

old sndmsg's

15-NOV-74 20:20:00,1056

Net mail from site USC-ISI rcvd at 15-NOV-74 20:19:58

Date: 15 NOV 1974 2019-PST

From: BOWLES at USC-ISI

Subject: Distribution Lists

To: POSTEL at SRI-ARC

Jon:

Effective December 15, I will be working for Remote Computing Corporation in Palo Alto.

Since RCC is not involved in the ARPA Network, and probably will never be, I am going about the process of removing my name from the various mailing and distribution lists which I worked so hard to get onto. If you have anything directed to me personally as opposed to Ken Bowles at ISI, please delete on 12/15.

I am not sure who is going to take over my work on our Net stuff here. Presumably Jim Madden will, but I would not be willing to place any bets on it. Things being what they are, we may not have any Net stuff to do before long.

The new FTP protocol is finished and I am currently working on the user documentation. If you're interested in a copy, let me know. I'd

like to thank you for your help; it made things a lot easier.

Kurt Barthelmess

old sndmsg's

----- 21

18-NOV-74 21:35:05,1025 22

Net mail from site SRI-AI rcvd at 18-NOV-74 21:35:03 23

Date: 18 NOV 1974 2117-PST 24

From: GEOFF at SRI-AI 25

Subject: SOMETHING THAT'LL GET A LAUGH ON YOUR NEXT NET DEMO, 26

To: NETWORK HACKERS: 27

28

HI ALL, 29

NEXT TIME YOU ARE SHOWING THE NETWORK OFF TO A STRANGER, FRIEND, 30

OR WHAT NOT, YOU MIGHT LIKE TO CONNECT TO "SRI-AI 21" (SOCKET 31

21(8))

WHERE THE OLD BUT NOT FORGOTTEN CCA LIMERICK HACK LIVES NOW, AND 32

WILL

BLURT OUT ONE AT RANDOM TO YOU EVERY TIME YOU CONNECT. 33

34

HOWEVER, SHOULD YOU GET TIRED OF CONNECTING AGAIN AND AGAIN, 35

UPON REQUEST I WILL SEND YOU THE ENTIRE LIST. ALSO, IF YOU HAVE A 36

PRICELESS GEM THAT YOU WOULD LIKE THE REST OF THE WORLD TO KNOW 37

ABOUT,

SEND ME A NOTE, AND I'LL BE HAPPY TO PASS IT ON TO THE AUTHOR 38

(HPP@CCA)

FOR INSERTATION IN THE NEXT VERSION OF ONELIM, 39

40

[GEOFF] 41

42

P.S. IF YOU'RE WONDERING WHO ELSE IN THE WORLD IS ON THIS LIST, 43

old sndmsg's

YOU CAN GET IT BY RETRIEVEING [SRI-AI]<PEOPLE>KNOWN-NETWORK.HACKERS, 44
BY USING USERNAME=ANONYMOUS PASSWORD=INITIALS, NAME, ETC. --GEOFF 45
----- 46

19-NOV-74 05:36:08,573 48
Net mail from site USC=ISI rcvd at 19-NOV-74 05:36:05 49
Date: 19 NOV 1974 0535-PST 50
From: FORMAN at USC=ISI 51
Subject: SETTING UP FORUM 52
To: POSTEL at SRI=ARC 53

JON, COULD YOU ASSIST ME IN SETTING UP FORUM. I WANT TO FAMILIARIZE 55
MYSELF WITH IT IN CONNECTION WITH A PWIN TELECONFERENCING SPEC I AM 56
WRITING, BUT THE PEOPLE AT THE INSTITUTE FOR THE FUTURE ARE BEING 57
LESS
THAN HELPFUL IN GETTING IT SSET UP. JI SAID YOU HAD SET IT UP 58
PREVIOUSLY, SO I WONDER IF YOOU WOULD BE KIND ENOUGH TO HELP ME SET 59
IT UP IN THE MITRE DIRECTORY AT BBN?DAVE WOOD. 60

----- 61
20-NOV-74 14:08:32,2002 62
Date: 20 NOV 1974 1408-PST 63
From: POSTEL 64
Subject: rje &graphics 65
To: fields at ISI 66
cc: postel 67

old sndmsg's

68

Craig:

69

As far as i am aware there is no implementation activity in either

70

area. i suspect that there may be some activity in the graphics

71

area that i am not aware of, in RJE there is at least one

72

implementation of the existing protocol (at UCSB).

73

the following is an exerpt from the protocol information file

74

i am keeping, the whole file is reteriveable from

75

[SRI-ARC]<POSTEL>PROTOCOL-INFORMATION.TXT

75a

76

RJE = Remote Job Entry

76a

Contact:

76a1

Jon Postel at SRI-ARC (POSTEL@SRI-ARC)

76a1a

Documents:

76a2

Bressler, B. "Remote Job Entry Protocol," RFC 407, NIC 12112,

76a2a

16-Oct-72

76a2b

Krilanovich, M. "Announcement of RJS at UCSB," RFC 436, NIC

76a2c

13700, 10-Jan-73.

76a2d

People:

76a3

John Day at Illinois (Day.CAC@MIT-Multics)

76a4

Schedule:

76a5

Recent developments:

76a6

John Day is interested in revising the specification.

76a7

RJS = CCNs Remote Job Service

76b

old sndmsg's

Contact:	76b1
Robert Braden at UCLA-CCN (BRADEN@UCLA-CCN)	76b1a
Documents:	76b2
Braden, R. "Interim NETRJS Specification," RFC 189, NIC 7133,	76b2a
15-July-71,	76b2b
Braden, R. "Update on NETRJS," RFC 599, NIC 20854, 13-Dec-73,	76b2c
People:	76b3
Robert Braden (BRADEN@UCLA-CCN)	76b3a
Steve Wolfe (WOLFE@UCLA-CCN)	76b3b
Schedule:	76b4
Recent developments:	76b5
Graphics	76c
Contact:	76c1
Robert Sproull (SPROULL@PARC-MAXC)	76c1a
Documents:	76c2
Sproull, R, and E. Thomas. "A Networks Graphics Protocol," NIC	76c2a
24308, 16-Aug-74.	76c2b
People:	76c3
Robert Sproull (SPROULL@PARC-MAXC)	76c3a
Elaine Thomas (Thomas@MIT-Multics)	76c3b
James Michener at MIT-DMS (JCM@MIT-DMS)	76c3c
Schedule:	76c4
Recent developments:	76c5

old sndmsg's

New document available from Robert Sproull,

76c5a

77

78

also note that the nsw project will include mechanisms that provide for

79

running jobs on batch machines.

80

81

--jon,

82

83

84

20-NOV-74 11:17:47,295

85

Date: 20 NOV 1974 1117-PST

86

From: WATSON

87

Subject: promised documents

88

To: postel, white

89

90

Tomorrow is the day we were going to send out documents on File, RJE, TBH and maybe Exec packages. What is status? I would like opportunity to read anything planned to go out. Thanks Dick

91

92

22-NOV-74 08:53:05,1244

93

Date: 22 NOV 1974 0852-PST

94

From: WATSON

95

Subject: Inviting BBN to Next NSW Meeting

96

To: carlson at ISI

97

cc: postel, white, watson

98

old sndmsg's

99

Bill, you are about to receive a number of design documents on NSW Protocols. We are implementing the basic PCP package for the 11 and the 10, but are assuming that BBN and ADR will be implementing the support packages for file transfer, exec, TBH etc. One of the important things that should happen at the next meeting in Dec is that everybody should have a clear understanding of who is responsible for what. Therefore, if you have not already done so I would recommend that Burchfiel or someone from BBN be invited to subsequent NSW meetings and be on distribution for working documents. Thanks Dick PS any response to the suggestion of an NSW wide design document(s). Probably what is needed is what we call a "super document" which is an overview document with NLS Links off to a network of more detailed specs. Any feedback on the scenario and Frontend issues docs is also solicited. You will shortly get an ELF status document which will indicate management attention is needed there.

100

This note seems to be expanding. Also what is happening on the IMP side interface situation?

101

102

22-NOV-74 16:19:04,7966

103

Net mail from site SRI=ARC revd at 22-NOV-74 16:18:57

104

Date: 22 NOV 1974 1618=PST

105

From: VICTOR at SRI=ARC

106

Subject: ELF and ELF related tasks for the NSW

107

To: NSW-DISTRIBUTION:

108

109

< VICTOR, ELF/UNIX,NLS;1, >, 22-NOV-74 15:55 KEV ;;;;

110

111

The following is a list of not yet completed ELF and ELF related tasks

112

required by SRI=ARC for its NSW work, and our understanding of the current status of these tasks.

113

114

old sndmsg's

115

The ELF KERNEL 115a

116

We need a TEST and a TESTS (test specific) system call so we can 116a
 check for the occurrence of an event without being put to sleep. 116b

117

Status: 117a

118

Dave Retz has indicated that it would be trivial to implement 118a
 these two system calls, but has not yet gotten around to doing 118b
 it. 118c

119

The ELF EXEC 119a

120

We need the ELF EXEC in a working and reliable state. 120a

121

We need to get a better understanding of the relationships that 121a
 exist between the ELF KERNEL, the ELF EXEC, and user processes 121b
 running on ELF. Specifically, it appears that from a users point 121c
 of view, some system calls are part of the KERNEL and some system 121d
 calls are part of the EXEC. Since it will eventually be 121e
 necessary for us to replace the ELF EXEC with an NSW EXEC, we 121f
 need to know how to separate the ELF EXEC into two parts: 121g

122

that part of the EXEC that implements system calls, and 122a

old sndmsg's

	123
that part of the EXEC that serves as the ELF command interpreter.	123a
	123b
	124
Status:	124a
	125
The ELF EXEC is supposed to be fully operational by Dec. 1,	125a
and documentation on its structure has been promised, but no	125b
date set for the documentation.	125c
	126
ELF Network Programs	126a
	127
We need a working NCP in ELF.	127a
	128
We need a working TELNET in ELF.	128a
	129
Status:	129a
	130
The ELF NCP and TELNET programs are supposed to be fully	130a
operational by Dec. 1.	130b
	131
ELF Virtual Memory	131a
	132
We need the virtual memory implementation of ELF. Without this	132a
capability, only 28K of the memory on an 11 is usable.	132b

old sndmsg's

	133
Status:	133a
	134
The virtual memory features of ELF are not expected to be	134a
ready until at least Jan. 1, 1975.	134b
	135
Loading ELF	135a
	136
We need to be able to "boot load" ELF into an 11 from over the	136a
network.	136b
	137
Status:	137a
	138
Eric Mader of BBN is currently working on this procedure.	138a
However, his boot loading procedures appear to require the use	138b
of experimental NCP programs. I am not sure of the current	138c
state of his work with regards to completion of this task.	138d
	139
Loading User Programs	139a
	140
We need to be able to load user processes from over the network.	140a
There appear to be several ways to do this:	140b
	141
1) Have a user FTP that runs on ELF that can get a remote file	141a
and store it in core (by using the Inter Process Port	141b

old sndmsg's

capabilites of ELF) rather than on a disk. This seems to be 141c
 the most desirable approach. 141d

142

2) Have a server FTP that runs on ELF that can receive a 142a
 remote file and store it in core (by using the Inter Process 142b
 Port capabilites of ELF) rather than on a disk. In this case 142c
 we would TELNET to the remote host that holds the file we wish 142d
 to load and then use FTP on the remote host to send the file 142e
 to ELF. 142f

143

3) Have a dedicated ELF process (a process that is part of the 143a
 ELF operating system) that is always listening on a specific 143b
 socket for files sent to it from a remote host. This process 143c
 would then store the received file in core. This seems to be 143d
 the least desirable approach in that it requires initiating 143e
 action on a remote host and that the functions performed by 143f
 this process are so similar to those that would be performed 143g
 by a user FTP that it seems senseless to have a special 143h
 separate process. 143i

144

All of these methods seem to require the pre-existance of a 144a
 process that is waiting to load, via an IPP, the remote file. It 144b
 would be desirable to have a (load) system call that would set up 144c
 this process with the appropriate address space and IPPs. The FTP 144d
 server or user process could then issue this sytem call at the 144e

old sndmsg's

right time, 144f

145

Status: 145a

146

Full server and user FTP processes are planned for ELF, but 146a

will probably not be fully operational until Spring, 1975. It 146b

appears that we will have to write our own code for the 146c

process that will load remote files into core via IPPs. 146d

147

ELF Debugging 147a

148

We need the ELF debugging process. A debugging process, which 148a

has the ability to monitor other processes, has been designed for 148b

the ELF operating system. Our debugging plans call for the use 148c

of this process. 148d

149

Status: 149a

150

Eric Mader of BBN is writing and implementing the ELF 150a

debugging process. He thinks he will be finished around mid 150b

December, 1975. 150c

151

Space Allocation 151a

152

Given the memory limitations of an 11, it might be nice to have 152a

old sndmsg's

system buffer pool calls,	152b
	153
Status:	153a
	154
ADR agreed at the recent NSW meeting to investigate this path,	154a
	155
PCP	155a
	156
We need the PCP routines for the implementation of the NSW,	156a
	157
Status:	157a
	158
SRI-ARC has most of the design work done and will be starting	158a
implementation soon.	158b
	159
Documentation	159a
	160
There is a need for more documentation about ELF from both a	160a
user's point of view, and from a system programmer's point of	160b
view,	160c
	161
Status:	161a
	162
Dave Retz has plans for eventually getting around to doing all	162a
the required documentation, however, it appears that as usual	162b

old sndmsg's

in the programming world, documentation will not be available 162c
 until after many of the programming tasks are completed, 162d
 163

General Requirements 163a
 164

In general we need an ELF that is reliable and bug free so we can 164a
 devote ourselves to NSW task without being sidetracked into 164b
 debugging of ELF, 164c
 165

Status: 165a
 166

It is hard to make any statement about the reliability of a 166a
 system that is not yet in full operational use, 166b
 167

The following is our understanding of which groups have 168
 responsibility

for the above tasks: 169
 170

SCRL Tasks 170a
 171

The ELF KERNEL 171a
 172

The ELF EXEC 172a
 173

The ELF Network Programs 173a

old sndmsg's

	174
The ELF Virtual Memory Features	174a
	175
Documentation	175a
	176
SRI-ARC Tasks	176a
	177
Loading User Programs Over the Network	177a
	178
We assume we have responsibility for writing any user code	178a
necessary for the loading of user programs; it is not clear	178b
who has responsibility for getting an FTP running or for	178c
getting any new system calls needed for the support of loading	178d
user programs over the network.	178e
	179
PCP	179a
	180
ADR Tasks	180a
	181
Memory Space Allocation	181a
	182
Maintenance of ELF after it is developed	182a
	183
BBN Tasks	183a
	184

old sndmsg's

Loading ELF over the Network	184a
	185
The ELF Debugging Process	185a
	186
Conclusions	187
	188
It appears that the 4 programmers working on ELF are overburdened,	188a
and that they are doing the best that is humanly possible. It may	188b
be desirable to loan them an ADR person to assist in the current	188c
development of ELF. (It's possible that this loaned person could	188d
be	
assigned to assist in getting the needed documentation completed.)	188e
	189
At the recent (NOV. 5-6) NSW meeting ADR indicated that it would	189a
like to freeze an NSW version of ELF, possibly as early as next	189b
month. By that time, as indicated above, many of the features	189c
needed by SRI-ARC for its tasks will not be available and	
therefore	189d
to freeze an NSW version of ELF at this time seems premature.	189e
	190
	191
-----	192
22-NOV-74 20:26:27,274	193
Date: 22 NOV 1974 2026-PST	194
From: POSTEL	195
Subject: host name	196

old sndmsg's

To: peters 197

cc: feinler, postel, norton 198

199

please change the host name table in the monitor 200

for all machines you have responsibility for to 201

use the name USC-ECL for host number 323 octal. 202

--jon. 203

----- 204

23-NOV-74 14:37:27,644 205

Date: 23 NOV 1974 1437-PST 206

From: POSTEL 207

Subject: arpa book protocols chapter 208

To: cerf at ISI, crocker at ISIB, walden at BBN 209

cc: postel 210

211

at last i found a little time to get started on the arpa book 212

protocols chapter, we have about a month to get something ready for 213

the

first draft due date, so please get your contributions in, if you 214

want

more specific discussion of what your contribution should be let me 215

know 216

if you want to check on my progress so far i am creating an nls file 217

named <postel>book.nls at sri-arc, if you have any online material 218

that should be included let me have a pointer to it. 219

old sndmsg's

220

--jon, 221

----- 222

23-NOV-74 14:59:52,769;000000000000 223

Net mail from site MIT-MULTICS rcvd at 23-NOV-74 14:59:45 224

From: padlipsky,CNet at MIT-Multics 225

Date: 11/23/74 1759-est 226

Subject: things 227

228

hi== 229

re ccl, i don't quite understand the reason why back refs, should be 230
 removed, do understand that it ought to be rfc'd, so as to eet on 231
 The List, pray expand on the refs, notion. 232

re logica rapport, haven't seen or heard of it, did chat for a 233
 while

with their guy (name escapes me) who spent a month or three at bbn, 234
 what is it? why do you ask? 235

re rfc 647, was simply delighted when i finally got out to ft, meade 236
 to

get superfriendly greeting from hassing with great chortles over 237
 having

read the rfc the day before an loved it--esp, App, 2, which made poor 238
 old howard very unhappy, giggles and cheers, map 239

23-NOV-74 18:44:57,3901;000000000000 240

Net mail from site SRI-ARC rcvd at 23-NOV-74 18:44:53 241

Date: 23 NOV 1974 1844-PST 242

old sndmsg's

From: POSTEL at SRI-ARC 243
 Subject: Version 2 of the Procedure Call Protocol (PCP) 244
 To: NSW-DISTRIBUTION: 245

246
 This note announces release of the second published version of the 247
 procedure Call protocol -- PCP Version 2. Version 2 is SUBSTANTIALLY 248
 different than Version 1; it and all intermediate, informally 249
 distributed PCP documents are obsoleted by this release. 250

251
 Version 2 consists of the following documents. Each is available 252
 on-line in two forms: as an NLS file and as a formatted text file. 253
 The

Journal number (e.g. 24459) refers to the former, of course, and the 254
 pathname (e.g. [SRI-ARC]<NLS>PCP.TXT) to the latter, accessible via 255
 FTP

using USER=ANONYMOUS and PASSWORD=GUEST (no account required). 256
 Hardcopy

is being forwarded by US Mail to all those who have expressed an 257
 interest in PCP. If you don't receive a copy and would like one of 258
 this

and/or future releases, send a note to that effect to WHITE@SRI-ARC: 259
 260

PCP (24459,) "The Procedure Call Protocol" 260a
 261

This document describes the virtual programming environment 261a
 provided by PCP, and the inter-process exchanges that implement 261b
 it. 261c

old sndmsg's

262
Pathname: [SRI=ARC]<NLS>PCP.TXT 262a

263

PIP (24460,) "The Procedure Interface Package" 263a

264

This document describes a package that runs in the setting 264a

provided by PCP and that serves as a procedure-call-level 264b

interface to PCP proper. It includes procedures for calling, 264c

resuming, interrupting, and aborting remote procedures. 264d

265

Pathname: [SRI=ARC]<NLS>PIP.TXT 265a

266

PSP (24461,) "The PCP Support Package" 266a

267

This document describes a package that runs in the setting 267a

provided by PCP and that augments PCP proper, largely in the area 267b

of data store manipulation. It includes procedures for obtaining 267c

access to groups of remote procedures and data stores, 267d

manipulating remote data stores, and creating temporary ones. 267e

268

Pathname: [SRI=ARC]<NLS>PSP.TXT 268a

269

PMP (24462,) "The Process Management Package" 269a

270

This document describes a package that runs in the setting 270a

old sndmsg's

provided by PCP and that provides the necessary tools for 270b
interconnecting two or more processes to form a multi-process 270c
system (e.g. NSW). It includes procedures for creating, deleting, 270d
logically and physically interconnecting processes, and for 270e
allocating and releasing processors. 270f

271

Pathname: [SRI=ARC]<NLS>PMP.TXT 271a

272

PCPFMT (24576,) "PCP Data Structure Formats" 272a

273

This document defines formats for PCP data structures, each of 273a
which is appropriate for one or more physical channel types. 273b

274

Pathname: [SRI=ARC]<NLS>PCPFMT.TXT 274a

275

PCPHST (24577,) "PCP ARPANET Inter-Host IPC Implementation" 275a

276

This document defines an implementation, appropriate for mediating 276a
communication between Tenex forks, of the IPC primitives required 276b
by PCP. 276c

277

Pathname: [SRI=ARC]<NLS>PCPHST.TXT 277a

278

PCPFRK (24578,) "PCP Tenex Inter-Fork IPC Implementation" 278a

279

old sndmsg's

This document defines an implementation, appropriate for mediating
 communication between processes on different hosts within the
 ARPANET, of the IPC primitives required by PCP.

Pathname: [SRI=ARC]<NLS>PCPFRK.TXT

The first document, PCP, is the place the interested reader should
 start. It gives the required motivation for the Protocol and states
 the substance of the Protocol proper. The reader may then, if he
 chooses,

read the next three documents: PIP, PSP, and PMP. The latter has the
 most to offer the casual reader; the programmer faced with coding in
 the

PCP environment should read all three. The final few documents --
 PCPFMT, PCPHST, and PCPFRK -- are of interest only to the PCP
 implementer.

--jim white,

23-NOV-74 18:53:01,3831;000000000000

Net mail from site SRI=ARC rcvd at 23-NOV-74 18:52:58

Date: 23 NOV 1974 1852-PST

From: POSTEL at SRI=ARC

Subject: version 2 of The National Software Works (NSW) Protocols

old sndmsg's

To: NSW-DISTRIBUTION: 299

300

This note announces the release of the second published version of 301

several National Software Works (NSW) protocol documents. This set of 302

documents is labeled Version 2. Version 1, as well as all 303
intermediate,

informally distributed NSW documents are obsoleted by this release. 304

305

Several of these documents specify protocols or procedure packages 306

based on the Procedure Call Protocol (PCP == 24459,), with which the 307

reader is assumed familiar. 308

309

These documents are available online in two forms: as journal items 310

indicated by the link number [for example the HOST document is 311
journal

item 24581]; and as ASCII text files by the indicated pathname [for 312

example the HOST document is text file HOST.TXT in directory NLS at 313
host

SRI-ARC]. The files may be retrieved from SRI-ARC using the file 314

transfer user name ANONYMOUS and the password GUEST, no account 315
number

is needed. 316

317

Hardcopy is being forwarded by US Mail to all those who have 318
expressed

an interest in NSW protocols. If you don't receive a copy and would 319

like one of this and/or future releases, send a note to that effect 320
to

old sndmsg's

WHITE@SRI=ARC;

321

322

The specifications are contained in the following documents:

323

324

HOST "NSW Host Protocol" (24581,)

324a

325

This document describes the host level protocol used in the NSW.

325a

The protocol is a slightly constrained version of the standard

325b

ARPANET host to host protocol. The constraints affect the

325c

allocation, RFNM wait, and retransmission policies.

325d

326

[SRI=ARC]<NLS>HOST.TXT

326a

327

EXEC "The Executive Package" (24580,)

327a

328

This document describes a package that runs in the setting

328a

provided by PCP. It includes procedures and data stores for user

328b

identification, accounting, and usage information.

