

Network Journal Distribution

A good suggestion, however instead of referring to a "network virtual line printer" lets refer to a standard file format for documents (see -- 24644,).
--jon.

Network Journal Distribution

(J24647) 2-DEC-74 18:50;;; Title: Author(s): Jonathan B.
Postel/JBP; Distribution: /EXM([ACTION]) SRI-ARC([INFO-ONLY]) ;
Sub=Collections: SRI-ARC; Clerk: JBP;

Jump to LOOP[?]

If you uses the address ",30p" in the command "jump to item" The A; remains on the screen, CPU time passes away, but nothing else happens (for up to a minute CPU time). I did it three times.

1

Jump to LOOP[?]

(J24648) 3-DEC-74 08:59;;; Title: Author(s): Dirk H. Van
Nouhuys/DVN; Distribution: /FDBK([ACTION]) ; Sub-Collections:
SRI-ARC FDBK; Clerk: DVN;

New Try at Indexing a Medium sized file

Recently I have been trying to run the index command of the publish subsystem on 461 one-line statements in the file (documentation,inx,). On November 18 it ran until it reached an illegal instruction(journal,24549,1a). It produced an index branch complete and successful except that beyond the word "content" the items were not regrouped into statements. Last night I tried it again and the same thing happened except it did not get so far. I attach the error message and resulting branch. Note statement signatures for timing,

```

ILLEGAL INSTRUCTION   R0 =      0
      at      NLSDAS+130 =    10202
Illegal instruction executed
R1/      R1 =      1
R2/      P =      7
R3/      SUBNM1+26 =    216
S/      773336,,GSTACK+1336 =    773336,,17046
M/      773336,,GSTACK+1336 =    773336,,17046

```

Index to group from 1 to 461

```

33=tty <226A>, <260A>, <296A>, <322A>          3a
35=tty <226A>, <260A>, <296A>, <322A>          3b
37=tty <226A>, <260A>, <296A>, <322A>          3c
abort <158>, <160>, <166>, <168>, <170>, <172>  3d
accept <101A>, <59>, <60>                      3e
access <208B>                                   3f
accesses <214A>, <214B>, <79A>, <79B>          3g
account <214A>, <214B>, <214C>, <79A>, <79B>, <79C> 3h
accum <451>, <452>                               3i
accumulator <431>, <454>, <455>, <456>, <460>    3j
accumulators <461>                              3k
address <101B>, <15>, <16>, <266>, <300>, <317>, <326>, <334>,
<336>                                           3l
allowed <101C>, <65>                            3m
alphabetical <214B>, <79B>                      3n

```

New Try at Indexing a medium sized file

analyzer	<349>, <353>	3o
answer	<101D>, <11>, <12>, <13>, <158>, <159>, <160>, <161>, <166>, <167>, <168>, <169>, <170>, <171>, <172>, <173>, <174>, <204>, <205>, <212>, <214>, <232>, <234>, <25>, <381A>, <381B>, <387>, <38>, <395>, <396>, <397>, <408>, <409>	3p
answer	<409>	3q
answer	<409>	3r
answer	<421>	3s
answer	<444>	3t
answer	<445>	3u
answer	<450>	3v
answer	<63>	3w
answer	<64>	3x
answer	<65>	3y
answer	<66>	3z
answer	<67>	3a@
etc.		3aa

New Try at Indexing a Medium sized file

(J24649) 3-DEC-74 09:30;;; Title: Author(s): Dirk H, Van
Nouhuys/DVN; Distribution: /FDBK([ACTION]) JMB([INFO-ONLY])
KIRK([INFO-ONLY]) ; Sub-Collections: SRI-ARC FDBK; Clerk: DVN;

Jon, you really put a lot of stuff into the book chapter on protocol!
Will discuss it with you Monday. Vint

1

(J24650) 3-DEC-74 14:21;;; Title: Author(s): Vinton G. Cerf/VGC;
Distribution: /JBP([INFO-ONLY]) ; Sub-Collections: NIC; Clerk: VGC;

ISI Query Re PCP Channels, Events, and Implementation

PCP SNDMSG dialog, For the record.

ISI Query Re PCP Channels, Events, and Implementation

PCP SNDMSG dialog, For the record,

1

QUERY

2

3-DEC-74 11:38:43,1970

Net mail from site ISIB rcvd at 3-DEC-74 11:38:39

Date: 3 DEC 1974 1139-PST

From: MANDELL at USC-ISIB

Subject: Questions about PCP

To: JAMES E WHITE;

cc: FILE/ARC;

2a

I am slightly confused by some of the terms used in the pcp documents. It would be a big help to me if you could comment on the following : 1) In the notes on page 1 of the PCPFRK document you indicate that direct channels will not be provided between TENEX jobs and some kinds of forks. The only other use of the term direct direct channel is in connection with the creation of a physical channel between forks. Will logical channels of some sort be provided between TENEX jobs and between the excluded forks within a job? If such logical channels are provided, what type of intermediaries will be needed? I assume that a superior fork can introduce two of its sons. However, in the case of jobs the intermediary is not clear.

2b

2) The nature of events is not clear. An event is defined in CALPRO by the character parameter cplevnt. The pip document says that pip signals the caller via the event. However, the signaling mechanism is not described. Do you intend to use the L10 SIGNAL mechanism?

2b1

When you complete your implementation in L10, will PIP, PSP, and PMP be in a form that they can be linked to other programs as REL files?

2c

We are doing all of our programming in Bliss. It seems likely to me that Bliss and L10 require different runtime environments and make incompatible use of some registers. Can you point me to a document that describes the runtime environment of L10, and to the L10 language manuals(we have a 1972 L10 programming Guide and May 1972 document titled L10 A programming Language for the Augmentation Research Center)?

2d

Thanks,
Dick Mandell

2d1

RESPONSE

3

Dick== Thanks for your questions; hope some answers follow.

3a

ISI Query Re PCP Channels, Events, and Implementation

Channels

3b

1) The term "direct channel" which appears in the PCPFRK document is exactly equivalent to "physical channel". I now realize that I chose the word "direct" to describe one of the arguments to the ITDPRCS procedure in PMP. That was obviously a mistake, and probably explains how this undefined term made its way into PCPFRK as well. Next go-round I will rename that argument to be "physical" and change "direct" to "physical" in PCPFRK; for now, please consider it a bug.

3b1

2) A physical channel can be created in either of the following two circumstances:

3b2

a) by ITDPRCS, if and only if argument DIRECT has the value TRUE, in which case the physical channel connects the processes denoted by PH1 and PH2, which may be located (in principle, but of course constrained by how completely we implement IPC) anywhere at all within the process tree. ITDPRCS uses the IPC CRTCHNEND procedure to create the physical channel.

3b2a

b) by CRTPRC, in which case the physical channel connects a process and its direct inferior. The creation of a physical channel is essential to, rather than optional with, CRTPRC. The physical channel is created via the CRTPRC IPC procedure.

3b2b

3) A logical channel is created in only one circumstance: by ITDPRCS, regardless of the argument DIRECT's value.

3b3

The logical channel is created even if DIRECT is TRUE, but will not be used for communication between the newly-introduced processes. Although the logical channel is in this case (currently) unnecessary, I decided to create it anyway, suspecting that a need for it may arise.

3b3a

For example, it may be necessary to inspect the logical channel to make the execution of certain key operations contingent upon appropriate tree-structural relationships, e.g. to insure that a process doesn't delete its direct superior's direct superior.

3b3a1

4) I plan to do the PCPFRK implementation of the IPC CRTCHNEND procedure only if we find a compelling reason to do so, in which case we will ask BBN to implement job-global fork handles (which, apparently, is trivial to do), to clean up the PCP implementation.

3b4

ISI Query Re PCP Channels, Events, and Implementation

I don't yet know whether having physical channels between distant forks within a job is important for the NSW system, but if we discover it to be, or if you believe it to be for the system ISI's building, we will seek to get job-global fork handles implemented.

3b4a

But according to the current plans, ITDPRCS will establish only a LOGICAL channel between processes implemented as forks within the same job.

3b5

5) We do not plan to support inter-job channels of any kind at present -- because we have no pressing need for them and because their implementation (which would involve the sharing of pages in files in a public directory) wouldn't be very clean.

3b6

The implication is that PCP process trees will initially be unable to cross job boundaries (although, of course, they will be able to cross host boundaries), except via the Network (by considering part of the tree to reside on another host).

3b7

6) ANY two forks within a job (assuming, of course, they're both in the tree) can be connected by a logical channel. ANY process which knows them both can introduce them.

3b8

7) The logical channel between introduced processes always involves the introducing process, as well as any intermediate process(es) between the introducer and either or both introducees (in the case where they themselves were previously introduced to each other, rather than one having created the other).

3b9

The choice of intermediaries is thus a function of the topology of the tree and existing logical channels, rather than upon the nature of any of the physical channels involved.

3b9a

Events

3c

1) The procedures which comprise PIP are intended largely, if not entirely, for use as internal subroutines by procedures within the process in which they're implemented, rather than as remotely-called procedures. They provide the basis upon which local procedure can call remote ones, and it is therefore perhaps misleading to call PIP a package. Although it can be offered as such, there's no point, since if your own local process provides the machinery required to CALL those procedures, you don't NEED to call them; you must HAVE them yourself.

3c1

ISI Query Re PCP Channels, Events, and Implementation

Given the above, it is inappropriate and unnecessary to talk in detail about events, as used by PIP's CALPRO procedure, since the nature of their implementation is of concern only to procedures within that process.

3c1a

For the Tenex implementation, we plan to use pseudo interrupts as the basic event-signalling mechanism.

3c1b

L10 signals are, as currently implemented, a basically different sort of animal.

3c1c

Run-time environments

3d

1) We had originally planned to implement PCP, PIP, PSP, and PMP as a REL file that could be linked with an arbitrary user program; we may still do this. If we do, we will define a simple protocol for interfacing to the PCP code, with ways for switching between run-time environments, hooking in tables describing packages supplied by the user program, and so forth.

3d1

However, we have since found it desirable to implement the PCP code such that it can run by itself in a fork, and execute user code in inferior forks. This entire fork structure will appear as a single PCP process (call it "P") to the rest of the MPSS. Its inferior forks will be used in two ways:

3d2

a) To save the state of process "P". When an inferior fork calls a remote procedure (via the superior fork) which itself calls a procedure "p" in "P", "p" will be executed in another inferior fork (sharing the same code and global storage of the first) thus preserving the state of the original calling procedure.

3d2a

b) To implement processors. Each of the process' processors will be implemented as a separate fork, all of which share the same code and global data.

3d2b

Bound versions of the PCP documents have not as yet arrived; I'll send one along when they do. --Jim

3e

ISI Query Re PCP Channels, Events, and Implementation

(J24651) 3-DEC-74 15:25;;; Title: Author(s): James E. (Jim)
White/JEW; Distribution: /JBP([INFO-ONLY]); Sub-Collections:
SRI-ARC; Clerk: JEW; Origin: < WHITE, MANMSG,NLS;7, >, 3-DEC-74
15:23 JEW ;;;;###;

Bad file msg

Herb, I talked with Frank this AM and we decided to have the operator retrieve the files from tape dump. They are back under their original names. Sorry for the trouble ...that was one of those things that goes with current computer hardware, although very rare.

An aside, I suggest you update more often. I hope to meet you on my brief visit to NSRDC on 13 Dec. Feel free to save questions comments for me, or, of course, if you wish, send them to Feedback right away. Jim

1

Bad file msg

(J24652) 3-DEC-74 16:03;;; Title: Author(s): James H. Bair/JHB;
Distribution: /HME([ACTION]) FGB([INFO-ONLY]) FEED([INFO-ONLY
]) ; Sub-Collections: SRI-ARC; Clerk: JHB;

Viewspec Cards: COM File

This is the file we just sent to COM. Be sure to eliminate the effects of the journal if you try to reconstruct it for COM again.

Viewspec Cards: COM File

VIEWSPECS	ARC 11/1/74	1
a	show one level less	1a
b	show one level more	1b
c	show all levels	1c
d	show first level only	1d
e	level of referenced statement	1e
f	recreate window if necessary	1f
g	show branch only	1g
h	show all branches	1h
i	filter statements	1i
j	don't filter statements	1j
k	show next filtered statement	1k
l	show plex only	1l
m	statement numbers/SIDs on	1m
n	statement numbers/SIDs off	1n
o	frozen statements on	1o
p	frozen statements off	1p
q	show one line less	1q
r	show one line more	1r
s	show all lines	1s
t	show first lines only	1t
u	recreate display after each change	1u
v	defer recreating display	1v
w	show all lines and all levels	1w
x	show one line and one level only	1x

Viewspec Cards: COM File

- Y blank line between statements on 1Y
- Z blank line between statements off 1Z
- A level indenting on 1a@
- B level indenting off 1aa
- C show statement names 1ab
- D don't show statement names 1ac
- E paginate when printing (TNLS only) 1ad
- F TNLS:no paging/DNLS:recreate display 1ae
- G statement numbers/SIDs right 1af
- H statement numbers/SIDs left 1ag
- I show SIDs, not statement numbers 1ah
- J show statement numbers, not SIDs 1ai
- K statement signatures on 1aj
- L statement signatures off 1ak
- O user sequence generator on 1al
- P user sequence generator off 1am
- Q indenting offset to CM level with l/g 1an

VIEWSPECs

ARC 11/1/74

- 2
- a show one level less 2a
- b show one level more 2b
- c show all levels 2c
- d show first level only 2d
- e level of referenced statement 2e
- f recreate window if necessary 2f
- g show branch only 2g

Viewspec Cards: COM File

h	show all branches	2h
i	filter statements	2i
j	don't filter statements	2j
k	show next filtered statement	2k
l	show plex only	2l
m	statement numbers/SIDs on	2m
n	statement numbers/SIDs off	2n
o	frozen statements on	2o
p	frozen statements off	2p
q	show one line less	2q
r	show one line more	2r
s	show all lines	2s
t	show first lines only	2t
u	recreate display after each change	2u
v	defer recreating display	2v
w	show all lines and all levels	2w
x	show one line and one level only	2x
y	blank line between statements on	2y
z	blank line between statements off	2z
A	level indenting on	2a@
B	level indenting off	2aa
C	show statement names	2ab
D	don't show statement names	2ac
E	paginate when Printing (TNLS only)	2ad
F	TNLS:no paging/DNLS:recreate display	2ae

Viewspec Cards: COM File

G	statement numbers/SIDs right	2af
H	statement numbers/SIDs left	2ag
I	show SIDs, not statement numbers	2ah
J	show statement numbers, not SIDs	2ai
K	statement signatures on	2aj
L	statement signatures off	2ak
O	user sequence generator on	2al
P	user sequence generator off	2am
Q	indenting offset to CM level with 1/g	2an
VIEWSPECS		3
	ARC 11/1/74	
a	show one level less	3a
b	show one level more	3b
c	show all levels	3c
d	show first level only	3d
e	level of referenced statement	3e
f	recreate window if necessary	3f
g	show branch only	3g
h	show all branches	3h
i	filter statements	3i
j	don't filter statements	3j
k	show next filtered statement	3k
l	show plex only	3l
m	statement numbers/SIDs on	3m
n	statement numbers/SIDs off	3n
o	frozen statements on	3o

Viewspec Cards: COM File

P	frozen statements off	3P
Q	show one line less	3Q
R	show one line more	3R
S	show all lines	3S
T	show first lines only	3T
U	recreate display after each change	3U
V	defer recreating display	3V
W	show all lines and all levels	3W
X	show one line and one level only	3X
Y	blank line between statements on	3Y
Z	blank line between statements off	3Z
A	level indenting on	3A@
B	level indenting off	3Aa
C	show statement names	3Ab
D	don't show statement names	3Ac
E	paginate when printing (TNLS only)	3Ad
F	TNLS:no paging/DNLS:recreate display	3Ae
G	statement numbers/SIDs right	3Af
H	statement numbers/SIDs left	3Ag
I	show SIDs, not statement numbers	3Ah
J	show statement numbers, not SIDs	3Ai
K	statement signatures on	3Aj
L	statement signatures off	3Ak
O	user sequence generator on	3Al
P	user sequence generator off	3Am

