnl's for dealing with links and address expressions. if anyone writes any code that deals with links, etc., they should use these new procedures as the old ones (lparse and lnkspec) will eventually disappear

1

This document also contains a formal description of the syntax for a link and an address expression.

2

PROCEDURES

3

all the following procedures live in (nls,adrmap,)

3a

(Lnkprs) PROCEDURE(bug, adstr);

3b

REF bug, adstr;

3b1

this procedure should replace lparse.

3b2

it accepts the address of a text pointer that points to where to start looking for a link; and the address of a data structure that will get filled in with a bunch of pairs of text pointers. (the fields of the data structure are described in CONST in the branch mothered by the comment:

3b3

% description of the data structure for parsed links %

3b3a

DECLARE EXTERNAL

3b3a1

lfn = 0, % file number for default directory %

3b3a1a

ls = 1, % text pointer to get start of link %

3b3a1b

le = 3, % text pointer to get end of link %

3b3a1c

cs = 5, % text pointer to get start of comment %

3b3a1d

ce = 7, % text pointer to get end of comment %

3b3a1e

hs = 9, % text pointer to get start of hostname %

3b3a1f

he = 11, % text pointer to get end of hostname %

3b3a1g

us = 13, % text pointer to get start of username %

3b3a1h

ue = 15, % text pointer to get end of username %

3b3a1i

links in xnl

```

fs = 17,          % text pointer to get start of          3b3a1j
filename %

fe = 19,          % text pointer to get end of filename    3b3aik
%

ds = 21,          % text pointer to get start of dae %      3b3ail
de = 23,          % text pointer to get end of dae %      3b3aim
vb = 25,          % text pointer to get start of          3b3ain
viewspecs %

ve = 27,          % text pointer to get end of viewspecs  3b3aio
%

lnkdsl = 29;     % length of this data structure %      3b3aip

(lnkpspc) PROCEDURE (cnt, bug, uastr, fastr, dastr, vastr, adstr) 3c
REF bug, uastr, fastr, dastr, vastr, adstr; 3c1
this procedure should replace lnkspec 3c2
cnt, bug, uastr, fastr, dastr, vastr are the same as the
parameters to lnkspec; adstr is the address of a data
structure to be filled in. if $bug is zero then count is
ignored and the data structure passed is assumed to be filled
in and will be used to generate the appropriate strings. 3c3

(lnbfls) PROCEDURE ( bug, adstr, fastr) 3d
REF bug, adstr, fastr; 3d1
this procedure can be used to parse a link where all you are
interested in obtaining is the file name from the link. 3d2
if $bug is zero the the data structure passed is used to
extract; if $bug is non-zero then it is assumed to be a
starting text pointer from which to find a link, and the data
structure passed ( that is if one is passed, which is not
necessary) is filled in. 3d3
both lnbfls and lnkpspc will return the number of the host that is
specified in the link; if no hostname is specified then the number
of the local host will be returned. 3e
the following is the formal description of a link that is used by the
procedures that parse links: 4

```

links in xnl's

s := [SP / TAB] / s (SP / TAB) 4a
link := opndlm s body s clsdlm 4b
opndlm := (('< / '(') [comment]) / "--" 4b1
clsdlm := ')' / '>' 4b2
comment := ctxt "--" 4b3
ctxt := any number of characters excluding the following: 4b4
'-' / ',' / '>' / ')' / '<' / '(' / '.' / ';' / ':' / 4b4a
' / '*' / '#' / '/' / ' / '"' / "'" / '=' / '+' 4b4b
body := [filspc] [dae] [': vwspec] 4c
filspc := [[hn ',] un ',] fn ', 4d
hn := s hstnam s / NULL 4e
hstnam := 1\$48(LD/'-) 4e1
un := s usnam s 4f
usnam := zero to 39 characters excluding the following 4f1
', / SP / TAB / EOL / ':' / ';' / 4f1a
'< / '> / '=' / '← / '*' / '@ / '.' / 4f1b
[0B,5B] / [7B,32B] / [34B,36B] / 140B / >= 173B 4f1c
fn := s (filnam / filnam2) s 4g
filnam := zero or more characters excluding the following 4g1
', / SP / TAB / EOL / ':' / 4g1a
'< / '> / '=' / '← / '@ / 4g1b
[0B,5B] / [7B,32B] / [34B,36B] / 140B / >= 173B 4g1c
filnam2 := '= delim1 STRING delim2 4g2
delim1 := CHARACTER 4g3
delim2 := the same character used for delim 4g4

links in xpls

```

dae := element / dae element                                4h
element :=                                                  4i
    s /                                                      4i1
    stmtnam / ' stmtnam / '* stmtnam /                    4i2
    '# marker /                                            4i3
    '/ / ' /                                              4i4
    imblink /                                             4i5
    ('" STRING "' / '" CHAR) s [= search] /              4i6
    '. pelement / '+ selement / '- selement           4i7
marker :=                                                  4j
    a letter followed by any number of characters except the 4j1
    following:
        SF / TAB / ')' / '>' / ':                        4j1a
stmtnam :=                                                  4k
    LD [LD / '- / '' / 'a] / stmtnam (LD / '- / '' / 'a) 4k1
search := stype [sdomain] / sdomain [stype]              4l
stype := [NUMBER] ('C / 'W)                                4m
    (can be upper or lower case letters)                  4m1
sdomain := [NUMBER] 'S                                     4n
    (can be upper or lower case letters)                  4n1
imblink := ('( / '<) s body s clsdlm                      4o
selement := [NUMBER] struc / selement [NUMBER] struc   4p
struc := 'C / 'E / 'F / 'I / 'L / 'N / 'V / 'W           4q
    (can be upper or lower case letters)                  4q1
pelement := [NUMBER] pos / pelement [NUMBER] pos       4r

```

links in xcls

pos :=	4s
'B / 'C / 'D / 'E / "FR" / 'H / 'L /	4s1
'N / 'O / 'P / 'R / 'S / 'T / 'U / 'W	4s2
(can be upper or lower case letters)	4s2a
vwspec := [viewspec] / vwspec viewspec	4t
viewspec :=	4u
s /	4u1
'a / 'b / 'c / 'd / 'e / 'f / 'g / 'h /	4u2
'i / 'j / 'k / 'l / 'm / 'n / 'o / 'p /	4u3
'q / 'r / 's / 't / 'u / 'v / 'w / 'x /	4u4
'y / 'z / 'A / 'B / 'C / 'D / 'G / 'H /	4u5
'I / 'J / 'K / 'L / 'O / 'P / filter	4u6
filter := '; CONTENT-PATTERN ';	4v

KEV 28-FEB-74 19:41 22144

links in xnl

(J22144) 28-FEB-74 19:41; Title: Author(s): Kenneth E. (Ken)
Victor/KEV; Distribution: /NPG DIRT; Sub-Collections: SRI-ARC-NPG DIRT;
Clerk: KEV;
Origin: (VICTOR, LINK-DOC.NLS;2,), 28-FEB-74 19:40 KEV ;

UK Reply

Dear Bill,

This note is a reply to your query regarding graphics facilities on ARPA in the UK. We don't have any available on our PDP-9 (although we do have a 340 display), but as you must know we front end the 360/195 at

RHEL which does, of course, have graphics facilities. Unfortunately, one cannot work interactively on the

360 (jobs can be submitted interactively and will run almost immediately, but users cannot interact with these jobs)

. The graphics facilities are thus passive, but are nevertheless fairly good. There are all the usual facilities for drawing points vectors, axes, labeling, titling (with variables), scaling (lin & log)

histograms etc etc, and all can be 2-D or 3-D. The output of a users job

, using these facilities, is directed to a special picture file which can then be viewed by the user. Unfortunately the 360 only supports Computek 400 or TEX 4002, but if you can get hold of a CTK 400, I will

show you a sample of what can be done.

No we do not have IMLAC software.

What graphics facilities do you have, as I am very concerned with trying to generate interest over here in using graphics facilities over the Network, and would be very pleased to hear of any projects that are being developed.

To reply, please use SNDMSG to KIRSTEIN@ISI beginning message with ATTN ELB.

Yours , DAVID BATES.

SRW 1-MAR-74 08:51 22145

UK Reply

(J22145) 1-MAR-74 08:51; Title: Author(s): Stephen R. Wilbur/SRW;
Distribution: /WJC; Sub-Collections: NIC; Clerk: SRW;

Use of FTP to retrieve Official Hostnames data from the NIC

Jim ... Two recent notes (from Hathaway and Krilanovich) criticized the suggestion made by me in RFC 608 (as an amplification of LPD's RFC 606) to use FTP for retrieving the official Hostnames file in machine readable format from the NIC.