328c

329

[SRI=ARC]<NLS>EXEC.TXT

329a

330

FILE "The File Package" (24582,)

330a

331

This document describes a package that runs in the setting

331a

provided by PCP. It includes procedures and data stores for

331b

old sndmsg's

opening, closing, and listing directories, for creating, deleting, 331c
 and renaming files, and for transferring files and file elements 331d
 between processes. 331e

332

[SRI=ARC]<NLS>FILE.TXT 332a

333

BATCH "The Batch Job Package" (24583,) 333a

334

This document describes a package that runs in the setting 334a

provided by PCP. It includes procedures for creating and deleting 334b

batch jobs, obtaining the status of a batch job, and communicating 334c

with the operator of a batch processing host. This package is 334d

implemented at the host that provides the batch processing 334e

facility. 334f

335

[SRI=ARC]<NLS>BATCH.TXT 335a

336

LLDEBUG "The Low-Level Debug Package" (24579,) 336a

337

This document describes a package that runs in the setting 337a

provided by PCP. It includes procedures for a remote process to 337b

debug at the assembly-language level, any process known to the 337c

local process. The package contains procedures for manipulating 337d

and searching the process' address space, for manipulating and 337e

searching its symbol tables, and for setting and removing 337f

old sndmsg's

breakpoints from its address space, Its data stores hold process 337g
 characteristics and state information, and the contents of program 337h
 symbol tables. 337i

338

[SRI-ARC]<NLS>LLDBUG.TXT 338a

339

BOXES "Black Boxes in PCP" (24584,) 339a

340

This document describes the transliteration of the black boxes 340a

defined by Millstein and warshall into the setting provided by 340b

PCP, especially the File Package and the Executive Package. 340c

341

[SRI-ARC]<NLS>BOXES.TXT 341a

342

343

--jon, 344

345

----- 346

24-NOV-74 08:01:43,2699 347

Net mail from site BBN-TENEXA rcvd at 24-NOV-74 08:01:38 348

Date: 24 NOV 1974 1101-EST 349

From: BURCHFIEL at BBN-TENEXA 350

Subject: INWG meeting 351

To: kahn at BBN 352

cc: cerf at SRI-ARC, postel at SRI-ARC, tomlinson, plummer, 353

old sndmsg's

cc: sutherland, burchfiel 354
 355

Bob, 356

You asked for a report on INWG activity. Ray and I met with 357
 Vint Cerf and Jon Postel on the 19th, and Ray attended a longer 358
 technical session at Stanford on the 20th. 359

The December 1 date for an initial internet demo has been 360
 slipped two months to Feb. 1. This happened partly because 361
 of the one month funding crack a BBN, partly because BBN is now 362
 requiring Tomlinson and Plummer to take accumulated vacations 363
 before Dec. 31 or forfeit them, and partly because Stanford has 364
 slipped a similar amount in producing the final TCP spec. This 365
 spec is due to be released by Stanford on Dec. 1. I think 366
 it is now a much stronger and sounder piece of technical work 367
 because of Tomlinson's crusade to get a demonstrably robust 368
 protocol. 369

Postel informs me that the NSW will no longer depend 370
 on the internet host-host protocol for its initial July demo. 371
 Instead, NSW will initially use existing host-host protocol and 372
 phase over to internet once it becomes a standard option on 373
 TENEX and ELF. 374

BBN is implementing the TENEX version of internet in BCPL, 375
 SU=DSL is implementing the ELF version in assembly 376
 language. Of course, our plan is to make our BCPL source 377
 compile compatibly for both the PDP-10 and PDP-11, just as we 378

old sndmsg's

did for our initial INWG 39 subset experimental protocol: that 379
 implementation is still in use as our PDP-11 and PDP-10 line 380
 printer spoolers. Vint has indicated his willingness 381
 to phase over to our BCPL version on the PDP-11 once it is 382
 demonstrated to work. 383
 As an aside on message systems, Jon Postel also told me 384
 that SRI-ARC is morally committed to providing NLS to USC-ISI 385
 with a PCP(Procedure call protocol) interface, Don Destreicher 386
 indicated that some money was changing hands to make this happen, 387
 but I didn't get a clear picture of contractual arrangements. 388
 You should probably probe Norton to get the details on this: 389
 I have no business meddling in ISI-SRI agreements. In any case, 390
 NLS will be the basis of ISI's message creation, coordination, 391
 and release system, but we have agreed that all messages moving 392
 between ISI modules and BBN modules will be in ARPANET standard 393
 sequential file format which can be directly processed by the 394
 File Transfer Protocol MLFL command. We don't currently see 395
 a need to use NLS within BBN's mail reader program, but we will 396
 give it serious consideration when we see what (and when) SRI 397
 delivers to ISI. 398
 Comments? 399
 Jerry 400
 ----- 401
 25-NOV-74 06:36:40,633 402
 Net mail from site BBN-TENEX rcvd at 25-NOV-74 06:36:37 403

old sndmsg's

Date: 25 NOV 1974 0737-EST 404
 From: WALDEN at BBN-TENEX 405
 Subject: ARPA BOOK PROTOCOLS CHAPTER 406
 To: POSTEL at SRI-ARC 407
 cc: CERF at ISI, CROCKER at ISIB, WALDEN 408

JON, 410
 I THINK I HAVE ALREADY SENT YOU LOTS OF SOURCE MATERIAL; 411
 DID YOU RECEIVE IT? I NOW PLAN TO 412
 DO NOTHING FUTHER UNTIL YOU GIVE ME A SPECIFIC 413
 ASSIGNMENT. 414

I WISH ANY FILES YOU CREATE WHICH ARE SUPPOSED 415
 TO ALLOW US TO CHECK YOUR PROGRESS WERE JUST TENEX FILES; 416
 I STILL DON'T KNOW HOW TO USE NLS. 417

REGARDS, 418
 DAVE 419

P.S. TO CROCKER; IS THAT YOU STEVE; HAVE YOU 420
 MADE IT TO THE WEST COAST? 421

----- 422

26-NOV-74 17:41:02,780 423

Net mail from site SRI-ARC rcvd at 26-NOV-74 17:41:00 424

old sndmsg's

Date: 26 NOV 1974 1740=PST 429
 From: POSTEL at SRI=ARC 430
 Subject: Announcement of RFCs 661 & 666 431
 To: Request-for-Comment-Distribution: 432

433
 Two RFCs are now available in online form at Office-1. The first, 434
 RFC 661 (NIC 31203), is an index of protocol information about 435
 current activity with protocols in the ARPA Network. The second, 436
 RFC 666 (NIC 31396), is publication in RFC form of Mike 437
 Padlipskys note on Unified User-Level Protocol. 438

439
 The RFCs may be reterived from the formatted text files: 440

[OFFICE-1]<NETINFO>RFC661.TXT 440a

[OFFICE-1]<NETINFO>RFC666.TXT 440b

as well as from the journal using the NIC numbers. 441

The FTP server program at Office-1 will accept username=NICGUEST and 442
 password=ARPA, 443

444

--jon, 445

----- 446

26=NOV=74 20:10:38,919 447

Date: 26 NOV 1974 2010=PST 448

From: POSTEL 449

Subject: rje 450

To: crain at OFFICE=1 451

old sndmsg's

cc: watson, white, postel 452
453

larry: 454

that message that you sent to jime white some long time ago 455
giving some real detail on the B4700 and your view of how to get it 456
hooked up has been circulating here. While we should still get our 457
thoughts together and make a specific response we want to call your 458
attention to some documents that have relevance. One is RFC 647 by 459
Padlipsky that speaks to the issue of interfacing machines to the net 460
via front ending. This is just for info and not a point to argue 461
about.

The other documents are the ones promised in an earlier note on PCP 462
and NSW protocol. I want you to especially note the discussion of the 463
BATCH package in the collection on NSW protocols. 464

These are on line as: 465

RFC 647 ==> [OFFICE-1]<NETINFO>RFC647.TXT 466

BATCH ==> [SRI-ARC]<NLS>BATCH.TXT 467

--jon, 468

----- 469

26-NOV-74 21:09:58,1353 470

Net mail from site PARC-MAXC rcvd at 26-NOV-74 21:09:57 471

Date: 26 NOV 1974 2108=PST 472

From: TAFT at PARC-MAXC 473

Subject: New version of PPL 474

To: TENEX-SITES: 475

old sndmsg's

476
 A new, 100% pure Tenex PPL is now available for distribution to 477
 interested sites. PPL is a conversational, extensible programming 478
 language. It has been in use at a number of PDP-10 sites and exists 479
 at most Tenex sites by virtue of its having been on <SUBSYS> at 480
 BBN for several years. 481

482
 The new version, besides no longer running under 10/50 compatibility, 483
 also has a number of important language improvements. The PPL User's 484
 Manual has just been revised and may be ordered in very limited 485
 quantities, from Eleanor Sacks (SACKS@HARV-10) at the following 486
 address:

487 Center for Research in Computing Technology
 488 Aiken Computation Laboratory
 489 Harvard University
 490 Cambridge, Mass. 02138

491
 An on-line document describing differences between this version 492
 and previous versions is available as file <PPL>PPLV53.DOC at 493
 PARC-MAXC. The language processor itself is <SUBSYS>PPL.SAV, 494
 and important auxiliary files (described in the document) are 495
 <PPL>RENUM.PPL and <PPL>IVER.PPL. 496

497
 Please direct any questions or comments to me. Also, if you or any 498
 users at your site are interested in being placed on a distribution 499

old sndmsg's

list for PPL announcements, please let me know. 500
 Ed 501
 ----- 502
 27-NOV-74 06:01:02,299 503
 Net mail from site BBN-TENEXA rcvd at 27-NOV-74 06:01:00 504
 Date: 27 NOV 1974 0900=EST 505
 From: MADER at BBN-TENEXA 506
 Subject: RFC #700? 507
 To: postel at SRI-ARC 508
 509
 Jon, 510
 511
 What is RFC 700?? If you mean the one about my DDT Protocol, 512
 that's in [BBNA]<MADER>DDT-PROTOCOL.DOC. 512a
 513
 Eric 513a
 514
 ----- 515
 27-NOV-74 12:20:50,1067 516
 Net mail from site SRI-ARC rcvd at 27-NOV-74 12:20:41 517
 Date: 27 NOV 1974 1220=PST 518
 From: WATSON at SRI-ARC 519
 Subject: Homework for Next NSW Meeting 520
 To: NSW-DISTRIBUTION; 521
 522

old sndmsg's

Even though I know that there will have to be some review of issues for 523

those who were not at the last meeting, I would like to minimize that 524

review as much as possible. Therefore I request everyone attending 525

to study the documents carefully that we have just distributed, on 526

Frontend Issues, Protocols (everyone should read carefully the basic 527

PCP document and understand it as PCP is the basis of NSW resource 528

sharing, protocols and interprocess communication and control), 529

Irby's scenario, and NLS Tasks. We will have additional material to present 530

at the meeting also. I would like to have discussion at the meeting 531

based on our work to be questions of clarification or technical 532

disagreements on things written in the documents rather than tutorials that try to 533

cover verbally in a short time the extensive material existing in 534

writing. 535

Thanks Dick 535a

----- 536

27-NOV-74 16:02:56,1013 537

Date: 27 NOV 1974 1602-PST 538

From: IRBY 539

Subject: nsw meeting 540

To: watson, white, POSTEL 541

542

Dick, 543

old sndmsg's

544

1) On Friday I mentioned to DIA that I had implemented a portcall mechanism and using it in the new command language interpreter but was afraid of having many call stacks around, one for each port. He called today to tell me of a marvelously simple way of doing the coroutine-port mechanism with one stack and such that signals are processed properly. Needless to say this made my day since it removed the only fear I had for the port approach for the CLI. It, however, does call for a minor change to the runtime package and to the compiler. I think we should proceed with it and told don so,

545

546

2) After talking with Millstein and my wife about the NSW meeting I have decided not to go. I am very sorry for any inconvenience this may cause any of you and hope that it will not make the meeting less valuable, but we have relatives visiting that we just don't get to see very often.

547

548

-- Charles,

549

550

2-DEC-74 10:42:52,1023

551

Date: 2 DEC 1974 1042-PST

552

From: ENGELBART

553

Subject: TO Tasker re NSW protocol documentation

554

To: BOSLEY at ISI

555

cc: postel, white, watson, engelbart

556

557

Pete:

558

Jean Iseli suggested that your project might benefit from learning about the new generation of network and terminal-support developments in the NSW program. Jim White and Jon Postel, here at ARC, have recently published a set of documents that make good reading.

559

A general-description starter, including FTP path descriptions to all associated on-line documents, can be copied out on your typewriter.

old sndmsg's

Get the file via path [OFFICE=1]<NETINFO>RFC661.TXT This is a copy
of NLS Journal Item (31203,). 560

Jon Postel is cued in on your general situation, and is ready to help
you with further information == POSTEL@SRI=ARC. 561

Jean said he'd recently talked with Chuck Sheehan == suggested that
Chuck stop by here to visit us on one of his journeys. Tell him we'd
welcome that very much. (Be very pleased to see you again, too.) 562

Best regards, Doug 563

----- 564

2=DEC=74 06:41:51,1067 565

Net mail from site SRI=ARC rcvd at 2=DEC=74 06:41:50 566

Date: 2 DEC 1974 0641=PST 567

From: CERF at SRI=ARC 568

Subject: Latest TCP SPECIFICATION 569

To: cerf at ISI, tomlinson at BBN, burchfiel at BBN, 570

To: mader at BBN, Kleinrock at ISI, retz at ISI, plummer at BBN, 571

To: Kirstein at ISI, KIRSTEIN at BBN, UK at ISI, Kahn at ISI, 572

To: Crocker at ISI, postel at ISI, Postel at SRI=ARC 573

574

ATTN PTK,PLH,MMG,DL,NPL 575

Gents: 576

In <cerf> at ISI and <cerf> at SRI=ARC you will find a sequential 577
file "TCPSPEC4.txt" which should be suitable for printing on a 578
terminal or a line printer. It is rather long (I haven't printed 579
the whole thing out, but guess it would be around 35=40 pages. 580

It is still not finished, in particular, sections 4.6, 4.14, 4.15, 5,
7, 8, 9, and 10 require updating. However, the bulk of the user 581

old sndmsg's

level call stuff and packet format as well as synchronization and 582
 closing are described, as is the method of handling window 583
 size for flow control, we will certainly try to have the rest 584
 of the spec put on-line for you this week. 585

Vint 586

----- 587

2=DEC=74 13:56:22,838 588

Net mail from site CCA=TENEX rcvd at 2=DEC=74 13:55:50 589

Date: 2 DEC 1974 1609=EST 590

From: TOM at CCA 591

Subject: ARPANET BOOK AND DATA BASES 592

To: IMPORTANT=PEOPLE: 593

cc: TOM, JMH, DALE 594

595

596

YOU MAY BE AWARE OF THE FACT THAT ARPA/IPT HAS AN EFFORT 597

UNDERWAY TO WRITE A BOOK DEALING WITH THE ARPANET, IN SUPORT 598

OF THIS EFFORT I HAVE AGREED TO TRY TO FIND OUT WHAT DATA 599

BASES ARE CURRENTLY STORED ON THE NET, 600

601

TO ACCOMPLISH THIS TASK I NEED HELP, IF YOU'RE AWARE OF ANY 602

DATA BASES ON YOUR MACHINE OR ON OTHER ARPANET MACHINES, 603

PLEASE LET ME KNOW, ANY INFORMATION WILL BE HELPFUL. 604

605

THANK YOU, 606

old sndmsg's

607

608

I CAN BE REACHED IN THE FOLLOWING WAYS:

609

610

MAIL ADDRESS: THOMAS MARILL

611

COMPUTER CORPORATION OF AMERICA

611a

CAMBRIDGE MASS, 02139

611b

612

PHONE: 617-491-3670

613

614

ARPANET MESSAGE:TOM@CCA

615

616

617

618

2-DEC-74 14:49:20,245

619

Net mail from site BBN-TENEXA rcvd at 2-DEC-74 14:49:18

620

Date: 2 DEC 1974 1750-EST

621

From: PLUMMER at BBN-TENEXA

622

Subject: INWG NOTE

623

To: POSTEL at SRI-ARC

624

625

JON,

626

[BBNA]<DOCUMENTATION>INWG.NOTE IS THE RUNOFF SOURCE FILE,

627

--BILL

628

629

old sndmsg's

3-DEC-74 09:06:27,544 630
 Net mail from site BBN-TENEXA rcvd at 3-DEC-74 09:06:24 631
 Date: 3 DEC 1974 1100=EST 632
 From: DODDS at BBN-TENEXA 633
 Subject: RFC'S 701,702 634
 To: POSTEL at SRI=ARC 635

636
 JON, 637
 RFC 702 IS AVAILABLE AND READ-ACCESSIBLE IN MY DIRECTORY AS 638
 <DODDS>NEWPR.TXT;10. THE FILE <DODDS>NEWPR.TXT;5 CONTAINS RFC 701 639
 IN NOT-QUITE-FINAL FORM (I THINK IT IS JUST MISSING THE RFC NUMBER 640
 HEADING). HELP YOURSELF. LET ME KNOW IF YOU NEED ANY MORE INFO. 641
 THE NEXT IN THIS EXCITING SERIES OF SURVEYS SHOULD BE FORTHCOMING 642
 IN ABOUT A WEEK. 643

--DOUG 643a

644
 3-DEC-74 20:02:48,5578 645
 Net mail from site OFFICE=1 rcvd at 3-DEC-74 20:02:43 646
 Date: 3 DEC 1974 1404=PDT 647
 From: CARLSON at OFFICE=1 648
 Subject: AGENDA FOR NSW MEETING ON 9-10 DEC 1974 649
 To: crocker at ISI, balzer at ISI, carlson at ISI, crain at ISI, 650
 To: baggiano at ISI, lloyd at ISI, mayhan at ISI, 651
 To: jacobs at OFFICE=1, urlig at OFFICE=1, 652
 To: wingfield at OFFICE=1, stone at OFFICE=1, 653

old sndmsg's

To: lawrence at OFFICE-1, watson at SRI-ARC, 654
 To: warshall at SRI-ARC, millstein at SRI-ARC, postel at SRI-ARC, 655
 To: irby at SRI-ARC, white at SRI-ARC, waal at SRI-ARC, 656
 To: thomas at BBN, burchfiel at BBN 657

< CARLSON, 9DEC=AGENDA,NLS;3, >, 3-DEC-74 12:00 WEC ;;;; 659

The following is the tentative agenda for the National Software works 661
 meeting on 9-10 December 1974, Comments welcome, 662

Remember that the new PCP document, the scenario of NSW operations, 664
 and

the list of NLS support tasks are required reading for this meeting, 665
 We

will be much too busy to fill people in on the written materials. 666

I will be staying at the Lord Wakefield Motor Hotel, which is the one 668
 closest to the COMPASS office. We should try to start by 9AM on 669
 Monday. 670

Monday morning- we will deal with some basic technical issues : 671

What will the NSW's analogue to TENEX control characters be? In 672a

other words, if you are waiting output from a tool, will you be 672b
 able

to abort it, hold it for later examination, change the 672c
 destination,

old sndmsg's

etc. How does one tell tools to stop what they are doing? 672d

(semantics, not syntax) 672e

673

When the Works Manager finds an error in an argument, will it be 673a

able to simply suspend the process and rely on the PCP HELP to 673b

provide it with either a correct argument or an indication that 673c

the activity should be aborted? This issue seems to be primarily a 673d

question of timing and responsibility for implementing all the 673e

components of the PCP protocol. 673f

674

Finalize design of the remote job entry system 674a

675

Monday afternoon= 676

677

Steve Warshall will present an overview of the Works Manager 677a

design.

678

We must be sure that responsibility for implementing all necessary 678a

protocols is firmly established. 678b

679

Discuss the scenario of NSW operations. We must be sure that 679a

everyone understands what the system is going to look like. 679b

680

Decide: are we a facility for building tools or a facility for 680a

old sndmsg's

accepting tools from industry and making them more widely available? 680b

681

Time-sharing systems have typically been extensible- software 681a

developed under them enters the environment and can easily be 681b

made available to other people, 681c

682

Steve Warshall suggests that may not be the right model for a 682a

system which may eventually be available to a very large, 682b

nationwide constituency. He has suggested that it may be 682c

desirable to isolate different working environments in a 682d

hierarchical fashion and strictly limit lateral communication. He 682e

suggests that in the NSW the best thing may be to make it just as 682f

easy to install a foreign tool as one which has been developed 682g

within the NSW environment. 682h

683

Steve also reminds us that initially we were not going to be tool 683a

builders, but instead were going to try to get industry to 683b

install tools and machines. Are we now ready to formally modify 683c

some of those assumptions? 683d

684

It may not be desirable to make it any easier to integrate 684a

programs built within the NSW than it is to integrate programs 684b

built somewhere else. I raised the fact that both AFDSC and 684c

AFDSDC build tools for internal use. Classic cases are AFOLDS and 684d

old sndmsg's

a file compaction routine. We discussed how such programs might become "part of the NSW". Clearly there needs to be some strong quality control. Steve pointed out that the routines represent mere files, and problems only arise when you want them to have special attributes for project management purposes, or when you want to make them available outside of your immediate project. We must get a clearly written document defining these issues and the Steering Committee's decision.

We need a model for how NSW using organizations are to go about sharing files.

Monday night- discussion of NSW project organization and long range plan.

We need to reformulate the NSW steering committee now that RADC is providing funds, Steve Crocker has gone to ISI, and Bill Carlson has

gone to work for ARPA (effective Jan 19, 1974)

We need to decide who is chairman of the steering committee- who will call meetings, organize sub-committees so everyone doesn't have

to come to all meetings, etc,

Dr Licklider has suggested we form an advisory group which should

old sndmsg's

not be drawn from contractors working on the NSW effort or from 691b
 AFDAA or RADC. This would provide an opportunity for the Army and 691c
 the Navy to provide inputs to the program before they actually 691d
 commit funds. It would also provide an outside audit of our goals 691e
 and objectives. We need to talk about it, see if it is agreeable 691f
 to us, decide how it might relate to the Steering Committee, and get 691g
 suggestions of who might be on it. 691h

rt 692a

Tuesday Morning= How do people expect to use the service which comes 694
 up in July. Who is planning for an operational test. Who will prepare an 695
 acceptance plan? 696

Tuesday afternoon= What do we think the NSW can look like in July 698
 1976, 1977, and 1978? 699

4-DEC-74 16:19:36,422 704
 Net mail from site BBN-TENEXA rcvd at 4-DEC-74 16:19:34 705
 Date: 4 DEC 1974 1635-EST 706
 From: DODDS at BBN-TENEXA 707

old sndmsg's

Subject: RFC NUMBER 708
 To: POSTEL at SRI-ARC 709
 710
 JON, 711
 I AM TOLD THAT YOU ARE NOW HANDLING THE ASSIGNMENT OF RFC NUMBERS, 712
 I NEED A NUMBER FOR MY LATEST OPUS ON TELNET-NEW-PROTOCOL, THE TITLE 713
 IS "NOVEMBER, 1974, SURVEY OF NEW-PROTOCOL TELNET SERVERS". I THANK 714
 YOU IN ADVANCE, REGARDS, 715
 DOUG 715a
 ----- 716
 4=DEC-74 16:20:49,561 717
 Net mail from site SRI-ARC rcvd at 4=DEC-74 16:20:45 718
 Date: 4 DEC 1974 1107-PST 719
 From: POSTEL at SRI-ARC 720
 Subject: Two additional NSW documents 721
 To: NSW-DISTRIBUTION; 722
 723
 There are two additional documents in the directory <NLS> at SRI-ARC 724
 one is titled "The NSW Remote Job Entry Model" and is the file 725
 RJE-MODEL.TXT 725a
 the other is titled "NSW Requirements on Tool Bearing Hosts" and is 726
 the file TBH.TXT 726a
 727
 Recall that files may be pulled from SRI-ARC by FTP using the 728
 username ANONYMOUS and the password GUEST, 729

old sndmsg's

--jon. 730

----- 731

732

4-DEC-74 17:50:57,283 733

Date: 4 DEC 1974 1750-PST 734

From: POSTEL 735

Subject: rfc number 736

To: dodds at BBNA 737

cc: postel 738

739

doug: 740

ok, use rfc number 669 and nic number 31435. 741

thanks for the pointers to the online copies of rfc 701 & 702, 742

will you also give me a pointer to this one? 743

--jon. 744

745

----- 746

5-DEC-74 10:02:35,493 747

Date: 5 DEC 1974 1002-PST 748

From: POSTEL 749

Subject: RFC Numbers 750

To: Hedtler at BBN 751

cc: Bthomas at BBN, Dodds at BBN, Schantz at BBN, feinler, 752

cc: Postel 753

754

old sndmsg's

Gail: 755

Her are the RFC Numbers for the documents you mentioned, 756

757

RFC	NIC	Author	Title	
667	31422	B Thomas	BBN Host Ports	758
669	31435	D Dodds	Telnet Survey	759
671	31439	R Schantz	... Reconnection Protocol	760
672	31440	R Schantz	... Data Collection ...	761
				762
				763

hope that is what you wanted, 764

--jon 765

766

----- 767

5-DEC-74 12:06:20,421 768

Net mail from site BBN-TENEXA rcvd at 5-DEC-74 12:06:16 769

Date: 5 DEC 1974 1506-EST 770

From: DODDS at BBN-TENEXA 771

Subject: NEW TELNET SURVEY 772

To: POSTEL at SRI-ARC, MCKENZIE, BURCHFIEL 773

774

JON, 775

THANKS FOR THE RFC & NIC NUMBERS. THE ON-LINE FILE IS 776

<DODDS>NEWPRT.TXT;14. 777

778

ALL, 779

old sndmsg's

IF YOU ARE INTERESTED IN STEALING A MARCH ON THE RFC DISTRIBUTION, 780
 COPY THE ABOVE FILE TO TTY OR LPT (2 PAGES), 781
 --DOUG 782
 ----- 783
 5-DEC-74 14:14:59,770 784
 Net mail from site OFFICE=1 rcvd at 5-DEC-74 14:14:56 785
 Date: 5 DEC 1974 1413-PDT 786
 From: LEE at OFFICE=1 787
 Subject: page size and the xgp 788
 To: postel at SRI-ARC 789
 cc: michael at SRI-ARC 790

The txt file with numbers in it printed 48 lines - that's with the
 xgp defaults unchanged (1 1/2 " top margin and 1" bottom margin), 792

The file run through Output Printer File and Sendprint with BM=43 put
 page numbers on a second page 1 1/2" from the top so making BM=44
 might work - I don't know. I don't remember successfully getting page
 numbers on the page so I'd have to play around to see what the right
 setting for BM is - unless you can make an educated guess! 794

Hope this helps - let me know if there are other things I can check
 out here for You. 796

Susan 798

----- 799
 5-DEC-74 19:33:01,500 800

Date: 5 DEC 1974 1933-PST 801

old sndmsg's

From: POSTEL 802
 Subject: xgp & bm 803
 To: lee at OFFICE=1 804
 cc: michael, postel 805

susan: 806

i suggest using for saftey and as a test try 807

my analysis rests on the following: 808

xgp allows 48 lines, thus BM + YBF + (footer lines) <= 48. 809

YBF is default to 5 lines, and your footer is one (the page number),
so 810

Try BM=40 + YBF=5 +1 == 46 < 48 811

if you the maximum text on a page and still a page number at the 812

bottom try BM=45 and YBF=2. 813

--jon. 814

----- 815

9-DEC-74 09:45:28,641 816

old sndmsg's

Net mail from site OFFICE-1 rcvd at 9-DEC-74 09:45:26 819
 Date: 9 DEC 1974 0944-PDT 820
 From: LEE at OFFICE-1 821
 Subject: printing nls files on the xgp 822
 To: postel at SRI-ARC 823
 cc: michael at SRI-ARC 824
 825

Thanks for your research! Your numbers are working as you expected.
 I guess the next thing that would be helpful would be for output
 termina file to leave off the ----- at the bottom of each page,
 Then we could use that command without sendprint, Thanks 826
 827

I'll probably write up a scenario of how to print an nls file on the
 xgp - when I get it finished or near finished I'll let you know in
 case you'd like to take a look... 828

----- 829

9-DEC-74 09:36:47,3697 830
 Net mail from site SRI-ARC rcvd at 9-DEC-74 09:36:41 831
 Date: 9 DEC 1974 0936-PST 832
 From: NORSAR-TIP at SRI-ARC 833

old sndmsg's

To: Postel at SRI-ARC

834

835

836

837

Jon Postel,

838

839

I have with great interest read your survey of implemented NCP's in the ARPA Net. It has been of good help for us in clearing up various problems in connection with the NCP.