Viewspec Cards: COM File

Q	indenting offset to CM level with 1/g	3an
IEWSPECS	ARC 11/1/74	4
a	show one level less	4a
b	show one level more	4b
c	show all levels	4c
d	show first level only	4d
e	level of referenced statement	4e
f	recreate window if necessary	4f
g	show branch only	4g
h	show all branches	4h
i	filter statements	4i
j	don't filter statements	4j
k	show next filtered statement	4k
l	show plex only	4l
m	statement numbers/SIDs on	4m
n	statement numbers/SIDs off	4n
o	frozen statements on	4o
p	frozen statements off	4p
q	show one line less	4q
r	show one line more	4r
s	show all lines	4s
t	show first lines only	4t
u	recreate display after each change	4u
v	defer recreating display	4v
w	show all lines and all levels	4w

Viewspec Cards; COM File

X	show one line and one level only	4x
Y	blank line between statements on	4y
Z	blank line between statements off	4z
A	level indenting on	4a@
B	level indenting off	4aa
C	show statement names	4ab
D	don't show statement names	4ac
E	paginate when printing (TNLS only)	4ad
F	TNLS:no paging/DNLS:recreate display	4ae
G	statement numbers/SIDs right	4af
H	statement numbers/SIDs left	4ag
I	show SIDs, not statement numbers	4ah
J	show statement numbers, not SIDs	4ai
K	statement signatures on	4aj
L	statement signatures off	4ak
O	user sequence generator on	4al
P	user sequence generator off	4am
Q	indenting offset to CM level with 1/g	4an

VIEWSPECS

ARC 11/1/74

		5
a	show one level less	5a
b	show one level more	5b
c	show all levels	5c
d	show first level only	5d
e	level of referenced statement	5e
f	recreate window if necessary	5f

Viewspec Cards: COM File

g	show branch only	5g
h	show all branches	5h
i	filter statements	5i
j	don't filter statements	5j
k	show next filtered statement	5k
l	show plex only	5l
m	statement numbers/SIDs on	5m
n	statement numbers/SIDs off	5n
o	frozen statements on	5o
p	frozen statements off	5p
q	show one line less	5q
r	show one line more	5r
s	show all lines	5s
t	show first lines only	5t
u	recreate display after each change	5u
v	defer recreating display	5v
w	show all lines and all levels	5w
x	show one line and one level only	5x
y	blank line between statements on	5y
z	blank line between statements off	5z
A	level indenting on	5a@
B	level indenting off	5aa
C	show statement names	5ab
D	don't show statement names	5ac
E	paginate when printing (TNLS only)	5ad

Viewspec Cards: COM File

F	TNLS:no paging/DNLS:recreate display	5ae
G	statement numbers/SIDs right	5af
H	statement numbers/SIDs left	5ag
I	show SIDs, not statement numbers	5ah
J	show statement numbers, not SIDs	5ai
K	statement signatures on	5aj
L	statement signatures off	5ak
O	user sequence generator on	5al
P	user sequence generator off	5am
Q	indenting offset to CM level with l/g	5an

VIEWSPECS

ARC 11/1/74

		6
a	show one level less	6a
b	show one level more	6b
c	show all levels	6c
d	show first level only	6d
e	level of referenced statement	6e
f	recreate window if necessary	6f
g	show branch only	6g
h	show all branches	6h
i	filter statements	6i
j	don't filter statements	6j
k	show next filtered statement	6k
l	show plex only	6l
m	statement numbers/SIDs on	6m
n	statement numbers/SIDs off	6n

Viewspec Cards: COM File

o	frozen statements on	6o
p	frozen statements off	6p
q	show one line less	6q
r	show one line more	6r
s	show all lines	6s
t	show first lines only	6t
u	recreate display after each change	6u
v	defer recreating display	6v
w	show all lines and all levels	6w
x	show one line and one level only	6x
y	blank line between statements on	6y
z	blank line between statements off	6z
A	level indenting on	6ae
B	level indenting off	6aa
C	show statement names	6ab
D	don't show statement names	6ac
E	paginate when printing (TNLS only)	6ad
F	TNLS;no paging/DNLS;recreate display	6ae
G	statement numbers/SIDs right	6af
H	statement numbers/SIDs left	6ag
I	show SIDs, not statement numbers	6ah
J	show statement numbers, not SIDs	6ai
K	statement signatures on	6aj
L	statement signatures off	6ak
O	user sequence generator on	6al

Viewspec Cards: COM File

P	user sequence generator off	6am
Q	indenting offset to CM level with 1/g	6an
VIEWSPeCS	ARC 11/1/74	7
a	show one level less	7a
b	show one level more	7b
c	show all levels	7c
d	show first level only	7d
e	level of referenced statement	7e
f	recreate window if necessary	7f
g	show branch only	7g
h	show all branches	7h
i	filter statements	7i
j	don't filter statements	7j
k	show next filtered statement	7k
l	show plex only	7l
m	statement numbers/SIDs on	7m
n	statement numbers/SIDs off	7n
o	frozen statements on	7o
p	frozen statements off	7p
q	show one line less	7q
r	show one line more	7r
s	show all lines	7s
t	show first lines only	7t
u	recreate display after each change	7u
v	defer recreating display	7v

Viewspec Cards: COM File

W	show all lines and all levels	7w
X	show one line and one level only	7x
Y	blank line between statements on	7y
Z	blank line between statements off	7z
A	level indenting on	7a@
B	level indenting off	7aa
C	show statement names	7ab
D	don't show statement names	7ac
E	paginate when printing (TNLS only)	7ad
F	TNLS:no paging/DNLS:recreate display	7ae
G	statement numbers/SIDs right	7af
H	statement numbers/SIDs left	7ag
I	show SIDs, not statement numbers	7ah
J	show statement numbers, not SIDs	7ai
K	statement signatures on	7aj
L	statement signatures off	7ak
O	user sequence generator on	7al
P	user sequence generator off	7am
Q	indenting offset to CM level with 1/g	7an
VIEWSPECs	ARC 11/1/74	8
a	show one level less	8a
b	show one level more	8b
c	show all levels	8c
d	show first level only	8d
e	level of referenced statement	8e

Viewspec Cards: COM File

f	recreate window if necessary	8f
g	show branch only	8g
h	show all branches	8h
i	filter statements	8i
j	don't filter statements	8j
k	show next filtered statement	8k
l	show plex only	8l
m	statement numbers/SIDs on	8m
n	statement numbers/SIDs off	8n
o	frozen statements on	8o
p	frozen statements off	8p
q	show one line less	8q
r	show one line more	8r
s	show all lines	8s
t	show first lines only	8t
u	recreate display after each change	8u
v	defer recreating display	8v
w	show all lines and all levels	8w
x	show one line and one level only	8x
y	blank line between statements on	8y
z	blank line between statements off	8z
A	level indenting on	8a@
B	level indenting off	8aa
C	show statement names	8ab
D	don't show statement names	8ac

Viewspec Cards: COM File

E	paginate when printing (TNLS only)	8ad
F	TNLS:no paging/DNLS:recreate display	8ae
G	statement numbers/SIDs right	8af
H	statement numbers/SIDs left	8ag
I	show SIDs, not statement numbers	8ah
J	show statement numbers, not SIDs	8ai
K	statement signatures on	8aj
L	statement signatures off	8ak
O	user sequence generator on	8al
P	user sequence generator off	8am
Q	indenting offset to CM level with l/g	8an

VIEWSPECS

ARC 11/1/74

		9
a	show one level less	9a
b	show one level more	9b
c	show all levels	9c
d	show first level only	9d
e	level of referenced statement	9e
f	recreate window if necessary	9f
g	show branch only	9g
h	show all branches	9h
i	filter statements	9i
j	don't filter statements	9j
k	show next filtered statement	9k
l	show plex only	9l
m	statement numbers/SIDs on	9m

Viewspec Cards: COM File

n	statement numbers/SIDs off	9n
o	frozen statements on	9o
p	frozen statements off	9p
q	show one line less	9q
r	show one line more	9r
s	show all lines	9s
t	show first lines only	9t
u	recreate display after each change	9u
v	defer recreating display	9v
w	show all lines and all levels	9w
x	show one line and one level only	9x
y	blank line between statements on	9y
z	blank line between statements off	9z
A	level indenting on	9ae
B	level indenting off	9aa
C	show statement names	9ab
D	don't show statement names	9ac
E	paginate when printing (TNLS only)	9ad
F	TNLS;no paging/DNLS;recreate display	9ae
G	statement numbers/SIDs right	9af
H	statement numbers/SIDs left	9ag
I	show SIDs, not statement numbers	9ah
J	show statement numbers, not SIDs	9ai
K	statement signatures on	9aj
L	statement signatures off	9ak

Viewspec Cards: COM File

O	user sequence generator on	9a1
P	user sequence generator off	9am
Q	indenting offset to CM level with 1/g	9an

Viewspec Cards: COM File

MOUSE and KEYSSET, Codes and Cases

10

Mouse ARC 11/1/74

Buttons: 000 010 100 001 110 011 101 111

Case: -0- -1- -2- -3- -4- -5- -6- -7-

10a

Keypad Code

10b

00000 CD BC CA BW RPT ESC

10c

00001 a A !

10d

00010 b B " :

10e

00011 c C # : Case 3: 001

10f

00100 d D \$: search for marker

10g

00101 e E % : named by keypad

10h

00110 f F & : combination

10i

00111 g G ' :

10j

01000 h H (:

10k

01001 i I) : Case 4: 110

10l

01010 j J @ : Take each keypad

10m

01011 k K + : code as a

10n

01100 l L = : lowercase viewspec

10o

01101 m M * :

10p

01110 n N / :

10q

01111 o O " : Case 5: 011

10r

10000 p P 0 : has no meaning

10s

10001 q Q 1 : with keypad input

10t

10010 r R 2 :

10u

10011 s S 3 :

10v

10100 t T 4 :

10w

Viewspec Cards: COM File

10101	u	U	5	:	Case 6:	101	10x
10110	v	V	6	:	has no meaning		10y
10111	w	W	7	:	with keyset input		10z
11000	x	X	8	:			10a@
11001	y	Y	9	:			10aa
11010	z	Z	=	:			10ab
11011	,	<	[	:	Case 7:	111	10ac
11100	.	>	]	:	Take each keyset		10ad
11101	;	:	-	:	code as a		10ae
11110	?	\	ALT:		capital viewspec		10af
11111	SP	TAB	CR	:	.....		10ag

MOUSE and KEYSSET, Codes and Cases

11

Mouse ARC 11/1/74
 Buttons: 000 010 100 001 110 011 101 111
 Case: -0- -1- -2- -3- -4- -5- -6- -7-

11a

Keyset Code

11b

00000		CD	BC	CA	BW	RPT	ESC	11c
00001	a	A	!	.....				11d
00010	b	B	"	:				11e
00011	c	C	#	:	Case 3:	001		11f
00100	d	D	\$	:	search for marker			11g
00101	e	E	%	:	named by keyset			11h
00110	f	F	&	:	combination			11i
00111	g	G	'	:				11j
01000	h	H	(	:				11k
01001	i	I	)	:	Case 4:	110		11l

Viewspec Cards: COM File

01010	j	J	@	:	Take each keyset	11m
01011	k	K	+	:	code as a	11n
01100	l	L	=	:	lowercase viewspec	11o
01101	m	M	*	:		11p
01110	n	N	/	:		11q
01111	o	O	"	:	Case 5: 011	11r
10000	p	P	0	:	has no meaning	11s
10001	q	Q	1	:	with keyset input	11t
10010	r	R	2	:		11u
10011	s	S	3	:		11v
10100	t	T	4	:		11w
10101	u	U	5	:	Case 6: 101	11x
10110	v	V	6	:	has no meaning	11y
10111	w	W	7	:	with keyset input	11z
11000	x	X	8	:		11a@
11001	y	Y	9	:		11aa
11010	z	Z	=	:		11ab
11011	,	<	[	:	Case 7: 111	11ac
11100	.	>	]	:	Take each keyset	11ad
11101	;	:	-	:	code as a	11ae
11110	?	\	ALT:	:	capital viewspec	11af
11111	SP	TAB	CR	:	.....	11ag

MOUSE and KEYSSET, Codes and Cases

12

Mouse ARC 11/1/74
 Buttons: 000 010 100 001 110 011 101 111
 Case: -0- -1- -2- -3- -4- -5- -6- -7-

12a

Viewspec Cards: COM File

Keypad Code	CD	BC	CA	BW	RPT	ESC		
00000								12b
00001	a	A	!	.....				12c
00010	b	B	"	:				12d
00011	c	C	#	:	Case 3:	001		12e
00100	d	D	s	:	Search for	marker		12f
00101	e	E	%	:	named by	keyset		12g
00110	f	F	&	:	combination			12h
00111	g	G	*	:				12i
01000	h	H	(	:				12j
01001	i	I	)	:	Case 4:	110		12k
01010	j	J	@	:	Take each	keyset		12l
01011	k	K	+	:	code as	a		12m
01100	l	L	=	:	lowercase	viewspec		12n
01101	m	M	*	:				12o
01110	n	N	/	:				12p
01111	o	O	"	:	Case 5:	011		12q
10000	p	P	0	:	has no	meaning		12r
10001	q	Q	1	:	with keyset	input		12s
10010	r	R	2	:				12t
10011	s	S	3	:				12u
10100	t	T	4	:				12v
10101	u	U	5	:	Case 6:	101		12w
10110	v	V	6	:	has no	meaning		12x
10111	w	W	7	:	with keyset	input		12y

Viewspec Cards: COM File

```

11000   x   X   8   ;                               12a@
11001   y   Y   9   ;                               12aa
11010   z   Z   =   ;                               12ab
11011   ,   <   [   : Case 7: 111                   12ac
11100   .   >   ]   : Take each keyset             12ad
11101   ;   :   -   : code as a                     12ae
11110   ?   \   ALT: capital viewspec              12af
11111   SP  TAB CR !.....                          12ag
    
```

MOUSE and KEYSSET, Codes and Cases 13

```

Mouse                                     ARC 11/1/74
Buttons: 000 010 100 001 110 011 101 111
Case: -0- -1- -2- -3- -4- -5- -6- -7-          13a
    
```

Keyset Code 13b

```

00000           CD  BC  CA  BW RPT ESC           13c
00001   a   A   !   .....                      13d
00010   b   B   "   ;                          13e
00011   c   C   #   : Case 3: 001              13f
00100   d   D   $   : search for marker        13g
00101   e   E   %   : named by keyset          13h
00110   f   F   &   : combination             13i
00111   g   G   '   ;                          13j
01000   h   H   (   ;                          13k
01001   i   I   )   : Case 4: 110              13l
01010   j   J   @   : Take each keyset        13m
01011   k   K   +   : code as a               13n
01100   l   L   =   : lowercase viewspec      13o
    
```

Viewspec Cards: COM File

01101	m	M	*	:		13p
01110	n	N	/	:		13q
01111	o	O	"	:	Case 5: 011	13r
10000	p	P	0	:	has no meaning	13s
10001	q	Q	1	:	with keyset input	13t
10010	r	R	2	:		13u
10011	s	S	3	:		13v
10100	t	T	4	:		13w
10101	u	U	5	:	Case 6: 101	13x
10110	v	V	6	:	has no meaning	13y
10111	w	W	7	:	with keyset input	13z
11000	x	X	8	:		13a@
11001	y	Y	9	:		13aa
11010	z	Z	=	:		13ab
11011	,	<	[	:	Case 7: 111	13ac
11100	.	>	]	:	Take each keyset	13ad
11101	;	:	-	:	code as a	13ae
11110	?	\	ALT:	:	capital viewspec	13af
11111	SP	TAB	CR	:	.....	13ag

MOUSE and KEYSSET, Codes and Cases

14

Mouse ARC 11/1/74
 Buttons: 000 010 100 001 110 011 101 111
 Case: -0- -1- -2- -3- -4- -5- -6- -7-

14a

Keyset Code

14b

00000 CD BC CA BW RPT ESC

14c

00001 a A !