1

The main aspect of the criticism that I'd like your comments on was that use of FTP was "overkill", and that instead, a socket with its own server program should be set up at the NIC to facilitate this.

2

Krilanovich (in -- HJOURNAL,22004,1:wy) put it this way:

2a

" ... RFC 608 states that the data base will be maintained as a file, and retrievable through FTP. I question the wisdom of basing such a simple process as keeping a host table up to date on such a complex protocol as FTP. Therefore I propose that the data base be available via a program running under its own socket at the NIC and at the secondary host. This also avoids the necessity for the accessing program to know the login parameters for the guest account at the serving host, which in fact might not be the same at the two hosts. Again, the motivation is to make things easy for accessing programs. ... "

2a1

Hathaway concurred in a sndmsg:

2b

FROM: HATHAWAY AT AMES-67 27 FEB 1974 1449-PDT

2b1

" Mark ... Got your RFC 623 today and just wanted to add my agreement to it. I agree with making the file binary and having a special ICP socket (or something) for it, rather than using FTP (talk about overkill). ... "

2b2

While this approach indeed may be easier for programs, I am puzzled by the distaste for FTP. It's as much overkill, in my estimation, as using the Journal to communicate this note to you. If we're trying to set up systems that everyone can use, why not use them? If we then find that FTP is that bad, shouldn't the criticism and work be directed towards improving it, rather than making end runs around it?

3

I would like your opinion, Jim. Should I object to Mark's and Wayne's suggestion? Is their suggestion trivial to implement?

4

... Mike

5

MDK 1-MAR-74 08:53 22146

Use of FTP to retrieve Official Hostnames data from the NIC

(J22146) 1-MAR-74 08:53; Title: Author(s): Michael D. Kudlick/MDK;
Distribution: /JEW JAKE(for your information); Sub-Collections:-SRI-ARC;
Clerk: MDK;
Origin: <KUDLICK>WHITE.NLS;2, 1-MAR-74 08:51 MDK ;

Bugs or Features? II

A bug that stops work in the Help Database:

Output Quick Print doesn't print the first statement. In the help database, that top node contains all of the crucial information.

1

<control-q> from the mouse and keyset does not give you the HELP herald and instead says "?", so you try again and the same thing happens, so you hit <CD> and it fires up the help system twice. Skipping the first view, it takes you to a description of help (thereby proving that after the <CD> was hit, it saw 2 <control-q>s). Harvey says it doesn't work because the mouse and Keyset is not sending a <control-q>. But if this is so, why does it get into help??? Oh yes, I think once when I entered <control-q> from the mouse and keyset, it worked right. What gives?

2

I think "Useroptions" is a misnomer. There is confusion with the already confusing special NLS concept of OPTIONS vs Alternatives and besides, every parameter of every command in nls is a user option. In other words, "Useroptions" is too general potentially very confusing. I think the word "Profile" is much more definitively descriptive. I like Charles' idea of renaming Programs to be Userprograms. Not only does it read better than "use roptions", it can provide a home for all those user programs that currently cannot be used because they have no CML interface. It currently requires more than twice as many steps as the old system since you have to load and attach to the CML interface for each one.

3

The default herald in TNLS should be verbose. I would rather people not get "HEL". Three characters for the prompt default is so arbitrary anyway. Isn't it an artifact from before the Herald (sic) command was implemented in the Profile subsystem?

4

Is there to be a command Help in each NLS subsystem?

5

CML should be modified so that after typing the noun in addition to the parameter (e.g. B:/[A:]) all of the command verbs in a subsystem can be made available. This is so those people who think this capability from the old system is valuable can write their own subsystem to do this.

6

In the Load command, "Busy" should not appear as an alternative to people who can't use it. Is this hard to do? It is needed in some other places like the Algorithm command in the Help subsystem should not show up when the user types "?".

7

Backspace character does not work for <SP> in expert Command-noun recognition. It backspaces the whole command. Isn't that what Backspace word is for? There is no way to backspace just the <SP> if you mistakenly hit one after the command-verb.

8

Bugs or Features? II

Initial spaces should be ignored in Demand Recognition. Also, CONFIRM should work for recognition. This way Altmode or SP might not be required before a CONFIRM even after a complete command-word has been typed.

9

After the command-noun (Return) has been specified in the Jump to Return Command, <BW> and <BC> delete the whole command instead of just the command-noun (Return).

10

Move Link (such as: (Return)) does really wierd things. Like putting it in a different place from where you bug or saying illegal link at the destination selection.

11

"File Verify in Progress" message should be just "Verifying File". Actually, it is unnecessary with the ... feature. However, "Good" should print out if it is not "Bad".

12

KIRK 28-FEB-74 20:44 22147

Bugs or Features? II

(J22147) 28-FEB-74 20:44; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /NEWNLS; Sub-Collections: SFI-ARC NEWNLS; Clerk: KIRK;

TENEX downtime message gripe

The message "use downtime command to see new up-down schedule" would be a valuable thing if it only appeared when there was a new up-down schedule. However, since the useless annoyance cries "wolf" every time I log in, it contains no information and as a result, I never know when there is a new up-down schedule. I have come in several times to work off-hours only to find the system down. The message should only appear when there is a different up-down schedule..

1

KIRK 28-FEB-74 20:45 22148

TENEX downtime message gripe

(J22148) 28-FEB-74 20:45; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /NEWNLS; Sub-Collections: SRI-ARC NEWNLS; Clerk: KIRK;

Some questions and needs about Help

- Please change the scue message in Help to 1
 - "Use <control-q> for help with Help." 1a
- Do you know anything about a command Help in each NLS subsystem? 2
- Do you have any plans for making questionmark in Help to do anything more special than what it already does? 3
- The Y or N message for more menu items in the help system does not give a prompt with a colon after it. This is expected from users who have learned everywhere else to only insert things when prompted. 4

KIRK 28-FEB-74 20:46 22149

Some questions and needs about Help

(J22149) 28-FEB-74 20:46; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /HGL EKM; Sub-Collections: SRI-ARC; Clerk: KIRK;

Potential AKW worker: Prof Joel Goldstein at CMU

I am putting the following message on record: Note: the leading, 5-digit numbers arrived with the message, apparently from Reddy's editor. I cut the message into statements.

1

1-MAR-74 08:40:35 Net mail from site CMU-1

2

00100 TO: DOUG ENGELBART
00200 FROM: RAJ REDDY
00300 SUB: PROF. JOEL GOLDSTEIN
00400 DEAR DOUG,

2a

00500 JOEL IS AN ASST. PROF OF PSYCHOLOGY INTERESTED IN
IMPACT
00600 OF COMPUTERS ON SOCIETY. HE PRESENTLY THINKING OF
00700 LEAVING; PREFERABLY TO A WEST COAST POSITION.

2b

HE HAS
00800 BEEN ACTIVE IN THIS AREA OF COMPUTERS AND SOCIETY.
00900 IN PARTICULAR HE WAS RECENTLY A MEMBER OF A PANEL
01000 ORGANIZED TO STUDY COMPUTERS AND SOCIETY BY NSF OCA
01100 AND HE IS COAUTHORING A REPORT ON THE SUBJECT.

2c

HE HAS
01200 BEEN LOOKING IN TO THE EFFECTS OF COMPUTERS ON
01300 SECRETARIES AND OTHERS SIMILAR USERS TO UNDERSTAND
01400 HOW TO MAKE THE COMPUTERS MORE REACTIVE TO HUMAN
NEEDS.

2d

01500 AS A SOCIAL PSYCHOLOGIST INTERESTED IN COMPUTERS HE
01600 MIGHT BE JUST THE PERSON NEEDED BY YOU FOR MST PROGRAM
01700 TO DO SOME OF HUMAN FACTORS STUDIES AND PROTOCOL
ANALYSIS.

2e

01800 IF YOU ARE INTERESTED PLEASE WRITE TO HIM AT CMU
PSYCHOLCGY
01900 DEPT OR CALL HIM THERE 412-621-2600.

2f

02000 BEST REGARDS
02100 RAJ

2g

DCE 1-MAR-74 09:18 22153

Potential AKW worker: Prof Joel Goldstein at CMU

(J22153) 1-MAR-74 09:18; Title: Author(s): Douglas C. Engelbart/DCE
; Distribution: /rww mdk pr jcn ; Sub-Collections: SRI-ARC; Clerk:
DCE ;

Formation of an IR Group
- - - -

Thanks for the paper; it looks very good and I'll read it today.

Now I need to talk to you about what your ideas and the recent suggestions of others has stimulated. It seems a good time to start a group, to answer your questions. I am appending the note in preparation.