840

841

As you probably know we have tried since the summer to approach ARPA in connection with their satellite plans, but up till now we have got no serious response> personally I think these plans are too advanced for us now since we must be considered as beginners in this field. A better approach would be to get connected to the ARPA Nat and have everything running smothly before we are proceeding futher. Hopefully we can partissipate in ecperimental activities in the Net in order to get more experience.

842

843

In your survey you advertise for certain spesific meassurements revealing the performance of the NCP. I would like to get more information about this topic and to here what type of experiments you suggest.

844

Also I would like to get in contact with persons or groups which

old sndmsg's

would be interested in having us as a counterpart in Network experiments. Do you have any suggestions. For your information I will give a brief description of the facilities here,

845

846

field it is very difficult to establish a sound platform for the work. I would therefore be very happy if you could give us any advice in this direction. Personally I would prefer to participate in experiments with other groups or persons. Any suggestion is welcome

847

848

For the time being we dispose of two SM-3 computers (Norwegian Make) each with 64 K of memory. They share a disc unit and a mag. tape station. It is also possible to transfer data on a word by word basis between the two machines. This makes it possible to test the various protocols on the two machines before they are tested on the Net.

849

850

We have chosen the Elf system as a model for our operating system. That's finished now and is working well I believe. At the moment I am working on the reliable transmission package which I hope to finish before Christmas. Then I can start with the main part of the NCP. We have already done some flowcharting on it, so I hope that we can finish it in a reasonable time. We are also working on the TELNET protocol. At a later stage we intend to implement the FILE transfer protocol. Well, that's the status here.

851

852

With my background in experimental nuclear physics I see a great need for communication network as means, in a remote way, to do physics experiments. Experiments done at for example Brookhaven or Argonne

old sndmsg's

are mostly done with computers on-line. With such a computer connected to the ARPA Net, I could in principle do or participate in experiments at for example Brookhaven. Do you know if these aspects of the Net has been discussed inside ARPA and eventually whom are involved in this.

853

854

Probably I am asking too many questions, but I hope that you have time at least to answer some of them.

855

856

With the best regards Paul (Spilling)

856a

857

You can reach me by means of Yngvar Lundh's network address.

858

859

P.S. I see that part of a block has disappeared from the text. The following block should be inserted after the block beginning with: In your survey ..

860

861

For the time being we are two persons working on this project. We started about 3/4 of a year ago without any experience in this field at all. Myself I had about 10 years of experience in experimental nuclear physics before I started in this game. My institute feels that we have to be involved in some way in the field of data communication, but due to the lack of experience in this....

862

863

old sndmsg's

9-DEC-74 11:42:33,4184 864
 Date: 9 DEC 1974 1142-PST 865
 From: POSTEL 866
 Subject: interest in measurements 867
 To: cerf, cerf at ISI, opderbeck at SRI-AI, lou at ISI 868
 cc: postel, norsar-tip 869

Vint, Lou and Holger 870
 Vint, Lou and Holger 871
 Paul Spilling sent me the following message which in part 872
 suggests a willingness to participate in network measurement 873
 experiments, i think that you should be able to utilize his 874
 talents and this oppertunity to good result, particularly interesting 875
 is the possibility for cooperative experiments to an extream reach of 876
 the network. 877

Net mail from site SRI-ARC rcvd at 9-DEC-74 09:36:41 878
 Net mail from site SRI-ARC rcvd at 9-DEC-74 09:36:41 879
 Date: 9 DEC 1974 0936-PST 880
 From: NORSAR-TIP at SRI-ARC 881

old sndmsg's

To: Postel at SRI-ARC

882

883

884

885

Jon Postel,

886

887

I have with great interest read your survey of implemented NCP's
 in the ARPA Net, It has been of good help for us in clearing up
 various problems in connection with the NCP,

888

889

890

891

As you probably know we have tried since the summer to approach ARPA
 in connection with their satellite plans, but up till now we have got
 no serious response> personally I think these plans are too advanced
 for us now since we must be considered as beginners in this field.
 A better approach would be to get connected to the ARPA Nat and have
 everything running smothly before we are proceeding futher. Hopefully
 we can partissipate in ecperimental activities in the Net in order
 to

892

893

894

895

896

897

898

old sndmsg's

get more experience, 899

900

In Your survey you advertise for certain specific measurements 901

revealing the performance of the NCP. I would like to get more 902

information about this topic and to here what type of experiments you 903

suggest. 904

Also I would like to get in contact with persons or groups which 905
would

be interested in having us as a counterpart in Network experiments. 906

Do you have any suggestions. For your information I will give a brief 907

description of the facilities here. 908

909

I see that part of a block has disappeared from the text. The 910
following

911

For the time being we are two persons working on this project. 912

We started about 3/4 of a year ago without any experience in this 913
field

at all. Myself I had about 10 years of experience in experimental 914

old sndmsg's

nuclear physics before I started in this game. My institute feels
that 915

we have to be involved in some way in the field of data
communication, 916

but due to the lack of experience in this 917

field it is very difficult to establish a sound platform for the
work. 918

I would therefore be very happy if you could give us any advice in
this 919

direction. Personally I would prefer to participate in experiments
with 920

other groups or persons. Any suggestion is welcome 921

922

For the time being we dispose of two SM-3 computers (Norwegian Make) 923

each with 64 k of memory. They share a disc unit and a mag. tape 924

station. It is also possible to transfer data on a word by word basis 925

between the two machines. This makes it possible to test the various 926

protocols on the two machines before they are tested on the Net. 927

928

We have chosen the Elf system 929

old sndmsg's

as a model for our operating system that's finished now and is working 930

well I believe, At the moment I am working on the reliable transmission 931

package which I hope to finish before Christmas. Then I can start with 932

the main part of the NCP. We have already done some flowcharting on it, 933

so I hope that we can finish it in a reasonable time. We are also 934

working on the TELNET protocol. At a later stage we intend to implement 935

the FILE transfer protocol. well, that's the status here. 936

937

With my background in experimental nuclear physics I see a great need 938

for communication network as means, in a remote way, to do physics 939

experiments. Experiments done at for example Brookhaven or Argonne are 940

mostly done with computers on-line. With such a computer connected to 941

the ARPA Net, I could in principle do or participate in experiments at 942

for example Brookhaven. Do you know if these aspects of the Net has been 943

old sndmsg's

discussed inside ARPA and eventually whom are involved in this. 944

945

Probably I am asking too many questions, but I hope that you have time 946

at least to answer some of them. 947

948

With the best regards Paul (Spilling) 948a

949

You can reach me by means of Yngvar Lundh's network address. 950

951

952

----- 953

9-DEC-74 17:49:27,9477 954

Date: 9 DEC 1974 1749-PST 955

From: POSTEL 956

Subject: File Format Standards 957

To: DCrocker at ISI, Hathaway at AMES, Krilanov at UCSB, 958

To: Pogran,CompNet at MIT-MULTICS, Tomlinson at BBN 959

old sndmsg's

cc: postel

960

961

I would like you to look over the following draft RFC on file format standards and give me your comments as soon as conveniently possible, I would like to firm up my suggestion with your contribution and sent this out within one week,

962

963

964

965

thank you

966

--jon,

967

968

969

970

971

< POSTEL, FILE-STANDARDS.NLS;9, >, 5-DEC-74 10:23 JBP ;;;;

972

Network Working Group
(SRI-ARC)

J. postel

973

Request for Comments: rrr
1974

dd December

974

975

NIC: fffff

976

old sndmsg's

977

978

979

Standard File Formats

979a

980

981

982

983

Introduction

984

985

In an attempt to provide online documents to the network community we

985a

have had many problems with the physical format of the final

985b

documents. Much of this difficulty lies in the fact that we do not

985c

have control or even knowledge of all the processing steps or devices

985d

that act on the document file. A large part of the difficulty in the

985e

past has been due to some assumptions we made about the rest of the

985f

old sndmsg's

world being approximately like our own environment. We now see that 985g

the problems are due to differing assumptions and treatment of files 985h

to be printed as documents. We therefore propose to define certain 985i

standard formats for files and describe the expected final form for 985j

printed copies of such files. 985k

986

These standard formats are not additional File Transfer Protocol data 986a

types/modes/structures, but rather usage descriptions between the 986b

originator and ultimate receiver of the file. It may be useful or 986c

even necessary at some hosts to construct programs that convert files 986d

between common local formats and the standard formats specified here. 986e

987

Standardization Elements 988

989

The elements or aspects of a file to be standardized are the 989a

old sndmsg's

character or code set used, the format control procedures, the
area 989b

of the page to be used for text, and the method to describe 989c

overstruck or underlined characters. 989d

990

The area of the page to be used for text can be confusing to
discuss, 990a

in an attempt to be clear we define a physical page and a logical 990b

page. 990c

991

Physical Page 991a

992

The physical page is the medium that carries the text, the 992a

height and width of its area are measured in inches. 992b

993

The typical physical page is a piece of paper eleven inches 993a

high and eight and one half inches wide. 993b

994

Typical print density is 10 characters per inch 994a

old sndmsg's

horizontally and 6 characters per inch vertically. This 994b
 results in the typical physical page having a maximum 994c
 capacity of 66 lines and 85 characters per line. It is 994d
 often the case that printing devices limit the area of 994e
 the physical page by enforcing margins. 994f

995

996

Standard File Formats [2] 996a

997

998

999

Logical Page 999a

1000

The logical page is the area that can contain text, the height 1000a
 of this area is measured in lines and the width is measured in 1000b
 characters. 1000c

1001

A typical logical page is 60 lines high and 72 characters 1001a

old sndmsg's

wide,	1001b
	1002
Code Set	1002a
	1003
The character encoding will be the network standard Network	1003a
Virtual Terminal (NVT) code as used in Telnet and File Transfer	1003b
protocols, that is ASCII in an eight bit byte with the high order	1003c
bit zero,	1003d
	1004
Format Control	1004a
	1005
The format will be controlled by the ASCII format effectors:	1005a
	1006
Form Feed <FF>	1006a
	1007
Moves the printer to the top of the next logical page, and	1007a
to the left edge of the logical page, [Note that this	1007b
differs from the NVT specification].	1007c

old sndmsg's

	1008
Carriage Return <CR>	1008a
	1009
Moves the printer to the left edge of the logical page remaining on current line.	1009a
	1009b
	1010
Line Feed <LF>	1010a
	1011
Moves the printer to the next print line, keeping the same horizontal position.	1011a
	1011b
	1012
Horizontal Tab <HT>	1012a
	1013
Moves the printer to the next horizontal tab stop.	1013a
	1014
The default stops for horizontal tabs will be every eight characters, that is character positions 9, 17, 25, ...	1014a
	1014b
within the logical page.	1014c

old sndmsg's

	1015
Vertical Tab <VT>	1015a
	1016
Moves the printer to the next vertical tab stop.	1016a
	1017
The default stops for vertical tabs will be every eight	1017a
lines starting at the first printing line on each logical	1017b
page.	1017c
	1018
	1019
Standard File Formats [3]	1019a
	1020
	1021
	1022
Back Space <BS>	1022a
	1023
Moves the printer one character position toward the left	1023a
edge of the logical page.	1023b

old sndmsg's

	1024
Not all these effectors will be used in all format standards, any	1024a
effectors which are not used in a format standard are ignored,	1024b
	1025
	1025a
	1026
Page Length	1026a
	1027
The logical page length will be specified in terms of a number of	1027a
lines of text. This describes the number of lines per physical	1027b
page available for text. This does not specify the size of the	1027c
physical page or the font.	1027d
	1028
Page Width	1028a
	1029
The logical page width will be specified as a number of	1029a
characters. This describes the number of characters per line of	1029b
the physical page available for text. This does not specify the	1029c

old sndmsg's

physical size of the page or the font. 1029d

1030

Overstriking 1030a

1031

Overstriking (note that underlining is a subset of overstriking) 1031a

may be specified to be done in one or both of the following ways, 1031b

or not at all: 1031c

1032

By Line 1032a

1033

The text of the line will be followed by a <CR> then the 1033a

overstriking will follow as a series of space and overstrike 1033b

characters followed by <CR><LF>. 1033c

1034

By Character 1034a

1035

Each character to be overstruck is to be immediately 1035a

followed by a <BS> and the overstrike character. 1035b

old sndmsg's

	1036
	1037
Standard File Formats [4]	1037a
	1038
	1039
	1040
Standard Formats	1041
	1042
Format 1	1042a
	1043
This format is designed to be used for documents to be printed on	1043a
line printers, which normally have 66 lines to a physical page,	1043b
but often have forced top and bottom margins of 3 lines each.	1043c
	1044
Active Format Effectors	1044a
<FF>, <CR>, <LF>.	1044a1
Page Length	1044b
60 lines.	1044b1

old sndmsg's

Page Width	1044c
72 Characters,	1044c1
Overstriking	1044d
By Line,	1044d1
	1045
Format 2	1045a
	1046
This format is designed to be used with hard copy terminals, which	1046a
in the normal case have 66 lines to a physical page.	1046b
	1047
Active Format Effectors	1047a
<FF>, <CR>, <LF>, <HT>, <VT>, <BS>.	1047a1
Page Length	1047b
66 lines,	1047b1
Page Width	1047c
72 Characters,	1047c1
Overstriking	1047d
By Character,	1047d1

old sndmsg's

	1048
Format 3	1048a
	1049
This format is designed to be used with full width (11 by 14 inch	1049a
paper) line printer output.	1049b
	1050
Active Format Effectors	1050a
<FF>, <CR>, <LF>.	1050a1
Page Length	1050b
60 lines.	1050b1
Page Width	1050c
132 Characters.	1050c1
Overstriking	1050d
None.	1050d1
	1051
	1052
Standard File Formats [5]	1052a
	1053

old sndmsg's

	1054
	1055
Format 4	1055a
	1056
This format is designed to be used for simulated card input. The	1056a
page width is 80 characters, each card image is followed by	1056b
<CR><LF>, thus each card is represented by 82 characters in the	1056c
file.	1056d
	1057
Active Format Effectors	1057a
<CR>, <LF>.	1057a1
Page Length	1057b
Infinite.	1057b1
Page Width	1057c
80 Characters.	1057c1
Overstriking	1057d
None.	1057d1
	1058

old sndmsg's

Implementation Suggestions	1059
	1060
Overflow	1060a
	1061
Overflow can result from two causes, first if the physical page is	1061a
smaller than the logical page, and second if the actual text in	1061b
the file violates the standard under which it is being processed,	1061c
	1062
In either case the following suggestions are made to implementors	1062a
of programs which process files in these formats,	1062b
	1063
Length	1063a
	1064
If more lines are processed than fit within the minimum of the	1064a
physical page and the logical page length since the last top of	1064b
page action, then the top of page action should be forced,	1064c
	1065
Width	1065a

old sndmsg's

1066
If more character positions are processed than fit on the 1066a
minimum of the physical page width and the logical page width 1066b
since the last left edge action, then characters are discarded 1066c
up to the next format effector. 1066d

or

1067
1067a
1068
If more character positions are processed than fit on the 1068a
minimum of the physical page width and the logical page width 1068b
since the last left edge action, then the left edge and next 1068c
line actions should be forced. 1068d

Standard File Formats [6]

1069
1070
1070a
1071
1072
1073

old sndmsg's

References	1074
	1075
A. McKenzie "TELNET Protocol Specification," NIC 18639, Aug-73.	1075a
	1076
"USA Standard Code for Information Interchange," United States of	1076a
America Standards Institute, 1968.	1076b
-----	1077
10-DEC-74 09:00:26,342	1078
Date: 10 DEC 1974 0900-PST	1079
From: MICHAEL	1080
Subject: dashes	1081
To: lee	1082
cc: postel	1083
	1084
Susan, I have just discovered this strange directiveNumDash	1085
If you put in a directive at the beginning of the file	1086
that says all but the very first line of dashes	1087
will go away.	1088

old sndmsg's

Norton wouldn't let me take them out all together, 1089
 ----- 1090
 10-DEC-74 10:38:41,4437 1091
 Net mail from site AMES-67 rcvd at 10-DEC-74 10:38:32 1092
 FROM: HATHAWAY AT AMES-67 1093
 DATE: 10 DEC 1974 1039-PST 1094
 RE: Comments on "File Format Standards" 1095
 1096
 Some first-reading comments on Jon's draft RFC on "Standard File
 Formats": 1097
 1098
 1098a
 The idea appeals in general, especially to a non-TENEXer who has 1099
 had to fight EOL's and tabs and control-whatever's for years ... 1100
 However, I am having a bit of trouble seeing what it is actually 1101
 intended for. I mean, would someone who is preparing a document 1102
 simply choose a likely format (depending on what he thinks the 1103
 most likely use of it will be) and then publicize which format 1104
 he chose when he announces the thing? That's about the only use 1105

old sndmsg's

I can think of right off, so please let me know what others I
have missed. Anyway, even in that light the thing seems some-
what valuable, so on with nits etc ...

1106
1107
1108
1108a

How come you need to redefine Form Feed (FF)? I can't see any
real reason it has to imply a CR also, and that could get con-
fusing. That is, it seems the straightforward thing to do with
FF anyway would be to include it after a "line" (i.e., after a
<CR><LF> pair) so the redefinition seems unnecessary. Also to
someone working on a terminal which really supports FF he may
well use it to stay in the same column from one page to another
(perhaps you wanted to exclude that use by the redefinition?).

1109
1110
1111
1112
1113
1114
1115
1116
1116a

You say "default stops for horizontal tabs ..." but don't dis-
cuss changing them -- are those in fact fixed stops or merely
defaults? Same for VT, and I guess there is a default VT stop
on line one, even though there is no HT stop needed at position
one?

1117
1118
1119
1120
1121

old sndmsg's

1121a
 1122 Under "Page Length" you reference the number of lines on the
 1123 physical page -- that seems a bit confusing, although it is
 1124 obvious what "page length" means. And you say that does not
 1125 describe the font, but nowhere do you say how (or if) you do
 1126 describe the font! "Page Width" has the same problem of ref-
 1127 erencing the physical page.
 1127a
 1128 I like your comment on underlining versus overstriking! Small
 1129 nit on "By Line" -- you say a series of space and overstrike
 1130 characters. Do you really mean to exclude control characters
 1131 from this, notably HT? I realize that in the formats defined
 1132 later "By Line" and use of HT are mutually exclusive, but ...
 1132a
 1133 On Standard Format 1, is it valid to use LF in the general
 1134 case, and not as a partner with CR? That would be a nuisance
 1135 for sure to mine printers ... In fact, what we really seem
 1136 to need is the New Line (NL) control rather than <CR><LF>.

old sndmsg's

but ...

1137

1137a

On Standard Format 2 it is true that 11-inch paper does have 1138
 a full 66 lines and typewriter terminals can normally print on 1139
 all of them, but what is the "top line" of the page supposed 1140
 to be? I mean if I put line one at a reasonable distance down 1141
 the page (really necessary on some terminals just to get the 1142
 paper to feed through rollers etc) then the 66th line is of 1143
 course way off the bottom. Alternatively I could try to put 1144
 line one exactly at the top of the page and expect the text 1145
 to skip a few lines -- which is meant? 1146

1146a

And how come no overstriking on Standard Format 3? What's the 1147
 difference between narrow line printer forms and wide ones? I 1148
 might also mention that we use 8.5X14 inch forms here at Ames 1149
 (yep, wide but not tall -- weird I know, but we are the U.S. 1150
 Gummint, so ...), but I'm not sure that's worth another Stan- 1151
 dard Format. However, I am aware that many shops are in the 1152

old sndmsg's

process of changing to 8.5X14 inch paper and 8 lines per inch, 1153
 as a tree-saving move, so mayhaps something on that? 1154

1154a

On Standard Format 4, how come you all of a sudden mention the 1155
 <CR><LF> on each line specifically? Aren't they on all the 1156
 others too? Would suggest mentioning it everywhere, actually. 1157

1157a

1157b

Anyway, I think the idea is interesting -- wonder how much co- 1158
 operation you will get from people preparing documents? Al- 1159
 though I guess any is better than now ... As I said, all of 1160
 the above is just first-cut nitting -- looks pretty good in 1161
 general. And of course feel free to comment on my comments! 1162

1162a

Wayne, 1162a1

1163

1164

CC: DCrocker at ISI, Krilanov at UCSB, Pogran, Compnet at MIT= 1165

old sndmsg's

MULTICS, Tomlinson at BBN (my mail system doesn't handle
it's own copies ...)

10-DEC-74 13:03:48,433

Net mail from site CCA-TENEX rcvd at 10-DEC-74 13:03:42

Date: 10 DEC 1974 1559-EST

From: HGM at CCA

Subject: NSW

- - - -

MAP WAS JUST HERE, NE MENTIONED THAT YOU HAVE BEEN DOING A LOT
OF WORK ON PROTOCOL FOR NSW. I'M INTERESTED - PROBABLY DON'T HAVE
TIME TO DO MUCH MORE THAT TRY TO KEEP UP, BUT I WOULD LIKE TO KNOW
WHAT NSW MIGHT EXPECT THE DATACOMPUTER TO DO. CAN I GET COPIES OF
THE RELEVANT STUFF EASILY?