14d

Viewspec Cards: COM File

00010	b	B	"	:	14e
00011	c	C	#	: Case 3: 001	14f
00100	d	D	s	: Search for marker	14g
00101	e	E	%	: named by keyset	14h
00110	f	F	&	: combination	14i
00111	g	G	'	:	14j
01000	h	H	(	:	14k
01001	i	I	)	: Case 4: 110	14l
01010	j	J	@	: Take each keyset	14m
01011	k	K	+	: code as a	14n
01100	l	L	-	: lowercase viewspec	14o
01101	m	M	*	:	14p
01110	n	N	/	:	14q
01111	o	O	"	: Case 5: 011	14r
10000	p	P	0	: has no meaning	14s
10001	q	Q	1	: with keyset input	14t
10010	r	R	2	:	14u
10011	s	S	3	:	14v
10100	t	T	4	:	14w
10101	u	U	5	: Case 6: 101	14x
10110	v	V	6	: has no meaning	14y
10111	w	W	7	: with keyset input	14z
11000	x	X	8	:	14a@
11001	y	Y	9	:	14aa
11010	z	Z	=	:	14ab

Viewspec Cards: COM File

11011	,	<	[	:	Case 7:	111	14ac
11100	.	>	]	:	Take each keyset		14ad
11101	:	:	-	:	code as a		14ae
11110	?	\		:	ALT: capital viewspec		14af
11111	SP	TAB	CR	:	.....		14ag

MOUSE and KEYSSET, Codes and Cases 15

Mouse ARC 11/1/74
 Buttons: 000 010 100 001 110 011 101 111
 Case: -0- -1- -2- -3- -4- -5- -6- -7- 15a

Keyset Code 15b

00000		CD	BC	CA	BW	RPT	ESC	15c
00001	a	A	!	.....				15d
00010	b	B	"	:				15e
00011	c	C	#	:	Case 3:	001		15f
00100	d	D	s	:	Search for marker			15g
00101	e	E	%	:	named by keyset			15h
00110	f	F	&	:	combination			15i
00111	g	G	'	:				15j
01000	h	H	(	:				15k
01001	i	I	)	:	Case 4:	110		15l
01010	j	J	@	:	Take each keyset			15m
01011	k	K	+	:	code as a			15n
01100	l	L	=	:	lowercase viewspec			15o
01101	m	M	*	:				15p
01110	n	N	/	:				15q
01111	o	O	"	:	Case 5:	011		15r

Viewspec Cards: COM File

10000	p	P	0	:	has no meaning	15s
10001	q	Q	1	:	with keyset input	15t
10010	r	R	2	:		15u
10011	s	S	3	:		15v
10100	t	T	4	:		15w
10101	u	U	5	:	Case 6: 101	15x
10110	v	V	6	:	has no meaning	15y
10111	w	W	7	:	with keyset input	15z
11000	x	X	8	:		15a@
11001	y	Y	9	:		15aa
11010	z	Z	=	:		15ab
11011	,	<	[	:	Case 7: 111	15ac
11100	.	>	]	:	Take each keyset	15ad
11101	;	:	-	:	code as a	15ae
11110	?	\	ALT:	:	capital viewspec	15af
11111	SP	TAB	CR	:	.....	15ag

MOUSE and KEYSER, Codes and Cases 16

Mouse ARC 11/1/74
 Buttons: 000 010 100 001 110 011 101 111
 Case: -0- -1- -2- -3- -4- -5- -6- -7- 16a

Keyset Code 16b

00000		CD	BC	CA	BW	RPT	ESC	16c
00001	a	A	!	.....				16d
00010	b	B	"	:				16e
00011	c	C	#	:	Case 3: 001			16f
00100	d	D	\$	:	Search for marker			16g

Viewspec Cards: COM File

00101	e	E	%	: named by keyset	16h
00110	f	F	&	: combination	16i
00111	g	G	'	:	16j
01000	h	H	(	:	16k
01001	i	I	)	: Case 4: 110	16l
01010	j	J	@	: Take each keyset	16m
01011	k	K	+	: code as a	16n
01100	l	L	=	: lowercase viewspec	16o
01101	m	M	*	:	16p
01110	n	N	/	:	16q
01111	o	O	^	: Case 5: 011	16r
10000	p	P	0	: has no meaning	16s
10001	q	Q	1	: with keyset input	16t
10010	r	R	2	:	16u
10011	s	S	3	:	16v
10100	t	T	4	:	16w
10101	u	U	5	: Case 6: 101	16x
10110	v	V	6	: has no meaning	16y
10111	w	W	7	: with keyset input	16z
11000	x	X	8	:	16a@
11001	y	Y	9	:	16aa
11010	z	Z	=	:	16ab
11011	,	<	[	: Case 7: 111	16ac
11100	.	>	]	: Take each keyset	16ad
11101	;	:	-	: code as a	16ae

Viewspec Cards: COM File

11110	?	\	ALT:	capital	viewspec		16af
11111	SP	TAB	CR	:	.....		16ag
MOUSE and KEYSSET, Codes and Cases							17
Mouse							ARC 11/1/74
Buttons:	000	010	100	001	110	011 101 111	
Case:	-0-	-1-	-2-	-3-	-4-	-5- -6- -7-	17a
Keypad Code							17b
00000		CD	BC	CA	BW	RPT ESC	17c
00001	a	A	!	.....			17d
00010	b	B	"	:			17e
00011	c	C	#	:	Case 3:	001	17f
00100	d	D	\$	:	search for marker		17g
00101	e	E	%	:	named by keypad		17h
00110	f	F	&	:	combination		17i
00111	g	G	'	:			17j
01000	h	H	(	:			17k
01001	i	I	)	:	Case 4:	110	17l
01010	j	J	@	:	Take each keypad		17m
01011	k	K	+	:	code as a		17n
01100	l	L	=	:	lowercase viewspec		17o
01101	m	M	*	:			17p
01110	n	N	/	:			17q
01111	o	O	"	:	Case 5:	011	17r
10000	p	P	0	:	has no meaning		17s
10001	q	Q	1	:	with keypad input		17t
10010	r	R	2	:			17u

Viewspec Cards: COM File

10011	s	S	3	:		17v
10100	t	T	4	:		17w
10101	u	U	5	:	Case 6: 101	17x
10110	v	V	6	:	has no meaning	17y
10111	w	W	7	:	with keyset input	17z
11000	x	X	8	:		17a@
11001	y	Y	9	:		17aa
11010	z	Z	=	:		17ab
11011	,	<	[	:	Case 7: 111	17ac
11100	.	>	]	:	Take each keyset	17ad
11101	;	:	-	:	code as a	17ae
11110	?	\	ALT:		capital viewspec	17af
11111	SP	TAB	CR	:	.....	17ag

MOUSE and KEYSSET, Codes and Cases

18

Mouse ARC 11/1/74
 Buttons: 000 010 100 001 110 011 101 111
 Case: -0- -1- -2- -3- -4- -5- -6- -7-

18a

Keyset Code

18b

00000		CD	BC	CA	BW	RPT	ESC		18c
00001	a	A	!	.....					18d
00010	b	B	"	:					18e
00011	c	C	#	:	Case 3:	001			18f
00100	d	D	s	:	Search for marker			18g	
00101	e	E	%	:	named by keyset			18h	
00110	f	F	&	:	combination			18i	
00111	g	G	'	:					18j

Viewspec Cards: COM File

01000	h	H	(	:		18k
01001	i	I	)	:	Case 4: 110	18l
01010	j	J	@	:	Take each keyset	18m
01011	k	K	+	:	code as a	18n
01100	l	L	=	:	lowercase viewspec	18o
01101	m	M	*	:		18p
01110	n	N	/	:		18q
01111	o	O	"	:	Case 5: 011	18r
10000	p	P	0	:	has no meaning	18s
10001	q	Q	1	:	with keyset input	18t
10010	r	R	2	:		18u
10011	s	S	3	:		18v
10100	t	T	4	:		18w
10101	u	U	5	:	Case 6: 101	18x
10110	v	V	6	:	has no meaning	18y
10111	w	W	7	:	with keyset input	18z
11000	x	X	8	:		18a@
11001	y	Y	9	:		18aa
11010	z	Z	=	:		18ab
11011	,	<	[	:	Case 7: 111	18ac
11100	.	>	]	:	Take each keyset	18ad
11101	;	:	-	:	code as a	18ae
11110	?	\	ALT:	:	capital viewspec	18af
11111	SP	TAB	CR	:	.....	18ag

Viewspec Cards: COM File

(J24653) 4-DEC-74 08:53;;; Title: Author(s): N. Dean Meyer/NDM;
Distribution: /DIRT([INFO-ONLY]) ; Sub-Collections: SRI-ARC DIRT;
Clerk: NDM; Origin: < MEYER, VSCARD,NLS;6, >, 3-DEC-74 17:27 NDM
!!!!

Do You Want To See an Electrostatic Printer Tomorrow?

As some of you know we are considering an electrostatic printer which could, among other things, simulate atleast roughly different type faces. I will distribute a journal item on the possibilities in a day or two. In the mean time at least one of the candidates is being demonstrated at the California Computer Show in South Palo Alto tomorrow afternoon. I am going to see it about 2:00 if anyone is interested.

1

Do You Want To See an Electrostatic Printer Tomorrow?

(J24654) 4=DEC-74 09:54;;; Title: Author(s): Dirk H. Van
Nouhuys/DVN; Distribution: /JOAN([ACTION] for dpcs notebook please)
SRI-ARC([INFO-ONLY]) ; Sub-Collections: DPCS SRI-ARC; Clerk: DVN;

The NSW Remote Jobe Entry Model

NOTE

2

The idea of "remote" job entry -- indeed "remote" anything -- in the National Software Works seems to me to be contradictory to the philosophy of NSW.

2a

INTRODUCTION

3

The remote job entry model describes how a primarily batch Computing task is prepared and submitted, and how the results of the computation are collected and returned.

3a

MODEL

4

First we discuss the entities involved in the process of composing a batch job, having it run, and examining the results.

4a

The principal entity is a batch processing facility. This is expected to be an existing hardware & software unit that will be only minimally changed to interface to the NSW.

4a1

The NSW talks to the batch processing facility via a procedure package called the Batch Job Package (BJP).

4a2

The Batch Job Package interacts with File Packages (FP) to effect the movement of files to and from the Batch Processing Facility.

4a3

The files themselves are created and examined using the text editors (e.g. NLS) available in the NSW.

4a4

The user interacts with the front end. The front end contains a command language interpreter that is driven by a grammar. The particular Grammar in use for this user at any time depends on which tool the user is accessing.

4a5

A scenario for a user creating, submitting, retrieving, and examining a batch job follows:

4b

The user interacts with an editing tool to create a source program and to concatenate it with a standard file of job control information particular to the Batch Processing Facility to which it will be submitted. The concatenation is accomplished using regular editing commands (not batch specific commands).

4b1

The user then interacts with the Works Manager and the Batch Job Package mediated by a grammar to submit the file he has created. The grammar and the Batch Package will require enough information from the user that the batch package can retrieve the input files from File Packages, and store the output files. The Batch Job package will return an identifier for this job which can be used to request status information at a later time.

4b2

When the job has been processed the user may use an editing tool to examine the output file. Note that the output files have been stored as specified in File Packages and are thus accessible to tools as permitted by the Works manager.

4b3

All this should make clear that a batch tool such as a batch processing facility is not a special case, that batch and interactive tools are accessed by the user and the internal NSW procedure packages in a consistent manner.

4c

****DRAFT****
The NSW Remote Job Entry Model

3-DEC-74

Jon Postel
Augmentation Research Center

Stanford Research Institute
Menlo Park, California 94025

The NSW Remote Job Entry Model is a discussion of the submission and retrieval of batch computations in the context of the National Software Works and the Procedure Call Protocol, with which the reader of the present document is assumed familiar.

The NSW Remote Jobe Entry Model

(J24655) 4-DEC-74 10:44;;; Title: Author(s): Jonathan B.
Postel/JBP; Distribution: /SRI-ARC([INFO-ONLY]) NSW([INFO-ONLY])
; Sub-Collections: SRI-ARC NSW; Clerk: JBP; Origin: < POSTEL,
NSW-RJE,NLS;7, >, 4-DEC-74 10:28 JBP ;;;;###;

****DRAFT****

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3-DEC-74

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Menlo Park, California 94025

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The idea of "remote" job entry -- indeed "remote" anything -- in the National Software Works seems to me to be contradictory to the philosophy of NSW.

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INTRODUCTION 3

The remote job entry model describes how a primarily batch computing task is prepared and submitted, and how the results of the computation are collected and returned. 3a

MODEL 4

First we discuss the entities involved in the process of composing a batch job, having it run, and examining the results. 4a

The principal entity is a batch processing facility. This is expected to be an existing hardware & software unit that will be only minimally changed to interface to the NSW. 4a1

The NSW talks to the batch processing facility via a procedure package called the Batch Job Package (BJP). 4a2

The Batch Job Package interacts with File Packages (FP) to effect the movement of files to and from the Batch Processing Facility. 4a3

The files themselves are created and examined using the text editors (e.g. NLS) available in the NSW. 4a4

The user interacts with the front end. The front end contains a command language interpreter that is driven by a grammar. The particular grammar in use for this user at any time depends on which tool the user is accessing. 4a5

A scenario for a user creating, submitting, retrieving, and examining a batch job follows: 4b

The user interacts with an editing tool to create a source program and to concatenate it with a standard file of job control information particular to the Batch Processing Facility to which it will be submitted. The concatenation is accomplished using regular editing commands (not batch specific commands). 4b1

The user then interacts with the Works Manager and the Batch Job Package mediated by a grammar to submit the file he has created. The grammar and the Batch Package will require enough information from the user that the batch package can retrieve the input files from File Packages, and store the output files. The Batch Job Package will return an identifier for this job which can be used to request status information at a later time. 4b2

When the job has been processed the user may use an editing tool to examine the output file. Note that the output files have been stored as specified in File Packages and are thus accessible to tools as permitted by the Works manager.

4b3

All this should make clear that a batch tool such as a batch processing facility is not a special case, that batch and interactive tools are accessed by the user and the internal NSW procedure packages in a consistent manner.

4c

INTRODUCTION

The remote job entry model describes how a primarily batch computing task is prepared and submitted, and how the results of the computation are collected and returned.

MODEL

First we discuss the entities involved in the process of composing a batch job, having it run, and examining the results.

The principal entity is a batch processing facility. This is expected to be an existing hardware & software unit that will be only minimally changed to interface to the NSW.

The NSW talks to the batch processing facility via a procedure package called the Batch Job Package (BJP).

The Batch Job Package interacts with File Packages (FP) to effect the movement of files to and from the Batch Processing Facility.

The files themselves are created and examined using the text editors (e.g. NLS) available in the NSW.

The user interacts with the front end. The front end contains a command language interpreter that is driven by a grammar. The particular grammar in use for this user at any time depends on which tool the user is accessing.

A scenario for a user creating, submitting, retrieving, and examining a batch job follows:

The user interacts with AN EDITING TOOL TO CREATE A SOURCE PROGRAM AND TO CONCATENATE IT WITH A STANDARD FILE OF JOB CONTROL INFORMATION PARTICULAR TO THE Batch Processing Facility to which it will be submitted. The concatenation is accomplished using regular editing commands (not batch specific commands).

The user then interacts with the Works Manager and the Batch Job Package mediated by a grammar to submit the file he has created. The grammar and the Batch Package will require enough information from the user that the batch package can retrieve the input files from File Packages, and store the output files. The Batch Job Package will return an identifier for this job which can be used to request status information at a later time.

When the job has been processed the user may use an editing tool to examine the output file. Note that the output files have been

The user may wait for the job to complete or the user may use another tool while the job is running or the user may log out of NSW. In this latter case the job will still be processed and the output saved for the user to access at some future session.

Printer glitch

Bill:

Here is commented version of your message on batch jobs. Following these comments is a description of my model for batch jobs in the NSW. The main differences are in the break down of functions to particular processes (wm, fe, grammar, tool, etc.), and in which processes touch which kinds of files.

--jon.

Comments on your message:

Date: 12 JAN 1975 1136-PDT
From: CARLSON at OFFICE-1
Subject: batch tools

< CARLSON, BATCH-TOOLS.NLS:2, >, 12-JAN-75 11:26 WEC ;;;;

I have a simplified model of batch tools which I use to make decision.

%% How does this model compare with the model presented in the documents RJE-MODEL, and BJP by Postel and the notes by Warshall and Millstein ? %%

%% What decisions ? %%

%% It would be very helpful to have your comments keyed to the previously distributed documents. %%

Please evaluate the model and, by 16 Jan 75, send a message indicating agreement or identify pitfalls in the model by describing scenarios where it fails, and propose SIMPLE revisions which resolve the pitfalls

%% Should this suspend progress on the implementation of NSW ? %%

A batch job cannot communicate with the user during execution.

%% Is this a definition or an attribute of batch jobs shared by other types of jobs ? %%

%% Millstein defined the terms BATCH, DETACHED, AND INTERACTIVE in a useful way, lets use his definitions. %%

Background jobs on Multics or other time-sharing systems qualify as batch jobs.