<NORTH>IRGROUP.NLS;6, 26-FEB-74 12:54 JBN ;

IR GROUP BEING FORMED

FORMATION OF A NETWORK DIALOG GROUP ON INFORMATION RETRIEVAL

Interest in Information Retrieval techniques indicates the desirability of establishing a Group to bring together people on the Network who want to exchange information on IR. So let's do it. I have entered the nucleus of the Group into the Ident file, composed of people who have recently indicated their interest. I have prepared a draft statement of the purpose of the Group, and when several of us have polished it to our satisfaction, we can make a formal announcement, inviting members and dialog. Call me, or better yet, journalize your comments on the draft and on potential members.

1a

PURPOSES OF THE INFORMATION RETRIEVAL GROUP

2

To promote dialog among Network people working in the following areas related to Information Retrieval:

2a

- Bibliographic retrieval
- Data retrieval
- Management information manipulation
- Text-searching

2a1

Aspects of IR of interest to the Group include:

2b

- Data elements
- File organization
- Languages
- Network access to remote data bases
- Report generation
- SDI profiles
- Strategies
- Thesauri

2b1

Projects of the Group will include:

2c

- Identification of retrieval systems existing on the Network
- Identification of data bases existing on the Network
- Bibliography of programs and other documentation of these systems

2c1

FORMATION OF A NETWORK DIALOG GROUP ON INFORMATION RETRIEVAL

MEMBERSHIP INFORMATION FORM

3

All interested persons are invited to fill out this form and send to the IR Group Coordinator, JBN@NIC or North@SRI-ARC.

3a

Name..... Site.....

3b

Areas of application (Check)

Bibliographic retrieval

Data retrieval

Management information

Text-searching

3c

Areas of specialization

Data elements

File organization

Languages

Network access to remote data bases

Report generation

SDI profiles

Strategies

Thesauri

3d

Contributed information

Retrieval systems being designed or used, with information about their characteristics:

3e

Data bases being accessed, with information about their characteristics:

3e1

Related programs and other documentation

4

5

JBN 1-MAR-74 10:06 22154

Formation of an IR Group

(J22154) 1-MAR-74 10:06; Title: Author(s): Jeanne B. North/JBN;
Distribution: /DON; Sub-Collections: NIC; Clerk: JB;

Extending ARC TENEX Service to ADR

Re (hjournal,22143,), the plan sounds like madness to me. If I were one of the early-morning users at ARC (I'm not), I'd be mighty upset with the plan. What is a typical load average at that time of the morning? Small enough that such an increase makes sense? What subsystems do they plan to use (sounds like they won't be using NLS, and will be using a compiler)? Who is ADR?

1

JEW 1-MAR-74 10:58 22155

Extending ARC TENEX Service to ADR

(J22155) 1-MAR-74 10:58; Title: Author(s): James E. (Jim)
White/JEW; Distribution: /SRI-ARC; Sub-Collections: SRI-ARC; Clerk: JEW;

Regarding a Hostnames Server Process

In response to your (hjournal, 22146,), Mike, I absolutely disagree with Mark's and Wayne's idea of building a separate process at NIC (and some second host) to give user processes access to a file for which a Network-standard () access method already () exists.

1

In my view, asking two hosts to build, run, and maintain a new server process (with its own protocol), and ALL hosts to build a new user process -- THAT'S overkill -- not using an existing mechanism designed for this very purpose.

2

The data base proposed IS simply a file, and a sequential one at that (nobody has characterized it as a random file, i.e., requested that the server be prepared to send subsets of the data to the user process). If FTP is appropriate for ANY file transfer application, it's appropriate for this one.

2a

Yes, FTP IS more complex that required for this particular application; but it's a general facility, and therefore almost by definition, it's more complex than would be required for ANY PARTICULAR application.

2b

If the apparent distaste for FTP results from deficiencies in the protocol, then the protocol should indeed be modified, as you point out. We had the very same situation re the RSEXEC. The solution there was to build an FTP-substitute and use it. That was the wrong solution

2c

Regarding the choice between binary and ASCII, I happen to favor the latter (I long ago lost that battle for Network protocols, and no longer care to fight it). But whichever choice is made, the data can STILL be shipped as a file.

3

Regarding common login parameters for the two servers, that doesn't seem like much of a problem. I can't believe that just two hosts can't agree on a common set. But in any case, a user program must have the hostnames of the two servers built in to it; it doesn't seem much of an added burden to have the login parameters built in as well.

4

JEW 1-MAR-74 11:54 22156

Regarding a Hostnames Server Process

(J22156) 1-MAR-74 11:54; Title: Author(s): James E. (Jim) White/JEW;
Distribution: /MDK; Sub-Collections: SRI-ARC; Clerk: JEW;
Origin: <WHITE>MDKMSG.NLS;4, 1-MAR-74 11:53 JEW ;

so much for getting work accomplished, a response to (22143,)

as an occasional early morning user i object to giving away one of the few remaining times for getting work done (i might be appeased by having a lineprocessor terminal at home so that i could use dnls at home in the only remaining light time, ie late at night)

1

KEV 1-MAR-74 14:29 22158

so much for getting work accomplished, a response to (22143,)

(J22158) 1-MAR-74 14:29; Title: Author(s): Kenneth E. (Ken)
Victor/KEV; Distribution: /SRI-ARC; Sub-Collections: SRI-ARC; Clerk:
KEV;

On a Possible Lockup Condition in the IMP Subnet due to Message Sequencing

Request for Comments #626

14 MAR 74

1

NIC # 22161

L. Kleinrock

2

H. Opderbeck

3

UCLA-NMC

4

"On a Possible Lockup Condition in the
IMP Subnet due to Message Sequencing"

5

6

Lockup or deadlock conditions are one of the most serious system malfunctions that can occur in a computer system or network. Communication protocols have to be designed very carefully to avoid the occurrence of these lockups. Their common characteristic is that they occur only under unusual circumstances which were not foreseen or deemed too unlikely to occur by the protocol designers. (However, these designers often are not the ones in a position to evaluate such likelihoods quantitatively.)

7

The best known lockup that has occurred in the ARPANET is the reassembly lockup [1]. The store-and-forward lockup, also described in Reference 1, has been avoided in the new IMPSYS by carefully observing Kahn's heuristics [1]. The last lockup in the subnet we know of occurred on December 21, 1973 ("Christmas lockup"). This dormant lockup condition was brought to light by collecting snapshot measurement messages from all sites simultaneously. The Christmas lockup happened when snapshot messages arrived at the UCLA IMP which had allocated reassembly storage for them and no reassembly blocks were free. (A reassembly block is a piece of storage used in the actual process of reassembling packets back into messages) [2].

8

Deadlock conditions have not only been observed in the subnet but also in higher level protocols. The original design of the ICP, for example, had a flaw that was discovered only after a few months of use [3,4]. More recently BBN reported a deadlock problem involving the exchange of HOST status information by the RSEXEC server (RSSER) programs [5].

9

As long as it is not possible to design practical communication protocols which guarantee deadlock-free operation it is vital to continually check those protocols that are currently in use for any such failures - even if they appear "very unlikely" to occur. In this RFC we comment on a possible deadlock condition in the IMP subnet which, to our knowledge, has not yet occurred, neither has it

On a Possible Lockup Condition in the IMP Subnet due to Message Sequencing

been identified. Though we have never seen this problem actually happen it may occur in the future if no precautions are taken. This possible lockup condition is due to the sequencing of messages in the subnet.

10

To avoid the occurrence of reassembly lockup, the flow control mechanism in the subnet was modified in some significant ways. Currently there is a limit of four messages that can simultaneously be in transmission between any pair of source and destination IMPs. As a result of removing the link-handling from the old IMPSYS, it became necessary to introduce a message sequencing mechanism.

11

Messages leave the destination IMP in the same order as they entered the source IMP. (Note that the sequencing is done on an IMP-to-IMP basis, not a HOST-to-HOST basis. This may introduce undesirable "sequencing delay" if two HOSTs attached to the same destination IMP receive messages from the same source IMP).

12

Sequencing of messages has, in general, the potential of introducing deadlock conditions. The reason for this is that any message, say message (n+1), which is out of order (and therefore cannot be delivered to its destination HOST) may use up resources that are required by message (n) which must be delivered next. Therefore, message (n) cannot reach its destination IMP which, in turn, prevents the other messages (n+1, etc) that are out of order from being delivered to their destination HOST(s). For this reason one has to be very careful not to allocate too many resources (e. g. buffers) to messages that are out of order.