10-DEC-74 13:24:54,1721

Net mail from site USC-ISI rcvd at 10-DEC-74 13:24:50

old sndmsg's

Date: 10 DEC 1974 1322-PST 1182
From: DCROCKER at USC-ISI 1183
Subject: MY two cents on File Standards 1184
To: Postel at ARC 1185
cc: Hathaway at AMES-67, Krilanov at UCSB, Pogran at MULTICS, 1186
cc: Tomlinson at BBNA 1187

I like the basic document and agree with most of 1188
Wayne's comments. 1189
1190

1. An interesting point about the short, wide paper now coming 1191
into vogue is that the printer generally still produces 1192
66 lines (max) to the page. It may, therefore, be best not to talk of 1193
inches, but only lines and characters. 1194
1195

2. I'm partial to names, so I suggest that Format 1, 2, etc. 1196
have reference names of Document Printer, Terminal, Full Printer, 1197
and Card. A minor point, admittedly. 1198
1199

old sndmsg's

1200

3. The discussion of width, under Implementation Suggestions, 1201
says that you can 1202
1203

a) discard up to next format effector. Don't you mean <cr>, <ff> or 1204
<vt>, only? (side note: I just realized that <vt> doesn't have the 1205
same eol effect defined into it as <ff>, Why?) I would expect 1206
characters to be discarded until one of the indicated characters 1207
is encountered, thereby resetting the column count to one. 1208
An alternative idea is to continue "virtual" printing so 1209
that if peculiar backspacing is done and some characters 1210
could still validly be printed, they wouldn't be lost. I can't 1211
believe this approach is worth doing, tho. 1212
1213

b. "left edge action" seems like an awkward phrasing; and 1214
"line action" even more so. And in combination, they 1215
confuse me completely. Do you mean that a <cr><lf> should be 1216
forced? I assume that you don't mean to discard until encountering 1217

old sndmsg's

the next left edge/line action characters, since that is 1218
taken care of in case a). 1219

Dave, 1221

----- 1222

11-DEC-74 06:50:11,660 1224

Net mail from site SRI-ARC rcvd at 11-DEC-74 06:50:10 1225

Date: 11 DEC 1974 0010-PST 1226

From: NORSAR-TIP at SRI-ARC 1227

To: Postel at SRI-ARC 1228

Jon, 1232

1230
1231
Thank you for your message. The ideas for measurements which you 1233
suggested will be considered in details, and we will certainly build

old sndmsg's

in the possibilities of gathering statistics on the various types of messages and of timing properties, 1234

1235

I have already sent a letter to Irving Cohen about the Brookhave connection to ARPA, 1236

1237

If I should have some problems in connection with the NCP, I hope that I may ask you again ffor advices, 1238

1239

Regards and all the best for the comming year 1240

1241

Paul, 1242

1243

1244

----- 1245

1246

11-DEC-74 12:35:59,1107 1247

Date: 11 DEC 1974 1235-PST 1248

From: POSTEL 1249

old sndmsg's

Subject: NSW	1250
To: hgm at CCA	1251
cc: white, watson, postal	1252
	1253
Hal:	1254
The NSW could use the Datacomputer to good effect if there were a	1255
quick effecient instance of what we call a File Package implemented	1256
there, this would be our first priority for Datacomputer use. Second	1257
i would expect that your group would want to make the power of	1258
Datalanguage available to users as what we call a "tool" or	1259
application	1259
package,	1260
	1261
I am sending you hard copy of our documents on protocols etc to be	1262
used	1262
in the NSW, but you might want to get a preview by copying to your	1263
lpt	1263
the txt files in the directory <NLS> at SRI-ARC, let me emphasize	1264
that	1264

old sndmsg's

these are ascii text files not nls files. The main documents you
 should 1265

look at are PCP.TXT, PSP.TXT, PMP.TXT, EXEC.TXT, and FILE.TXT 1266

you can pull them via ftp by using the username ANONYMOUS and
 password 1267

GUEST, 1268

if you have any more questions please dont hesitate to call either 1269

me or Jim White at (415) 326 6200 x3718 (postel) or x2960 (White). 1270

SNDSMSG is also a fine communications mechanism too, 1271

--jon, 1272

----- 1273

11-DEC-74 12:49:22,1084 1274

Date: 11 DEC 1974 1249-PST 1275

From: POSTEL 1276

Subject: NSW 1277

To: Kanodia at MIT-MULTICS 1278

cc: Clark at MIT-MULTICS, Pogran at MIT-MULTICS, White, watson, 1279

cc: Postel 1280

1281

old sndmsg's

Raj: 1282

You expressed some interest in the NSW protocols and NSW does have 1283
interest in having a Multics system involved some time and thus it is 1284
everybodys interest for you to know what we are up to and for us to 1285
know
if our ideas are implementable in the Multics environment. 1286
1287

I am sending you a set of our documents via hard copy, but you may 1288
also want to access our online copies. The files are in the 1289
directory <NLS> at SRI-ARC as txt files let me emphasise that 1290
these are ascii text files not nls files. The documents are 1291
numerous, but the main ones are PCP PSP PMP TBH the path names for 1292
ftp would be <NLS>PCP.TXT for example. One can use the username 1293
ANONYMOUS and password GUEST for pulling files from SRI-ARC, 1294
1295

Please feel free to contact either Jim White or me at (415) 326-6200 1296
x 3718 (postel) or x 2960 (White) or use network mail POSTEL@SRI-ARC 1297
or
WHITE at SRI-ARC. 1298

old sndmsg's

	1299
--jon,	1300
-----	1301
12-DEC-74 06:52:56,4630	1302
Net mail from site MIT-MULTICS rcvd at 12-DEC-74 06:52:03	1303
From: Pogran,CompNet at MIT-Multics	1304
Date: 12/12/74 0952=est	1305
Subject: Comments on Postel's File Format Standards	1306
	1307
Congratulations to Jon on making an attempt at trying to crack a very	1308
hard nut! Also, it's nice to see that lots of responses still do pop	1309
up promptly when a Good new Networking idea is presented. It helps	1310
one to maintain one's faith in the citizens of the Network Working	1311
Group (the WHAT?).	1312
	1313
First I'll present my own comments, and then my comments on Wayne's	1314
comments:	1315
	1316

old sndmsg's

Jon has embraced the Multics interpretation of <FF>: namely, the 1317
NewPage interpretation. Our experience has been that, at least in 1318
document presentation, one rarely wants to go to the top of a new 1319
page
with the horizontal position other than at the left margin. 1320

If TELNET ASCII is to be used in the document file, then <CR> must 1321
actually be transmitted as <CR> <NULL>, I strongly suggest that this 1322
be done. 1323
1324

Of course, TELNET ASCII leaves no provision for <LF> without a 1325
preceding <CR>. I agree with wayne that the NewLine function is what 1326
is most often required, and that the <CR> <LF> TELNET NewLine 1327
sequence 1328

be used for this purpose. Is there really a need in document 1329
presentation for a stand-alone <LF>? We have gotten along without it 1330
here for a long time. 1331

About tabs, both horizontal and vertical: Different systems assume 1332
1333

old sndmsg's

different "native" (or default) tab stops. Almost all systems provide 1334

software for handling terminals which do not have a hardware tab 1335

feature, converting the tabs to the "right" number of spaces. 1336

Writing software to do this is considerably easier than writing software to 1337

convert from one tab-stop convention to another! I suggest, 1338

therefore, that rather than define tab stops for Network document 1339

files, we preclude the use of tabs in such files. While this will 1340

mean that we will have to transmit more characters, I think it will 1341

mean less hassle in the long run. 1342

1343

Overstriking: Yes, yes, we need it! People might discover that 1344

terminals should print underscores for code 137 rather than 1345

back-arrows! 1346

1347

Line length for document files: Is 72 characters appropriate? Note 1348

that if one indents one inch from the left edge of the paper and uses 1349

a 65-character line, you will have one-inch margins on each side of 1350

old sndmsg's

your 8.5 in. wide paper! This is our default standard on Multics, 1351
1352

Format 2: for hard copy terminals. Note that IBM terminals (Yes, 1353
some
people still use them when they want high quality hardcopy; not 1354
everyone has Diablo's yet) do NOT have FormFeed. Nor do 1355
thermal-printing terminals such as TI's. Perhaps the standard file 1356
should contain instead the "right" number of NewLines instead, 1357
1358

Simulated card input: Must we completely represent card images? I 1359
think it would be fairly easy to handle the "early" occurrence of a 1360
NewLine at the receiving end, and pad out the remaining 80-N columns 1361
with spaces. Avoids transmitting extra spaces this way. 1362
1363

On to Wayne's comments: 1364
1365

I've already mentioned my feelings about the NewPage interpretation 1366
about <FF>. Wayne talks about describing page length and type fonts. 1367

old sndmsg's

Please, let's not re-implement NLS! 1368

1369

As for the meaning of the "top line" of the page on a hardcopy 1370
terminal, we have found only one satisfactory assumption: The "top 1371
line" of a page on a hardcopy terminal is defined to be one linespace 1372
down from the edge of the sheet. No one in his right mind would
begin 1373

printing a document there, so a document file in this format 1374
invariably begins with some number of NewLine characters. As for how 1375
you do type "up high" on the sheet -- well, we presume you are using 1376
continuous forms. Our runoff does optionally pause after each page
if 1377

you are using individual sheets; if you're using this feature,
though, 1378

your document had better be formatted properly (top margin-wise) so 1379
that the paper is fed through the rollers before serious typing 1380
begins. 1381

1382

I think Jon specified no overstriking on Format 3 because he wanted to 1383

old sndmsg's

describe something approximating "ordinary" lineprinter output. Now, 1384
 Wayne, I know that the lineprinter software on MY system will do 1385
 overstriking, and perhaps the lineprinter software on YOUR system 1386
 will
 too, but I would wager that the "normal" lineprinter control software 1387
 on many systems would balk at the idea. The real question here, I 1388
 think, is whether we need to specify a document file format for 1389
 "ordinary" line printer output at all. I'm not sure how I feel about 1390
 it, actually. 1391

Well, folks, are we ready for the next go-round? 1392
 1393

Regards, 1394
 1395

Ken 1396

12=DEC-74 11:45:56,12668 1397

Net mail from site SRI-ARC rcvd at 12=DEC-74 11:45:41 1398

Date: 12 DEC 1974 1145-PST 1399

From: POSTEL at SRI-ARC 1400

old sndmsg's

Subject: Procedure Call Protocol 1401

To: Request-for-Comment-Distribution: 1402

1403

1404

1405

1406

1407

<GJOURNAL>31484.NLS;1, 12-DEC-74 04:32 XXX ;;;; Title: Author(s): 1408

Jonathan B. Postel/JBP; Distribution: /NAG([ACTION]) NLG([ACTION] 1409

) NSW([ACTION]) PI([ACTION]) ; Sub-Collections: NIC NWG SRI-ARC 1410

NAG NLG NSW PI; RFC# 674; Clerk: JAKE; Origin: < NETINFO, 1411

RFC674.NLS;2, >, 11-DEC-74 17:58 JAKE ;;;;####; 1412

1413

NWG/RFC# 674 JBP 11-DEC-74 18:04 31484 1414

Procedure Call Protocol Documents 1415

1416

old sndmsg's

		1417
		1418
Request for Comments 674	Jon	
Postel		1419
NIC 31484	Jim	
White		1420
SRI=ARC		1420a
12 December 1974		1421
		1422
Procedure Call Protocol Documents		1422a
Version 2		1422a1
		1423
		1424
1		1424a
		1425
As many of you may know SRI is part of a team working on the National		1426
Software works project. In the course of our work we have developed a		1427
Procedure Call Protocol to be used between the modules which make up		1428
the NSW. We are interested in your comments on this protocol. Please		1429

old sndmsg's

foreward your remarks to either:
2

1430

1431

James E. White (WHITE@SRI-ARC) or Jon Postel (POSTEL@SRI-ARC)
2a

1431a

1432

Augmentation Research Center

1432a

Stanford Research Institute

1432b

Menlo Park, California 94025

2b

1432c

1433

(415) 326-6200 x2960 (White) or x3718 (Postel)

2c

1433a

1434

This note announces the release of the second published version of
several National Software Works (NSW) and Procedure Call Protocol
(PCP) documents. Version 2 is SUBSTANTIALLY different than Version 1;
it and all intermediate, informally distributed PCP documents are
obsoleted by this release.

1435

1436

1437

1438

3

1439

1440

old sndmsg's

Each of the following documents is available on-line in two forms: as 1441
 an NLS file and as a formatted text file. The Journal number (e.g. 1442
 24459) refers to the former, of course, and the pathname (e.g. 1443
 [SRI-ARC]<NLS>PCP.TXT) to the latter, accessible via FTP using 1444
 USER=ANONYMOUS and PASSWORD=GUEST (no account required). Let it be 1445
 emphasised that files indicated by pathname of the form 1446
 [SRI-ARC]<NLS>name.TXT are ASCII text files not NLS files. 1447
 4 1448

The specifications are contained in the following documents: 1449
 5 1450

HOST (24581,) "NSW Host Protocol" 1450a
 5a 1451

This document describes the host level protocol used in the NSW. 1451a
 The protocol is a slightly constrained version of the standard 1451b
 ARPANET host to host protocol. The constraints affect the 1451c
 allocation, RFNM wait, and retransmission policies. 1451d
 5a1

old sndmsg's

1452

NWG/RFC# 674
31484

JBP 11-DEC-74 18:04

1453

RFC 674;
Announcement

PCP

1454

1455

1456

1457

Pathname: [SRI-ARC]<NLS>HOST.TXT
5a1a

1457a

1458

PCP (24459,) "The Procedure Call Protocol"
5b

1458a

1459

This document describes the virtual programming environment
provided by PCP, and the inter-process exchanges that implement

1459a

1459b

it.
5b1

1459c

1460

Pathname: [SRI-ARC]<NLS>PCP.TXT
5b1a

1460a

old sndmsg's

		1461
PIP	(24460,) "The Procedure Interface Package"	
5c		1461a
		1462
This document describes a package that runs in the setting		1462a
provided by PCP and that serves as a procedure-call-level		1462b
interface to PCP proper. It includes procedures for calling,		1462c
resuming, interrupting, and aborting remote procedures,		1462d
5c1		
		1463
Pathname: [SRI=ARC]<NLS>PIP.TXT		
5c1a		1463a
		1464
PSP	(24461,) "The PCP Support Package"	
5d		1464a
		1465
This document describes a package that runs in the setting		1465a
provided by PCP and that augments PCP proper, largely in the		1465b
area of data store manipulation. It includes procedures for		1465c
obtaining access to Groups of remote procedures and data stores,		1465d

old sndmsg's

manipulating remote data stores, and creating temporary ones.
5d1 1465e

1466

Pathname: [SRI=ARC]<NLS>PSP.TXT
5dia 1466a

1467

PMP (24462,) "The Process Management Package"
5e 1467a

1468

This document describes a package that runs in the setting 1468a

provided by PCP and that provides the necessary tools for 1468b

interconnecting two or more processes to form a multi-process 1468c

system (e.g. NSW). It includes procedures for creating, 1468d

deleting, logically and physically interconnecting processes, 1468e

and for allocating and releasing processors.
5e1 1468f

1469

Pathname: [SRI=ARC]<NLS>PMP.TXT
5e1a 1469a

1470

old sndmsg's

PCPFMT (24576,) "PCP Data Structure Formats" 1470a
5f

1471

This document defines formats for PCP data structures, each of 1471a

which is appropriate for one or more physical channel types. 1471b
5f1

1472

Pathname: [SRI=ARC]<NLS>PCPFMT.TXT 1472a
5f1a

1473

1474

1475

1476

1477

1478

1 1478a

1479

NWG/RFC# 674
31484

JBP 11-DEC-74 18:04

1480

old sndmsg's

RFC 674;
Announcement

PCP

1481

1482

1483

1484

PCPHST (24577,) "PCP ARPANET Inter-Host IPC Implementation"
5g

1484a

1485

This document defines an implementation, appropriate for
mediating communication between Tenex forks, of the IPC
primitives required by PCP.
5g1

1485a

1485b

1485c

1486

Pathname: [SRI=ARC]<NLS>PCPHST.TXT
5g1a

1486a

1487

PCPFRK (24578,) "PCP Tenex Inter-Fork IPC Implementation"
5h

1487a

1488

This document defines an implementation, appropriate for

1488a

old sndmsg's

mediating communication between processes on different hosts	1488b
within the ARPANET, of the IPC primitives required by PCP.	
5h1	1488c
	1489
Pathname: [SRI=ARC]<NLS>PCPFRK.TXT	
5h1a	1489a
	1490
EXEC (24580,) "The Executive Package"	
5i	1490a
	1491
This document describes a package that runs in the setting	1491a
provided by PCP. It includes procedures and data stores for	1491b
user identification, accounting, and usage information.	
5i1	1491c
	1492
Pathname: [SRI=ARC]<NLS>EXEC.TXT	
5i1a	1492a
	1493
FILE (24582,) "The File Package"	
5j	1493a
	1494

old sndmsg's

This document describes a package that runs in the setting 1494a
 provided by PCP. It includes procedures and data stores for 1494b
 opening, closing, and listing directories, for creating, 1494c
 deleting, and renaming files, and for transferring files and file 1494d
 elements between processes. 1494e
 5j1 1494e

1495

Pathname: [SRI=ARC]<NLS>FILE.TXT 1495a
 5j1a 1495a

1496

BATCH (24583,) "The Batch Job Package" 1496a
 5k 1496a

1497

This document describes a package that runs in the setting 1497a
 provided by PCP. It includes procedures for creating and 1497b
 deleting batch jobs, obtaining the status of a batch job, and 1497c
 communicating with the operator of a batch processing host. This 1497d
 package is implemented at the host that provides the batch 1497e
 processing facility. 1497e
 5k1 1497f

old sndmsg's

1498

Pathname: [SRI=ARC]<NLS>BATCH.TXT
5k1a

1498a

1499

RJE-MODEL (24655,) "The NSW Remote Job Entry Model"
51

1499a

1500

1501

1502

1503

1504

1505

2

1505a

1506

NWG/RFC# 674
31484

JBP 11-DEC-74 18:04

1507

RFC 674;
Announcement

PCP

1508

1509

1510

old sndmsg's

1511
 This document discusses the process of utilizing a batch 1511a
 processing facility to complete a programming task in the NSW 1511b
 environment. This same activity in another environment might 1511c
 utilize a remote job entry system. 1511d
 511

1512

Pathname: [SRI-ARC]<NLS>RJE-MODEL.TXT
 511a

1512a

1513

LLDEBUG (24579,) "The Low-Level Debug Package"
 5m

1513a

1514

1514a
 This document describes a package that runs in the setting
 provided by PCP. It includes procedures for a remote process to 1514b
 debug at the assembly-language level, any process known to the 1514c
 local process. The package contains procedures for manipulating 1514d
 and searching the process' address space, for manipulating and 1514e
 searching its symbol tables, and for setting and removing 1514f

old sndmsg's

breakpoints from its address space, Its data stores hold 1514g
 process characteristics and state information, and the contents 1514h
 of program symbol tables, 1514i
 5m1

1515

Pathname: [SRI=ARC]<NLS>LLDEBUG.TXT
 5mia

1515a

1516

TBH (24656,) "NSW Requirments on Tool Bearing Hosts"
 5n

1516a

1517

This document discusses the environment needed in the tool 1517a
 bearing host and the interfaces to the operating system 1517b
 components by various PCP packages, 1517c
 5n1

1518

Pathname: [SRI=ARC]<NLS>TBH.TXT
 5n1a

1518a

1519

BOXES (24584,) "Black Boxes in PCP"
 5o

1519a

old sndmsg's

	1520
This document describes the transliteration of the black boxes	1520a
defined by Millstein and Warshall into the setting provided by	1520b
PCP, especially the File Package and the Executive Package,	1520c
501	1521
Pathname: [SRI-ARC]<NLS>BOXES.TXT	
501a	1521a
	1522
The document on the Host level Protocol, HOST, is a suggestion for	1523
some restrictions on the regular ARPANET host protocol for use in	
NSW,	1524
this topic has little impact on the remainder of the NSW protocols,	1525
The reader is urged to begin with the major Procedure Call Protocol	1526
documents,	
6	1527
	1528
The document on PCP is the place the interested reader should start,	1529
It gives the required motivation for the Protocol and states the	1530

old sndmsg's

substance of the Protocol proper.
7

1531

1532

1533

1534

1535

1536

1537

3

1537a

1538

NWG/RFC# 674
31484

JBP 11-DEC-74 18:04

1539

RFC 674;
Announcement

PCP

1540

1541

1542

1543

The reader may then proceed to the next three documents: PIP, PSP and
PMP. The latter has the most relavence to the casual reader; the

1544

1545

old sndmsg's

programmer faced with coding in the PCP environment should read all 1546
 three, 1547
 8 1548
 The three documents PCPFMT, PCPHST, and PCPFRK specify low level 1549
 details of the communication formats and are of interest only to PCP 1550
 implementers. 1551
 9 1552
 The documents EXEC, FILE and BATCH describe procedure packages to be 1553
 implemented as appropriate to provide the services of the 1554
 accounting/status/usage statistics subsystem, the file subsystem or 1555
 batch processing subsystem respectively. 1556
 10 1557
 The document RJE-MODEL describes how a user would utilize various 1558
 tools in the NSW in the process of carrying out tasks he might in 1559
 the absence of NSW achieve using a remote job entry system. This should 1560
 be

old sndmsg's

read with the document on BATCH.

1561

11

1561a

1562

The LLDEBUG package specifies a debugging package that operates in the
PCP environment.

1563

12

1564

1565

The document called BOXES describes a mapping between the PCP
mechanisms and the File Package procedures and the Black Boxes needed
by the Works Manager.

1566

1567

13

1568

1569

The document TBH speaks to the requirements placed on the Tool
Bearing

1570

Host. This document indicates how and where various PCP packages
interface to an operating system.

1571

14

1572

1573

1574

1575

old sndmsg's

- 1576
- 1577
- 1578
- 1579
- 1580
- 1581
- 1582
- 1583
- 1584
- 1585
- 1586
- 1587
- 1588
- 1589
- 1590
- 1591
- 1592
- 1593

old sndmsg's

1594

4

1594a

1595

12-DEC-74 11:50:21,333

1596

Net mail from site OFFICE-1 rcvd at 12-DEC-74 11:50:17

1597

Date: 12 DEC 1974 1149-PDT

1598

From: LEE at OFFICE-1

1599

Subject: Printing nls files on the xgp

1600

To: postel at SRI=ARC

1601

1602

My file describing how to print nls files on the xgp is in my office-1 dir - (lee,nls=xgp,) - it shouldn't be protected,

1603

Any comments are welcome!