%% Does "background" include TENEX Detatched Jobs ? %%

The following classes of batch jobs are of interest:

Predefined NSW Tools: allow a user talking to the Works Manager to say the logical equivalent of "execute TESTDATA using CRITERIA as input and producing MONTHLY as output." CRITERIA and MONTHLY are NSW files. Optionally, the user might specify a host, ie "execute TESTDATA at UCLA91".

%% "Predefined" is a new term to me perhaps a further explanation would be helpful. I take it to mean that it is a

program that has been made known to the Works Manager as a

tool and has a grammar. %%

%% Which 360 should we be getting up to speed on NSW/PCP --
RAND or UCLA ? %%

The WM will know whether the TBH requires all files to be resident before a batch job is submitted, or if it supports delayed staging of files. If files must be prestaged, the WM will move or create the files and remember the local names.

%% Perhaps the works manager doesn't need to know this but the batch job package can take care of fetching the required files. %%

%% The idea of prestaging vs delayed staging of files is what distinguishes BATCH and DETACHED tools in Millstein's document, let's use one set of definitions. %%

The WM will know the local name of the tool. It will send a message to the TBH of the form "run Local-Tool-Name on Local-File-1, Local-File-2, NSW-File-3 producing Local-File-4 and NSW-File-5 using TEXT-ARG-1,TEXT-ARG-2."

%% This assumes that it is easy to distinguish local (to what) filenames from NSW filenames -- i for one don't buy that assumption. Although i do agree that the probability of confusion can be greatly reduced by a suitable prefix name for all NSW file names. %%

%% By now everyone should think in terms of Procedure Call Protocol. The procedure call your "message" maps into is defined in the Batch Job Package (BJP) and is named CRTJOB.

CRTJOB (infiles, outfiles -> jobid)

The files in the lists infiles and outfiles are filenames that can be handled by file packages, the batch job package calls on a file package either in the same TBH or another TBH to get the files for input or store the result files.
%%

If the TBH does not support delayed staging, then of course there will be no NSW files in the list. Note that since this message is in an NSW format, we should easily be able to mark local file names, NSW file names, and textual arguments.

%% By "in NSW format" do you mean it is a PCP Call ? %%

One implementation (not only one) would have the local tool name be a text file or catalogued procedure. The Foreman component in the TBH would ask the WORKS MANAGER for a correct local name corresponding to each NSW filename (if there is delayed staging of files). The local filenames and the textual arguments would be substituted into the control file, which would be given to the standard scheduler to be executed at its convenience. The only uses I have thought of for textual arguments thus far are run time parameters like core size, time limit, priority, etc.

%% What is the "Foreman component" ? Perhaps this is the

role of the Batch Job Package ? %%

%% The textual arguments you suggest are already handled in every case we know of by parameters in the control file required by the batch processing facility, why should this aspect of host specific job control be replicated in the general purpose batch job package ? %%

%% These "textual arguments" could be accepted from the user by the grammar driven front end, which calls on a simple procedure to edit the control card file by substituting the arguments for place holders. %%

The TBH must provide the WM with a job ID. The WM must be able to get job status information for a given JOBID.

%% See the CRTJOB and STSJOB procedures specified in the Batch Job Package. %%

The TBH must signal the WM whenever a job terminates.

%% An interesting point. To do this the Works Manager must provide a procedure that a batch job package may call when a job terminates. %%

RESPONSIBILITIES

COMPASS- define language for invoking tools (the WM command language), provide tool for defining other tools to the WM (CML is part of it, but I don't think all of it), Provide a document telling how to define tools. It must identify options with regard to numbers and attributes of input & output files, checking of textual arguments, optional files, warranties, etc.

TBH Installer- provide a mechanism for accepting WM messages and invoking tools,

%% Shouldn't "a mechanism for accepting WM messages" be a "mechanism for accepting and making PCP Calls". %%

Create ident/jobid/account card with info sent by WM,

%% This card is generally the first card in the control card file which is required by the batch processing facility. This info should be sent in the control file which is one of the infiles in the CRTJOB call to the batch job package. %t

Provide for status probing, signal WM when tools complete,

%% See the batch job package %%

Provide a reasonable way to send output reports onto the ARPANET,

%% I think this is a call for a reformatting program to make line printer oriented output presentable on display and teletype terminals. %%

Provide a document telling how to install additional tools on that machine.

General Issue: How does the WM know how much space to allocate for output files? COMPASS to take responsibility for formulating and documenting some reasonable answer.

%% How does anybody know ? %%

Sequences of NSW Batch Tools: One can envision jobs consisting of several "standard" NSW batch tools to be run in succession on the same TBH. On many hosts, the scheduling algorithm will make it advantageous to have the sequence lumped into a multi-activity job. Yet the WM should know when each activity completes, and have some options with regard to file disposition and conditional tool invocation. Passing files between activities may also necessitate control stream changes.

%% Why should the works manager notice the jobstep completion for multistep one host jobs ? It may be very difficult to get access to this information in any case. %%

Responsibilities: UCLA should take the lead in resolving these issues, with inputs from COMPASS and all TBH installers.

"Perfect" Batch Control Streams: contain only local file names. We want to discourage these in the NSW, but must provide the capability so users don't have to leave the NSW just to type in a few simple control cards and run a batch job on their own machine. All the TBH must do is append the ident/jobid/account into to the control stream and retrieve status and output.

%% It would be easy for a NSW user to create a file (either with a special tool or with any text editor) that contained control cards and file names specific to a particular batch processing facility. %%

Responsibilities:

COMPASS: WM must accept a command like "run file at place", move the file, signal TBH to invoke it

%% BY "file" are you now referring to a control file ?
%%

TBH Installer: responsible for start-up, status and output reporting.

Batch Control Streams Containing NSW Filenames:

The user builds a job control stream ready to run, except he wants to refer to files by NSW names. In general case, would also want to be able to defer file movement (not this year). Solution to delayed staging of files should use same TBH features as for predefined NSW Tools.

Responsibility

SRI: build an interactive tool which works on typewriter

terminals as well as displays and replaces NSW filenames

with LOCAL names. Eventually, will instead simply identify some of the names as NSW names and will also be able to handle priority etc. After the substitutions are complete, the tool will invoke the WM to initiate the job

%% There could easily be a tool that assisted users in replacing NSWfilenames by filenames local to a particular batch processing facility, this would be useful in preparing the control files for a program developed in the NSW to be turned over for use outside the NSW. %%

%% This aside on typewriter terminals and display terminals is out of place and shows a lack of conviction that the front end will provide means to use a range of terminal classes to use the same tools. %%

COMPASS and TBH Installers are responsible for providing the same capabilities as for "perfect" batch control streams and (eventually) as for NSW defined tools.

%% The user wants a nsw-wide control file that is like the existing host specific control files but allows each job step to be executed on a different host. The user can construct such a file with any text editor or perhaps a special control file construction tool. When the user wants to have this control file "executed" a tool is called upon to translate (by calling on the works manager) the nsw filenames to file package file names and to call the appropriate batch job packages for each job step. %%

Description of my model:

Here is a scenario of use of a batch tool which is an elaboration of the discussion contained in the RJE-MODEL document.

Note that there are two case for batch jobs in the NSW: one is the traditional batch processing facility which normally expects as its primary input a control card file; the other is an interactive time sharing system which allows input to come from a file instead of interactively from a user at a terminal.

MODEL

First we discuss the entities involved in the process of composing a batch job, having it run, and examining the results.

The principal entity is a batch processing facility. This is expected to be an existing hardware & software unit that will be only minimally changed to interface to the NSW.

Examples of batch job processing facilities are the B4700 and the IBM 360.

Another type of batch job capability is is the TENEX runfil or the Multics execom facility.

The NSW talks to the batch processing facility via a procedure

The batch job package in a sense referees the flow of information between its PCP callers and the batch processing facility. For example the batch job package collects all the input files that are resident on other hosts before turning the job over to the batch processing facility, and the batch job package may distribute the result files to other hosts when the job is completed by the batch processing facility.

The Batch Job Package interacts with File Packages (FP) to effect the movement of files to and from the Batch Processing Facility.

The call on the batch job package to get a job submitted to a batch processing facility is:

```
CRTJOB ( infiles, outfiles -> jobid )
```

The files referenced in infiles and outfiles are named so that the batch job package can get them from and put them into the directories owned by NSW at various hosts and manipulated by file packages. Thus these files are named by "file-package-filenames".

The user sees only NSW-filenames so there must be a language/grammar that controls the users interaction which results in the generation of a create job call on a batch job package. This processing for the user must include the mediation of the NSW-filenames the user supplies into the file-package-filenames included in the create job call.

The files themselves are CREATED AND EXAMINED USING THE TEXT EDITORS (e.g. NLS) available in the NSW.

Some files that are included in a create job call may be standard library files and from the users point of view part of the system. The user may not even be aware of their existence since their names could be supplied by the grammar internally.

The input files are probably in most cases job control files in a particular batch processing facilities specific job control language. There might be grammars/tools to aid the user in constructing such control files for specific batch processing facilities and applications programs.

A scenario for a user creating, submitting, retrieving, and examining a batch job follows:

The user interacts with the front end. The front end contains a command language interpreter that is driven by a grammar. The particular grammar in use for this user at any time depends on which tool the user is accessing.

The user interacts with an editing tool to create a source program and to concatenate it with a standard file of job control information particular to the Batch Processing Facility to which it will be submitted. The concatenation is

accomplished using regular editing commands (not batch

specific commands).

The user then interacts with the Works Manager and the Batch Job Package mediated by a grammar to submit the file he has created. The grammar and the Batch Job Package will require enough information from the user that the Batch Job Package can retrieve the input files from File Packages, and store the output files. The Batch Job Package will return an identifier for this job which can be used to request status information at a later time.

Some of the information needed to run a batch job could be in a standard file that the user always appends his file to, OR this type of information could be in a separate file that is included by the grammar in the create job call automatically, and the grammar could call on a function to edit a standard file to contain user and run specific parameters such as user-name, priority, run-time-limit.

When the job has been processed the user may use an editing tool to examine the output file. Note that the output files have been stored as specified in File Packages and are thus accessible to tools as permitted by the Works manager.

It may be necessary to construct special tools to reformat the output of other tools for presentation on the users terminal.

In particular the tools which were designed to output to line printers will produce output difficult to view adequately on narrower display and teletype terminals.

A discussion of a batch program as a tool.

An applications program which lives on a batch processing facility can be made into a tool in the NSW such that the users of it as a tool do not need to know the control language of the facility where it lives. To do this the tool installer must create a control card file and a grammar which are stored in the Works Manager under the toolname assigned to this program.

When the user accesses the tool the front end gets the grammar from the works manager and follows it to collect the parameters from the user. Once all the arguments are collected the front end (or the works manager) can call the batch job package. Note that one of the arguments is the name of the control card file. This argument may be built in to the grammar or supplied by the works manager.

A discussion of multi-host batch jobs.

Suppose a user wanted to run a series of batch jobs steps where each step was to be carried out on a different host. It is not difficult to envision a NSW=batch-control-language in which one could say things like:

"If the previous job step was successful then use its output file WALDO appended to control file DOITTOIT as card

input to the batch processing facility ABC and call the

printer output file GEORGE".

This requires a tool to "execute" files of this
NSW-batch-control-language to be written.

Requirements on Tool Bearing Hosts

INTRODUCTION

1a

A Tool Bearing Host (TBH) is a host which contains one or more packages required by a tool,

1a1

The TBH must provide an environment for procedures to be executed under the control of the Process Management and Executive Packages of the Procedure Call Protocol. The tool bearing host must provide a mechanism whereby the Works Manager can be invoked to interpret and authorize references to files and perhaps other input and output facilities.

1a2

INTERFACES

1b

Host Protocol

1b1

The NSW assumes the existence of an NCP which implements the standard ARPA Network Host to Host protocol (8246,), with some additional policy constraints as specified in:

1b1a

"NSW Host Protocol"
(JBP 22-NOV-74 -- 24581,)

1b1a1

System to Process Interface

1b2

The NSW assumes that there is a process listening to the PCP contact socket that will complete the Initial Connection Protocol when called and will leave the pair of connections connected to a process called the TBH Supervisor containing the PCP Support Package (PSP).

1b2a

"PCPHST 2 / PCP ARPANET Inter-Host IPC Implementation"
(JEW 22-NOV-74 -- 24577,)

1b2a1

"PCPFMT 2 / PCP data Structure Formats"
(JEW 22-NOV-74 -- 24576,)

1b2a2

"PSP 2 / The PCP Support Package"
(JEW 22-NOV-74 -- 24461,)

1b2a3

Interface to Process Structure

1b3

The NSW assumes that the TBH Supervisor supports the Process Management Package (PMP), and that the caller may employ it to create inferior processes beneath the TBH Supervisor.

1b3a

"PMP 2 / The Process Management Package"
(JEW 22-NOV-74 -- 24462,)

1b3a1

Interface to Access Control, Accounting And Status Systems 1b4

The NSW assumes that the TBH Supervisor supports the Executive Package (EXEC), providing interfaces to the access control (LOGIN) aspect of the system, to the accounting information maintained by the system, and to system status information,

1b4a

"The Executive Package"
(JBP 22=NOV=74 == 24580,)

1b4a1

Interface to the File System 1b5

If this host provides for file access by tools (or the Works Manager) then the NSW assumes that the TBH Supervisor supports the File Package (FP), which interfaces to the file system and utilizes the file system structure of directories or catalogs to implement the directory and file structure and controls specified by the File Package,

1b5a

"The File Package"
(JBP 22=NOV=74 == 24582,)

1b5a1

Interface to System Calls 1b6

It will be necessary to filter certain system calls by some tool packages to prevent access to unauthorized files or other resources. The case most discussed is access to files,

1b6a

One way to accomplish this is to trap all calls that open files to a filtering routine and report any calls for files not provided to the Works Manager. The Works Manager may (after calling other routines) allow the access to proceed,

1b6b

One such mechanism is the one provided in TENEX called the "JSYS Trap Mechanism" which allows one process to be invoked (traped to) whenever its subprocesses execute particular system calls,

1b6b1

Another way to do this is to include in each tool program a special open file subroutine that calls the filtering routine when necessary instead of the normal system call,

1b6c

In the context of filtering calls for access to files there are two problems that should be mentioned:

1b6d

First is that if the user can present to the tool a string to be used by the tool as a filename this string

must always be referred to the Works Manager for (a) translation from an NSW filename to a local filename, or (b) authorization if already a local filename,

1b6d1

We believe that it is impossible to construct NSW filenames such that there could never be a case where an NSW file and a different local file were named by identical strings,

1b6d1a

Second if the tool is allowed to access data base files (and we can think readily of several cases) then such files will probably live as local non-NSW files unknown to the Works Manager, thus calls on these files must be unfiltered,

1b6d2

This then says a tool allowed access to data base files can access any file (subject to local system access controls but not NSW access controls) and therefore should be certified,

1b6d2a

These two difficulties call into doubt the ability of a mechanism such as the TENEX JSYS Trap facility to deal effectively with filtering calls, especially when the filtering mechanism can not be aware if the call arguments were supplied by a user or generated by the program,

1b6d3

As a possible mechanism to exercise control over the filtering or not filtering of calls we propose to modify the create process (CRTPRC) call of the Process Management Package (PMP) to include a boolean argument indicating if the created process is to have its calls filtered or not,

1b6e

****DRAFT****
NSW Requirements on Tool Bearing Hosts

3-DEC-74

Jon Postel
Augmentation Research Center

Stanford Research Institute
Menlo Park, California 94025

The tool bearing host is required to provide the environment and mechanisms necessary to support the Procedure Call Protocol, with which the reader of the present document is assumed familiar.

Requirements on Tool Bearing Hosts

(J24656) 4=DEC=74 10:48;;; Title: Author(s): Jonathan B,
Postel/JBP; Distribution: /SRI-ARC([INFO-ONLY]) NSW([INFO-ONLY])
; Sub=Collections: SRI-ARC NSW; Clerk: JBP; Origin: < POSTEL,
NSW=TBH,NLS;7, >, 4=DEC=74.10:33 JBP ;;;;####;

INTRODUCTION

A Tool Bearing Host (TBH) is a host which contains one or more packages required by a tool.

The TBH must provide an environment for procedures to be executed under the control of the Process Management and Executive Packages of the Procedure Call Protocol. The tool bearing host must provide a mechanism whereby the Works Manager can be invoked to interpret and authorize references to files and perhaps other input and output facilities.