13

To avoid lockup conditions the current IMPSYS takes the following two precautions:

14

1. Requests for buffer allocation are always serviced in order of message number; i. e. no "ALLOCATE" is returned for message (n+1) if message (n) (or a request for buffer allocation for message (n)) has not yet been received and serviced.

14a

2. Single packet messages (regular and priority) that arrive at the destination IMP out of order are not accepted unless they were retransmitted in response to a previous buffer allocation. These messages are treated rather as a request for the allocation of one buffer (according to 1 above) and then discarded.

14b

With these two precautions a deadlock condition appears to be impossible to occur. However, there is a second buffer allocation mechanism that is not tied to the message sequencing, namely the "ALLOCATE" that is piggy-backed on the RFLM for a multiple-packet message. The piggy-backed ALLOCATE represents a buffer allocation

On a Possible Lockup Condition in the IMP Subnet due to Message Sequencing

for the next multiple-packet message, and NOT for the next message in sequence. Thus, if the next message in sequence is a single-packet message, the piggy-backed ALLOCATE in effect allocates buffers to a message that is out of order.

15

Let us see how this situation can lead to a deadlock condition. Assume there is a maximum number of 24 reassembly buffers in each IMP.

16

Let IMPs A, B, and C continually transmit 8-packet messages to the same destination IMP D such that all 24 reassembly buffers in IMP D are used up by this transmission of multiple packet messages. If now, in the stream of 8-packet messages, IMP A sends a single-packet message it will generally not be accepted by destination IMP D since there is no reassembly buffer space available. (There may be a free reassembly buffer if the single-packet message happens to arrive during the time one of the three 8-packet messages is being transmitted to its HOST). The single-packet message will therefore be treated as a request for buffer allocation. This request will not be serviced before the RFINM of the previous multiple-packet message is sent. At this time, however, all the free reassembly buffers have already been allocated to the next multiple-packet message via the piggy-backed ALLOCATE mechanism. The only chance for the single-packet message to get its allocation request satisfied is to grab a reassembly buffer from one of the other two 8-packet messages. This attempt may be unsuccessful because it depends on the timing of events in the IMP. A deadlock condition can occur if IMP B and IMP C also send a single-packet message in their stream of 8-packet messages which cannot be serviced for the same reason. In this case, the three 8-packet messages that will arrive later at IMP D cannot be delivered to their destination HOST(s) because they are out of order. The three single-packet messages that should be delivered next, however, will never reach the destination IMP since there is no reassembly space available.

17

A possible sequence of event that leads to a deadlock condition can be described as follows:

18

Examples for notation:

18a

event: A8 arrives -> all 8 packets of the 8-packet message from IMP A have arrived at IMP D

18a1

event: C1 arrives -> a single packet message from IMP C has arrived at IMP D (and is treated as a request for buffer allocation)

18a2

On a Possible Lockup Condition in the IMP Subnet due to Message Sequencing

event: B8 complete ->	the last packet of the 8-packet message from IMP B has been received by its destination HOST	18a3
event: A8 RFNM/ALL ->	a RFNM with the piggy-backed ALLOCATE is sent to IMP A	18a4

On a Possible Lockup Condition in the IMP Subnet due to Message Sequencing

	#of allocated reassembly buffers	#of reassembly buffers in use	#of free reassembly buffers	19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38
Initially	24	0	0	22
1. A8 arrives	16	8	0	23
2. B8 arrives	8	16	0	24
3. C8 arrives	0	24	0	25
4. A1 arrives	0	24	0	26
5. B1 arrives	0	24	0	27
6. C1 arrives	0	24	0	28
7. A8 complete	0	16	8	29
8. B8 complete	0	8	16	30
9. C8 complete	0	0	24	31
10. A8 RFNM/ALL	8	0	16	32
11. B8 RFNM/ALL	16	0	8	33
12. C8 RFNM/ALL	24	0	0	34
13. A8 arrives	16	8	0	35
14. B8 arrives	8	16	0	36
15. C8 arrives	0	24	0	37
16. - deadlock -				38

Note that an ALLOCATE for one of the single-packet messages A1, B1, and C1 can only be returned to source IMP A, B, and C, respectively, after the RFNM (with its piggy-backed ALLOCATE) for the previous 8-packet message has been sent. If these RFNMs are sent in sequence, i. e. without an ALLOCATE for one of the single-packet messages in between, the temporarily freed reassembly storage (events (7) through (9)) is implicitly allocated to the next multiple-packet messages (events (10) through (12)) and not to any of the single-packet messages. The next 8-packet messages are, however, out of order and cannot be delivered to their destination HOST(s).

39

On a Possible Lockup Condition in the IMP Subnet due to Message Sequencing

Right now it looks as if such a lockup can only occur if the number of reassembly buffers is a multiple of eight. Indeed, the probability of a lockup in this latter case is much higher. However, deadlocks can also occur if the number of reassembly buffers is not a multiple of eight. Let us assume there are 26 instead of 24 reassembly buffers. Assume also that, due to alternate paths, line failure, or retransmission, the second packet of a 2-packet message arrives at IMP D before a single-packet message from the same source IMP A. The single-packet message has a smaller sequence number and must therefore be delivered to its destination HOST before the 2-packet message. When the second packet of the 2-packet message arrives at IMP D the IMP realizes that only 2 of the allocated 8 buffers will be needed. Therefore 6 buffers are returned to the pool of free reassembly buffers. If there were $26 - 3 \times 8 = 2$ buffers in the pool before, the pool size is increased by 6 to 8 buffers. These 8 buffers, however, are just enough to send out another piggy-backed ALLOCATE. The single-packet message will therefore find the pool of free reassembly buffers empty although the total number of reassembly buffers is not a multiple of eight. The 2-packet message cannot be delivered to its destination HOST because it is out of order. Therefore the deadlock condition we described before may occur again.

40

We agree that the above mentioned sequence of events is unlikely to occur (otherwise one would have observed it already). This is particularly true since the current maximum number of reassembly buffers (58) is much larger than 24. Judging from past experience with computer systems and networks, however, we know that even very unlikely events have a tendency to occur in the long run. Also, the probability of this deadlock condition increases with increasing traffic in the net. Therefore, it is certainly worthwhile to modify the IMPSYS in such a way that this deadlock cannot occur. It turns out that a minor modification already achieves the desired effect. Recall that the described deadlock can only occur because single- and multiple-packet messages use the same pool of reassembly buffers. If we set aside a single reassembly buffer (or one for each destination HOST) that can be used only by single-packet messages this lockup condition due to message sequencing cannot occur.

41

Another solution to this problem is, of course, to move the message sequencing from the IMP to the HOST level. This does not mean that similar lockup problems cannot occur on the HOST level. Also, it is currently much easier to resolve this problem by a slight modification of the IMPSYS rather than having to coordinate all the various HOSTs. Another alternative is to discontinue the use of multiple-packet messages. However, this also involves much more drastic changes which require careful consideration.

42

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On a Possible Lockup Condition in the IMP Subnet due to Message Sequencing

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59 |

NWG/RFC# 626

LK HO 14-MAR-74 13:12 22161

On a Possible Lockup Condition in the IMP Subnet due to Message
Sequencing

(J22161) 14-MAR-74 13:12; Title: Author(s): Leonard Kleinrock,
Holger Opderbeck/LK HO; Distribution: /RFC; Sub-Collections: NWG NIC
RFC; RFC# 626; Clerk: MLK;
Origin: <KEENEY>LOCKUPALC.NLS;12, 14-MAR-74 09:25 JCP ;

Archive Problems

Steve ... in response to your 1-Mar note (22142,) re archive requests: 1

I sent this note to our operator, and things should get straightened out soon. 2

" Jeff: Please recover the following files for directory <UK-ICS> at SRI-ARC 2a

these were the only ones I found in the archive directory: 2a1

USERNOTICES.NLS;11 26-Feb 2a1a

INDRA342.NLS;7 25-Feb 2a1b

USERS.NLS;3 15-Feb 2a1c

UK-DOCS.NLS;4 15-Feb 2a1d

LABEL.NLS;6 12-Feb 2a1e

these were archived by Steve wilbur on the dates indicated but somehow got lost: 2a2

JEAN-MIL.SAV 21-Jan 2a2a

PAGE.TEC 19-Jan 2a2b

SOFTWARE.NLS ? 2a2c

TECO.NLS 19-Jan 2a2d

COMMENTS.NLS 19-Jan 2a2e

INDRA337.NLS 9-Jan 2a2f

INDRA331.NLS 6-Jan 2a2g

PCST.NLS 29-Dec 2a2h

BLVISIT.NLS ? 2a2i

DEC73NEWS.NLS 19-Dec 2a2j

... Thanks. Mike Kudlick " 2a3

Steve, as you may already know, archived files are stored on mag tape, and are not accessible on-line till they're returned to disk. We have no way to delete archived files from the tapes, but they may

Archive Problems

get lost through inadvertent error, meaning that the directory record of the archiving got lost or obliterated. (We currently have no policy about deleting these directory records. They stay forever unless the user deletes them.)