1604

1605

12-DEC-74 22:00:36,567

1606

Net mail from site BBN-TENEX rcvd at 12-DEC-74 22:00:34

1607

Date: 13 DEC 1974 0100-EST

1608

From: OMALLEY at BBN-TENEX

1609

old sndmsg's

Subject: RFC 674	1610
To: POSTEL at SRI-ARC	1611
	1612
THIS IS NOT MIKE HIMSELF BUT ONE OF HIS MINIONS WHO OFTEN	1613
HAS OCCASION TO READ THE MAIL FOR HIM, IN DEFERENCE TO THOSE OF	1614
US WHO STILL HAVE TO STRUGGLE ALONG WITH HARDCOPY	1615
DEVICES AND DIAL-UP LINES PLEASE IN THE FUTURE RE-FORMAT	1616
YOUR MESSAGES OUT OF NLS FORMAT BEFORE DISTRIBUTING	1617
THEM, IT TOOK OVER TEN MINUTES TO TYPE ON A TI,	1618
MOSTLY DEVOTED TO WHITE SPACE,	1619
THANKS FOR LISTENING	1620
HT	1620a
-----	1621
13-DEC-74 09:39:47,781	1622
Net mail from site CCA-TENEX rcvd at 13-DEC-74 09:39:42	1623
Date: 13 DEC 1974 1239-EST	1624
From: HGM at CCA	1625
Subject: NSW	1626

old sndmsg's

To: POSTEL at SRI-ARC, WHITE at SRI-ARC 1627

cc: map at MULTICS 1628

1629

THANKS FOR THE GOODIES. THEY WERE ON MY DESK THIS MORNING. 1630

THE PART THAT I WAS LOOKING FOR WAS THE 'HOST' SECTION, I'LL GET TIME 1631

TO LOOK AT THE REST SOON. 1632

A FEW QUESTIONS... 1633

A) THE 8000 BIT RESTRICTION; IS 'NORMAL' TENEX OK? [I THINK SO, 1634

BUT I'M JUST TRYING TO CONFIRM... I'M NOT INTERESTED IN THE NVT 1635

MODE,]

B) THERE IS A CLAIM [6+7] THAT ONLY THE SEND HALF NEEDS TO BE 1636

UPDATED,

I'M NOT SURE I [YET] AGREE. WHAT HAPPENS IF THE NET BOTCHES IT? 1637

IF THE NET DROPS ONE MESSAGE, DON'T THINGS ARRIVE OUT OF ORDER..... 1638

DOESN'T THE RECVR HAVE TO BE PREPARED TO SORT THINGS OUT? 1639

----- 1640

16-DEC-74 14:26:01,1523 1641

Net mail from site USC-ISI rcvd at 16-DEC-74 14:25:57 1642

Date: 16 DEC 1974 1425-PST 1643

old sndmsg's

From: UCSB at USC-ISI 1644
 Subject: YOUR PROPOSED RFC ON STANDARD FILE FORMATS 1645
 To: POSTEL at SRI-ARC 1646
 cc: DCROCKER at ISI, HATHAWAY at AMES-67, 1647
 cc: POGRAN,COMPNET at MIT-MULTICS, TOMLINSON at BBN, 1648
 cc: KRILANOV at UCSB 1649

1650

I AGREE WITH ALL OF WAYNE AND DAVE'S COMMENTS; PARTICULARLY: 1651

1652

(1) I HAVE LONG FELT THAT IT WOULD BE MUCH BETTER TO HAVE SOME 1653
 SINGLE CHARACTER FOR NEW LINE RATHER THAN <CR><LF>, BESIDES BEING 1654
 BASICALLY LOGICAL, IT WOULD MAKE EVERYONE'S CODE SIMPLER, I 1655
 WOULD MAKE A PUSH FOR THIS IF ONLY I COULD COME UP WITH A GOOD 1656
 IDEA AS TO WHAT CHARACTER TO USE. 1657

1658

(2) I LIKE DAVE'S IDEA OF CALLING THE FORMATS BY NAMES RATHER 1659
 THAN NUMBERS, AND I IN FACT LIKE THE NAMES HE CHOSE. HE SAID HE 1660
 FELT THIS WAS A MINOR POINT, BUT ASSUMING YOU MEAN FOR THESE 1661

old sndmsg's

IDENTIFIERS TO BE USED BY PEOPLE RATHER THAN COMPUTERS, I FEEL 1662
 STRONGLY THAT THEY SHOULD BE NAMES. 1663

1664

(3) I AGREE THAT 'LEFT-EDGE ACTION' AND 'NEXT-LINE ACTION' ARE 1665

AWKWARD; ASSUMING I GUESSED CORRECTLY WHAT THEY MEAN (I DON'T 1666

THINK YOU DEFINED THEM, DID YOU?), I WOULD RATHER SEE JUST <CR> 1667

AND <LF> USED. 1668

1669

(4) AS WAYNE SAYS, IT WOULD BE NICE TO KNOW WHAT THE INTENDED 1670

USE IS. IF IT IS INTENDED (HOPED) THAT AS A RESULT OF THIS, TENEX 1671

WILL NO LONGER SEND EOL'S THROUGH FTP WHEN <CR><LF> WAS MEANT, FOR 1672

EXAMPLE, I AM WHOLEHEARTEDLY FOR IT, AND I THINK STATING SUCH 1673

WOULD HELP GATHER SUPPORT FOR YOUR PROPOSAL. 1674

1675

--MARK KRILANOVICH 1675a

----- 1676

17-DEC-74 08:41:38,706 1677

Net mail from site SRI-ARC rcvd at 17-DEC-74 08:41:34 1678

old sndmsg's

Date: 17 DEC 1974 0841-PST 1679
 From: CERF at SRI-ARC 1680
 Subject: RFC 675 (NIC 31505) Internetwork Protocol 1681
 To: Request-for-Comment-Distribution: 1682

1683
 1684
 This note announces the release of RFC 675,
 'Transmission Control Program Specification' 1685
 which defines an internetwork protocol for inter- 1686
 process communication. Copies of the spec may be 1687
 obtained by sending your mailing address to 1688
 CERF at ISI along with a request for a copy. 1689

1690
 I have intentionally not sent it out to everyone
 because it is about 50 pages long. An on-line 1691
 copy without figures is in <CERF>TCPSPEC8.txt at ISI. It may be
 TCPSPECx.TXT 1692
 bythe time you see it. 1693

1694
 Vint Cerf 1695

old sndmsg's

----- 1696
17-DEC-74 10:35:58,410 1697
Net mail from site BBN-TENEXA rcvd at 17-DEC-74 10:35:53 1698
Date: 17 DEC 1974 1324-EST 1699
From: JOHNSON at BBN-TENEXA 1700
Subject: RFC # 1701
To: JBP at NIC 1702
cc: BTHOMAS 1703
1704
Jon: 1705
1706
Could you send us an RFC number for a paper we wish to distribute? 1707
1708
The paper is: 1709
1710
The Maintenance of Duplicate Databases 1711
by 1712
Paul R. Johnson 1713

old sndmsg's

Robert H. Thomas 1714

Bolt Beranek and Newman, Inc. 1714a

1715

Thanks. 1716

---Paul 1717

----- 1718

18-DEC-74 15:32:31,251 1719

Net mail from site USC-ISI rcvd at 18-DEC-74 15:32:28 1720

Date: 18 DEC 1974 1512-PST 1721

From: FARBER at USC-ISI 1722

Subject: MISC 1723

To: POSTEL at SRI-ARC 1724

1725

1. WILL PAY BILL ASAP. 1726

2. WOULD YOU ASK ENGELBART TO READ 1727

THE MAIL I SENT HIM. 1728

DAVE 1729

----- 1730

old sndmsg's

1731

18-DEC-74 17:26:22,660 1732

Net mail from site USC-ISI rcvd at 18-DEC-74 17:26:21 1733

Date: 18 DEC 1974 1719-PST 1734

From: DCROCKER at USC-ISI 1735

Subject: RD 1736

To: Postel at ARC 1737

1738

Actually, I mistyped that note. I meant NLS, not RD. I have 1739

made several attempts to retrieve enough files to get 1740

tnls running at isi, and I keep running into a few files 1741

I don't have. Latest one is some file which indicates 1742

what idents are associated with what directory. It's 1743

really too bad. I couldn't seem to convince Norton that 1744

it is reasonable to make nls a standard Tenex subsys 1745

(with no user assistance from Arc as an explicit condition 1746

of its release). Sigh. 1747

1748

old sndmsg's

Thanks anyhow, Dave.

1749

1750

1751

19-DEC-74 09:09:54,634

1752

Date: 19 DEC 1974 0909-PST

1753

From: WHITE

1754

Subject: IBM TBHs

1755

To: watson

1756

cc: postel

1757

1758

Dick-- I talked to Steve Crocker yesterday, and he told me that NSW has

1759

found interest in and funds for bringing up an IBM machine (probably CCN's or RAND's) as a TBH this first year. He is bringing Braden and Fredrickson up to speed starting now. He asked that I send each a copy

1760

1761

1762

of all TBH-related protocol documentation, which I did.

1763

1764

old sndmsg's

We have now used up all 50 copies of the PCP document, and all but one 1765

or two of the NSW document. If we're going to prepare another version 1766

for printing, now's the time. --Jim 1767

1768

----- 1769

23-DEC-74 16:33:15,911 1770

Net mail from site USC-ISI rcvd at 23-DEC-74 16:33:13 1771

Date: 23 DEC 1974 1633-PST 1772

From: BINDER at USC-ISI 1773

Subject: PROC, CALL PROTOCOL 1774

To: POSTEL at SRI-ARC 1775

cc: WHITE at SRI-ARC, BINDER 1776

1777

HAVE READ SOME OF THE INTRO STUFF TO YOUR PROC, CALL PROT., 1778

AND LOOKS INTERESTING, TWO IMMEDIATE QUESTIONS: 1779

1780

1. CAN (AT LEAST A BASIC SUBSET) OF IT BE IMPLEMENTED 1781

old sndmsg's

ON A SMALL MACHINE, SUCH AS A PDP11/40?	1782
	1783
2. WHO (OR WHAT) DO YOU KNOW WHO IS PLANNING TO USE IT	1784
IN THE NEAR FUTURE? LONGER RANGE FUTURE?	1785
	1786
I AM INTERESTED IN IT FOR SOME MEDICAL APPLICATION	1787
PROGRAMS WHICH WOULD INTERACT BETWEEN HAWAII	1788
(THE 11/40) AND THE SUMEX SYSTEM AT STANFORD.	1789
(3. DO YOU KNOW IF TTHE PROT. WILL BE ON THE	1790
SUMEX SYSTEM?)	1791
THE 11/40 WILL HAVE A SIMPLE I/O INTERFACE TO ANOTHER	1792
SMALL MINI WHICH RUNS ARPANET HOST-HOST PROTOCOL	1793
(HAWAII-ALOHA), AND WHICH COULD MEET THE HOST-PCP	1794
SPEC.	1795
REGARDS,	1796
DICK BINDER	1797
-----	1798
23-DEC-74 17:38:47,1623	1799

old sndmsg's

Date: 23 DEC 1974 1738=PST 1800

From: POSTEL 1801

Subject: regarding cryptic messages about protocol documents 1802

To: jmc at SU=AI 1803

cc: engelbart, postel 1804

1805

Appologies for the cryptic message i sent concerning Procedure Call 1806

Protocol Documents [RFC 674, NIC 31484], As you may know the 1807

Augmentation Research Center is working (with others) on IPT's 1808

National 1808

Software Works program. As part of our effort we have developed a set 1809

of 1809

procedure oriented protocols which we feel may be of use in other 1810

contexts as well. The intent of the unfortunately widely distributed 1811

message was to call attention to the availability of the documents 1812

describing this Procedure Call protocol. 1813

1814

The documents are available as online files both in the nls 1815

old sndmsg's

journal and as text files. The 4 page announcement cited in the earlier	1816
message is available via File Transfer Protocol at OFFICE-1 as file	1817
<NETINFO>RFC647.TXT	1817a
	1818
The actual documents describing the new protocol are	1819
available at SPI-ARC via FTP as files:	1820
<NLS>HOST.TXT	1820a
<NLS>PCP.TXT	1820b
<NLS>PSP.TXT	1820c
<NLS>PIP.TXT	1820d
<NLS>PMP.TXT	1820e
<NLS>PCPFMT.TXT	1820f
<NLS>PCPHST.TXT	1820g
<NLS>PCPFRK.TXT	1820h
<NLS>EXEC.TXT	1820i
<NLS>FILE.TXT	1820j
<NLS>BATCH.TXT	1820k

old sndmsg's

<NLS>RJE-MODEL.TXT	18201
<NLS>LLDEBUG.TXT	1820m
<NLS>TBH.TXT	1820n

1821

Note that one can pull files from either OFFICE-1 or SRI-ARC via FTP	1822
using the username ANONYMOUS and the password GUEST.	1823

1824

--jon.	1825
--------	------

[POSTEL at SRI-ARC]	1825a
---------------------	-------

-----	1826
-------	------

24-DEC-74 09:35:59,1214	1827
-------------------------	------

Date: 24 DEC 1974 0935-PST	1828
----------------------------	------

From: POSTEL	1829
--------------	------

Subject: Accessing Files at other Hosts	1830
---	------

To: triolo	1831
------------	------

cc: postel, watson	1832
--------------------	------

1833

Vic:	1834
------	------

old sndmsg's

```

In the absence of a running NSW we have to work a little in order to 1835
get a hold of files at other hosts, the scenario goes as follows: 1836
                                                                    1837
Assuming that you are in the exec at your home host, 1838
                                                                    1839

FTP          % start the FTP user program % 1840
---          % FTP says hello etc. % 1841
CONN OFFICE-1  % establish a connection to the 1842
              % place that has the file e.g. OFFICE-1 % 1842a
---          % Office=1 says hello % 1843
LOG ANONYMOUS GUEST  % tell office=1 a ftp username and password 1844
              % it likes (note that most tenexes will take 1844a
              % ANONYMOUS GUEST % 1844b
GET <NETINFO>RFC674.TXT  % get the distant file specifying the 1845
              %file name exactly % 1845a
(to) MYCOPY.TXT          % to local file with a name i want % 1846
---          % ftp says it is starting the transfer % 1847
<wait> 1848

```

old sndmsg's

```

---          % ftp says transfer completed %          1849
QUIT        % leave ftp                                1850
                                                    1851
                                                    1852

-i hope this helps FTP also has a help command and a ? lists
commands,                                           1853

--jon.                                             1854

-----                                             1855

24-DEC-74 10:24:43,788                             1856
Date: 24 DEC 1974 1024-PST                         1857
From: POSTEL                                       1858
Subject: Procedure Call Protocol                   1859

To:  BINDER at ISI                                1860
cc:  WHITE, POSTEL                                1861
                                                    1862

DICK:                                              1863

SRI-ARC is using the Procedure Call Protocol in the implementation
of the National Software Works. In this we will have PCP
implementations                                     1865
    
```

old sndmsg's

on TENEX and a large PDP 11/45. The eleven is large because there are 1866
 many things for it to do not because PCP is necessarily large, the 1867
 eleven will run the elf system. 1868

I think the SUMEX system is TENEX so there should not be much 1869
 difficulty in getting PCP running there but as far as i know they 1870
 have

not expressed any interest in PCP. The ISI COTCO project has 1871
 expressed interest in and plans to utilize PCP in their work. We 1872
 are encouraged by your interest and welcome your suggestions. 1873

--jon. 1874

----- 1875

24-DEC-74 10:31:51,8722 1876

Net mail from site OFFICE-1 rcvd at 24-DEC-74 10:31:42 1877

Date: 24 DEC 1974 1022-PDT 1878

From: CRAIN at OFFICE-1 1879

Subject: dialogue on bjp 1880

To: NSW-DISTRIBUTION; 1881

cc: av at 70 1882

old sndmsg's

1883

For those of you who havent been in on a series of messages(via Journal) between Jon Postel and myself, here is what has transpired so

1884

1885

far:

1886

+++++

1887

1 Jim and Jon,

1888

May I suggest that the "CRTJOB" procedure of the BJP

1888a

(Journal,24583,1:w) requires at least two and possibly three additional

1889

parameters.

1890

1891

1A PRIORITY- Most batch scheduling systems allow the user to specify

1891a

a Priority/Class/Queue or some other similiar term. Differences in

1891b

cost and resources available within the different classes are

1891c

usually significant. It is reasonable for us to expect that the user

1891d

will want to take advantage of a lower priced priority if he can

1891e

old sndmsg's

tolerate a slower turnaround, or conversely to want to be able to 1891f
 select a higher priced, quick turnaround class. There needs to be 1891g
 a
 way to specify this priority in the CRTJOB call. I would suggest a 1891h
 third input parameter: 1891i

priority = INTEGER 1891ii

1892

1A1 We should also recognize that some systems actually have a 1892a
 multiple priority scheme. The B4700, for example, has a separate 1892b
 specifyable priority for a job's being scheduled, receiving 1892c
 processing slices, and holding control of memory against other 1892d
 jobs when core is needed for a realtime job. However, I think it 1892e
 is probably acceptable to combine these three fields into one 1892f
 three digit integer 1892g

1893

1B PRE/CO-REQUISITE JOBS- It should also be recognized that one 1893a
 job
 may have as a prerequisite the successful completion of another 1893b
 (perhaps because it uses that job's output file for input). The 1893c

old sndmsg's

most obvious case is the execution of a program which must first
 be 1893d

compiled, but many other programs also require serial execution of 1893e

two or more jobs. A few also require parallel execution. 1893f

1894

1B1 We must certainly allow the user to generate a string of 1894a

jobs, each of which will be executed only if the previous one 1894b

went to normal completion. Thus there is an absolute requirement 1894c

for a Prerequisite field: 1894d

1895

1B1A <preq>- LIST ((%host#%INTEGER, %jobid%INTEGER)...) 1895a

1896

1B1B Initially we should probably administratively require 1896a

that any jobs linked in this way reside in the same machine, 1896b

but a multi-machine structure will probably someday become 1896c

quite desirable, and thus should be allowed for in the call. 1896d

1897

1B2 The need for a co-requisite parameter is not as clear-cut. 1897a

old sndmsg's

Giving two (or more) jobs the same prerequisite might suffice in 1897b
 a single machine environment. However, by the time a 1897c
 multi-machine environment is implemented, such a parameter might 1897d
 be necessary. This idea needs more exploration to determine 1897e
 whether it is a real need. 1897f

1898

2 /Larry Crain 1899

1900

1 JBP 16-DEC-74 19:26 24768 1901

RE: 31493 -- comments on BJP 1902

Message: Larry: 1903

Thanks for your comments, the ideas on priority can be easily 1904

incorporated, in the CRTJOB call. As for the Prerequisite job 1905

information, that seems to be something like job steps in the ibm 1906
 world.

Is there such a concept in the B3500,B4700 control language now? 1907

I think that we should be careful not to reconstruct the entire 1908

job control language in the crtjob call, perhaps even the priority is 1909

old sndmsg's

best handled in the job control language in the input files. 1910

Comments ? 1911

--jon. 1912

*****Note: [INFO=ONLY] ***** 1913

1914

1915

< CRAIN, BJP-REPLY,NLS;2, >, 24-DEC-74 09:25 LAC ;;;; 1916

1917

1918

Jon: 1919

1920

1 I think if pressured on the Priority field, i could probably be 1921

convinced to forget about it. As you say, priority can be handled 1922

within the JCL of about any machine which implements priority. Thus 1923

it

is machine specific, and even more important, requires no contact 1924

with

other hosts. 1925

1926

old sndmsg's

2 On the other hand i am going to be significantly more stubborn on the
1927
idea of Prerequisite jobs. As you say, this is not an uncommon idea
1928
in
the environment of single independant computers, the IBM jobstep is
1929
such a system, I think we must recognize, also, that to the user, NSW
1930
should "look like" such a large machine, not a network of several.
1931
Since the concept of a string of jobs is recognized as important (ie,
1932
it's implemented and used) in the current single machine environment,
1933
i
think that it should be available to the NSW User also, unless there
1934
are large technical problems to its implementation.
1935
1936

3 One example of how such a facility might be used is in the area of
1937
programming. Suppose I have written a program in Structured COBOL,
1938
and
now want to compile and test execute it. I might wish to do so by
1939
invoking the following batch steps:
1940
1941

3A 1. a Structured->Standard COBOL preprocessor, 1941a

old sndmsg's

	1942
3B 2, a source language instrumentation package (which instruments	1942a
the source code to trace execution through the control paths and	1942b
count how many times each path is taken, flagging any path not	1942c
exercised)	1942d
	1943
3C 3, Standard COBOL Compile and go	1943a
	1944
3D 4, A Listing->NLS file formatter	1944a
	1945
4 It can reasonably be expected that this job stream will execute on	
at	1946
least two machines (Steps 2 and 3 on a B4700, step 4 on a TENEX, step	
1	1947
on either or even a third machine-maybe RADC's Multics). It is	
clearly	1948
undesirable for the user to view this as three separate batch jobs,	1949
each of which he cannot call for until informed the previous one went	1950
to completion. That would involve at least three separate	1951

old sndmsg's

logins/queries of the status of the previous job. He should 1952
 (eventually) be able to specify a string of such batch jobs, and let 1953
 NSW worry about where and when to execute them. 1954
 1955

5 Now, that could be done by a little 'demon' setting in the NSW 1956
 works
 manager, but that would add complexityWM, not to mention unnecessary 1957
 work, for the WM. It is my opinion that a batch job should be 1958
 scheduled, and then not bother the WM until it is done. Clearly 1959
 having
 the WM controlling an unlimited number of batch job strings is not 1960
 consistent with what we had hoped would be its function. 1961
 1962

6 Next, let's assume for the moment that such a facility could 1963
 (technically) be implemented within the operating system of each 1964
 Batch
 TBH, This would imply rather massive surgery to cause the Batch 1965
 queuing
 mechanism to recognize the existance of NSW, and either query the WM 1966
 or the prerequisite host on the status of a prerequisite job. Again, 1967

old sndmsg's

possible (with great effort) but undesirable, 1968

1969

7 finally, let us consider the option of making prerequisites 1970
(including host- which will be necessary to completely specify JOBID
in 1971
a multi-computer system anyway) part of the CRTJOB call to the BJP.
In 1972
this case, a job with prerequisites is not put directly into the
hosts 1973
batch queue. Instead, it is put into a holding area. Periodically,
the 1974
BJP will query the Prerequisite host(s) for STATUS of the
prerequisite 1975
JOBID. If an "incomplete" reply is received, the job is left in 1976
storage. If a "complete=success" indication is received, the BJP 1977
retrieves the necessary files and schedules the job in the Batch
queue. 1978
If a "complete=unsuccessful" reply is received, the BJP deletes the 1979
job. Note that in this case, all following jobs in the string will
also 1980
be eventually deleted, as the next time BJP #(n+1) queries BJP#n, it 1981

old sndmsg's

will find the prerequisite job was completed unsuccessfully(by 1982
 deletion) and thus delete its job. Thus the deletions will ripple 1983
 through the string/tree of all jobs after the unsuccessful one, 1984
 cleaning up the slate. 1985

1986

8 As I mentioned in my first message, I don't feel Prerequisite jobs 1987
 on
 foreign hosts are required for the initial implementation. Indeed, it 1988
 would be possible to use JCL to implement prerequisites within any 1989
 single host. However, I feel strongly that if we dont make allowances 1990
 for such job linking, when we want to implement it across hosts= AND 1991
 I'M POSITIVE WE EVENTUALLY WILL if NSW is to realize its full 1992
 potential= It will be alot more difficult than if we recognize this 1993
 future requirement by reserving a field in the CRTJOB call at the 1994
 outset to support it. 1995

1996

9 /Larry 1997

1998

old sndmsg's

+-----+ 1999
 +-----+
 now that you all know where we are, comments? 2000
 /Larry 2001
 2002
 ps, for those of you at office-1, distribution lists for NSW-ALL, 2003
 NSW-PI
 (primary investigators), and NSW-STEERING (committee) are now 2004
 available
 under <CRAIN>whatever, DISTRIBUTION-LIST, 2005
 ----- 2006
 24-DEC-74 11:15:37,909 2007
 Date: 24 DEC 1974 1115-PST 2008
 From: POSTEL 2009
 Subject: Notice of Journal Distribution 2010
 To: DEUTSCH at PARC 2011
 cc: Lampson at PARC, TAFT at PARC, POSTEL 2012
 2013
 Yes, the note that the arc & office-1 journal sends to notify people 2014

old sndmsg's

for whom it has only a network (not local) address is obscure to
thoses 2015

who havent used the journal recently, we are trying to agree on a 2016

more informative message for use in the future. 2017

2018

in any case the files in question are available in text form 2019

at office-1 in the directory <NETINFO> with filenames RFCXXX.TXT
where 2020

xxx is replaced by the RFC number of the document cited. To pull the
files using FTP supply the user name NIGUEST and password ARPA to
the 2021

FTP-server at OFFICE-1. 2022

2023

The document in the recent obscure announcement is RFC 674. 2024

2025

A RFC that discusses how to pull files from the journal give an 2026

announcement such as you received is 629. 2027

2028

--jon, 2029

----- 2030

old sndmsg's

24-DEC-74 11:22:09,3470 2031

Net mail from site BBN-TENEX rcvd at 24-DEC-74 11:21:55 2032

Date: 24 DEC 1974 1414-EST 2033

From: ERWIN at BBN-TENEX 2034

Subject: RFC 663 2035

To: POSTEL at SRI-ARC 2036

cc: WALDEN, BURCHFIEL, CERF at ISI, MCKENZIE, TOMLINSON 2037

2038

I HAVE READ IT OVER ONCE BUT NOT STUDIED IT DEEPLY ENOUGH TO REALLY 2039

UNDERSTAND IT. NONETHELESS I HAVE SEVERAL REMARKS: 2040

1. I THINK THERE IS NO SERIOUS "LOST MESSAGE" PROBLEM IN THE 2041

CURRENT ARPA NETWORK. 2042

2043

2. THERE IS, I THINK, A GENERAL LACK OF ROBUSTNESS TO THE 2044

ARPA HOST/HOST PROTOCOL WHICH HAS CAUSED SOME PROBLEMS. E.G. THE 2045

INCREMENTAL ALLOCATE--I AM CONVINCED THAT THE MAJORITY OF THE 2046

"LOST ALLOCATE" TROUBLES SEEN ARE A RESULT OF HOST 2047

SOFTWARE BUGS OR HOST HARDWARE ARITHMATIC ERRORS. ED MEYER WAS 2048

old sndmsg's

WRONG IN RFC492 IN OPPOSING RESYNCHRONIZATION MECHANISMS BECAUSE 2049
THEY MASK UNDERLYING PROBLEMS; THE UNDERLYING PROBLEMS ARE INEVITABLE 2050
AND RESYNC MECHANISMS MUST EXIST; OF COURSE AN ATTEMPT 2051
SHOULD BE MADE TO MINIMIZE THE UNDERLYING PROBLEMS FOR EFFICIENCY 2052
REASONS; BUT NOTE, IF IT BECOMES MORE EFFICIENT TO RESYNC 2053
THAN PREVENT A PROBLEM THEN ONE SHOULD STOP TRYING TO PREVENT 2054
AND TO RESYNC, 2055
2056