INTERFACES

Host Protocol

The NSW assumes the existence of an NCP which implements the standard ARPA Network Host to Host protocol (8246,), with some additional policy constraints as specified in:

"NSW Host Protocol"
(JBP 22-NOV-74 -- 24581,)

System to Process Interface

The NSW assumes that there is a process listening to the PCP contact socket that will complete the Initial Connection Protocol when called and will leave the pair of connections connected to a process called the TBH Supervisor containing the PCP Support Package (PSP). *Note that of the following*

"PCPHST 2 / PCP ARPANET Inter-Host IPC Implementation"
(JEW 22-NOV-74 -- 24577,)

"PCPFMT 2 / PCP Data Structure Formats"
(JEW 22-NOV-74 -- 24576,)

"PSP 2 / The PCP Support Package"
(JEW 22-NOV-74 -- 24461,)

Interface to Process Structure

The NSW assumes that the TBH Supervisor supports the Process Management Package (PMP), and that the caller may employ it to create inferior processes beneath the TBH Supervisor. *at all in this host*

"PMP 2 / The Process Management Package"
(JEW 22-NOV-74 -- 24462,)

number 25 (31 octal)

packages - PMP, EXEC, FP, and NUTP are expected to be available in this TBH supervisor process if provided

Output Processor Bug: Trailing directive

Wonder if I should leave this out of the about to be published Output Processor Guide? That would be a loss,

Output Processor Bug: Trailing directive

The Output Processor directive "Trailing" does not work. It should leave in the output invisibles that appear at the end of lines. With Trailing set to Off, the OP continues to remove spaces at the end of a line before the next visible. Edwards at Bell pointed the problem out to us, and we have no answer to his problem without this directive.

1

Output Processor Bug: Trailing directive

(J24658) 4-DEC-74 15:46;;; Title: Author(s): N, Dean Meyer/NDM;
Distribution: /FDBK([ACTION]) RLL([INFO-ONLY]) JDH([INFO-ONLY
]) EKM([INFO-ONLY]) HGL([INFO-ONLY]) ; Sub-collections:
SRI=ARC FDBK; Clerk: NDM;

test message

hope this worked,testing to see if this message reaches all of us in
the bell ident.

1
2
3

test message

(J24659) 4=DEC=74 16:15; Title: Author(s): Inez M. Mattiuz/IMM;
Distribution: /BELL-CANADA; Sub-Collections: BELL-CANADA BELL-CANADA;
Clerk: IMM;

test message

hope this worked,testing to see if this message reaches all of us in
the bell ident.

1
2
3

test message

(J24660) 4=DEC=74 16:31; Title: Author(s): Inez M. Mattiuz/IMM;
Distribution: /BELL-CANADA; Sub-Collections: BELL-CANADA BELL-CANADA;
Clerk: IMM;

Troubles Using MTACOPY at ISI

TELNET typescript file started at WED 4 DEC 74 1515:09

1

#isi is complete.# Message slots are now being allocated.
Type LOG or GLOG; type OFFQUOTA for more information.

2

ISI-KA-TENEX 1,32,9, ISI-TENEX EXEC 1,51,4
@GLOG SRI-ARC 1
JOB 14 ON TTY7 4-DEC-74 15:14
TENEX WILL GO DOWN THU 12-5-74 2345 TIL FRI 12-6-74 0500
SRI-ARC OVER ALLOCATION BY 112 PAGES.
@LINK (TO) OPERATOR

3

LINK FROM SRI-ARC, JOB 14, TTY 7
@;HI, COULD YOU MOUNT ONE OF OUR TAPES SO I COULD PUT SME FILS ON IT?
@;YES,BUT I WILL BE A MIN, OR SO.
!;FINE, 'LL WAIT
@;OK
!;DO YOU WANT A WRITE RING IN IT?
!;YOU THERE?
!^X
@;YUP, YES, I'D LIKE A WRITE RING
@;YOU STILL THERE?
!YUP ?
@;OK, THE TAPE IS MOUNTED WITH WRITE RING, THE NUMBER IS 0005.
!;THANKS, I'LL LINK TO YOU WHEN I'M THRU
@;OK, ALSO, ITH IS MOUNTED ON UNIT 0:
!;FINE
@BREAK (LINKS)
@MTACPY,SAV;1

4

MAGTAPE UNIT NO.=0GTJFN: Device not available
LOCATION = 400030

@
@ASSIGN (DEVICE) MTA ? ^X
@ASSIGN (DEVICE) ?^X
@ASSIGN (DEVICE) MTA0
MTA0: ALREADY ASSIGNED TO JOB 8
@MOUNT MTA0
MTA0: ASSIGNED TO JOB 8
@JOB ?
@JOBSTAT
TSS JOB 14, USER SRI-ARC, TTY7
@LINK^C
@SYS

5

UP 136:32:09!! 16 JOBS
LOAD AV 0,32 0,49 0,54
TENEX WILL GO DOWN THU 12-5-74 2345 TIL FRI 12-6-74 0500

5a

Troubles Using MTACOPY at ISI

JOB	TTY	USER	SUBSYS
8	0	OPERATOR	TALK
10	2	UCSB	FTP
14	7	SRI-ARC	EXEC
16	4	UCLA-SPEECH	DED
22	5	UCSB	FTP
23	3	SCRL	EXEC
31	6	CARLSON	EXEC
35	1	BOSLEY	TECO
1	DET	SYSTEM	NETSER
2	DET	SYSTEM	RSSER
3	DET	SYSTEM	TIPSER
4	DET	SYSTEM	ACTSER
5	DET	SYSTEM	MAILER
6	DET	SYSTEM	RCV
7	DET	SYSTEM	GROUP
20	DET	RICHARDSON	EXEC

5b

@LINK (TO) OPERATOR

6

LINK FROM SRI-ARC, JOB 14, TTY 7
 @;HI, IT WON'T LET ME ASSING MTAO BECAUSEIT'S SSINGED TO JOB #8,
 THAT'S **YOU

@;OK, SORRY BOUT THAT,

BRE

BREA

XXX

ASSIGN (DEVICE) MTAO

MTAO: ALREADY ASSIGNED TO JOB 8

@MOUNT MTAO

?

@;TIME PASSES

@;BRE

XXX

^C

!DAESSIGN (DEVICE) MTAO: ?

!

!ASNDEV, SAV;1

DEV	JOB	TTY	USER
MTAO	8	0	OPERATOR
MTA1	8	0	OPERATOR
DTAO	8	0	OPERATOR
DTA1	8	0	OPERATOR
DTA2	8	0	OPERATOR
DTA3	8	0	OPERATOR

7

!^C

!^C

!DEA MTAO

Troubles Using MTACOPY at ISI

```
!LINK (TO) TTY7
?
!LINK (TO) 7
!HI, ?
@ YOU ?
@RE ?
@OR ?
@BREAK (LINKS)
@ASSIGN (DEVICE) MTAO
@MTACPY,SAV;1
```

8

```
MAGTAPE UNIT NO.=0
USE 556 BPI?(Y OR N)
```

9

```
USE 556 BPI?(Y OR N) N
DESIRED DENSITY(200 OR 800):800
NORMAL ODD PARITY?(Y OR N):0
NORMAL ODD PARITY?(Y OR N):
```

10

```
NORMAL ODD PARITY?(Y OR N):Y
TO OR FROM MAGTAPE? (T OR F)?T IO WAIT AT 400323 LOAD AV. = 1.13,
USE **D 0:00:05.8 IN 0:21:56
IO WAIT AT 400323 LOAD AV. = 0.88, USED 0:00:06.0 IN 0:22:38
```

11

```
#? connection.to disconnect status.of news echo.mode,is
terminal.type,is local.mode remote.mode no current.modes,are
character.mode line.buffer raise lower transparent.mode
case,shift,prefix,for unshift,prefix: quote,prefix: synch,character:
attention,character: concise verbose fancy,c
#status.of ? <octal digit><any number of octal digits> KI4B KI4A ECL
UKICS-360 ULICS-360 INDRA ADEPT SDC-ADEPT CCBS MOD75 RCC CCA DEVTENEX
ISI MAXC ML AI SAIL TX-2 ACL SDC MATHLAB DMS MULTICS BBNB BBN UCSB
NIC AIC ARC CCN PARC AMES CMUB CMUA I4-TENEX BBNA ISIB HAWAII-500
SDC-CC DOCB LONDON UCSD-CC PARC-MAXC CCA-TENEX ARPA-DMS USC-44
USC-ISI AMES-67 KI4B-TENEX KI4A-TENEX CMU-10A CMU-10B CASE-10 SU-AI
LL-TX-2 LL-67 HARV-10 SDC-LAB RAND-RCC MIT-ML MIT-AI MIT-DMS
MIT-MULTICS BBN-TENEXA BBN-TENEXB BBN-TENEX UTAH-10 UCSB-MOD75 SRI-AI
SRI-ARC UCLA-CCBS UCLA-CCN OFFICE-1 NMC SPEECH11 KIRTLAND-TIP
BBN-RCC-TIP HASKINS RADC-645 CHI1 ISI-TSP EGLIN LONDON-VDH BBN-1D
AMES-11 CMU-CC AFWL-TIP WPAFB-TIP RUTGERS-TIP PARC-11 CMU-11 UNIVAC
SU-DSL UCB PARC-VTS LL-ANTS ILL-NTS WPAFB SCI NDRE BBN-NCC
HAWAII-ALOHA LBL FNWC SDAC-44 LLL-RISOS ETAC BBN-11X TYMSHARE-TIP
LONDON-TIP NORSAR-TIP NCC-TIP RML-TIP ALOHA-TIP FNWC-TIP CCA-TIP
BBN-TESTIP BRL ARPA-TIP BELVOIR SDAC-TIP DOCB-TIP GWC-TIP USC-TIP
ETAC-TIP NBS-TIP NBS-ICST RADC-TIP ISI-SPEECH11 MITRE-TIP AMES-TIP
AMES-ILLIAC I4-TENEXA ILL-CAC LL-TSP HARV-11 HARV-1 UTAH-TIP SCRL-ELF
SRI-11 UCLA-NMC status.of usc-isi logger operational.#
```

12

#

13

Troubles Using MTACOPY at ISI

#clear,output,character= "H# 14

15

#connection,to isi is complete,# Message slots are now being
allocated,
Type LOG or GLOG; type OFFQUOTA for more information, 16

ISI-KA-TENEX 1,32,9, ISI-TENEX EXEC 1,51,4
@GLO°C
@SYS 17

UP 136:46:08!! 15 JOBS
LOAD AV 0,51 0,83 0,79
TENEX WILL GO DOWN THU 12-5-74 2345 TIL FRI 12-6-74 0500 17a

JOB	TTY	USER	SUBSYS
8	0	OPERATOR	TALK
14	7	SRI-ARC	,OTHER
16	4	UCLA-SPEECH	SNDMSG
19	10	JONES	SNDMSG
23	3	SCRL	,OTHER
28	5	NOT LOGGED IN	EXEC
31	6	CARLSON	EXEC
1	DET	SYSTEM	NETSER
2	DET	SYSTEM	RSSER
3	DET	SYSTEM	TIPSER
4	DET	SYSTEM	ACTSER
5	DET	SYSTEM	MAILER
6	DET	SYSTEM	RCV
7	DET	SYSTEM	GROUP
10	DET	UCSB	EXEC
20	DET	RICHARDSON	EXEC

17b

@;GLOG SRI-AARC°C
@GLOG SRI-ARC 1
JOB 28 ON TTY5 4=DEC=74 15:43
TENEX WILL GO DOWN THU 12-5-74 2345 TIL FRI 12-6-74 0500
SRI-ARC OVER ALLOCATION BY 112 PAGES,
@ASSIGN (DEVICE) MTAO
MTAO: ALREADY ASSIGNED TO JOB 14
@LINK (TO) OPER
?
@LINK (TO) OPERATOR 18

LINK FROM SRI-ARC, JOB 28, TTY 5
@;HI, I THINK IT'S ONE OF THOSE DAYS, MY OTHER JOB SEEMS TO BE HUNG,
IF **YOU CAN DEASSIGN THAT DEVICE AND GIVE IT TO MY NEW JOB, OR JUST

Troubles Using MTACOPY at ISI

LET IT ** LOOSE, I*LL TRY AGAIN
 @;I DON'T QUITE UNDERSTAND WHAT YOU ARE SAYING. 19

***IMPBUG 766 HOST UCLA=CCN STS/LINK 4AT 105401 4=DEC-74 15:46:24 -
 RECD NCP ERR 20

@;WELL, IF YOU KNOW MTACPY I WAS TO TH
 ***IMPBUG 767 HOST UCLA=CCN STS/LINK 4AT 105401 4=DEC-74 15:46:50 -
 RECD NCP ERR
 E POINT WHERE IT EXPECTS M
 ***IMPBUG 768 HOST UCLA=CCN STS/LINK 4AT 105401 4=DEC-74 15:47:03 -
 RECD NCP ERR
 E TO ANSWER T TO THE QUESTION TO OR FROM MAG
 ***IMPBUG 769 HOST UCLA=CCN STS/LINK 4AT 105401 4=DEC-74 15:47:20 -
 RECD NCP ERR
 TAPE. I TYPED T AND FROM THEN ON NO CHARACTERS EXCEPT "T MAD E
 ANYTHING **HAPPEN
 @
 ***IMPBUG 770 HOST UCLA=CCN STS/LINK 4AT 105401 4=DEC-74 15:47:49 -
 RECD NCP ERR 21

***IMPBUG 771 HOST UCLA=CCN STS/LINK 4AT 105401 4=DEC-74 15:48:01 -
 RECD NCP ERR
 ;I DON'T KNOW AN
 ***IMPBUG 772 HOST UCLA=CCN STS/LINK 4AT 105401 Y 4=DEC-74 15:48:17 -
 RECD NCP ERR
 THING ABOUT MTACPY BUT I WILL SEE IF I
 ***IMPBUG 773 HOST UCLA=CCN STS/LINK 4AT 105401 4=DEC-74 15:48:39 -
 RECD NCP ERR
 CAN GET SOMEONE TO HEPT
 ***IMPBUG 774 HOST UCLA=CCN STS/LINK 4AT 105401 4=DEC-74 15:49:02 -
 RECD NCP ERR
 ;I SUSPECT IT WAS A B
 ***IMPBUG 775 HOST UCLA=CCN STS/LINK 4AT 105401 4=DEC-74 15:49:17 -
 RECD NCP ERR
 IZZARRE EVENT AND IF YOU RELEASE THE DEVICE, I CA START OVER AND MAKE
 IT ** WORK AS I HAVE MANY TMES IN THE PAST
 @;OK WILL SEE WHAT I CAN DO
 ;THANKS
 @
 ***IMPBUG 776 HOST UCLA=CCN STS/LINK 4AT 105401 4=DEC-74 15:50:07 -
 RECD NCP ERR 22

***IMPBUG 777 HOST UCLA=CCN STS/LINK 4AT 105401 4=DEC-74 15:50:21 -
 RECD NCP ERR 23

***IMPBUG 778 HOST UCLA=CCN STS/LINK 4AT 105401 4=DEC-74 15:50:47 -
 RECD NCP ERR
 ^C

Troubles Using MTACOPY at ISI

```

IAV D
PTR, PTP
DEVICES ASSIGNED TO THIS JOB: MTA1, DTA0, DTA1, DTA2, DTA3
!***IMPBUG 779 HOST UCLA-CCN STS/LINK 4AT 105401 4-DEC-74 15:51:07 =
RE **CD NCP ERR
!***IMPBUG 780 HOST UCLA-CCN STS/LINK 4AT 105401 4-DEC-74 15:51:29 =
RE **CD NCP ERR
!***IMPBUG 781 HOST UCLA-CCN STS/LINK 4AT 105401 4-DEC-74 15:51:52 =
RE **CD NCP ERR
!***IMPBUG 782 HOST UCLA-CCN STS/LINK 4AT 105401 4-DEC-74 15:52:17 =
RE **CD NCP ERR***IMPBUG 783 HOST UCLA-CCN STS/LINK 4AT 105401
4-DEC-74 15 **:52:29 = RECD NCP ERR
@ASSIGN (DEVICE) MTA0
MTA0: ALREADY ASSIGNED TO JOB 14
@JO
TSS JOB 8, USER JOPERATOR, TTY0
!OBSTAT
TSS JOB 28, USER SRI-ARC, TTY5
@WH SRI-ARC
TTY7, JOB 14, SRI-ARC, ,OTHER
TTY5, JOB 28, SRI-ARC, EXEC
!;THE JOB IS ALREADY ASSIGNED TO YOU, WHAT SORT OF PROBLEM ARE !;YOU
HHAVING? GA
!;I LOGGED INA S JOB 14, I WAS IN THE MID***IMPBUG 784 HEADER: 5 250
30 **0 AT 105076 4-DEC-74 15D:56:25L = Received irreg msg with
unknown lin **k or typeE OF DOING AN MTACOPY WHEN YOUR TENEX STOPED
RESPONDING FOR M **E TO ANYTHING BUT "T, I RELOGEED IN AS JOB 28,
WHICH IS HOW I AM TLAKI **NG TO YOU
@;OK, I'LL SEE WHAT I CAN DO TO UNHANG TO\OHE JOB 14. WILL LINK BACK
IN !;A FEW MIN, BYE
!BREAK (LINKS)
LOAD AV, = 0.65, USED 0:00:02.9 IN 0:14:30

```

24

```

LINK FROM Operator, JOB 8, TTY 0
!;U THERE??
!;
!;YUP
@;OK, WE GOT RID OF THE HUNG JOB....TRY USING THE MAGTAP AGAIN, GZA
!;THANKS A LOT
@BREAK (LINKS)
@ASSIGN (DEVICE) MTA0
@MTACPY,SAV;1

```

25

```

MAGTAPE UNIT NO.=0
USE 556 BPI?(Y OR N)
USE 556 BPI?(Y OR N) N
DESIRED DENSITY(200 OR 800):800
NORMAL ODD PARITY?(Y OR N):Y

```

26

Troubles Using MTACOPY at ISI

TO OR FROM MAGTAPE? (T OR F)?T IO WAIT AT 400323 LOAD AV. = 0.55,
USE **D 0:00:03.7 IN 0:21:17 27

#isi is complete.# Message slots are now being allocated.
Type LOG or GLOG; type OFFQUOTA for more information. 28

ISI-KA-TENEX 1,32,9, ISI-TENEX EXEC 1,51,4

@GLOG SRI-ARC 1

JOB 23 ON TTY6 4-DEC-74 16:05

TENEX WILL GO DOWN THU 12-5-74 2345 TIL FRI 12-6-74 0500

SRI-ARC OVER ALLOCATION BY 112 PAGES.