3

If the files you were looking for are not in the above list, let me know their exact names (in the format above).

4

If they were deleted from disk without being archived, we will recover those you want from our disk backup tapes.

5

... Mike Kudlick

6

P.S. I like your habit of keeping a record of the files that you archived. May I suggest that you add the version number and directory name (if not UK-ICS) to your records for future archived files? It helps appreciably in recovering these files.

7

Archive Problems

(J22162) 1-MAR-74 14:34; Title: Author(s): Michael D. Kudlick/MDK;
Distribution: /SRW; Sub-Collections: SRI-ARC; Clerk: MDK;
Origin: <KUDLICK>SRW.NLS;3, 1-MAR-74 14:31 MDK ;

Meeting to tell about ARPA TENEX meeting

Smokey and I will give a summary of the TENEX meeting we attended in Washington next Wed, March 6 at 10 am in the conference room. I will shortly be submitting a statement to the journal, but you will be able to ask us questions there. If the meeting is fairly small, we will adjourn to the parseley room.

1

WRF 1-MAR-74 17:03 22165

Meeting to tell about ARPA TENEX meeting

(J22165) 1-MAR-74 17:03; Title: Author(s): Ferg R. Ferguson/WRF;
Distribution: /SRI-ARC; Sub-Collections: SRI-ARC; Clerk: WRF;

27-FEB-74 14:49:08 Net mail from site AMES-

1

FROM: HATHAWAY AT AMES-67
DATE: 27 FEB 1974 1449-PDT
RE: Support of RFC 623 by Mark Krilanovich (copy))

1a

Mark --

Got your RFC 623 today and just wanted to add my agreement to it. I agree with making the file binary and having a special ICP socket (or something) for it, rather than using FTP (talk about overkill). And also agree about needing two hosts -- but in fact, two hosts is just slightly more reliable than one, really. So in fact would like to see several hosts participating, with a fast, automatic updating scheme (for example, a second ICP socket that means "fill your host table" rather than "dump your host table" and have the NIC or some-body blast updates around daily). Towards this end, we (being a some-time server) would also be willing to volunteer to keep a copy of the file. So let me know how things go and if I can help in any way.

Wayne.

cc: Mike Kudlick, Peter Deutsch

1b

(J22166) 1-MAR-74 17:27; Title: Author(s): Michael D. Kudlick/MDK;
Distribution: /JAKE(copy of Hathaway's msg); Sub-Collections: SRI-ARC;
Clerk: MDK;

New TNLS problem

Problems using a simple content analysis filter in New TNLS: 1

In Editor, I gave the Set Filter To command, typing in the pattern 1a

I then did Set Filter On 1b

I set viewspec i on. 1c

When I printed my branch, none of the contents were filtered out 1d

In programs, I did a Show Status, and it said my buffer indeed had the correct thing at the top of the "Stack of compiled programs" "None" was printed after each "...program for display area:" 1e

Can you get someone to diagnose my problem fairly soon, since I've been trying for two weeks to do a simple content analysis in xnls for a specific purpose??? 1f

JMB 1-MAR-74 20:13 22167

New TNLS problem

(J22167) 1-MAR-74 20:13; Title: Author(s): Jeanne M. Beck/JMB;
Distribution: /NNLS SRL; Sub-Collections: SRI-ARC; Clerk: JMB;

Problems with the AE in New TNLS:

What do you do in an Address Expression to point to the second instance in the statement of " (double quote)?

1

1. The following element:

' "=2c

and:

' "=3c

all get me only the first double quote mark in the statement.

1a

2. Doing a content search on the string of characters ending with the second double quote mark, thus:

"ograms"

is not understood by the system.

1b

Can you make a suggestion?

2

Problems with the AE in New TNLS:

(J22168) 1-MAR-74 20:28; Title: Author(s): Jeanne M. Beck/JMB;
Distribution: /NNLS KEV; Sub-Collections: SRI-ARC; Clerk: JMB;

Problems with the AE in New TNLS (the 2nd):

The address element:

.w (jump to word)

takes me to the origin of my file from anywhere in that file. It
does this also when I use a number before the w
Makes Transpose Word, or Insert, etc, very difficult to use in TNLS

1

JMB 1-MAR-74 20:30 22169

Problems with the AE in New TNLS (the 2nd):

(J22169) 1-MAR-74 20:30; Title: Author(s): Jeanne M. Beck/JMB;
Distribution: /NNLS KEV; Sub-Collections: SRI-ARC; Clerk: JMB;

Please change spelling in <NLS>SYNTAX

In CML, for the Useroptions subsystem, would you please change the spelling of the command-word "Hearald" to "Herald"? Thanks

1

JMB 1-MAR-74 21:52 22170

Please change spelling in <NLS>SYNTAX

(J22170) 1-MAR-74 21:52; Title: Author(s): Jeanne M. Beck/JMB;
Distribution: /NNLS DCW; Sub-Collections: SRI-ARC; Clerk: JMB;

ae in xnls

your problems with AE should be gone after the next load of an xnls.
(by the way , I think you probably want +/-W and not .W)

1

KEV 3-MAR-74 03:27 22171

ae in xnl

(J22171) 3-MAR-74 03:27; Title: Author(s): Kenneth E. (Ken)
Victor/KEV; Distribution: /JMB; Sub-Collections: SRI-ARC; Clerk: KEV;

Assistance needed for London-tip

To John Pickens,
Hello, this is Sylvia Kenney of London-tip.
Adrian Stokes gave me your name and suggested
you might be able to tell me something about
the Illinois Plato software. We have
someone here in London who would like to demonstrate
Plato at a conference. Are you able to tell me
briefly how to access Plato and/or send me
some documentation? Also, do you happen to know of any other
sites with similar educational software?
I should be very grateful if you can help me
in any way. Best wishes from myself and Adrian
Stokes, Sylvia Kenney. (network mail to Kirstein
at ISI or EBN, marked 'Attn: SK')

1

SK 4-MAR-74 03:59 22172

Assistatance needed for London-tip

(J22172) 4-MAR-74 03:59; Title: Author(s): Sylvia Kenney/SK;
Distribution: /JRP; Sub-Collections: NIC; Clerk: SK;

Temporary Use of SRI-ARC by ADR Users in the Early Morning Hours

SRI-ARC has offered to aid IPT in their attempt to provide relief to ADR users of the overloaded USC-ISI TENEX by providing early morning (PST) service to ADR users. The following information was sent to Mike Wolfsberg of ADR today:

1

We view this arrangement as being temporary until IPT can find a suitable longer term solution to their TENEX resource problem. In the meantime, we will try to co-exist and hope that both ARC and ADR users get reasonable service. Our other processes that run in the early hours aren't too heavy normally, although there are two or three systems programmers and other assorted users who make good use of those hours (Irby, Wallace, Norton etc.).

1a

We have received the list of directories and groups from Mike Wolfsberg (thanks, Mike). We are now in the process of reconfiguring our diskpack system to provide the added pages needed to handle ADR users.

1b

A 6th drive is in place now and all that needs to be done is a complete disk dump and reload on a reconfigured monitor with some subsequent checkout. We plan to complete this by sometime Saturday, 3/2.

1c

We are hoping to be ready Monday morning for ADR users and I'm still assuming that they will FTP over their own files and programs at that time. The login account number will probably be 3, but just a CR will force the default (3) to be assumed.

1d

The initial startoff password will be as agreed. Passwords may be changed by your users with the CHANGE PASSWORD command at the exec level.

1e

We will set an initial allocation of 8 ADR user jobs having guaranteed access to the ARC machine from 5am to 8am (PST) with a zero allocation after 8am. As we discussed, users will get a 5 minute warning at 8am before being automatically logged off. This is the normal convention under our allocation system. Users must be ready at that time or may lose their investment in then-running compilations. Be careful.

1f

As usual there may be complications..at least the first day..so please bear with us. Problems should be communicated to FERGUSCN@SRI-ARC and NORTON@SRI-ARC or by calling or linking to our operator in the 5am to 8am period who will be logged in as OPERATOR and is Mark Beach. After 8am our operator is Jeff PETERS. The ARC computer room number is: (415) 327-4990 or 329-0740. SRI-ARC is host 2.