3. THE BURCHFIELD/WALDEN RFC (I CANNOT REMEMBER ITS NUMBER) 2057
ON THE TIP/TENEX RELIABILITY PLAN (AN OUTGROWTH OF RFC 467) GIVES 2058
ONE LESS THAN PERFECT BUT HELPFUL WAY TO GET AROUND SOME OF 2059
HOST/HOST PROTOCOL'S LACK OF ROBUSTNESS, 2060
2061

4. KANODIA DOESN'T ADDRESS HIS OWN SECOND GOAL OF DETECTION 2062
OF ERRORS IN DATA, 2063
2064

5. KANODIA DOESN'T EXPLICITLY ADDRESS THE VERY SIGNIFICANT 2065
DIFFICIENCY OF HOST/HOST PROTOCOL IN THAT IT DOESN'T PERMIT 2066

old sndmsg's

SIMULTANEOUSLY MANY MESSAGES TO BE IN TRANSIT, 2067
2068
6. I DOUBT THAT KANODIA ADEQUATELY SOLVES THE PROBLEMS THAT 2069
ARISE WHEN HIS CONTROL MESSAGES THEMSELVES GET LOST, 2070
2071
CONCLUSION: 2072
2073
HOST/HOST PROTOCOL BASICALLY WORKS QUITE WELL--IT'S BEEN A LONG 2074
TIME SINCE I SAW A "HUNG CONNECTION" NOT ASSOCIATED WITH A HOST 2075
INTERRUPTION (NOW THAT THE TIP/TENEX RESYNC CODE IS IN)--I'VE 2076
NEVER FELT LOSING DATA WAS A PROBLEM--LOSS OF STATE INFORMATION 2077
WAS ALWAYS THE PROBLEM. 2078
2079
PEOPLE INTERESTED IN INCREASED ROBUSTNESS OF HOST/HOST PROTOCOL 2080
MIGHT CONSIDER IMPLEMENTING THE TIP/TENEX SCHEME AS THAT SEEMS TO 2081
HELP SOME AND 23 TIPS AND SOME NUMBER OF TENEXS ALREADY DO 2082
THIS. (I KNOW, I KNOW THAT WE'LL BE ACCUSED AGAIN THAT BBN IS 2083
TRYING TO FORCE SOMETHING ON THE WORLD THROUGH UNILATERAL 2084

old sndmsg's

ACTION.) IF YOU WOULD BE INTERESTED, I CAN DOCUMENT EXACTLY 2085
WHAT WE DO; IT IS A LITTLE DIFFERENT THAN ORIGINALLY PROPOSED, 2086
2087
DOING THINGS ON A MESSAGE BASIS RATHER THAN TRYING TO HANDLE 2088
AN INFINITE BIT STREAM IS A GOOD IDEA, 2089
2090
THOSE SEEKING MULTIPLE MESSAGES IN FLIGHT SIMULTANEOUSLY MIGHT 2091
CONSIDER KANODIA'S SCHEME BUT THEN IT WOULD HAVE TO BE MADE TO 2092
REALLY WORK. THIS MIGHT BE A GOOD APPROACH FOR SOMEONE TRYING 2093
TO MINIMIZE THE CHANGE TO THEIR NCP. IN ANY CASE, I THINK 2094
KANODIA'S CHANGE (LIKE THE TIP/TENEX CHANGE) SHOULD BE VOLUNTARY 2095
AND BACKWARD COMPATIBLE. KANODIA SEEMS TO AGREE WITH THIS, 2096
2097
ANYONE REALLY WANTING A BIG IMPROVEMENT OVER THE CURRENT HOST/HOST 2098
PROTOCOL WOULD DO WELL TO CONSIDER JUST DOING A DIFFERENT BETTER 2099
ONE. CERF'S TCP IS ONE CANDIDATE ALTHOUGH I SERIOUSLY DOUBT THAT 2100
IT IS RETRANSMISSION AND ALLOCATION MECHANISMS ARE POWERFUL AND 2101
FLEXIBLE ENOUGH. 2102

old sndmsg's

2103

HOPE THIS DISCUSSION HELPS--WHY DO YOU ASK?

2104

2105

REGARDS,

2106

2107

DAVE

2108

2109

P.S., IN POINT 2 ABOVE, I MEAN TO INCLUDE

2110

THE TIP AS ONE OF THE HOSTS

2111

WHICH SOMETIMES LOST STATE INFORMATION DUE TO BUGS.

2112

2113

2114

24-DEC-74 12:47:53,805

2115

Net mail from site SRI-ARC rcvd at 24-DEC-74 12:47:50

2116

Date: 24 DEC 1974 1247-PST

2117

From: POSTEL at SRI-ARC

2118

Subject: Batch Job Package & Muliti-host Jobs

2119

To: NSW-DISTRIBUTION;

2120

old sndmsg's

2121

Larry: 2122

2123

Our view of the Batch Job Package (BJP) is that it is the PCP 2124
interface

to one Batch Processing facility (BJF) such as the B4700, for the 2125
scenario you suggest (in your point 3) we would expect that a series 2126
of four jobs would be submitted to the set of BJFs through their 2127
individual BJPs by a "super-job-processor". The super-job-processor 2128
would be a tool in the NSW which could accept as input a 2129
nsw-job-control

language and schedule the job steps described there on the various 2130
real BJFs when the constraints and dependencies described in the nsw- 2131
job-control language are fulfilled, 2132

2133

--jon, 2134

----- 2135

27-DEC-74 10:06:43,1518 2136

Date: 27 DEC 1974 1006-PST 2137

old sndmsg's

From: ENGELBART 2138

Subject: To McCarthy re cryptic protocol-doc citation 2139

To: jmc at SU-AI 2140

cc: engelbart, postel 2141

2142

John: I looked into the situation regarding the confusing and 2143
 unwelcome citation (GJournal, 31484,) that you reported to me in your 2144
 20 Dec 74 message (my ref == MDEC74, L20-1327*McCarthy). 2145

2146

The problem turned out to be that Jon Postel was a bit over-eager in 2147
 distributing the newly developed NSW-protocol documentation, and used 2148
 the same direct means for sending to the wider populace (e.g. all 2149
 PI's)

that he had for the NWG types about the Net. The citation indeed was 2150
 cryptic and it didn't provide directly a contacting address for its 2151
 author. 2152

2153

For people who are regularly involved in the subject matter and in 2154
 the

old sndmsg's

mode of document-citation distribution that was used for the original 2155
announcemnt, the original form is workable enough, but would better
be 2156
less cryptic -- while for a person caught by surprise, such as you
were 2157
(and we heard from one other person also), it wasn't appropriate. We 2158
will try to be more careful in the form of notification used fo 2159
different categories of people. Sorry. 2160
2161
Jon has since produced an intermediate-stage announcement message that 2162
hopefully makes more sense to the uninitiated. I believe that you 2163
already will have received the new announcement; please let me know
if 2164
it's form and content seem reasonable to you. 2165
2166
Sorry for the inconvenience, John. 2167
2168
Regards, Doug 2169
2170

old sndmsg's

----- 2171

27-DEC-74 13:11:47,590 2172

Date: 27 DEC 1974 1311-PST 2173

From: POSTEL 2174

Subject: New PCP/NSW Documents 2175

To: Burchfiel at BBN, Schantz at BBN, BThomas at BBN 2176

cc: White, Watson, Postel 2177

2178

I would like to call your attention to two new PCP/NSW documents: 2179

PCPTNXINT - The PCP Tenex PCP Process Internal Structure 2180

FILE-APP - The File Package Appendix 2181

These documents are relevant to the tasks that BBN has been asked 2182

to participate in. 2183

The documents are being sent via US mail and are also available 2184

on-line at sri-arc as <NLS>PCPTNXINT.TXT and <NLS>FILE-APP.TXT. These 2185

are Text files. 2186

--jon. 2187

2188

old sndmsg's

----- 2189
 27-DEC-74 13:15:56,427 2190
 Date: 27 DEC 1974 1315-PST 2191
 From: POSTEL 2192
 Subject: PCP/NSW Documents 2193
 To: waal, triolo 2194
 cc: watson, white, postel 2195

2196
 Have you been reading and do you have any comments on the PCP/NSW 2197
 documents ? Especially the Batch Job Package ? My view of the program 2198
 you have to write in the front end is that on one side it implements 2199
 a batch job package and on the other it implements something Crain 2200
 specifies. 2201

--jon, 2202

----- 2203

27-DEC-74 15:30:53,402 2204
 Date: 27 DEC 1974 1530-PST 2205
 From: POSTEL 2206

old sndmsg's

Subject: RFCs	2207
To: burchfile at BBN	2208
cc: Schantz at BBN, BThomas at BBN, Johnson at BBN, postel	2209
	2210
I havent received any of the RFCs that you recently requested numbers	2211
for. Have they been sent out? Am i on the Mailing list ? In particular	2212
RFC numbers 667 (BThomas), 671 & 672 (Schantz), and 677 (Johnson), are	2213
the ones i am missing,	2214
--jon,	2215
-----	2216
1-JAN-75 02:32:47,1078	2217
Net mail from site BBN-TENEX rcvd at 1-JAN-75 02:32:44	2218
Date: 1 JAN 1975 0521-EST	2219
From: WALDEN at BBN-TENEX	2220
Subject: RFC 663	2221
To: PPOSTEL at SRI-ARC	2222
cc: WALDEN	2223

old sndmsg's

2224
JON, 2225
I'D GUESS DYNAMIC WAY FOR A NEW IMPLEMENTATION 2226
TO DETECT WHETHER IT IS TALKING TO ANOTHER NEW IMPLMENTATION 2227
WOULD BE A SIMPLE ADDITION 2228
TO TIP/TENEX SCHEME, WHY NOT JUST TRY SENDING 2229
MULTIPLE MESSAGES ON A CONNECTION LINK AT ONE TIME 2230
WITHOUT MAKING ANY CHANGES TO 2231
CURRENT PROTOCOL (EXCEPT VIOLATING 1 MESSAGE IN 2232
FLIGHT RULE) AND SEE IF IT WORKS 2233
GOOD ENOUGH ENOUGH OF THE TIME, THE TIP MAG TAPE 2234
DOES THIS INCLUDING SEQUENCE NUMBERS AT "USER" 2235
LEVEL, THEN IF TROUBLE IS DETECTED, 2236
THE TIP MAG TAPE BACK-SPACES A FILE OR A RECORD 2237
OR WHATEVER IS NECESSARY AND SENDS AGAIN (KNOWING 2238
NOTHING ABOUT HOW RECORDS FIT IN TO MESSAGES). 2239
WHEN THE TIP MAG TAPE DOES HAVE TROUBLE, IN FACT, 2240
IT CLOSES THE CONNECTIONS AND REOPENS THEM 2241

old sndmsg's

BEFORE CONTINUING, 2242

WE ROUTINELY GET GOOD THROUGHPUT THIS WAY, 2243

BY THE WAY, THE EXPANSION OF THE MESSAGE NUMBER 2244

WINDOW TO 8 SHOULD HAPPEN VERY SOON, 2245

DAVE 2246

----- 2247

2-JAN-75 11:43:15,371 2248

Date: 2 JAN 1975 1143-PST 2249

From: WATSON 2250

Subject: Terminals 2251

To: hardy 2252

cc: postel, watson 2253

2254

Martin, I promised Jon a TI for Home use last summer. He is now
 moved in so can utilize it. My own need has been building so would
 like to use this opportunity to have you order a couple TI's for us
 and get an extra phone installed at each place. Thanks Dick 2255

----- 2256

2-JAN-75 09:35:50,835 2257

old sndmsg's

Net mail from site SRI-ARC rcvd at 2-JAN-75 09:35:48 2258
 Date: 2 JAN 1975 0925-PST 2259
 From: POSTEL at SRI-ARC 2260
 Subject: Additional PCP & NSW Documents 2261
 To: NSW-DISTRIBUTION; 2262
 2263

This is to announce additional documents now available online at
 SRI-ARC 2264

The documents are: 2265

1) PCPTNXINT - Tenex PCP Process Internal Structure 2266
 2267

[SRI-ARC]<NLS>PCPTNXINT.TXT 2267a

2268

2) FILE-APP - The File Package Appendix 2269

[SRI-ARC]<NLS>FILE-APP.TXT 2269a

2270

3) RJE-MODEL - The NSW Remote Job Entry Model 2271

[SRI-ARC]<NLS>RJE-MODEL.TXT 2271a

old sndmsg's

	2272
4) TBH - NSW Requirements on Tool Bearing Hosts	2273
[SRI=ARC]<NLS>TBH.TXT	2273a
	2274
5) NVTP - The Network Virtual Terminal Package	2275
[SRI=ARC]<NLS>NVTP.TXT	2275a
	2276
	2277
As before these and the previous documents are TEXT file and may be	2278
pulled via FTP using the username ANONYMOUS and password GUEST.	2279
	2280
--jon.	2281
-----	2282
	2283
2-JAN-75 16:14:27,811	2284
Net mail from site SRI=ARC rcvd at 2-JAN-75 16:14:23	2285
Date: 2 JAN 1975 1614-PST	2286
From: POSTEL at SRI=ARC	2287

old sndmsg's

Subject: Protocol Information 2288

To: Mckenzie at BBN, Rettberg at BBN, Postel at SRI-ARC, 2289

To: Cerf at ISI, Cohen at ISIB, Mader at BBN, 2290

To: Padlipsky at MIT-MULTICS, Day at MIT-MULTICS, 2291

To: Braden at UCLA-CCN, Sproull at PARC, BThomas at BBN, 2292

To: Andrews at SRI-ARC 2293

2294

The Protocol Information file is being brought up to date. If you could 2295

look it over for errors and suggest additional information to be 2296

included i would be appreciative. Especially check the sections where 2297

you are listed as the "Contact". 2298

2299

The file is <POSTEL>PROTOCOL-INFORMATION.TXT at SRI-ARC 2300

2301

Files may be pulled from SRI-ARC via FTP using the username ANONYMOUS 2302

and the password GUEST. 2303

2304

old sndmsg's

--jon,	2305
-----	2306
2-JAN-75 16:34:59,2192	2307
Net mail from site BBN-TENEX rcvd at 2-JAN-75 16:34:54	2308
Date: 2 JAN 1975 1919-EST	2309
From: TOMLINSON at BBN-TENEX	2310
Subject: Release of TENEX Version 133	2311
To: TENEX-SITES:	2312
	2313
Version 133 of TENEX is now ready for distribution. The pertinent	2314
files are mainly found in the directory named 133-TENEX. You will	2315
find all monitor sources there plus a SOUP correction file (extension	2316
COR) for each file which has changed since the 132 distribution.	2317
Also to be found in that directory are prototype files for PARAMS	2318
and for LOD10X and CCL command file for loading a monitor. These	2319
latter files are very site dependent and no attempt has been made	2320
to indicate how to update them.	2321
	2322

old sndmsg's

We would like to encourage all sites to use SOUP to accomplish the 2323
update procedure. This will reduce network traffic and system 2324
load substantially and should greatly simplify the incorporation 2325
of site dependent changes into the new release. The 2326
best known working versions of the SOUP programs FED and CAM are 2327
to be found in [BBN]<SUBSYS>CAM.SAV and [BBN]<SUBSYS>FED.SAV. 2328
These are unmodified copies of programs that Ed Taft at PARC 2329
made to work obtained from PARC in mid-December 74. The file 2330
[BBN]<133-TENEX>133CAM.CMD is a command file used to generate all 2331
the .COR files. You might want to run a few TECO loops over this 2332
file to produce the command file you need to generate the merged 2333
correction file. 2334
2335
You will undoubtedly get indications of conflicts between our changes 2336
and yours. These will be mainly in the edit comments at the 2337
beginning
of each file. You resolve the conflicts by editing the resultant 2338
merged correction file. The DEC documentation explains how. 2339

old sndmsg's

	2340
Other files you will need are: [BBN]<EXEC>*,*. Older EXEC's	2341
will not work with the new monitor due to changes in account	2342
verification. Further documentation of the EXEC is to be found	2343
in the .NEWS file in that directory.	2344
	2345
Patches to the 133 release will be kept in the	
<133-TENEX>PATCHES.GRIPE	2346
file and a record of all messages sent concerning the 133 release	2347
will be found in <133-TENEX>133-MESSAGES.TXT.	2348
	2349
Pointers to further documentation will be included in a subsequent	2350
message.	2351
-----	2352
2-JAN-75 17:33:10,418	2353
Date: 2 JAN 1975 1733-PST	2354
From: WATSON	2355
Subject: Your RFC Draft	2356

old sndmsg's

To: oestreicher at ISIB 2357
 cc: postel 2358
 2359

Don, Jon is playing role of protocol czar among other things and it might be useful for you to run your draft RFC by him so that if there is any little thing that might be a stumbling block from his experience it can get caught now before it goes out as an RFC. He'll respond fast. Thanks Dick 2360

----- 2361

3-JAN-75 12:25:41,1939 2362

Net mail from site BBN-TENEX rcvd at 3-JAN-75 12:25:36 2363

Date: 3 JAN 1975 1524-EST 2364

From: MCKENZIE at BBN-TENEX 2365

Subject: "Protocol Information" 2366

To: postel at SRI-ARC 2367

cc: mckenzie 2368

2369

Jon, 2370

Several comments about the draft. 2371

2372

old sndmsg's

- 1) Perhaps the document should be reordered so that "official" 2373
 protocols, in decreasing order of importance, come first. The 2374
 document
 would then be more helpful to new entrants to the network. 2375
 2376
- 2) Perhaps the document should reference some of the other useful 2377
 on-line files; I am thinking particularly of 2378
 <netinfo>hosts.txt 2378a
 liaisons=sndmsg.txt 2378a1
 liaisons.txt 2378a2
 in (my estimate of) decreasing order of importance. 2379
 2380
- 3) I think you should add the following to the "documents" under 2381
 IMP=IMP/surface: 2382
 McQuillan, J.M. et.al. "Improvements in the Design and Perform- 2382a
 ance of the ARPA Network," AFIPS Conference Proceedings, 2382b
 41:741-754, FJCC 1972. 2382c
 2383

old sndmsg's

McQuillan, J.M., "Throughput in the ARPA Network -- Analysis and Measurement," BBN Report No. 2491 (text contained in BBN Quarterly Technical Report No. 16, available from the National Technical Information Service [NTIS] accession number AD754441) 2383a
 2383b
 2383c
 2383d
 2384

4) Under IMP=HOST/IMP=Host [Official]/Documents: 2385
 The most recent revision of BBN Report 1822 is "December 1974". 2386
 Since this revision contains all pertinent data from the other 2387
 three references, I would leave them out (or as a second choice, 2388
 leave out all but Burchfiels RFC). 2389
 2390

5) On page 18 of Your text file, just above the line 2391
 "RJE - Remote Job Entry" 2391a
 there is the text ".SNFShow=[1,2]" which I assume is a typo or 2392
 computer 2393
 error. 2394
 2394

6) Under RSEXEC/Recent Developments: 2395

old sndmsg's

(which is on page 20 of the text version) I suggest you say 2396
 "The TIPS and some RSEXEC servers are now cooperating to perform 2396a
 TIP user authentication and accounting functions." 2396b
 2397
 I hope this is helpful, or at least amusing. 2398
 Regards, 2399
 Alex 2400
 ----- 2401
 3-JAN-75 13:43:31,4921 2402
 Net mail from site BBN-TENEXA rcvd at 3-JAN-75 13:43:21 2403
 Date: 3 JAN 1975 1625-EST 2404
 From: HEDTLER at BBN-TENEXA 2405
 Subject: TENEX Advisory Committee Meeting #3, Agenda 2406
 To: 10X-ADVISORY-COMMITTEE;, TENEX-SITE-MANAGEMENT-LIAISONS; 2407
 cc: LICKLIDER at ISI, FIELDS at ISI, CARLSON at ISI, 2408
 cc: RUSSELL at ISI, KAHN at ISI, CARLSTROM at ISI, STUBBS at ISI, 2409
 cc: WALKER at ISI 2410
 2411

old sndmsg's

Gentlemen;

2412

2413

The meeting will convene on Thursday, January 9 at

2414

10 a.m. at the ARPA-IPTC office. (DaPlace to be discovered

2415

upon arrival at ARPA).

2416

2417

The agenda follows.