@LINK ?

@ ?

@OPERA^C

@LINK (TO) OPERATOR 29

LINK FROM SRI-ARC, JOB 23, TTY 6

@;HI, IT HAPPENED AGAIN AT THE SAME SPOT, DO YO THINK SOMETHING COULD
BE ** WRONG WITH SOMETHING IN YOUR SOFTWARE?

@;I DON'T KNOW, HOLD ON I WILL CHECK WIHH JP AGAIN.

!;THAKS

@;THIS IS JP,,,,I DON'T THINK TE\HERE IS A PROBLEM HERE,..

!;DO YOU HAVE THE UNIT ASSIGNED? GA

!;WELL, I HAVE IT ASSIGNED TO TE SECOND JOB WHICH IS NOW HUNG @WH

SRI-ARC

TTY6, JOB 23, SRI-ARC, EXEC

TTY5, JOB 28, SRI-ARC, ,OTHER

!ASNDEV,SAV;1

DEV	JOB	TTY	USER
MTA0	28	5	SRI-ARC
MTA1	8	0	OPERATOR
DTA0	8	0	OPERATOR
DTA1	8	0	OPERATOR
DTA2	8^C		

!^C

!;THE ME YOU ARE TALKING WITH IS PRESUMABLY 23. IF YOU GOT MTA0 LOOSE
FR **OM 28, I COULD GO THROUGH IT AGAIN WIT YOU WATICH,..I'D BE A
NICLL IT **WOULD HANGE AGAIN

@;XXX

!;OK, I'M GOING TO UN-HANG IT AGAIN, THEN I'LL LINK TO YOU AND WATCH

!BR;ECAK (LINKS) OOL

@

;OK, THE JOB HAS GONE AWAY, PLS LINK TO ME AND TRY IT AGAIN,..JP ;OK

@LINK (TO) PIPES

REFUSED @;SHIT

@LINKQO^C

@LINK (TO) OPERATOR 30

LINK FROM SRI-ARC, JOB 23, TTY 6

Troubles Using MTACOPY at ISI

```

!C
^C
!;U STILL THERE?
!WH SRI-ARC
TTY6, JOB 23, SRI-ARC, ,OTHER
IN
DESIRED DENSITY(200 OR 800):800
NORMAL ODD PARITY?(Y OR N):0
NORMAL ODD PARITY?(Y OR N):Y
TO OR FROM MAGTAPE? (T OR F)?T
! IO WAIT AT 400323  LOAD AV. = 0.39, USED 0:00:03.4 IN 0:13:45 33

! IO WAIT AT 400323  LOAD AV. = 0.36, USED 0:00:03.5 IN 0:13:53 IO
WAIT AT 400323  LOAD AV. = 0.35, USED 0:00:03.7 IN 0:13:57 34

!;ARRE
***IMPBUG 785 HOST SCRL=ELFAT 105232 4-DEC-74 16:20:08
- ILL FMT CTL MSG
U T
!;U THERE?
!BREAK (LINKS) 35

#isi is complete.# Message slots are now being allocated,
Type LOG or GLOG; type OFFQUOTA for more information, 36

ISI-KA-TENEX 1.32.9, ISI-TENEX EXEC 1.51.4
@GLOD\DG SRI-ARC \ 1
JOB 28 ON TTY2 4-DEC-74 16:21
TENEX WILL GO DOWN THU 12-5-74 2345 TIL FRI 12-6-74 0500
SRI-ARC OVER ALLOCATION BY 112 PAGES.
@SYS 37

UP 137:24:31!!! 15 JOBS
LOAD AV 0.38 0.39 0.47
TENEX WILL GO DOWN THU 12-5-74 2345 TIL FRI 12-6-74 0500 37a

JOB TTY USER SUBSYS
8 0 OPERATOR ,OTHER
10 11 UCSB (PRIV)
16 1 NOT LOGGED IN EXEC
23 6 SRI-ARC ,OTHER
28 2 SRI-ARC EXEC
37 3 PIPES EXEC
1 DET SYSTEM NETSER
2 DET SYSTEM RSSER
3 DET SYSTEM TIPSER
4 DET SYSTEM ACTSER
5 DET SYSTEM MAILER
6 DET SYSTEM RCV
    
```

Troubles Using MTACOPY at ISI

```

7  DET  SYSTEM  GROUP
14 DET  SCRL   EXEC
20 DET  RICHARDSON EXEC
31 DET  SCRL   TELNET
    
```

37b

```

@LINK (TO) PIPES
REFUSED @LINK (TO) PIPES
REFUSED @SYS
    
```

38

```

Up 137:26:31!!! 14 JOBS
LOAD AV 0.35 0.38 0.46
TENEX WILL GO DOWN THU 12-5-74 2345 TIL FRI 12-6-74 0500
    
```

38a

```

JOB TTY  USER  SUBSYS
8  0  OPERATOR EXEC
16 1  NOT LOGGED IN EXEC
23 6  SRI-ARC  .OTHER
28 2  SRI-ARC  EXEC
37 3  PIPES    (PRIV)
1  DET  SYSTEM NETSER
2  DET  SYSTEM RSSER
3  DET  SYSTEM TIPSER
4  DET  SYSTEM ACTSER
5  DET  SYSTEM MAILER
6  DET  SYSTEM RCV
7  DET  SYSTEM GROUP
14 DET  SCRL   EXEC
20 DET  RICHARDSON EXEC
31 DET  SCRL   TELNET
    
```

38b

```

@LINK (TO) OPERATOR
REFUSED @
LINK FROM PIPES, JOB 37, TTY 3
@;U TE\EHERE?
@;
    
```

```

@;HI, YES, YOU SAW WHAT HAPPENED, AFTER THE POINT WHERE I HIT THE
*T'S, **NOTHING I TYPED DID ANYTHING
@
    
```

```

@;YES, WE FOUND THE PROBLEM,..I SURE IT WILL WORK NOW, SORRY, BUT IT
@;WAS AN OP MISTAKE, SEE YA
@;THANKS
    
```

```

@BREAK (LINKS) BR
EAK (LINKS)
@ASSIGN (DEVICE) MTAO
@MTACPY,SAV;1
    
```

39

```

MAGTAPE UNIT NO.=0
USE 556 BPI?(Y OR N)
    
```

40

Troubles Using MTACOPY at ISI

USE 556 BPI?(Y OR N) N
 DESIRED DENSITY(200 OR 800):800
 NORMAL ODD PARITY?(Y OR N):Y
 TO OR FROM MAGTAPE? (T OR F)?T
 SOURCE FILE(S):SANJUAN.COM;1
 117504 (DECIMAL) SIX-BIT BYTES.
 SOURCE FILE(S):COMKEN.COM;1
 103680 (DECIMAL) SIX-BIT BYTES.
 SOURCE FILE(S):VSCARD.COM;1
 41472 (DECIMAL) SIX-BIT BYTES.
 SOURCE FILE(S):

41

DONE?(Y OR N)N
 SOURCE FILE(S):SANJUAN.COM;1
 117504 (DECIMAL) SIX-BIT BYTES.
 SOURCE FILE(S):VSCARD.COM;1
 41472 (DECIMAL) SIX-BIT BYTES.
 SOURCE FILE(S):COMKEN.COM;1
 103680 (DECIMAL) SIX-BIT BYTES.
 SOURCE FILE(S):

42

DONE?(Y OR N)Y
 EXIT.
 ^C

@LINK (TO) OPERATOR
 REFUSED @SND ?
 @

LOGOUT
 SRI-ARC OVER ALLOCATION BY 112 PAGES.
 KILLED JOB 28, USER SRI-ARC, ACCT 1, TTY 2, AT 12/04/74 1631
 USED 0:0:14 IN 0:10:20

43

#quit

44

Troubles Using MTACOPY at ISI

(J24661) 4-DEC-74 16:43;;; Title: Author(s): Dirk H. Van
Nouhuys/DVN; Sub-Collections: DPCS SRI-ARC; Clerk: DVN; Origin:
< VANNOUHUYS, ISIPAIN,NLS;1, >, 4-DEC-74 16:37 DVN ;;;;####;

Attitudes toward a software center by the ASME.

The ASME has for about six years addressed the problem of setting up a clearing house for analytical software (especially in the area of stress analysis). A review of the current status of this effort was conducted at the winter meeting. The content of this session is of particular interest to both our NSW and CAD community activities.

1

The session was chaired by Donald S. Griffin (Westinghouse, Madison, Pa) who has been a prime mover in the effort. The co-chairman was Michael P. Gaus (National Science Foundation)

1a

The keynote address was provided by H. Kraus (RPI). He discussed the Attitudes toward computer software and its exchange in the pressure vessel industry (open literature paper of the same name ASME number 74-wa/pvp-1) His results show both an interest and a resistance to the concept. The central problems are program certification and documentation.

2

A panel discussion followed:

3

Nicholas Perrone (Dept. of the Navy, Arlington, Va) This talk is summarized in XDOC 24510.

3a

There is some interesting data on operations in western Europe. Dr. Perrone is familiar with the NSW effort.

3a1

Kenneth Medearis (K. Medearis & Assoc., Fort Collins, Co) This talk is summarized in XDOC 24598.

3b

This contains a feasibility study for a software center for civil engineering software. (unimplemented)

3b1

Pedro Marcal (MARC analysis Research Corp, Providence, RI) discussed the cost of such a center. His estimates call for \$250,000 per program package per year (which does not include original development). In addition, he estimates that \$1 billion is currently being spent on software and support in stress analysis alone.

3c

Nichol (Sandia) reviewed some adjacent work including the National Controlled Thermonuclear Research Computer Center. This effort which is funded for \$50 million over the next 5 years will provide an information bank for people working on fusion.

3d

Michael Gaus (National Science Foundation) cited a GAO report concerning the cost of software prepared by Harry Mason. During the discussion a fellow from the NBS (who had a program which could compute the sine of an angle to an arbitrary number of places - say 200,000) said that NBS was being funded for precision

Attitudes toward a software center by the ASME,

software development because of this GAO report and the interest of Senator? Brooks,

3e

In general, there seemed to be a real interest in something like a program warehouse, although there was doubt that it could be funded at a level which would make it operational. I think, too, that the engineering population in general has only thought in terms of clearing houses and user groups and may soon be ready for more comprehensive thinking,

4

Attitudes toward a software center by the ASME.

(J24662) 26=NOV=74 12:34;;; Title: Author(s): Robert Louis
Belleville/RLB2; Distribution: /SRI-ARC([INFO-ONLY]);
Sub=Collections: SRI-ARC; Clerk: RLB2; Origin: < BELLEVILLE,
ASME-SFTWARE-CENT-ATTITUDE.NLS;1, >, 22=NOV=74 11:45 RLB2 ;;;###;

Introduction

This notebook is a collection of documents that describe or specify the various protocols of the ARPA Computer Network as of December 1974. Protocols are the rules of communication between processes. The protocols defined here form a tree structure. The basic protocol described here is the IMP to Host Protocol. Built on that is the Host to Host Protocol. Then spreading out somewhat but still closely related are the process level protocols: Telnet, File Transfer, Remote Job Entry, and Graphics. Interspersed along the way are a few small protocols such as the Initial Connection Protocol, and the definition of the standard character set.

JBP 4-DEC-74 18:14 24663
Current Network Protocols
Introduction
4 December 1974

(J24663) 4-DEC-74 18:14;;; Title: Author(s): Jonathan B,
Postel/JBP; Distribution: /JAKE([ACTION]); Sub=Collections:
SRI=ARC; Clerk: JBP; Origin: < POSTEL, INTRO,NLS;3, >, 4-DEC-74
18:03 JBP ;;;;####!

Mail Protocol

Introduction

This document describes the existing mail sending protocols. The mail sending protocol is a subset of the File Transfer protocol, consisting of two additional commands to the set of commands described in the specification of the File Transfer protocol.

Old FTP

A. McKenzie "File Transfer Protocol," RFC 454, NIC 14333,
16-Feb-73.

New FTP

N. Neigus "File Transfer Protocol," RFC 542, NIC 17759,
12-Jul-73.

J. Postel "Revised FTP Reply Codes," RFC 640, NIC 30843,
5-Jun-74.

Commands

Mail File (MLFL)

The intent of this command is to enable a user site to mail data (in form of a file) to another user at the server site. It should be noted that the files to be mailed are transmitted via the data connection in ASCII or EBCDIC type. (It is the user's responsibility to ensure that the type is correct.) These files should be appended to the destination user's mail by the server in accordance with serving HOST mail conventions. The mail may be marked as sent from the particular using HOST and the user specified by the 'USER' command. The argument field may contain one or more system or NIC idents (it is recommended that multiple idents be allowed so the same mail can easily be sent to several users), or it may be empty. If the argument field is empty or blank (one or more spaces), then the mail is destined for a printer or other designated place for site mail.

A NIC ident refers to the standard identification described in the NIC directory of Network Participants. A serving host may keep a table mapping NIC idents into system idents, although NIC idents are not required in the implementation. A system ident is the user's normal identification at the serving HOST.

The use of system idents would allow a network user to send mail to other users who do not have NIC identification but whose system ident is known.

Mail (MAIL)

This command allows a user to send mail that is NOT in a file over the TELNET connection. The argument field may contain one or more system or NIC idents, or it may be empty. The idents are defined as above for the MLFL command. After the 'Mail' command is received, the server is to treat the following lines as text of the mail sent by the user. The mail text is to be terminated by a line containing only a single period, that is, the character sequence ".CRLF" in a new line. It is suggested that a modest volume of mail service should be free; i.e., it may be entered before a USER command.

Reply Codes

The MAIL and MLFL commands have the same reply codes as the Append (APPE) command, with the addition of the reply code for MAIL stating that mail is expected over the Telnet connection.

Old FTP

350 = Enter mail, terminate with <CR><LF>,<CR><LF>

New FTP

354 = Start mail input, end with <CR><LF>,<CR><LF>

Syntax

It is strongly urged that for consistency in the handling of mail at the various hosts that all mail sending subsystems or programs use these standard syntax convention for the text of the mail. This will help a great deal in allowing a user or program to intelligently process incoming mail.