1g

Either Bill Ferguson or I will send a message when the system is

Temporary Use of SRI-ARC by ADR Users in the Early Morning Hours

ready for your use. If there are questions you need answered, send me a message..ok? Jim Norton

1h

JCN 28-FEB-74 19:21 22173

Temporary Use of SRI-ARC by ADR Users in the Early Morning Hours

(J22173) 28-FEB-74 19:21; Title: Author(s): James C. Norton/JCN;
Distribution: /SRI-ARC JSP JCRL; Sub-Collections: SRI-ARC; Clerk: JCN;

links in xnl

this document describes some of the new procedures available in xnl for dealing with links and address expressions. if anyone writes any code that deals with links, etc., they should use these new procedures as the old ones (lparse and lnkspec) will eventually disappear

1

This document also contains a formal description of the syntax for a link and an address expression.

2

PROCEDURES

3

all the following procedures live in (nls, adrmnp,)

3a

(lnkprs) PROCEDURE(bug, adstr);

3b

REF bug, adstr;

3b1

this procedure should replace lparse.

3b2

it accepts the address of a text pointer that points to where to start looking for a link; and the address of a data structure that will get filled in with a bunch of pairs of text pointers. (the fields of the data structure are described in CONSI in the branch mothered by the comment:

3b3

% description of the data structure for parsed links %

3b3a

DECLARE EXTERNAL

3b3a1

lfn = 0, % file number for default directory % 3b3a1a

ls = 1, % text pointer to get start of link % 3b3a1b

le = 3, % text pointer to get end of link % 3b3a1c

cs = 5, % text pointer to get start of comment
% 3b3a1d

ce = 7, % text pointer to get end of comment % 3b3a1e

hs = 9, % text pointer to get start of hostname
% 3b3a1f

he = 11, % text pointer to get end of hostname % 3b3a1g

us = 13, % text pointer to get start of username
% 3b3a1h

ue = 15, % text pointer to get end of username % 3b3a1i

links in xrns

```

fs = 17,      % text pointer to get start of filename      3b3a1j
%
fe = 19,      % text pointer to get end of filename %      3b3aik
ds = 21,      % text pointer to get start of dae %        3b3ail
de = 23,      % text pointer to get end of dae %         3b3aim
vb = 25,      % text pointer to get start of              3b3ain
viewspecs %
ve = 27,      % text pointer to get end of viewspecs     3b3aio
%
lnkdsl = 29;  % length of this data structure %          3b3aip

(lnkpspc) PROCEDURE (cnt, bug, uastr, fastr, dastr, vastr, adstr) 3c
REF bug, uastr, fastr, dastr, vastr, adstr;                      3c1
this procedure should replace lnkspec                            3c2
cnt, bug, uastr, fastr, dastr, vastr are the same as the
parameters to lnkspec; adstr is the address of a data
structure to be filled in. if $bug is zero then count is
ignored and the data structure passed is assumed to be filled
in and will be used to generate the appropriate strings.      3c3

(lnbfls) PROCEDURE ( bug, adstr, fastr)                          3d
REF bug, adstr, fastr;                                          3d1
this procedure can be used to parse a link where all you are
interested in obtaining is the file name from the link.      3d2
if $bug is zero the the data structure passed is used to
extract; if $bug is non-zero then it is assumed to be a
starting text pointer from which to find a link, and the data
structure passed ( that is if one is passed, which is not
necessary ) is filled in.                                       3d3
both lnbfls and lnkpspc will return the number of the host that is
specified in the link; if no hostname is specified then the number
of the local host will be returned.                              3e
the following is the formal description of a link that is used by the
procedures that parse links:                                     4

```


links in xels

s := [SP / TAB] / s (SP / TAB) 4a
link := opndlm s body s clsdlm 4b
opndlm := (('< / '(' [comment]) / "--" 4b1
clsdlm := ')' / '>' 4b2
comment := ctxt "--" 4b3
ctxt := any number of characters excluding the following: 4b4
'-' / ',' / '>' / ') / '<' / '(' / '.' / ';' / ':' / 4b4a
' / '*' / '#' / '/' / ' / '"' / "'" / '=' / '+' 4b4b
body := [filspc] [dae] [' : vwspc] 4c
filspc := [[hn ' ,] un ' ,] fn ' , 4d
hn := s hstnam s / NULL 4e
hstnam := 1\$48(LD/'-) 4e1
un := s usrnams 4f
usrnam := zero to 39 characters excluding the following 4f1
', / SP / TAB / EOL / ' : / ' ; / 4f1a
'< / '> / '=' / '+ / '* / '@ / '.' / 4f1b
[0B,5B] / [7B,32B] / [34B,36B] / 140B / >= 173B 4f1c
fn := s (filnam / filnam2) s 4g
filnam := zero or more characters excluding the following 4g1
', / SP / TAB / EOL / ' : / 4g1a
'< / '> / '=' / '+ / '@ / 4g1b
[0B,5B] / [7B,32B] / [34B,36B] / 140B / >= 173B 4g1c
filnam2 := '= delimi STRING delim2 4g2
delim1 := CHARACTER 4g3
delim2 := the same character used for delim 4g4

links in xnl's

```

dae := element / dae element                                4h
element :=                                                    4i
    s /                                                       4i1
    stmtnam / ' stmtnam / '* stmtnam /                       4i2
    '# marker /                                              4i3
    '/ / ' /                                                 4i4
    imblink /                                                4i5
    ('" STRING "' / "' CHAR) s ['= search] /                4i6
    '. pelement / '+ selement / '- selement              4i7
marker :=                                                    4j
    a letter followed by any number of characters except the 4j1
    following:
        SF / TAB / ')' / '>' / ':                            4j1a
stmtnam :=                                                    4k
    LD [LD / '- / '' / '@] / stmtnam (LD / '- / '' / '@)    4k1
search := stype [sdomain] / sdomain [stype]                 4l
stype := [NUMBER] ('C / 'W)                                  4m
    (can be upper or lower case letters)                     4m1
sdomain := [NUMBER] 'S                                       4n
    (can be upper or lower case letters)                     4n1
imblink := ('( / '<) s body s clsdln                          4o
selement := [NUMBER] struc / selement [NUMBER] struc     4p
struc := 'C / 'E / 'F / 'I / 'L / 'N / 'V / 'W             4q
    (can be upper or lower case letters)                     4q1
pelement := [NUMBER] pos / pelement [NUMBER] pos         4r

```

links in xnl's

```

pos := 4s
      'B / 'C / 'D / 'E / "FR" / 'H / 'L / 4s1
      'N / 'O / 'P / 'R / 'S / 'T / 'U / 'W 4s2
      (can be upper or lower case letters) 4s2a
vwspc := [viewspec] / vwspc viewspec 4t
viewspec := 4u
      s / 4u1
      'a / 'b / 'c / 'd / 'e / 'f / 'g / 'h / 4u2
      'i / 'j / 'k / 'l / 'm / 'n / 'o / 'p / 4u3
      'q / 'r / 's / 't / 'u / 'v / 'w / 'x / 4u4
      'y / 'z / 'A / 'B / 'C / 'D / 'G / 'H / 4u5
      'I / 'J / 'K / 'L / 'O / 'P / filter 4u6
filter := ';' CONTENT-PATTERN '; 4v

```

KEV 28-FEB-74 19:41 22174

links in xnl's

(J22174) 28-FEB-74 19:41; Title: Author(s): Kenneth E. (Ken)
Victor/KEV; Distribution: /NPG DIRT; Sub-Collections: SRI-ARC NPG DIRT;
Clerk: KEV;
Origin: (VICTOR, LINK-DOC.NLS;2,), 28-FEB-74 19:40 KEV ;

links in xnls

this document describes some of the new procedures available in xnls for dealing with links and address expressions. if anyone writes any code that deals with links, etc., they should use these new procedures as the old ones (lparse and lnkspec) will eventually disappear!

1

This document also contains a formal description of the syntax for a link and an address expression.

2

PROCEDURES

3

all the following procedures live in (nls,adrmnp,)

3a

(lnkprs) PROCEDURE(bug, adstr);

3b

REF bug, adstr;

3b1

this procedure should replace lparse.