2418

2419

Regards,

2420

Bert Sutherland/

2421

by Gail Hedtler

2422

2423

2424

2425

2426

2427

TENEX Advisory Committee Meeting #3

2427a

2428

old sndmsg's

Agenda Items Submitted	2428a
	2429
1. ARPA's intended level of support to TENEX software development,	2430
	2431
2. Difficulty of getting DEC to be interested in problems with	2432
TENEX subsystem updates. BBN is not always up-to-date,	2432a
	2433
3. Methods of software updates to TENEX and subsystems. The	2434
current scheme of sending out all new sources is very wasteful	2434a
of personnel time in trying to discern the differences and fold	2434b
in the differences to site code,	2434c
	2435
4. Efficiency of TENEX. Interprocess communication speedup What	2436
should be done, and who should do it?	2436a
	2437
5. KL10 TENEX, is there going to be one? What will the specs look	2438
like? who will generate the specs?	2438a
	2439

old sndmsg's

6. Service site idea, what happened to it? 2440
2441
(These were submitted by Dan Lynch, SRI-AI) 2441a
2442
7. What will it cost to maintain TENEX in a professional way until
DEC offers an equivalent alternative? 2443
2443a
2444
8. What will it cost to have TENEX supported for the KI10 and KL10? 2445
2446
9. What financial arrangements are reasonable for providing for
this support? In particular, how can users planning a medium to
long-term commitment to TENEX be assured of reasonable upper
bounds on their annual maintenance charges for the duration of
the commitment? 2447
2447a
2447b
2447c
2447d
2448
(These were submitted by Bill Carlson) 2448a
2449
10. TENEX development schedule 2450

old sndmsg's

	2451
11. Policies of Network accounting program, and any TENEX impacts,	2452
	2453
12. Pie=slice allocation policies throughout net,	2454
	2455
13. TIP/TENEX interactions, Review,	2456
	2457
14. Hardware configuration control, hardware acquisition plans for	2458
'75. Any software implications?	2458a
	2459
(These were submitted by Bert Sutherland)	2459a
	2460
15. Please refer to the attached list of detailed comments	2461
generated by a TENEX user,	2461a
	2462
Page 2	2462a
	2463
	2464

old sndmsg's

	2465
	2465a
	2466
	2467
1. Control W doesn't erase a word in TECO,	2468
	2469
2. Interrogate doesn't give a list ordered like directory	2470
	2471
3. Archive file doesn't immediately take file out of directory;	2472
e.g. I keep having to pay for file storage until the Computer	2472a
Center happens to feel like running the archiver,	2472b
	2473
4. The archiver is not run nearly often enough, i.e. every day	2474
would be better,	2474a
	2475
5. MAILER sends queued mail in the wrong order.	2476
	2477
6. Control C doesn't work to break out of LOGIN messages.	2478

old sndmsg's

- | | |
|---|-----------------------|
| | 2479 |
| 7. There is no way to escape in Control C, i.e., control V before Control C doesn't work. | 2480
2480a
2481 |
| 8. There is a bottleneck waiting for the logging TTY on login and logout. | 2482
2482a
2483 |
| 9. * Doesn't work in the rename command. | 2484
2485 |
| 10. A user can't change his own file protection and directory protection defaults. | 2486
2486a
2487 |
| 11. User names can't include a space and commas, thus distorting peoples names. | 2488
2488a
2489 |
| 12. Systems A and C are both down for P.M. at the same time. | 2490
2491 |
| 13. Systems invariably return from P.M. late | 2492 |

old sndmsg's

- | | |
|--|-------|
| | 2493 |
| 14. Archive directory is stored in my file directory | 2494 |
| | 2495 |
| 15. Can type CR after enough of an EXEC command to recognize it; | 2496 |
| can't CR after enough of a SUBSYS name to recognize it; also, | 2496a |
| can't CR after enough of a file name to recognize it, | 2496b |
| | 2497 |
| 16. TENEX manuals are always way out of date, e.g., TENEX users | 2498 |
| guide was last updated almost 2 years ago, | 2498a |
| | 2499 |
| 17. Typing a CR after archive status gets a question mark; typing CR | 2500 |
| after interrogate gets *,*,;* | 2500a |
| | 2501 |
| 18. Typing escape in a file name does not recognize through the last | 2502 |
| character of the ambiguity, | 2502a |
| | 2503 |
| 19. I believe TENEX could greatly improve its public image by being | 2504 |
| a little more careful about the printing of login messages. It | 2504a |

old sndmsg's

2505

Page 3

2505a

2506

2507

2508

certainly appears ridiculous, for instance, for a new user 2508a

coming on the system to have to get 18 feet of old messages 2508b

since the system first was brought up (e.g., "no operator 2508c

coverage Christmas Day 1973"), or for a user who has been on 2508d

vacation for 3 weeks to have to get status reports on the days 2508e

of panic following the disk crash two weeks ago, or obsolete 2508f

announcements of TECO updates. 2508g

2509

This is the end of the message, 2510

----- 2511

4-JAN-75 10:52:38,385 2512

Date: 4 JAN 1975 1052-PST 2513

From: MILLSTEIN 2514

old sndmsg's

Subject: TBH AND TOOL REQUIREMENTS 2515
 To: POSTEL 2516
 cc: MILLSTEIN 2517

I JUST FINISHED READING TBH.TXT, I BELIEVE THAT WE ARE CONVERGING 2519
 (AT LEAST ASYMPTOTICALLY) ON A COMMON UNDERSTANDING OF THE 2520
 PROBLEM, I SUGGEST THAT YOU READ <MILLSTEIN>TOOLS,FILES AT YOUR 2521
 EARLIEST OPPORTUNITY. 2522

REGARDS, 2522a

BOB MILLSTEIN 2522a1

----- 2523

5-JAN-75 08:58:14,620 2524

Date: 5 JAN 1975 0858-PST 2525

From: MILLSTEIN 2526

Subject: CRTPRC 2527

To: POSTEL 2528

cc: MILLSTEIN 2529

2530

old sndmsg's

I AM IN GREAT NEED OF THE FORM OF THE NEW CRTPRC WHICH WILL HAVE 2531
ACCOUNTING AND AUTHORIZATION CODES AS ARGUMENTS. IN PARTICULAR, 2532
I WOULD LIKE TO HAVE A CODE RETURNED WHICH THE CREATED PROCESS 2533
ITSELF KNOWS SO THAT THE WM CAN VERIFY FUTURE WM CALLS FROM THE 2534
NEWLY CREATED PROCESS. I NEED THIS INFORMATION IN ORDER TO 2535
FINALIZE THE PROCEDURE CALLS WHICH WILL BE AVAILABLE TO TOOLS. 2536
COULD YOU PLEASE LET ME KNOW WHEN DOCUMENTATION ON THE NEW 2537
CRTPRC WILL BE AVAILABLE. 2538

REGARDS, 2538a

BOB MILLSTEIN 2538b

----- 2539

6-JAN-75 08:01:20,435 2540

Net mail from site USC-ISI rcvd at 6-JAN-75 08:01:19 2541

Date: 6 JAN 1975 0801-PST 2542

From: CRAIN at USC-ISI 2543

Subject: NSW DISTRIBUTION LISTS AT ISI 2544

To: NSW-DISTRIBUTION; 2545

2546

old sndmsg's

THERE ARE NOW AVAILABLE DISTRIBUTION LISTS FOR NSW AT ISI IN THE <NSW>	2547
DIRECTORY, FILE NAMES ARE:	2548
ALL,DISTRIBUTION=LIST EVERYONE	2549
PI,DISTRIBUTION=LIST PRIMARY INVESTIGATORS	2550
STEERING,DISTRIBUTION=LIST STEERING COMMITTEE	2551
/LARRY	2551a
-----	2552
6-JAN-75 08:46:47.637	2553
Date: 6 JAN 1975 0846=PST	2554
From: WATSON	2555
Subject: Misc Protocols	2556
To: postel, white	2557
	2558

You guys are really doing a great job on the Protocol work; I'm really pleased with the way things are going. One small concern though. I notice the fairly large amount of time you are having to spend with the NLS people and the question enters my mind of whether or not ADR or MCA may not also need some special attention? jAny thoughts? Also I will begin the draft of the next NSW Proposal. For Protocols I will take off from the last proposal and the recent

old sndmsg's

note to Crocker. Any further input would be appreciated. Thanks
 Dick 2559

----- 2560

6-JAN-75 14:36:03,1499 2561

Net mail from site BBN-TENEX rcvd at 6-JAN-75 14:35:59 2562

Date: 6 JAN 1975 1724=EST 2563

From: MCKENZIE at BBN-TENEX 2564

Subject: NTIS "AD" numbers for protocol documents 2565

To: feinler at SRI-ARC 2566

cc: postal at SRI-ARC, mckenzie 2567

2568

Jake, 2569

As you probably know, there is a piece of the government called the 2570

National Technical Information Service (NTIS). Us government 2571

contractors send them things like Technical Reports, papers, 2572

operating manuals, etc. and they distribute them, for a fee, to 2573

whoever discovers that they are there and asks for them. This 2574

morning I received an "NTIS Bibliograpy of Network Reports" and 2575

old sndmsg's

noticed that the Host/Host protocol document was on file at NTIS, 2576
 BBN has no record of sending it in (although I "wrote" it) so I 2577
 wondered if the NIC had sent it in. (It was apparently sent in 2578
 about March 1973.) If so, what other protocol documents may have 2579
 been submitted? This would be helpful to know, since one could 2580
 then reference the protocols by NTIS number rather than by NIC 2581
 number (now that the NIC isn't in the distribution business). In 2582
 fact, if we can't find any record of previous submission, I think 2583
 we will send in at least the TELNET and FTP documents ourselves, 2584
 so that we can tell people where to buy copies. So please let me 2585
 know if you can discover that these were already submitted, and 2586
 what the NTIS numbers are! 2587
 Jon, the NTIS accession number for the Host/Host Protocol document 2588
 (NIC 8246) is AD-757 680. 2589
 Regards, 2590
 Alex 2591
 ----- 2592
 6-JAN-75 15:36:39,1455 2593

old sndmsg's

Date: 6 JAN 1975 1536-PST 2594
 From: POSTEL 2595
 Subject: comments on tool, files & tbh requirements 2596
 To: warshall, millstein 2597
 cc: postel, white 2598

I find that in general we are in close agreement on how a tbh acts 2600
 with respect to tools and files. 2601

In the TBH Requirements paper i feel some how that the discussion of 2603
 reporting crisis conditions is out of place == a detail (albeit 2604
 important) stuck in an overview. 2605

The paragraph on accounting should not be parenthesised as if it were 2606
 an asside as this is a major concern, some systems will have 2607
 difficulty 2608
 returning accounting information in a useful form. 2609

On the Files document == 2610

old sndmsg's

2611

i t would be so nice if you could adopt the notation we have used for 2612
calling sequences and procedure definitions, not because it is good
or 2613
because we did it, but for consistency, Eg. 2614

 OPENFILE (username, attcode => localname, resultcode) 2614a

Argument/Result types: 2614b

 username - specifies a NSW filename 2614b1
 attcode - specifies an attribute code 2614b2
 localname - indicates the local filename 2614b3
 resultcode - indicates success or failure and if failure 2614b4
 the type of error. 2614b4a

2615

i take it that a "tool candidate" is a program someone wants to make 2616
into a tool. 2617

2618

letting the tool reference local files "temporaries" that are in fact 2619
data base or cumulative history files has implications on the privacy 2620

old sndmsg's

or security of the user, 2621
 2622
 --jon, 2623
 ----- 2624
 6-JAN-75 16:46:25,1137 2625
 Date: 6 JAN 1975 1646=PST 2626
 From: MILLSTEIN 2627
 Subject: WM PROCEDURE CALL SYNTAX 2628
 To: POSTEL, WHITE 2629
 cc: WARSHALL, MILLSTEIN 2630
 2631

TOOLS,FILES IS NOT AN OFFICIAL COMPASS DOCUMENT. IT IS INTENDED TO 2632
 DISSEMINATE OUR VIEWS ON TBH AND TOOL REQUIREMENTS AS OF A 2633
 PARTICULAR DATE. I EXPECT TO PRODUCE, WITHIN THE NEXT TWO WEEKS, 2634
 (MY CERVICAL SPINE PERMITTING) A DOCUMENT DESCRIBING A FAIRLY LARGE 2635
 SUBSET OF WM CALLS. I WILL BE ONLY TOO HAPPY TO ACCOMODATE THE SYNTAX 2636
 OF THOSE CALLS (AS DESCRIBED IN THE DOCUMENT) TO JON'S SUGGESTION. 2637
 2638

old sndmsg's

OF MORE SUBSTANCE--IF PH IS TO BE USED BY TOOLS AS A VARIABLE OF 2639
 CALL WHEN ASKING FOR WM PROCEDURES (AN ENTIRELY REASONABLE 2640
 SUGGESTION), THEN A FURTHER REQUIREMENT ON TOOLS IS THAT THEY 2641
 BE AWARE THAT THEY ARE CREATED PROCESSES OF THE WM, AND FURTHER 2642
 THAT THEY KNOW THE PH BY WHICH THE WM KNOWS THEM. 2643

THE ENTIRE ISSUE OF HOW A PROGRAM IS ENTERED INTO(?) 2644
 CONTAINS(?) PCP IS NOT CLEAR TO ME, EXCEPT IN THE SPECIAL 2645
 CASE OF PCPTNXINT, SOMEONE SHOULD EXAMINE THIS PROBLEM 2646
 FROM THE POINT OF VIEW OF OTHER TENEX PROGRAMS AS WELL AS OTHER TBHS. 2647
 2648

REGARDS, 2648a

BOB MILLSTEIN 2648b

----- 2649

7-JAN-75 10:11:37,492 2650

Date: 7 JAN 1975 1011-PST 2651

From: POSTEL 2652

subject: Mail systems 2653

To: watson 2654

old sndmsg's

cc: postel

Dick:

The report on mail systems design did not mention three topics that jim and i came up with:

1) one network transmission for all addressees at the same host

2) elimination of duplicate names in addressee lists (allows combining

distribution lists)

3) Standardize the text format as well as the header formats say using

the document formats proposed in rfc678.

--jon.

8-JAN-75 12:18:16,282

Net mail from site OFFICE=1 rcvd at 8-JAN-75 12:18:15

Date: 8 JAN 1975 1218-PDT

From: CARLSON at OFFICE=1

Subject: nv graphics terminal

2655
2656
2657
2658
2659
2660
2661
2661a
2662
2662a
2663
2664
2665
2666
2667
2668
2669

old sndmsg's

To: postel at SRI=ARC 2670

cc: carlson 2671

2672

Who is the best person to talk to about the network 2673

virtual graphics protocol? 2674

2675

bill 2676

----- 2677

8-JAN-75 15:35:35,1840 2678

Date: 8 JAN 1975 1535=PST 2679

From: WATSON 2680

subject: copy of what went out on vezza proposal forgot to list you
in it 2681

To: postel, white 2682

2683

Reply to Vezza Proposal 2684

2685

I think that the type of goals Al is trying to achieve are good, 2685a

old sndmsg's

however for several reasons I think we should go with Don's 2685b
 extensions to RFC 561 at this time, although I'm still not happy 2685c
 with the reference and numbering things. 2685d

2686

First of all for a short term system, which is what we are 2686a
 recommending, I think we want to have the minimum change. 2686b

2687

Second, the fact that it is difficult for a person to read what 2687a
 would get transmitted and requires a "pretty print" program is 2687b
 another short term drawback. 2687c

2688

Third Al indicates his proposal is a compromise between where we 2688a
 want to go and what is (I agree that it is). I think a compromise 2688b
 at this point is a mistake and we should as part of our medium 2688c
 term

to long term recommendations specify the right solution, to the 2688d
 best

of our present level of knowledge. 2688e

2689

old sndmsg's

Fourth, if you look at the data types that are specified, you see an 2689a

application specific set of data types that are handled in a general 2689b

way in a total environment in the PCP Protocol work. It is our 2689c

feeling that "right" mail protocols of the future should operate 2689d

within a PCP environment and the various types of functions proposed 2689e

by AI be PCP packages. We think PCP will be the basis for most new 2689f

protocol work in the future and offers many advantages to present 2689g

protocols based on Telnet etc. 2689h

2690

In conclusion I want to again emphasize my support for the 2690a

directions of AI's proposal, but feel strongly that the right 2690b

solution requires more thought for the longer term and should be 2690c

taken within the PCP context. Dick 2690d

2691

2692

9-JAN-75 17:26:16,522

2693

old sndmsg's

Date: 9 JAN 1975 1726-PST 2694
 From: IRBY 2695
 Subject: Guide for tool installers 2696
 To: carlson at ISI 2697
 cc: POSTEL 2698
 2699

Bill, Jon Postel told me that in a conversasion with you, you had mentioned tha my recent note answering questions from Steve Warshall should be reorganized to be a guide to installers of simple tools, especially using NVTP. I was answering questions from Warshall because I thought he was writing just such a document. If it turns out that he isn't, let me know and I will write it,

2700

--Charles,

2701

2702

10-JAN-75 11:54:32,1456

2703

Date: 10 JAN 1975 1154-PST

2704

From: POSTEL

2705

Subject: message to schantz

2706

To: postel

2707

2708

old sndmsg's

First i would lik to get online copies of these rfcs into a directory 2709
 at office 1, could you give me pointers to source files of the 2710
 documents
 either as documents or the runoff input ? 2711
 2712
 Now some comments: 2713
 2714
 On the multi site data collection: 2715
 This is a very good discussion of the problems and evaluation of 2715a
 the protocol possibilities, I urge you to send a copy to Steve 2715b
 Warshall at COMPASS if you havent already done so, His address is 2715c
 Massachusetts Computer Associates 2715c1
 26 Princess Street 2715c2
 Wakefield, Mass, 2715c3
 2716
 On reconnection 2717
 2718
 one thing i judge to be an error is that in three places you 2718a

old sndmsg's

define the positive acknowledgement of a reconnectoin step with
the 2718b

sequence <IAC><SE> i think that the sequences should be 2718c

<IAC><SB><RECONNECT><IAC><SE> at least and possibly should include 2718d

another byte <POSITIVE-ACK> after the <RECONNECT> byte, 2718e

Your aside on the limiting scope placed on reconnection by not 2718f

placing it at the host to host level brings to mind the original 2718g

reconnection proposal by Steve Crocker (see RFC 36), 2718h

2719

Over all i found the documents very readable and to the point, I am
a 2720

bit undecided on what happens next with regard to the reconnection 2721

protocol == are you suggesting that the protocol you present in 671 2722

should replace the existing telnet option ? 2723

2724

--jon, 2725

----- 2726

10-JAN-75 12:15:41,2099 2727

Date: 10 JAN 1975 1215=PST 2728

old sndmsg's

From: POSTEL 2729
Subject: telnet,typescript 2730
To: postel 2731

2732

2733

TELNET typescript file started at FRI 10 JAN 75 1155:25 2734

2735

#isi is complete.# 2736

Message slots are now being allocated, 2737

2738

2739

2740

2741

2742

Type LOG or GLOG; type OFFQUOTA for more information. 2743

2744

2745

2746

old sndmsg's

	2747
	2748
	2749
	2750
ISI-KA-TENEX 1.32.10, ISI-TENEX EXEC 1.51.4	2751
@LOG POSTEL 1000	2752
JOB 23 ON TTY16 10-JAN-75 11:54	2753
TENEX WILL GO DOWN THU 1-16-75 2345 TIL FRI 1-17-75 0500	2754
YOU HAVE A MESSAGE	2755
@RD	2756
	2757
TECO 1.29	2758
	2759
1672 CHARS	2760
1 10 JAN 1975 TREHAN NET FUTURE	2761
2 10 JAN 1975 RISOS NSW Host Protocol, Version 2	2762
TYPE MHS FOR HELP	2763
*1MTS	2764

old sndmsg's

Date: 10 JAN 1975 0603-PST 2765
 From: TREHAN 2766
 Subject: NET FUTURE 2767
 To: POSTEL 2768
 cc: TREHAN 2769

2770
 JON, WE GOT IT FROM RELIABLE SOURCE THAT THE NET WILL BE TAKEN OVER 2771
 BY DCA SOON, ARPA WILL CONTINUE USING IT AND IT WILL BE AVAILABLE 2772
 TO ARPA CONTRACTORS, DCA WILL TRY TO PUT UNCLASSIFIED APPLNS. 2773
 ON IT PRIMARILY USAF, DCA IS ALREADY MEETING WITH BBN AND IS 2774
 INTERESTED IN A DUPLICATE NCC HERE, ARPA WILL FOR SOME TIME HELP DCA 2775
 IN MANAGING THE NET . INTERNAL TRANSFERS FOR ARPA USE ARE NOT WORKED 2776
 OUT
 YET AND OUR WORK WILL ASSIST. THE EFFECT OF THE NET TRANSFER ON WWMCCS 2777
 IS NOT CLEAR YET, I HOPE THIS IS USEFUL TO YOU, PLEASE TREAT IT 2778
 DISCREETL
 **Y AND ANONYMOUSLY, WISHES, RANVIR 2779
 ----- 2780
 2781

old sndmsg's

*2MTs 2782
 Date: 10 JAN 1975 1046=PST 2783
 From: RISOS 2784
 Subject: NSW Host Protocol, Version 2 2785
 To: Postel 2786

The implications of the RFNM Policy are not clear to me. 2787a
 Even though the IMPs deliver messages in the order they receive 2788
 them, it is possible for messages to get out of order as a result 2789
 of the Retransmission policy, if more than one message is allowed 2790
 to be outstanding at a time on one connection. (1) Is the receiving 2791
 host expected to reorder messages by examining the sequence counter? 2792
 This requires the receiving host to maintain its own copy of the 2793
 sequence counter. Are the counters synchronized to zero when a 2794
 connecti 2794
 **on 2795
 is established? (2) It is not true that the RFNM Policy can be used 2796
 for interactions with non NSW hosts, because such hosts do not 2797

old sndmsg's

reorder messages.	2798
-----	2799
12-JAN-75 06:10:09,1371	2800
Net mail from site USC-ISI rcvd at 12-JAN-75 06:10:07	2801
Date: 12 JAN 1975 0605-PST	2802
From: CARLSON at USC-ISI	2803
Subject: NEW ADDRESS LISTS	2804
To: CROCKER at ISIB, BALZER at ISIB, POSTEL at SRI-ARC,	2805
To: CARLSON at ISI, LLOYD at ISI, BAGGIANO at ISI,	2806
To: MAYHAN at ISI, CRAIN at ISI, WATSON at SRI-ARC,	2807
To: WARSHALL at SRI-ARC, MILLSTEIN at SRI-ARC, WHITE at SRI-ARC,	2808
To: IRBY at SRI-ARC, STONE at OFFICE-1, WINGFIELD at OFFICE-1,	2809
To: RIDDLE at OFFICE-1, WEEKS at OFFICE-1, LAWRENCE at OFFICE-1,	2810
To: UHLIG at OFFICE-1, JACOBS at BBN, BURCHFIEL at BBN,	2811
To: THOMAS at BBN, SCHANTZ at BBN, WAAL at SRI-ARC,	2812
To: TRIOLO at SRI-ARC, SCHAFFNER at SRI-ARC, HOLG at ISIB,	2813
To: BRADEN at CCN, POGAN at MIT-MULTICS	2814
	2815

old sndmsg's

THERE ARE NEW ADDRESS LISTS IN MY DIRECTORY AT ISI:	2816
	2817
ALL-NSW (CONTAINS THE PEOPLE RECEIVING THIS MESSAGE)	2818
NSW-BATCH (THOSE PEOPLE INVOLVED IN INSTALLATION OF BATCH TOOLS)	2819
NSW-PI (FOCAL POINT AT EACH SITE)	2820
STEERING-COM (THE NSW STEERING COMMITTEE, UNCHANGED)	2821
	2822
NSW-BATCH CONTAINS:	2823
@SRI-ARC, WAAL, TRIOLO, WARSHALL, MILLSTEIN, POSTEL, WATSON, IRBY, @CCN, BRADEN, N, @ISIB, CROCKER, BALZER, HOLG, @ISI, CARLSON, CRAIN, LLOYD	2824
	2825
	2826
NSW-PI CONTAINS	2827
@SRI-ARC, WATSON, WARSHALL, WAAL, @BBN, BURCHFIEL	2828
, BRADEN@CCN, POGGRAN@MIT-MULTICS	2829
	2830
	2831
STEERING-COM CONTAINS:	2832

old sndmsg's

@ISI,CARLSON,LLOYD,CRAIN,BAGGIANO,@ISIB,CROCKER,BALZER,@OFFICE-1,WING FIELD,STONE	2833
,HOLG@ISIB	2834
-----	2835
	2836
12-JAN-75 06:43:15,1352	2837
Net mail from site USC-ISI rcvd at 12-JAN-75 06:43:13	2838
Date: 12 JAN 1975 0637-PST	2839
From: CARLSON at USC-ISI	2840
Subject: CONNECTION OF TERMINALS TO TOOLS	2841
To: POSTEL at SRI-ARC, WHITE at SRI-ARC	2842
cc: WATSON at SRI-ARC, WARSHALL at SRI-ARC, WAAL at SRI-ARC,	2843
cc: BURCHFIEL at BBN, BRADEN at CCN, POGAN at MIT-MULTICS,	2844
cc: CARLSON at ISI, LLOYD at ISI, CRAIN at ISI, BAGGIANO at ISI,	2845
cc: CROCKER at ISIB, BALZER at ISIB, WINGFIELD at OFFICE-1,	2846
cc: STONE at OFFICE-1, HOLG at ISIB	2847
	2848
	2849

old sndmsg's

I HAVE BEEN READING THE DOCUMENT ON THE NETWORK VIRTUAL TERMINAL 2850
PACKAGE AND FIND THAT IT DOES NOT REALLY ADDRESS SOME FUNDAMENTAL 2851
DESIGN ISSUES, TELNET HAS BEEN AROUND FOR A LONG ENOUGH PERIOD OF 2852
TIME THAT IT HAS BEEN TIGHTLY INTEGRATED INTO THE OPERATING SYSTEM 2853
OF MANY NETWORK HOSTS, WE MUST ALSO ACCEPT THAT INITIALLY THE 2854
TOOL BEARING HOSTS MUST SUPPORT NON-NSW USERS, THUS, WE SEEM TO 2855
BE CREATING A DATA PATH FOR TERMINAL MESSAGES WHICH IS IN PARALLEL 2856
WITH TELNET AND IS LESS EFFICIENT, IT IS CERTAIN TO CAUSE MAINTENANCE 2857
HEADACHES FOR TENEX AND ELF(WHICH MUST BE BUILT TO SUPPORT NON-NSW 2858
USERS. 2859

2860

PLEASE SEND A BRIEF NOTE INDICATING WHY TERMINALS CANNOT BE CONNECTED 2861
TO NSW TOOLS VIA TELNET, IT SHOULD GO TO EVERYONE COPIED ON THIS 2862
MESSAGE AND I WOULD LIKE THEIR COMMENTS ON THE VALIDITY OF THE 2863
ARGUMENTS. 2864