The text of the mail, whether transmitted over the FTP Telnet connection (via the MAIL command) or over the separate data connection (via the MLFL command), is governed by the syntax below:

Example:

From: White at SRI-ARC
Date: 24 JUL 1973 1527-PDT
Subject: Multi-Site Journal Meeting Announcement
NIC: 17996

At 10 AM Wednesday 25-JULY there will be a meeting
to discuss a Multi-Site Journal in the context of
the Utility, Y'all be here,

Formal Syntax:

```
<mailtext> ::= <header> <CRLF> <message>
<header> ::= <headeritem> ! <headeritem> <header>
<headeritem> ::= <item> <CRLF>
<item> ::= <authoritem> ! <dateitem> !
          <subjectitem> ! <miscitem>
<authoritem> ::= FROM: <SP> <user> <SP> AT <SP> <host>
<dateitem> ::= DATE: <SP> <date> <SP> <time> = <zone>
<subjectitem> ::= SUBJECT: <SP> <line>
<miscitem> ::= <keyword> : <SP> <line>
<date> ::= <ydate> ! <tdate>
<ydate> ::= <dayofmonth> <SP> <ymonth> <SP> <yyear>
<tdate> ::= <tmonth> / <dayofmonth> / <tyear>
<dayofmonth> ::= one or two decimal digits
<ymonth> ::= JAN ! FEB ! MAR ! APR ! MAY ! JUN !
           JUL ! AUG ! SEP ! OCT ! NOV ! DEC
<tmonth> ::= one or two decimal digits
<yyear> ::= four decimal digits
<tyear> ::= two decimal digits
<zone> ::= EST ! EDT ! CST ! CDT ! MST ! MDT !
         PST ! PDT ! GMT ! GDT
<time> ::= four decimal digits
<user> ::= <word>
<host> ::= a standard host name
<message> ::= <line> <CRLF> ! <line> <CRLF> <message>
<keyword> ::= <word>
<line> ::= a string containing any of the 128
ASCII
          characters except CR and LF
<word> ::= a string containing any of the 128
ASCII
          characters except CR, LF, and SP
<CRLF> ::= CR LF
<SP> ::= space
```

Please note the following:

- (1) <authoritem>, <dateitem>, and <subjectitem> may each appear at most once in <header>; <miscitem> may occur any number of times. The order of <authoritem>, <dateitem>, and <subjectitem> is insignificant, but they must precede all occurrences of <miscitem>.
- (2) The case (upper or lower) of keywords -- specifically, 'FROM', 'DATE', 'SUBJECT', 'AT', <host>, <zone>, <vmonth> and <keyword> -- is insignificant. Although 'FROM', for example, appears in upper-case in the formal syntax above, in the header of an actual message it may appear as 'From' (as in the example), or 'from', or 'FrOm', etc.
- (3) No attempt has been made to legislate the format of <user>, except to exclude spaces from it.
- (4) The time has no internal punctuation.
- (5) No provision is made for multiple authors.

JBP 4-DEC-74 18:32 24664
Mail Protocol
Jon Postel
4 December 1974

(J24664) 4-DEC-74 18:32;;; Title: Author(s): Jonathan B.
Postel/JBP; Distribution: /JAKE([ACTION]); Sub-collections:
SRI-ARC; Clerk: JBP; Origin: < POSTEL, MAILSPEC.NLS;5, >,
4-DEC-74 18:31 JBP ;;;;#####

re 'Senator Brooks'

Its Congressman Jack Brooks of Texas (re == 24662,).

1

re 'Senator Brooks'

(J24665) 5-DEC-74 08:47;;; Title: Author(s): Jonathan B.
Postel/JBP; Distribution: /RLB2([ACTION]); Sub-Collections:
SRI=ARC; Clerk: JBP;

File Standards Proposal Round 2

Network Working Group
Request for Comments: rrr

J. Postel (SRI-ARC)
dd December 1974

NIC: jjjjj

Standard File Formats

Introduction

In an attempt to provide online documents to the network community we have had many problems with the physical format of the final documents. Much of this difficulty lies in the fact that we do not have control or even knowledge of all the processing steps or devices that act on the document file. A large part of the difficulty in the past has been due to some assumptions we made about the rest of the world being approximately like our own environment. We now see that the problems are due to differing assumptions and treatment of files to be printed as documents. We therefore propose to define certain standard formats for files and describe the expected final form for printed copies of such files.

These standard formats are not additional File Transfer Protocol data types/modes/structures, but rather usage descriptions between the originator and ultimate receiver of the file. It may be useful or even necessary at some hosts to construct programs that convert files between common local formats and the standard formats specified here.

Standardization Elements

The elements or aspects of a file to be standardized are the character or code set used, the format control procedures, the area of the page to be used for text, and the method to describe overstruck or underlined characters.

The area of the page to be used for text can be confusing to discuss, in an attempt to be clear we define a physical page and a logical page.

Physical Page

The physical page is the medium that carries the text, the height and width of its area are measured in inches.

The typical physical page is a piece of paper eleven inches high and eight and one half inches wide.

Typical print density is 10 characters per inch horizontally and 6 characters per inch vertically.

This results in the typical physical page having a maximum capacity of 66 lines and 85 characters per line. It is often the case that printing devices limit the area of the physical page by enforcing margins.

Logical Page

The logical page is the area that can contain text, the height of this area is measured in lines and the width is measured in characters.

A typical logical page is sixty lines high and seventy two characters wide.

Code Set

The character encoding will be the network standard Network Virtual Terminal (NVT) code as used in Telnet and File Transfer protocols, that is ASCII in an eight bit byte with the high order bit zero.

Format Control

The format will be controlled by the ASCII format effectors:

Form Feed <FF>

Moves the printer to the top of the next logical page, and to the left edge of the logical page. [Note that this differs from the NVT specification].

Carriage Return <CR>

Moves the printer to the left edge of the logical page remaining on current line.

Line Feed <LF>

Moves the printer to the next print line, keeping the same horizontal position.

Horizontal Tab <HT>

Moves the printer to the next horizontal tab stop.

The default stops for horizontal tabs will be every eight characters, that is character positions 9, 17, 25,

Vertical Tab <VT>

Moves the printer to the next vertical tab stop.

The default stops for vertical tabs will be every

eight lines starting at the first printing line on each logical page,

Back Space <BS>

Moves the printer one character position toward the left edge of the logical page.

Not all these effectors will be used in all format standards, any effectors which are not used in a format standard are ignored.

Page Length

The logical page length will be specified in terms of a number of lines of text. This describes the number of lines per physical page available for text. This does not specify the size of the physical page or the font.

Page Width

The logical page width will be specified as a number of characters. This describes the number of characters per line of the physical page available for text. This does not specify the physical size of the page or the font.

Overstriking

Overstriking (note that underlining is a subset of overstriking) may be specified to be done in one or both of the following ways, or not at all:

By Line

The text of the line will be followed by a <CR> then the overstriking will follow as a series of space and overstrike characters followed by <CR><LF>.

By Character

Each character to be overstruck is to be immediately followed by a <BS> and the overstrike character.

Standard Formats

Format 1

This format is designed to be used for documents to be printed on line printers, which normally have 66 lines to a physical page, but often have forced top and bottom margins of 3 lines each.

Active Format Effectors

<FF>, <CR>, <LF>.

Page Length

60 lines.

Page Width

72 Characters.

Overstriking

By Line.

Format 2

This format is designed to be used with hard copy terminals, which in the normal case have 66 lines to a physical page.

Active Format Effectors

<FF>, <CR>, <LF>, <HT>, <VT>, <BS>.

Page Length

66 lines.

Page Width

72 Characters.

Overstriking

By Character.

Format 3

This format is designed to be used with full width (11 by 14 inch paper) line printer output.

Active Format Effectors

<FF>, <CR>, <LF>.

Page Length

60 lines.

Page Width

132 Characters.

Overstriking

None.

Format 4

This format is designed to be used for simulated card input. The page width (line length) is 82 characters this allows the 80 character card image followed by <CR><LF>.

Active Format Effectors

<CR>, <LF>,
Page Length
Infinite,
Page Width
82 Characters,
Overstriking
None.

Implementation Suggestions

Overflow

Overflow can result from two causes, first if the physical page is smaller than the logical page, and second if the actual text in the file violates the standard under which it is being processed.

In either case the following suggestions are made to implementors of programs which process files in these formats.

Length

If more lines are processed than fit within the minimum of the physical page and the logical page length since the last top of page action, then the top of page action should be forced.

Width

If more character positions are processed than fit on the minimum of the physical page width and the logical page width since the last left edge action, then characters are discarded up to the next format effector.

or

If more character positions are processed than fit on the minimum of the physical page width and the logical page width since the last left edge action, then the left edge and next line actions should be forced.

References

A. McKenzie "TELNET Protocol Specification," NIC 18639, Aug-73.

File standards Proposal Round 2

(J24666) 5-DEC-74 09:39;;; Title: Author(s): Jonathan B.
Postel/JBP; Distribution: /JEW([ACTION]); Sub-Collections:
SRI-ARC; Clerk: JBP; Origin: < POSTEL, FILE-STANDARDS,NLS;8, >,
5-DEC-74 09:34 JBP ;;;;####;

Trip Report: Lockheed Autotext

THE PRESENTATION

1

On Monday the 10th Elizabeth Michael, Bob Belleville, Charles Irby, Dick Watson and I visited the Lockheed Missile and Space Company's Building 101 in Sunnyvale to learn about the AUTOTEXT computer-based publication system. Bob Mathieu led the presentation; a programmer [Does anyone remember his name?] was present along with a [Does anyone remember his name?] who seemed to be a representative of management and spoke about the prospects of Lockheed trying to sell AUTOTEXT to outside users and about Lockheed organization.

1a

They presented the system basically from the viewpoint of the publications people who use it. They took us on a tour where we saw input and editorial typists, macro-editor (see below) and the COMP=80.

1b

HISTORY

2

It is very important to keep in mind that AUTOTEXT evolved from a punch card batch system in the midst of massive manual production. Its whole purpose is to produce printed pages of a certain general type. Procedures have evidently evolved integrally with software.

2a

AUTOTEXT was developed as a system called CAMP as part of the C-5a program. Since 1968 it has continued development at LMSC Missiles System Division mostly in connection with the Poseidon program. In 1973 LMSC MSD put about 45,000 final photo typeset pages through AUTOTEXT and other parts of Lockheed about 15,000.

2b

FILES

3

Their files are indexed sequential files. When the files are first input they are apparently divided only into numbered sentences (variable length records). After they have passed through the Output Generator (see below) they have the following addressing hierarchy of parts: File, Documents, Chapter, Page Paragraph,, and Sentence. It is not fully clear to us how these units work. Sentences (which may not be grammatical sentences) are evidently records. Sentences are reallocated into pages in storage when the file passes through the Output Generator. [An example of their orientation toward book production.] Autotext uses a file handling system written at Lockheed. Commands like copy can cross file. The system is not oriented toward lines.

3a

MACHINE SUPPORT

4

The system began on a Spectra and now runs on a Lockheed Administrative Service 370/165 Dual Processor System. It shares

Trip Report: Lockheed Autotext

time with many other sorts of work through Lockheed time-sharing and file management systems.

4a

THE PROCESS

5

(1)The writer makes a paper draft using his conventional tools. The draft may then pass into the hands of a conventional editor,

5a

(2)This draft goes to an input typist who types into disk storage exactly what she sees,

5b

(3)An unformatted draft from a line printer then normally goes to a "macro" editor who inserts by hand on paper instructions ("macros") to the Output Generator (see below),

5c

Some of the time it is possible to skip this and the following step because work of the input typist can go directly to the Output Generator which can perform some of its functions on the basis of the content. But it is our impression that the intervention of the macro editor is usually necessary,

5c1

(4)The draft marked by the macro editor returns to the input typist who adds the "macros."

5d

(5) A new draft is produced for the author (or conventional editor),

5e

Drafts come in three forms:

5e1

unformatted

5e1a

(roughly equivalent to NLS quickprint),

5e1a1

output via COM

5e1b

(paper equivalent to the proofs we get from DDSI is used for draft revision in advanced stages of production)

5e1b1

and a third, intermediate form in which the phototypeset layout is roughly approximated on the line printer by using the full width of the paper,

5e1c

We could derive such drafts from output COMtest,

5e1c1

(6)The author or editor marks any changes by hand on the draft and returns it to the input typist. The cycle repeats until the copy is ready for final printing.

5f

OPERATING THE PROCESS

6

Trip Report: Lockheed Autotext

The operators are not the author, editor in the conventional sense, or systems people but specially trained publications clerical people.

6a

Only the input typist touches the system. She uses a 2741 running in half duplex. Commands are not very mnemonic. The command equivalent to replace text is "TC147" or something like that. Nevertheless I got the feeling that typist input and corrections worked smoothly. Our hosts remarked that many typists did not want to work on the system and that those who did were lured by higher pay, the promise of advancement, and even then did not stay long. Commands include insert, append, delete, copy and output proof. It was clear that these commands could be applied only to a restricted subset of their file structure entities. They claimed that enough training to function took an hour, proficiency weeks. They seem to have no offline input or editing comparable to mag cards or DEX.

6b

A class of editor called a "macro editor" exists at Lockheed to insert formatting directives by hand into paper drafts. These "macros" subsume the equivalent of NLS Output Processor directives. They also play a part in structuring the file. Macro editors have a role similar to production editors. That job is popular.

6c

We saw five macro editors and one typist working. They said they have a staff of ten typists.

6d

THE OUTPUT GENERATOR

7

This code formats files for the line printer, Morganthaler Linetron, and COMP-80 much as the Output Processor does. AUTOTEXT stresses standard formats more than we have and some documents require no, or few, handset "macro's." In addition it hyphenates, checks spelling, lays out and rules tables (during input it is possible to specify that content occupy a certain row and column), and makes normal and keyword-in-context indices.

7a

Indices require much human labor both before and after insertion of directives.

7a1

The Output Generator is a two-pass machine which knows enough about page lay-out at the end of the first pass to make an index although not enough to set up page foot notes.

7b

It can call the low-level graphic generation language of the COMP-80 to create designs by defining then ends of a line as the like. Macros exist to call a substantial list of special characters (e.g., braces, Greek letters.)

7c

Trip Report: Lockheed Autotext

Illustrations are inserted by defining blank space (no less than a page quadrant) and flashing them in from slides in the COMP-80,

7d

The Output Generator creates tables of contents and sets type font etc. for headings by checking the content. e.g. a line beginning "CHAPTER" appears as a chapter in the table of contents. Several standard layouts exist.

7e

Use of the Linetron is apparently fading after introduction of the COMP-80. The COMP-80 can produce 42X but not 48X micro fiche.

7f

CONNECTION WITH OTHER REALMS

8

The AUTOTEXT group recognizes the possibilities of joining their text handling facilities to DIALOG, and the extensive Lockheed computer Aided Design and CADM facilities, but have done nothing concrete to implement them.

8a

VIRTUES CLAIMED

9

Their documentation people praise AUTOTEXT in terms of reducing publication time and cost. They assert that AUTOTEXT reduces typing for input 50% because the typist does not have to worry about format, much more when the document can be copied. But it is not clear where the cost of the macro editor enters in that calculation. They assert it reduces writing time about 40% because of the ease of copying from previous materials.

9a

MARKETING

10

The AUTOTEXT group would like to sell the system as a service bureau. Management has not made a decision on their proposal. They would have to either run on the present Lockheed machine with advantages of cost sharing and complications of accounting, security classification, and burden rates, or move to another machine where they might lower burden rates, but have to support the whole machine or find congenial partners. There are similar questions about restriction of access, communication costs, personnel labor rates, access to the COMP-80, etc.

10a

Another question is what happens when one tries to prepare other sorts of documents on AUTOTEXT, documents where for example one did not want the word "CHAPTER" to appear at the beginning of each chapter? It was not clear how much reprogramming would be necessary in various situations.

10b

10c

PRINTING FILES FROM NLS

11

Trip Report: Lockheed Autotext

We gave them a copy of our COM output specifications (14093,) and asked them to call us if they wanted a sample tape. They have not done so. They were not enthusiastic about the possibilities. On the business side it might be hard for them to bill small jobs. On the machine side, the 165 hands the COMP-80 output very unlike ours. It is very close to COMP-80 machine code.