3b2

it accepts the address of a text pointer that points to where to start looking for a link; and the address of a data structure that will get filled in with a bunch of pairs of text pointers. (the fields of the data structure are described in CONST in the branch mothered by the comment:

3b3

% description of the data structure for parsed links %

3b3a

DECLARE EXTERNAL

3b3a1

lfn = 0, % file number for default directory % 3b3a1a

ls = 1, % text pointer to get start of link % 3b3a1b

le = 3, % text pointer to get end of link % 3b3a1c

cs = 5, % text pointer to get start of comment % 3b3a1d

ce = 7, % text pointer to get end of comment % 3b3a1e

hs = 9, % text pointer to get start of hostname % 3b3a1f

he = 11, % text pointer to get end of hostname %
% 3b3a1g

us = 13, % text pointer to get start of
username % 3b3a1h

ue = 15, % text pointer to get end of username %
% 3b3a1i

links in xnls

```

fs = 17,          % text pointer to get start of          3b3alj
filename %

fe = 19,          % text pointer to get end of filename      3b3alk
%

ds = 21,          % text pointer to get start of dae %          3b3all
de = 23,          % text pointer to get end of dae %          3b3alm
vb = 25,          % text pointer to get start of          3b3aln
viewspecs %

ve = 27,          % text pointer to get end of viewspecs      3b3alo
%

lnkds1 = 29;      % length of this data structure %      3b3alp

(lnkpspc) PROCEDURE (cnt, bug, uastr, fastr, dastr, vastr, adstr) 3c
  REF bug, uastr, fastr, dastr, vastr, adstr;                    3c1
  this procedure should replace lnkspec                          3c2

  cnt, bug, uastr, fastr, dastr, vastr are the same as the
  parameters to lnkspec; adstr is the address of a data
  structure to be filled in. if &bug is zero then count is
  ignored and the data structure passed is assumed to be filled
  in and will be used to generate the appropriate strings.      3c3

(lnbfls) PROCEDURE ( bug, adstr, fastr)                          3d
  REF bug, adstr, fastr;                                        3d1

  this procedure can be used to parse a link where all you are
  interested in obtaining is the file name from the link.      3d2

  if &bug is zero the the data structure passed is used to
  extract; if &bug is non-zero then it is assumed to be a
  starting text pointer from which to find a link, and the data
  structure passed ( that is if one is passed, which is not
  necessary) is filled in.                                     3d3

  both lnbfls and lnkpspc will return the number of the host that is
  specified in the link; if no hostname is specified then the number
  of the local host will be returned.                          3e

```

the following is the formal description of a link that is used by the procedures that parse links:

4

links in xnlS

```

s := [SP / TAB] / s (SP / TAB) 4a
link := opndlm s body s clsdlm 4b
  opndlm := ( ('< / '() [comment] ) / "--" 4b1
  clsdlm := ') / '>' 4b2
  comment := ctxt "--" 4b3
  ctxt := any number of characters excluding the following: 4b4
    '- / ', / '> / ')' / '< / '(' / '.' / ';' / ':' / 4b4a
    '! / '*' / '#' / '/' / '\' / '"' / '|' / '=' / '+' 4b4b
body := [filspc] [dae] [' : vwspc] 4c
filspc := [[hn ',] un ',] fn ', 4d
hn := s hstnam s / NULL 4e
  hstnam := 1$48(LD/'-) 4e1
un := s usrnam s 4f
  usrnam := zero to 39 characters excluding the following 4f1
    ', / SP / TAB / EOL / ':' / ';' / 4f1a
    '< / '> / '=' / '+' / '*' / '@ / '.' / 4f1b
    [0B,5B] / [7B,32B] / [34B,36B] / 140B / >= 173B 4f1c
fn := s (filnam / filnam2) s 4g
  filnam := zero or more characters excluding the following 4g1
    ', / SP / TAB / EOL / ':' / 4g1a
    '< / '> / '=' / '+' / '@ / 4g1b
    [0B,5B] / [7B,32B] / [34B,36B] / 140B / >= 173B 4g1c
  filnam2 := '= delim1 STRING delim2 4g2
  delim1 := CHARACTER 4g3
  delim2 := the same character used for delim 4g4

```

links in xnlS

```

dae := element / dae element                                4h
ELEMENT :=                                                    4i
    s /                                                       4i1
    stmntnam / 'i stmntnam / '* stmntnam /                  4i2
    '# marker /                                             4i3
    '/ / '\ /                                               4i4
    imblink /                                               4i5
    ('" STRING "' / 'i CHAR) s [= search] /                4i6
    '. pelement / '+ selement / '- selement            4i7
marker :=                                                    4 J
    A LETTER FOLLOWED BY ANY NUMBER OF CHARACTERS EXCEPT THE 4j1
    FOLLOWING;
    SP / TAB / ' / '> / ':                                  4j1a
stmntnam :=                                                    4k
    LD [LD / '- / ' / '@] / stmntnam (LD / '- / ' / '@)    4k1
search := stype [sdomain] / sdomain [stype]                4l
stype := [NUMBER] ('C / 'W)                                  4m
    (can be upper or lower case letters)                    4m1
sdomain := [NUMBER] 'S                                       4n
    (can be upper or lower case letters)                    4n1
imblink := ((' / '<) s body s clsdm                          4o
selement := [NUMBER] struc / selement [NUMBER] struc    4p
struc := 'C / 'E / 'F / 'I / 'L / 'N / 'V / 'W            4q
    (can be upper or lower case letters)                    4q1
pelement := [NUMBER] pos / pelement [NUMBER] pos        4r

```


links in xnls

```

pos :=                                     4s
    'B / 'C / 'D / 'E / "FR" / 'H / 'L /   4s1
    'N / 'O / 'P / 'R / 'S / 'T / 'U / 'W   4s2
    (can be upper or lower case letters)    4s2a
vwspc := [viewspec] / vwspc viewspec       4t
viewspec :=                                 4u
    s /                                     4u1
    'a / 'b / 'c / 'd / 'e / 'f / 'g / 'h / 4u2
    'i / 'j / 'k / 'l / 'm / 'n / 'o / 'p / 4u3
    'q / 'r / 's / 't / 'u / 'v / 'w / 'x / 4u4
    'y / 'z / 'A / 'B / 'C / 'D / 'G / 'H / 4u5
    'I / 'J / 'K / 'L / 'O / 'P / filter   4u6
filter := '; CONTENT-PATTERN ';           4v

```

<HJOURNAL>22174.NLS;1, 4-MAR-74 04:32 XXX ; Title: Author(s): Kenneth
E. (Ken) Victor/KEV; Distribution: /NPG DIRT; Sub-Collections: SRI-ARC
NPG DIRT; Clerk: KEV;
Origin: (VICTOR, LINK-DOC.NLS;2,), 28-FEB-74 19:40 KEV ;

Bugs or Features? II

A bug that stops work in the Help Database:

Cutput Quick Print doesn't print the first statement. In the help database, that top node contains all of the crucial information.

1

<control-q> from the mouse and keyset does not give you the HELP herald and instead says "?", so you try again and the same thing happens, so you hit <CD> and it fires up the help system twice. Skipping the first view, it takes you to a description of help (thereby proving that after the <CD> was hit, it saw 2 <control-q>s). Harvey says it doesn't work because the mouse and Keyset is not sending a <control-q>. But if this is so, why does it get into help??? Oh yes, I think once when I entered <control-q> from the mouse and keyset, it worked right. What giveso

2

I think "Useroptions" is a misnomer. There is confusion with the already confusing special NLS concept of CPTIONs vs Alternatives and besides, every parameter of every command in nls is a user option. In other words, "Useroptions" is too general potentially very confusing. I think the word "Profile" is much more definitively descriptive. I like Charles' idea of renaming Programs to be Userprograms. Not only does it read better than "use roptions", it can provide a home for all those user programs that currently cannot be used because they have no CML interface. It currently requires more than twice as many steps as the old system since you have to load and attach to the CML interface for each one.

3

The default herald in TNLS should be verbose. I would rather people not get "HEL". Three characters for the prompt default is so arbitrary anyway. Isn't it an artifact from before the Herald (sic) command was implemented in the Profile subsystem?

4

Is there to be a command Help in each NLS subsystem?

5

CML should be modified so that after typing the noun in addition to the parameter (e.g. B:[A:]) all of the command verbs in a subsystem can be made available. This is so those people who think this capability from the old system is valuable can write their own subsystem to do this.

6

In the Load command, "Busy" should not appear as an alternative to people who can't use it. Is this hard to do? It is needed in some other places like the Algoritm commad in the Help subsystem should not show up when the user types "?".

7

Backspace character does not work for <SP> in expert Command-noun recognition. It backspaces the whole command. Isn't tht what Backspace word is for? There is no way to backspace just the <SP> if you mistakenly hit one after the command-verb.

8

Bugs or Features? II

Initial spaces should be ignored in Demand Recognition. Also, CONFIRM should work for recognition. This way Altmode or SP might not be required before a CONFIRM even after a complete command-word has been typed.

9

After the command-noun (Return) has been specified in the Jump to Return Command, <BW> and <BC> delete the whole command instead of just the command-noun (Return).

10

Move Link (such as: (Return)) does really wierd things. Like putting it in a different place from where you bug or saying illegal link at the destination selection.

11

"File Verify in Progress" message should be just "Verifying File". Actually, it is unnecessary with the ... feature. However, "Good" should print out if it is not "Bad".

12

Bugs or Features? II

(J22175) 28-FEB-74 20:44; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /NEWNLS; Sub-Collections: SRI-ARC NEWNLS; Clerk: KIRK;

TENEX downtime message gripe

The message "use downtime command to see new up-down schedule" would be a valuable thing if it only appeared when there was a new up-down schedule. However, since the useless annoyance cries "wolf" every time I log in, it contains no information and as a result, I never know when there is a new up-down schedule. I have come in several times to work off-hours only to find the system down. The message should only appear when there is a different up-down schedule..

1

KIRK 28-FEB-74 20:45 22176

TENEX downtime message gripe

(J22176) 28-FEB-74 20:45; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /NEWNLS; Sub-Collections: SEI-ARC NEWNLS; Clerk: KIRK;

Some questions and needs about Help

- Please change the scue message in Help to 1
"Use <control-q> for help with Help." 1a
- Do you know anything about a command Help in each NLS subsystem? 2
- Do you have any plans for making questionmark in Help to do anything more special than what it already does? 3
- The Y or N message for more menu items in the help system does not give a prompt with a colon after it. This is expected from users who have learned everywhere else to only insert things when prompted. 4

KIRK 28-FEB-74 20:46 22177

Some questions and needs about Help

(J22177) 28-FEB-74 20:46; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /HGL EKM; Sub-Collections: SEI-ARC; Clerk: KIRK;

Request for Privacy Support from EXEC

Ferg-- The privacy stuff in NLS, which is otherwise ready to go, requires a change to the EXEC (and to GEDIT and its data base), which Smokey informs me is your domain these days. We need to be able to associate a LIST of idents (not just zero or one) with a login directory, and, for such directories, prompt the user for his ident (as we do now when there's no ident) and accept it iff it's in the list. We also need to restrict use of the EXEC's CHANGE IDENT command in the same way, or eliminate it entirely. Appropriate changes to QEDIT (e.g., to permit modification of the ident list) must also be made. How does this fit into your work queue? ---Jim

1

JEW 4-MAR-74 16:15 22178

Request for Privacy Support from EXEC

(J22178) 4-MAR-74 16:15; Title: Author(s): James E. (Jim)
White/JEW; Distribution: /WRF DCW RWW; Sub-Collections: SRI-ARC; Clerk:
JEW;

I'm really sorry I didn't get to look at your document until today. It looks quite good and should provide an excellent base for comments.

1

I have one minor and two trivial comments:

2

1) In recommendations, it would have been nice to suggest that Tenex incorporate the NIC's ident system, to allow monitoring exactly who is using what kind of resource (interest in what kind of person, not the person's name). As you point out, too many directories are shared. The ident system gives better precision). A modification would have to be made to allow defaulting the ident, in the case of unshared directories. Those people do not want to have to type another piece of information.

3

2) Why do (f) Documentation and (h) Mail indicate category (1) Source program creation, instead of (2) Data file preparation? (I told you they were trivial). Seems like a difference in perspective concerning the user's role.

4

Dave.

5

DHC 4-MAR-74 18:03 22179

(J22179) 4-MAR-74 18:03; Title: Author(s): David H. Crocker/DHC;
Distribution: /UDEF; Sub-Collections: NIC UDEF; Clerk: DHC;

Telephone Noise Boggles Runfiles

It turns out Eileen has been logging in at ARC as energy and telnetting to Office-1 when she needs to run the runfile that collects peoples sndmessages so she can distribute them. 1

The telephne connections between here and offic-1, via whatever rout (direct, Tymeshare TIP, Ames TIP) introdue so many spurious characters that she dubs runfiles useless via phone lines. 2

If she's right and we can think of no other solution, she will have a real porblem when Energy is made part of the group allocation-group world...that is they can log in only if there is a free solt. 3

DVN 4-MAR-74 19:47 22180

Telephone Noise Boggles Runfiles

(J22180) 4-MAR-74 19:47; Title: Author(s): Dirk H. Van Nouhuys/DVN;
Distribution: /ECW JCN NDM NDM JHB; Sub-Collections: SRI-ARC-DE+S;
Clerk: DVN;

Not Much Time on the HELP Data Base

Just to note that since we decided to let Jim Bair train Eileen partly to free me to work on the help data base, I have spent at most an hour or two reviewing said file. My time, besides DEIS, has been taken up with various overheadish things.

1

Maybe this week will be better.

2

DVN 4-MAR-74 19:55 22181

Not Much Time on the HELP Data Base

(J22181) 4-MAR-74 19:55; Title: Author(s): Dirk H. Van Nouhuys/DVN;
Distribution: /JCN KIRK JMB(how are you doing?); Sub-Collections: SRI-ARC; Clerk: DVN;

Line Processor and XNLS Problems

I am working tonight in XNLS through the line processor, so I am sending my problems in both directions. 1

Fragments of my origen statement are all the time floating in my input text; likewise my input text runs into the top lines of my file. The fragments of the origien statement are, I guess, the source of CRG in caps which floats up some times. 2

Sometimes when I do jump to item the screen removes a middle item or two, moves the jumped-to item up to second place, and waits for a recreate display before making further modifications. 3

Insert word just does not work. The system goes through all the motions, but the text never reaches the destined spot. 4

On one occasion Update File Old, produced some kind of jumble on the screen. <control-t> followed by <control-C> produced a complete jumble including the tenex teletype image, and various fragments of my file. I reset. 5

Just now it worked fine. 5a

Finally some one on a TI linked to me. I hit <control-c> to see more lines. That got me the teletype face plus a jumbled NLS screen. I reset. Then she wanted me to try something in new TNLS. I reentered WORK intending to simulated terminal type TI. But I was greeted with a new high in garbage. All kinds of shit like I'd not set up the line procesor properly..eg <control-c> echoed with a string of chracters. I went to another terminal. 6

DVN 4-MAR-74 22:07 22182

Line Processor and XNLS Problems

(J22182) 4-MAR-74 22:07; Title: Author(s): Dirk H. Van Nouhuys/DVN;
Distribution: /DIA NEWNLS CHI; Sub-Collections: SRI-ARC NEWNLS; Clerk:
DVN;
Origin: <VANNOUHUYS>FORSUSAN.NLS;1, 4-MAR-74 22:04 DVN ;

Message from London-tip

To James Anderson,
This is Sylvia Kenney of London-tip.
I saw the message you left us last week requesting
more information. Can you be specific?
Do you want particular information about the 360 system?
I can send you a facts card which may help.
Let me know how I can help. Sylvia Kenney

1

SK 5-MAR-74 03:58 22183

Message from London-tip

(J22183) 5-MAR-74 03:58; Title: Author(s): Sylvia Kenney/SK;
Distribution: /JA; Sub-Collections: NIC; Clerk: SK;

another message from London-tip.

James, sorry, I forgot to tell you
my network address. It's KIRSTEIN at ISI or BBN
marked 'attn: SK'. Sylvia Kenney

SK 5-MAR-74 04:01 22184

another message from London-tip.

(J22184) 5-MAR-74 04:01; Title: Author(s): Sylvia Kenney/SK;
Distribution: /JA; Sub-Collections: NIC; Clerk: SK;

Thanks for the LP and XNLS note

Thank you for your note about the Line Processor. For the time being observe the two following suggestions:

1

DO NOT type <control-C> or <control-T> while the display is being updated or changed. This problem is awaiting a TENEX fix.

1a

If you hit SYSTEM RESET on the Line Processor you must also say TERMINAL TYPE IS ... to the EXEC.

1b

Also, you must QUIT NLS to get more TTY lines. <control-C> only gives you the two lines.

2

Thanks for the LP and XNLS note

(J22185) 5-MAR-74 05:50; Title: Author(s): Don I. Andrews/DIA;
Distribution: /DVN CHI; Sub-Collections: SRI-ARC; Clerk: DIA;

Small Clarification on Line Processor Troubles

Replies to (hjournal ,22185,)

Small Clarification on Line Processor Troubles

Thanks for your thanks. I will try to observe your caveats and warn others. It was not clear to me from your note if you understood what I meant by reset. On the occasion I recounted, I reset by typing res <CR>, not by touching the face of the lin processor.

1

Small Clarification on Line Processor Troubles

(J22186) 5-MAR-74 08:24; Title: Author(s): Dirk H. Van Nouhuys/DVN;
Distribution: /CHI DIA; Sub-Collections: SRI-ARC; Clerk: DVN;