11a

Trip Report: Lockheed Autotext

(J24667) 5-DEC-74 10:44;;; Title: Author(s): Dirk H. Van Nouhuys,
Richard W. Watson, Elizabeth K. Michael/DVN RWW EKM; Distribution:
/JOAN([ACTION] please add to dpcs notebook and send thru SRI mail
copies to Tom Humphry, Shirely Hentzell, Pat Whitting-O'Keefe, and Richard H
Smith) DPCS([INFO-ONLY]) SRI-ARC([INFO-ONLY]) LAC([INFO-ONLY]
) WEC([INFO-ONLY]) ; Sub-Collections: SRI-ARC DPCS; Clerk: DVN;
Origin: < HAMILTON, AUTOTEXTMTG.NLS;3, >, 5-DEC-74 10:26 DVN
;;;####;

Acronyms, Abbreviations, and other Nonsense Syllables

"The use of nonsense syllables, in this context, is not considered a critical deviation from real world activities since an examination of most current computer-based information systems would produce numerous acronyms and abbreviations which are used as identifiers in information-handling task."

1

From: Baker, James D, and Goldstein, Ira, Batch vs. Sequential Displays; Effects on Human Problem Solving, "Human Factors", June 1966.

1a

In their reserach, Baker and Goldstein asked experimental subjects to sit at a CRT and work their way through a maze of nonsense syllables.

1b

Acronyms, Abbreviations, and other Nonsense Syllables

(J24668) 5-DEC-74 10:54;;; Title: Author(s): Dirk H. Van
Nouhuys/DVN; Distribution: /SRI-ARC([INFO-ONLY]) DPCS([INFO-ONLY]
); Sub-Collections: SRI-ARC DPCS; Clerk: DVN;

Both (24662,) and (24624,) are the same with different titles.

Apparently (gjournal,24662,) and (Gjournal,24624,) are the same but with different titles. First with a date of 26-nov-74 12:34 and the second with 27-nov-74 0858. Also the first arrived on the 5th of DEc. This message is for the record.

Both (24662,) and (24624,) are the same with different titles.

(J24669) 5-DEC-74 11:21;;; Title: Author(s): Robert N.
Lieberman/RLL; Distribution: /JDH([INFO-ONLY]) RLB2([INFO-ONLY])
; Sub-Collections: SRI-ARC; Clerk: RLL;

Contact Report - John Copeland, U. Mich.

CONTACT REPORT: 1

NAME AND ADDRESS: 1a

John Copeland (for Carl Zinn)
 Merit Computer Center
 108 Cooley Building
 2355 Bonisteel Boulevard
 North Campus
 University of Michigan
 Ann Arbor, Michigan 48105

1a1

PHONE: 1b

(313) 764-9423

1b1

PURPOSE OF DISCUSSION: 1c

To discuss the problems encountered and the procedures used by E. Feinler in building an online resource sharing data base for the Arpanet,

1c1

DISCUSSION: 1d

John is involved in writing a proposal for NSF for NSF 74-38 program solicitation which involves (as I understand it) information techniques for easy user interface. (Apparently this RFP has many parts of which we are bidding on two - it was a little embarrassing not to know this when talking to Copeland.) Merit has a problem in that they spend upwards of \$200,000 a year to maintain networking capabilities and find that only about \$60,000 worth of activity is taking place and this is dropping. (UCSB has complained of similar problems with their use of the Arpanet by the way). They feel that this is largely due to problems in locating and advertising resources that are available for use. We discussed many of the problems in finding these resources, particularly application packages and user-written and maintained programs.

1d1

I explained to him what we have done including a fairly detailed description of the online query access to the Resource Notebook. In this I included some discussion of our unique file structure, of the concept of the NIC/QUERY language, and of all the data categories that I have collected. He was very interested and copied down all of the major categories over the phone. He would like to do an online questionnaire (which was what I had proposed before but have not been able to get implemented) and then follow this up with concise descriptions of each program. He again took down in great detail exactly

Contact Report - John Copeland, U. Mich,

how I describe each program and also some of the descriptive categories that I think should be there that are not now implemented (such as brief access scenarios and use parameters or restrictions as well as charges, if any, and maintenance contacts.)

1d2

We discussed techniques for gathering the information and I described some of the difficulties I have had due to the fact that there is very little known about users on the Arpanet. I explained that my main contacts are Liaison who are basically builders of the network and whose interests do not lean as heavily towards use as would those of an all user university population. I also discussed my interaction with some of the student population on the Arpanet and discussed some of the ways they seem to like to operate in a networking environment.

1d3

He was very interested in what VOLUME of response he might have to such a system. I told him that the only statistics I have concern how many users have come into NIC/QUERY which was about 5000 users over a 10 month period. He was quite impressed especially when I explained that there are login queing problems and that, due to lack of help, much of the data has been out of date or filled with error messages. I explained that I have no way of knowing who they are or what they access but that they are probably NOT experienced query users since an experienced user would bypass the beginning instructions and access to the beginning instruction file is what I based my statistics on.

1d4

We discussed the preferences for online access and hardcopy description. I stated that particularly for program descriptions that I thought the system should be interactive with possible periodical printouts of program compendiums. We discussed the concept of automatic access to a program and I pointed him to Jim White and the new process sharing protocol that has been written. Copeland is actually interested in such a program himself. My description of what a system should look like was basically the following:

1d5

The user should come into a central system that has free access and very easy browsability as well as cross-file Boolean search capability. Here he could find: 1) what there is to use (by browsing) 2) what process will do his job (by searching) 3) miscellaneous other parameters about any given process (such as charges, restrictions on use, or whatever). From this the ultimate would be for the user to go into what might be termed 'load or use mode' where he asks the computer to 'Load program X at campus (or host) y'. He would automatically be taken into this program and

Contact Report - John Copeland, U. Mich.

automatically billed for his use of it, if there was a charge. Any problems, restrictions, idiosyncrasies, etc. would be presented to him at this point so that he would know what he was up against.

1d5a

Another feature might be a scenario mode, again with free easy user access. Here a user could look at a brief scenario for an available program and see whether it in fact was what he was looking for.

1d5b

Documentation would be another mode where references to documentation for a given program would first appear. These would be searchable by subject, author, publisher, etc.,. Upon finding a reference to documentation that a user wanted to see he could then link to the actual document which would be maintained online (or easily loadable from archive ala our journal approach). Hardcopy documentation could be printed out for detailed reading. Possibly table-of-contents (via a viewspec approach) would also be easily accessible for browsing purposes.

1d5c

Any user could enter information through an online interrogation scheme. This would ask enough questions about the program being offered to give a complete description of it. Some information such as scenarios could be filled in later. This information would then appear in the open resource files (probably with minor editing of items that bomb out for one reason or another). This information entering should be very accessible and dynamic. It might also have an 'I discovered' subset and/or news item bulletin board such as those proposed by Jim Calvin in his program HACK for incomplete information or general comments.

1d5d

Also needed would be a feedback and maintenance process. There would no doubt be varying types of maintenance such as central maintenance of large compilers to author maintenance or no maintenance of small user packages. Degree of maintenance would have to be carefully spelled out to the user.

1d5e

Copeland stated that Michigan was interested in coming onto the Arpanet and asked if I thought ARPA would be interested in a proposal to do this job. I told him that would be in direct competition with my own interests and that he would have to be on his own on that one. I did point out that he would have the problem of catching up on what had gone before. He agreed to get in touch with me if they do come on the Arpanet and we could perhaps pursue some mutual interests along these lines (I believe he was fairly naive with respect to the Arpa proposal

Contact Report - John Copeland, U. Mich.

but feel that Michigan might make such a bid. My own feeling is that this is a proposal that we should be submitting to funding agencies. It fits in nicely with both NSW concepts and, if written as a general case approach, would be extremely useful to utility customers as a general case resource catalog-building tool, query language, search tool, and bibliographic citation and document retrieval tool.) I would be interested in collaborating on such a system with other members of ARC.

1d6

ACTION

1e

I will send him a copy of the Arpanet Directory and my Server questionnaire so that he can get some idea of the types of information we have collected. I will also send him a copy of the Resource Notebook when it is published. He will send me a copy of his proposal and will share his programs with me in the event that Michigan comes onto the Arpanet.

1e1

REFERRALS:

1f

I referred him to the following people that he either asked me about or whose experience I thought might be useful:

1f1

Ken Bowles - has free help and browse system. Also runs a large computer center at a University that might have similar user population and problems to that of Michigan,

1f1a

Jean Iseli - Mentioned that Jean had served as new user interface for the Arpanet and would be able to give him some input with respect to volume of requests need for information, etc.

1f1b

Jacques Vallee - he asked me about user response to teleconferencing and I referred him to Jacques who has done some formal studies on this. He was also interested in who had teleconferencing programs.

1f1c

Jim Calvin - described the simple-minded HACK program to him and suggested he contact Jim to see if any more had been done on this program.

1f1d

Erica Graf-Webster for the REX search system. He will be using SPIRES and was not particularly interested in anyone else's search system.

1f1e

Jim White and Jon Postel - protocols (as mentioned above)

1f1f

Contact Report - John Copeland, U. Mich.

(J24670) 5-DEC-74 13:19;;; Title: Author(s): Elizabeth J. (Jake)
Feinler/JAKE; Distribution: /DCE([INFO-ONLY]) JCN([INFO-ONLY])
RWW([INFO-ONLY]) NPG([INFO-ONLY]) DVN([INFO-ONLY]) ;
Sub-Collections: SRI=ARC NPG; Clerk: JAKE; Origin: < FEINLER,
COPELAND=MICH,NLS;2, >, 5-DEC-74 13:12 JAKE ;;;;###;

test

hellohowareyou thisis a fascinating system

1

test

(J24671) 5-DEC-74 14:15;;; Title: Author(s): Jeanne M. Beck/JMB;
Distribution: /POOH([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk:
JMB;

current implementation of user=programs

The current implementation of user=programs based on "USER PROGRAM RECOMMENDATIONS FOR APPLICATIONS SUPPORT" <bair,progs,> 1

Subsystems

> These are located in directory <PROGRAMS>. (* notes those content-analyzers for which the command-word interface has not yet been written. They have been converted and are available as content-analyzer patterns.) 2

Address 2a

Insert (address to follow) STRING DESTINATION OK (input ident) CONTENT OK 2a1

Modify 2b

APPEND 2b1

Append Group/Plex (at) DESTINATION (join with) CONTENT OK 2b1a

DELCOL 2b2

Delete Visible (beginning in column of width) DESTINATION OK 2b2a

Delete Column (of width beginning at) DESTINATION OK 2b2b

ADDTEXT 2b3

Insert Front/Back STRUCTURE (at) DESTINATION (the text) CONTENT OK/<Filtered; VIEWSPECS OK> 2b3a

DELSP* 2b4

Delete Leading (spaces in) STRUCTURE 2b4a

LOWERCASE* 2b5

Force (Sentence case for:) STRUCTURE ... 2b5a

DELNAME* 2b6

Delete Names (from statements in:) STRUCTURE 2b6a

Format 2c

DELDIR 2c1

Delete (Directives in) STRUCTURE (at) DESTINATION OK 2c1a

current implementation of user=programs

SHOWDIR	2c2
Set Directive (statements)	2c2a
Reset directive filter	2c2b
Reset Directive (Filter) OK	2c2b1
FORMAT	2c3
Format File (at) DESTINATION (using Format #) CONTENT (Title;) CONTENT (Author Ident(s);) CONTENT (Journal Number;) CONTENT (Formatting File)	2c3a
Format File (at) DESTINATION (using Format #) CONTENT	2c3b
SRIFORM *	2c4
Title page	2c4a
Generate title page...	2c4a1
Message	2d
Send Text (at) CONTENT !still being debugged as of this writing!	2d1
/ STRUCTURE (at) DESTINATION	2d1a
(subject;) CONTENT	2d1b
(to;) CONTENT	2d1c
(type CA to send the message, n to add to list)	2d1d
OK;	2d1e
Move Message	2d2
Copy Message	2d3
<>Sort Message	2d4
JFORM3*	2d5
Publish	2e
INDEX	2e1

current implementation of user=programs

Index STRUCTURE	2e1a
TOC	2e2
Generate Table (of contents for file at:)	2e2a
WORDCOUNT	2e3
Count (visables in:) STRUCTURE	2e3a
MAKEREf (not yet implmented as of this writing!	2e4
Generate References (at:) STRUCTURE	2e4a
Content analyzer patterns	3
jform3	3a
delsp	3b
sriform	3c
lowercase	3d
delname	3e
Sort Keys	4
sortnocase	4a
sortrev	4b
sortnum	4c
sortnmskip	4d
REL files	5
letter runs as a rel file as it did in NLS=7	5a

current implementation of user=programs

(J24672) 5-DEC-74 15:35;;; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /NDM([INFO-ONLY]) JHB([INFO-ONLY]) RLL([
INFO-ONLY]) JCN([INFO-ONLY]) RWW([INFO-ONLY]) EKM([INFO-ONLY
]) ; Sub-Collections: SRI=ARC; Clerk: KIRK; Origin: < KELLEY,
STAT-OF-PROGS,NLS;3, >, 5-DEC-74 15:32 KIRK ;;;;####;

Protocol Notebooks

I will be printing 10 copies of the protocol notebook current up to Dec. of this year. These ten copies will be turned over to Defense Documentation Center (DDC) and will eventually be available for purchase from the National Technical Information Service (NTIS). In so doing I will be glad to make additional copies for anyone who needs one (one to a customer, please) if you let me know before Monday 12/9/74. These volumes will be bound not loose-leaf. Anyone who has a loose-leaf version he would like to maintain instead can check with me to find out what is missing.

1

Protocol Notebooks

(J24673) 5-DEC-74 16:58;;; Title: Author(s): Elizabeth J. (Jake)
Feinler/JAKE; Distribution: /SRI-ARC([ACTION]) ; Sub-Collections:
SRI-ARC; Clerk: JAKE;

Hark, Hark, the polymorphous perversity of Meteorological Ameliorists
Barks

What better way to celebrate our dedication to augmenting geographically distributed communities than to experience our pre-Christmas enjoyings in a--as has often been our wont--MOBILE fashion? That's right, a pre-Christmas party on wheels, in which ARC staff, in varying stages of stability, can skate with or around each other, discussing topics of great hierarchial import. Yes indeed, Tacky think-tank Chic will reign as we sashay on down to the Skateland Roller Rink for an evening of quote traditional AND rock-and-roll unquote induced skating, an event not to be missed by you Buff-ecru perpetrators of the supraordinary. Haircuts will be administered with a fork and spoon to the needy apres skate, friday evening the 13th (we never said we weren't devilish), 8:30p.m., that's skateland, on the corner of Lawrence Expressway and Reed Ave., in Sunnyvale, \$1.35 to enter and 50 cents to rent your Wheels. Friends and intimate relations encouraged to assist. (rink #241-1121) You will probably discover somewhat of a preliminary warm-up session at 535 encina after 6pm that evening. Don't say we didn't warn ya....

Hark, Hark, the polymorphous perversity of Meteorological Ameliorists
Barks

(J24674) 5-DEC-74 17:18;;; Title: Author(s): Jeanne M. Leavitt,
Sandy L. Johnson/JML SLJ; Distribution: /SRI=ARC([ACTION]) ;
Sub=Collections: SRI=ARC; Clerk: JML;

Cutup Branch

I have created a commands branch to make it easy to cutup and reassemble the contents of some file. It is (vannouhuys,cutprog,cutbranch). To use it, copy it to some file you can write on, then replace the name of the file in the link following the jump to link command (which appears about half way down as "jum lin (link,1)) with the name of the file you want to cut up. Then use the process commands from branch command. Note that the append step takes a long time on even medium files.

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Cutup Branch

(J24675) 5-DEC-74 20:53;;; Title: Author(s): Dirk H. Van
Nouhuys/DVN; Distribution: /JML([INFO-ONLY]) SJL([INFO-ONLY])
MARK([INFO-ONLY]) HGL([INFO-ONLY]) KIRK([INFO-ONLY]) ;
Sub-Collections: SRI=ARC; Clerk: DVN;

24672'; Title: .Hi='current implementation of user=programs';
Author(s): James H. BairKirk E. Kelley

Just a point of clarification.

24672'; Title: 'HI='current implementation of user=programs';
Author(s): James H. BairKirk E. Kelley

The refered to Journal item describibg the current state of user Progs was awaiting approval by JCN. That is why I hadnt Journalized it. I realize that Kirk's submission is a report of the current status; it does not represent the agreed to implementation of all programs on the original list (submitted by NDM) except sort keys into subsystems.... When JCN reviews the design we will Journalize Applications position.

JHB 6-DEC-74 09:29 24677

24672'; Title: .H1='current implementation of user=programs';
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]) ; Sub-Collections: NIC; Author(s): /JHB; Clerk: JHB;