2865

2866

THANKS, 2867

old sndmsg's

BILL 2868
----- 2869
2870
12-JAN-75 13:01:43,6251 2871
Net mail from site OFFICE-1 rcvd at 12-JAN-75 13:01:38 2872
Date: 12 JAN 1975 1136-PDT 2873
From: CARLSON at OFFICE-1 2874
Subject: batch tools 2875
To: WAAL at SRI-ARC, TRIOLO at SRI-ARC, WARSHALL at SRI-ARC, 2876
To: MILLSTEIN at SRI-ARC, POSTEL at SRI-ARC, WATSON at SRI-ARC, 2877
To: IRBY at SRI-ARC, BRADEN at CCN, carlson at ISI, 2878
To: crain at ISI, lloyd at ISI, crocker at ISI, balzer at ISI, 2879
To: holg at ISI 2880
cc: pogram at MIT-MULTICS 2881
2882
< CARLSON, BATCH=TOOLS.NLS;2, >, 12-JAN-75 11:26 WEC ;;;; 2883
I have a simplified model of batch tools which I use to make
decision. 2884

old sndmsg's

Plase evaluate the model and, by 16 Jan 75, send a message indicating 2885
 agreement or identify pitfalls in the model by describing scenarios 2886
 where it fails, and propose SIMPLE revisions which resolve the 2887
 pitfalls

A batch job cannot communicate with the user during execution. 2888

Background jobs on Multics or other time-sharing systems qualify as 2889
 batch jobs. 2890

The following classes of batch jobs are of interest: 2891

Predefined NSW Tools: allow a user talking to the Works Manager to 2891a
 say the logical equivalent of "execute TESTDATA using CRITERIA as 2891b
 input and producing MONTHLY as output." CRITERIA and MONTHLY are 2891c
 NSW

fills. Optionally, the user might specify a host, ie "execute 2891d
 TESTDATA at UCLA91". 2891e

The WM will know whether the TBH requires all files to be 2891e1
 resident before a batch job is submitted, or if it supports 2891e2
 delayed staging off files. If files must be prestaged, the WM 2891e3
 will move or create the files and remember the local names. 2891e4
 The WM will know the local name of the tool. It will send a 2891e5

old sndmsg's

message to the TBH of the form "run Local-Tool-Name on 2891e6
Local-File-1, Local-File-2, NSW-File-3 producing Local-File-4
and 2891e7
NSW-File-5 using TEXT-ARG-1,TEXT-ARG-2." If the TBH does not 2891e8
support delayed staging, then of course there will be no NSW 2891e9
files in the list. Note that since this message is in an NSW 2891e10
format, we should easily be able to mark local file names, NSW 2891e11
file names, and textual arguments, 2891e12
One implementation (not only one) would have the local tool
name 2891e13
be a text file or catalogued procedure. The Foreman component
in 2891e14
the TBH would ask the WORKS MANAGER for a correct local name 2891e15
corresponding to each NSW Filename (if there is delayed staging
2891e16
of files). The local filenames and the textual arguments would
be 2891e17
substituted into the control file, which would be given to the 2891e18
standard scheduler to be executed at its convenience. The only 2891e19
uses I have thought of for textual arguments thus far are run 2891e20
time parameters like core size, time limit, priority, etc. 2891e21

old sndmsg's

The TBH must provide the WM with a job ID. The WM must be able
to 2891e22

get job status information for a given JOBID. 2891e23

The TBH must signal the WM whenever a job terminates. 2891e24

RESPONSIBILITIES 2891e25

COMPASS= define language for invoking tools(the WM command 2891e25a
language), provide tool for defining other tools to the WM 2891e25b
(CML is part of it, but I don't think all of it), Provide a
document telling how to define tools. It must identify 2891e25c
options with regard to numbers and attributes of input & 2891e25d
output files, checking of textual arguments, optional files,
warranties, etc. 2891e25f
2891e25g

TBH Installer= provide a mechanism for accepting WM messages
and invoking tools, Create ident/jobid/account card with 2891e25h
info 2891e25i

sent by WM, provide for status probing, signal WM when tools
complete, provide a reasonable way to send output reports 2891e25j
onto 2891e25k

the ARPANET, Provide a document telling how to install 2891e25l

old sndmsg's

additional tools on that machine, 2891e25m

General Issue: How does the WM know how much space to allocate 2891e25n

for output files? COMPASS to take responsibility for 2891e25o

formulating and documenting some reasonable answer, 2891e25p

Sequences of NSW Batch Tools: One can envision jobs consisting of 2891f

several "standard" NSW batch tools to be run in succession on the 2891g

same TBH. On many hosts, the scheduling algorithm will make it 2891h

advantages to have the sequence lumped into a multi-activity job. 2891i

Yet the WM should know when each activity completes, and have some 2891j

options with regard to file disposition and conditional tool 2891k

invokation, Passing files between activities may also necessitate 2891l

control stream changes. 2891m

Responsibilities: UCLA should take the lead in resolving these 2891m1

issues, with inputs from COMPASS and all TBH installers. 2891m2

"perfect" Batch Control Streams: contain only local file names. We 2891n

want to discourage these in the NSW, but must provide the 2891o

capability

so users don't have to leave the NSW just to type in a few simple 2891p

old sndmsg's

control cards and run a batch job on their own machine. All the
 TBH 2891q

must do is append the ident/jobid/account into to the control
 stream 2891r

and retrieve status and output. 2891s

Responsibilities: 2891s1

COMPASS: WM must accept a command like "run file at place"n,
 2891s1a
 move the file, signal TBH to invoke it 2891s1b

TBH Installer: responsible for start-up, status and output 2891s1c
 reporting. 2891s1d

Batch Control Streams Containing NSW Filenames: the user builds a 2891t
 job control stream ready to run, except he wants to refer to files 2891u
 by NSW names. In general case, would also want to be able to defer 2891v
 file movement(not this year). Solution to delayed staging of files 2891w
 should use same TBH features as for predefined NSW Tools. 2891x

Responsibility 2891x1

SRI: build an interactive tool which works on typewriter 2891x1a
 terminals as well as displays and replaces NSW filenames
 with 2891x1b

old sndmsg's

LOCAL names. Eventually, will instead simply identify some of
 of 2891x1c
 the names as NSW names and will also be able to handle 2891x1d
 priority etc. After the substitutions are complete, the tool
 2891x1e
 will invoke the WM to initiate the job 2891x1f
 COMPASS and TBH Insjallers are responsible for providing the
 2891x1g
 same capabilities as for "perfect" batch control streams and
 2891x1h
 (eventually) as for NSW defined tools. 2891x1i

2892

2893

2894

2895

2896

2897

2898

2899

2900

2901

13-JAN-75 08:00:02,1616

Net mail from site BBN-TENEXA rcvd at 13-JAN-75 07:59:59

Date: 13 JAN 1975 1054-EST

From: SCHANTZ at BBN-TENEXA

Subject: RFCs

To: Postel at SRI=ARC

old sndmsg's

Jon: 2902

The RFCs exist in document form on both system A & C as: 2903

[BBN]<schantz>rfc671.doc 2904

[BBN]<schantz>rfc672.doc 2905

or 2905a

[BBNA]<schantz>rfc671.doc 2906

[BBNA]<schantz>rfc672.doc 2907

Please let me know whether you have access to them there, and if so 2908

when you've got them so I can give them a permanent home. 2909

2910

With regard to your comments on reconnection: 2911

1)By using <IAC><SE> as a positive acknowledgement, I was really 2912

arguing that there should be a reply, more than trying to specify 2913

what

the reply would consist of. The reason I chose <IAC><SE> was that 2914

first it was simple to parse, and second it lent itself to the notion 2915

of

finality with respect to messages over this connection (which is now 2916

to

old sndmsg's

be closed). Your point is well taken, though, and perhaps should be 2917
uniformly applied to all subnegotiations that may require 2918
acknowledgement, 2919

2)I am proposing that the protocol in 671 become~ the new telnet 2920
reconnection option standard (with the possible exception of the 2921
<iac><SE> changes you mentioned. This should cause no major problem 2922
since it is based upon the existing protocol (mostly additions, some 2923
modifications), and since our Telnet surveys indicate that no one has 2924
implemented the option anyway, 2925

3)I am not familiar with the contents of RFC 36 (Crocker 2926
reconnection),

but will read it now to determine its relevance, 2927

2928

2929

I'd like to thank you for taking the time to comment on the 2930
documents,

2931

-- Rick 2932

old sndmsg's

----- 2933
 13-JAN-75 12:24:23,2029 2934
 Date: 13 JAN 1975 1224-PST 2935
 From: WHITE 2936
 Subject: Documentation for TBH Implementers 2937
 To: warshall 2938
 cc: postel 2939

Steve-- Sorry that your request of 2-JAN fell through the cracks, 2941
 Here's the reply; hope it isn't too late. --Jim 2942

2943
 Documents of interest to TBH/Tool Implementers 2944
 System structure overview 2944a
 "NSWSTRUC 2 / NSW Process Structure" 2944a1
 (JEW 10-JAN-75 -- 25009,) 2944a2
 Protocols that a TBH must implement 2944b
 General 2944b1
 "Requirements on Tool Bearing Hosts" 2944b1a

old sndmsg's

(JBP 4-DEC-74 -- 24656,)	2944b1b
"NSW Host Protocol"	2944b1c
(JBP 22-NOV-74 -- 24581,)	2944b1d
"NTP 2 / The NSW Tool Package"	2944b1e
(JEW 10-JAN-75 -- 25008,)	2944b1f
PCP	2944b1g
"PCP 2 / The Procedure Call Protocol"	2944b1g1
(JEW 22-NOV-74 -- 24459,)	2944b1g2
"PIP 2 / The Procedure Interface Package"	2944b1g3
(JEW 22-NOV-74 -- 24460,)	2944b1g4
"PSP 2 / The PCP Support Package"	2944b1g5
(JEW 22-NOV-74 -- 24461,)	2944b1g6
"PMP 2 / The Process Management Package"	2944b1g7
(JEW 22-NOV-74 -- 24462,)	2944b1g8
"PCPV2CHANGES / PCP Inter-Version (2-3) Documentation"	2944b1g9
(JEW 10-JAN-75 -- 25062,)	2944b1g10
"PCPHST 2 / PCP ARPANET Inter-Host IPC Implementation"	2944b1g11
(JEW 22-NOV-74 -- 24577,)	2944b1g12

old sndmsg's

"PCPFMT 2 / PCP data Structure Formats"	2944b1913
(JEW 22-NOV-74 -- 24576,)	2944b1914
Tools that use files	2944b2
"The File Package"	2944b2a
(JBP 22-NOV-74 -- 24582,)	2944b2b
"File Package Appendix"	2944b2c
(JBP 24-DEC-74 -- 24813,)	2944b2d
RJE tool	2944b3
"The NSW Remote Job Entry Model"	2944b3a
(JBP 4-DEC-74 -- 24655,)	2944b3b
"The Batch Job Package"	2944b3c
(JBP 22-NOV-74 -- 24583,)	2944b3d
Tenex TBHs	2944b4
"PCPFRK 2 / PCP Tenex Inter-Fork IPC Implementation"	2944b4a
(JEW 22-NOV-74 -- 24578,)	2944b4b
"PCPTNXINT 2 / Tenex PCP Process Internal Structure"	2944b4c
(JEW 20-DEC-74 -- 24792,)	2944b4d
Supporting uninstalled tools	2944c

old sndmsg's

"NVTP -- The Network Virtual Terminal Package" 2944c1

(JBP 26-DEC-74 -- 24827,) 2944c2

----- 2945

13-JAN-75 16:57:47,11591 2946

Net mail from site ISIB rcvd at 13-JAN-75 16:57:12 2947

Date: 13 JAN 1975 1701-PST 2948

From: DESTREICHER at USC-ISIB 2949

Subject: EXTENSIONS TO RFC561 2950

To: MESSAGE-SERVICE-COMMITTEE: 2951

cc: DCROCKER at ISI, POSTEL at ARC 2952

2953

ATTN: PTK 2954

This is the latest (possibly final) version of the new net 2955

message standards document. I believe that this answers 2956

most problems rasied by the various message committee 2957

coordinators, with the obvious exception of Al Vezza. 2958

2959

In line with the majority this document is the next epsilon 2960

old sndmsg's

step beyond the present set of standards (RFC561) which is 2961
not yet universally honored across the net. I feel 2962
obligated to list some of the assumptions upon which this 2963
document was based. 2964

2965
First, we hoped to move forward with the minimum 2966
perturbation to existing software services. We have not 2967
made the large step of requiring special support programs at 2968
every site. (e.g. we are still using the FTP mail 2969
protocol). We have also avoided deep structure within the 2970
message definition, and invisible fields. 2971

2972
Where do we go from here? First there should be a strong 2973
suggestion for a mail protocol committee, to design a 2974
protocol more in line with the needs and aspirations of the 2975
system builders of the second generation mail systems. I am 2976
sure we all appreciate the limitations of the enclosed 2977
document, but a full new, complete protocol is not something 2978

old sndmsg's

which I believe we can produce this month. There are 2979
 several deep issues involved, and possibly several companion 2980
 protocols and servers which must also be specified, 2981

Second, we should go ahead with the enclosed suggested 2982
 changes, (and any locally supported other additions) and 2983
 build up our experience base towards providing better 2984
 service to users now and in the future, 2985
 2986

Page 2

2987
 2987a
 2988
 2989
 2990
 TO: ARPA Message Service Designers 2991
 CC: ARPA IPT Office, NIC Journal 2992
 BCC: ARPA Message Service Committee 2993
 FROM: ARPA Message Service Committee 2994
 BY: Oestreicher 2995

old sndmsg's

SUBJECT: Extensions to RFC 561 2996
 REFERENCES: <[NIC]RFC 561> 2997
 MESSAGE ID: <[ISIB]<OESTREICHER>MESSAGE-FIELDS.TXT> 2998

2999
 3000
 3001
 3002
 3003
 3004
 3005
 3006
 3007
 3008
 3009
 3010

This document defines a number of message fields beyond those discussed in RFC 561. The overall message format is compatible with RFC 561; it makes extensive use of the miscellaneous fields defined within RFC 561. The purpose of this document is to establish ARPANET standards with regard to the syntax and semantics for these additional fields. It is fully expected that all fields discussed within will not be automatically processed by all Message Servers, however the standard is necessary so that sites which wish to make use of these fields have a standard to work with.

3011
 3012
 3013

This document attempts to tread the narrow line between features for people processing and features for machine processing. The general feeling is that the fields listed

old sndmsg's

are useful to people even if automatic processing is not 3014
 supplied. In most cases, machine readable notations have 3015
 been enclosed in angle brackets (<>) to make for easy 3016
 non-ambiguous ways for automatic processes to know whether 3017
 and where to look in any field. The entire specification 3018
 has been made excessively general to allow for 3019
 experimentation. Future documents based on experience will 3020
 try to be more specific. This is simply the next step 3021
 following <[NIC]RFC 561>. 3022

3023
 This document is contained in two sections. Section I 3024
 contains the relevant parts of RFC 561 which define the 3025
 basic message syntax. Section II lists the new (and 3026
 existing) header fields together with their proposed uses. 3027

3028
 SECTION I: BASIC MESSAGE SYNTAX 3028a

3029
 <mailtext> ::= <header> <CRLF> <message> 3030

old sndmsg's

<header>	::= <headeritem> ! <headeritem> <header>	3031
<headeritem>	::= <item> <CRLF>	3032
<item>	::= <authoritem> ! <dateitem> !	3033
<subjectitem>	! <miscitem>	3033a
<authoritem>	::= FROM: <SP> <user> <SP> AT <SP> <host>	3034
<dateitem>	::= DATE: <SP> <date> <SP> <time> - <zone>	3035
<subjectitem>	::= SUBJECT: <SP> <line>	3036
<miscitem>	::= <keyword> : <SP> <line>	3037
<date>	::= <vdate> ! <tdate>	3038
<vdate>	::= <dayofmonth> <SP> <vmonth> <SP> <vyear>	3039
<tdate>	::= <tmonth> / <dayofmonth> / <tyear>	3040
<dayofmonth>	::= one or two decimal digits	3041
		3042
Page 3		3042a
		3043
		3044
		3045
<vmonth>	::= JAN ! FEB ! MAR ! APR ! MAY ! JUN !	3046

old sndmsg's

JUL AUG SEP OCT NOV DEC	3046a
<tmmonth> ::= one or two decimal digits	3047
<vyear> ::= four decimal digits	3048
<tyear> ::= two decimal digits	3049
<zone> ::= EST EDT CST CDT MST MDT	3050
PST PDT GMT GDT	3050a
<time> ::= four decimal digits	3051
<user> ::= <word>	3052
<host> ::= a standard host name	3053
<message> ::= <line> <CRLF> <line> <CRLF> <message>	3054
<keyword> ::= <word>	3055
<line> ::= a string containing any of the 128 ASCII	3056
characters except CR and LF	3056a
<word> ::= a string containing any of the 128 ASCII	3057
characters except CR, LF, and SP	3057a
<CRLF> ::= CR LF	3058
<SP> ::= space	3059
	3060

old sndmsg's

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 proceed 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.

3061

3062

3063

3063a

3063b

3063c

3063d

3064

3065

3065a

3065b

3065c

3065d

3065e

3065f

3066

3067

3067a

old sndmsg's

- 3068
- (4) The time has no internal punctuation. 3069
- 3070
- (5) No provision is made for multiple authors. 3071
- 3072

Page 4

3072a

3073

3074

3075

SECTION II: MESSAGE HEADER FIELDS

3075a

3076

A. ORIGINATOR SPECIFICATION FIELDS

3077

3078

FROM

3079

This field contains the identity of the person who wished 3080
 this message to be sent. This is expected to be field which 3081
 may be specified by the user, if the message is being 3082
 entered by one person for another. The message creation 3083

old sndmsg's

process defaults this to be the user entering the message, 3084
[The usage for FROM and BY differs from that of RFC561.] 3085
3086
BY 3087
This field contains the identity of the person who entered 3088
the message. This field is expected to be set by the message 3089
creation process automatically. It is possibly that some 3090
sites will not include this in external communications. 3091
3092
AUTHENTICATION 3093
This field contains a description of which the above two 3094
fields have been verified (if any) and by which operating 3095
system. This field should be created by message 3096
transmission processes. 3097
3098
It is expected that current systems will only to be able to 3099
authenticate the BY field, however later systems might have 3100
mechanisms to verify that the FROM actually authorized the 3101

old sndmsg's

BY to act on his/her behalf. It is expected that when the 3102
 FROM is authenticated, the BY will no longer be necessary 3103
 for external distribution. 3104

3105

B. REFERENCE SPECIFICATION FIELDS 3106

3107

MESSAGE ID 3108

The contents of this field contains a unique identifier to 3109
 refer to this message. The format for a message identifier 3110
 is: 3111

[Net Address]Text String CRLF 3111a

Examples: 3112

[ISIB]DEC-7-74.14:23:45 3112a

[ARC]QJOURNAL 39273 3112b

3113

The uniqueness of the message identifier is guaranteed by 3114
 each net-address message processor making the text which 3115
 follows the net-address unique for that net address. This 3116

old sndmsg's

together with the net-address will guarantee the uniqueness 3117
 across the net. N.B. The specification specifically says 3118
 net-address and not site name. This would allow BBN (for 3119
 instance) to allocate unique identifiers over all four 3120
 machines, which may be addressed as BBN within the message 3121
 system, thus producing a more integrated service for their 3122
 users. 3123

Page 5

3124a
 3125
 3126
 3127
 The text following the net-address is not defined here, as 3128
 the problems associated with this specification are too 3129
 great at this time. However, the net-address should allow 3130
 automatic processes to determine if they can deal 3131
 intelligently with the following text. Several types of 3132
 automatic processing by the local message reader are thus 3133

old sndmsg's

possible: 1) If the site uses a filing mechanism known to 3134
 the reader, the reader can retrieve the message, 2) If the 3135
 site supports remote message access (protocol not currently 3136
 defined), the message id can be passed to the remote site 3137
 and the message can be thus retrieved by the reader, 3) 3138
 Finally, if the message has been filed in the data computer 3139
 (using the entire message id [including net-address] as the 3140
 handle), the reader can retrieve it from the data computer, 3141

3142

REPLY TO

3143

The contents of this field identify previous correspondences 3144
 to which this message answers. If message identifiers are 3145
 used in this field they should be enclosed in angle brackets 3146
 (<>). 3147

3148

REFERENCES

3149

The contents of this field identifies other correspondences 3150
 to which this message references. If message identifiers 3151

old sndmsg's

are used they should be enclosed in angle brackets (<>), 3152

3153

KEYWORDS 3154

The contents of this field contains keywords or phrases from 3155

the message separated by commas, 3156

3157

C. RECEIVER SPECIFICATION FIELDS 3158

3159

TO 3160

This field contains the identity of the primary receivers of 3161

this message. 3162

3163

CC 3164

This field contains the identity of the secondary receivers 3165

of the message. 3166

3167

BCC 3168

This field contains the identity of the tertiary receivers 3169

old sndmsg's

of the message. This field should not be made available to 3170
 the primary and secondary receivers, but may be archived to 3171
 provide information for access control. 3172

3173

D. MESSAGE TYPE SPECIFICATION FIELDS 3174

3175

PRECEDENCE 3176

This field describes the importance and urgency of the 3177

message. Machine readable notations will be enclosed in 3178

angle brackets (<>). <PRIORITY> means that the message 3179

should be delivered as soon as possible. <ROUTINE> means 3180

3181

Page 6 3181a

3182

3183

3184

that Priority processing is not necessary. Plain text may 3185

also be included in this field. 3186

old sndmsg's

	3187
MESSAGE CLASS	3188
This field describes the "legal" status of the message.	3189
Examples: Official, Unofficial, Record, Off the Record, Junk	3190
Mails. No automatic processing of this field is immediately	3191
expected. Certain message creation processes might always	3192
insert:	3193
MESSAGE CLASS: Unofficial ARPANET Message	3194
for example.	3195
	3196
SPECIAL HANDLING	3197
This field contains any special instructions with regard to	3198
the handling of the message at the receivers end. Machine	3199
readable notations will be enclosed in angle brackets (<>).	3200
<PRIVATE> means that the message reception process should	3201
not aid the user in circulating copies to others. Plain	3202
text may also be included in this field.	3203
-----	3204

old sndmsg's

13-JAN-75 23:06:36,6677 3205
 Date: 13 JAN 1975 2306-PST 3206
 From: POSTEL 3207
 Subject: batch tool model 3208
 To: Carlson at ISI 3209
 cc: watson, irby, white, postel 3210

Here is a scenario of use of a batch tool which is an elaboration of 3212
 the discussion contained in the RJE-MODEL document. 3213

NOTE 3214a

The idea of "remote" job entry -- indeed "remote" anything -- in 3215a
 the National Software Works seems to me to be contradictory to 3215b
 the philosophy of NSW. 3215c

INTRODUCTION 3216a

3217

old sndmsg's

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.

3217a
 3217b
 3217c

3218

MODEL

3218a

3219

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

3219a
 3219b

3220

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.

3220a
 3220b
 3220c

3221

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

3221a
 3221b

3222

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

3222a
 3222b

old sndmsg's

	3223
The batch job package in a sense referees the flow of	3223a
information between its PCP callers and the batch	3223b
processing facility. For example the batch job package	3223c
colects all the input files that are resident on other	3223d
hosts before turning the job over to the batch processing	3223e
facility, and the batch job package may distribute the	3223f
result files to other hosts when the job is completed by	3223g
the batch processing facility.	3223h
	3224
The Batch Job Package interacts with File Packages (FP) to	3224a
effect the movement of files to and from the Batch Processing	3224b
Facility,	3224c
	3225
The call on the batch job package to get a job submitted to	3225a
a batch processing facility is:	3225b
	3226
CRTJOB (infiles, outfiles => jobid)	3226a

old sndmsg's

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

3227
 3227a
 3227b
 3227c
 3227d
 3227e
 3228
 3228a
 3228b
 3228c
 3228d
 3228e
 3228f
 3229
 3229a
 3229b
 3230
 3230a

old sndmsg's

standard library files and from the users point of view 3230b
 part of the system. The user may not even be aware of their 3230c
 existence since their names could be supplied by the 3230d
 grammar internally. 3230e

3231

The input files are probably in most cases job control 3231a
 files in a particular batch processing facilities specific 3231b
 job control language. There might be grammars/tools to aid 3231c
 the user in constructing such control files for specific 3231d
 batch processing facilities and applications programs. 3231e

3232

The user interacts with the front end. The front end contains 3232a
 a command language interpreter that is driven by a grammar. 3232b
 The particular grammar in use for this user at any time 3232c
 depends on which tool the user is accessing. 3232d

3233

A scenario for a user creating, submitting, retrieving, and 3233a
 examining a batch job follows: 3233b

old sndmsg's

	3234
The user interacts with an editing tool to create a source	3234a
program and to concatenate it with a standard file of job	3234b
control information particular to the Batch Processing	3234c
Facility to which it will be submitted, The concatenation is	3234d
accomplished using regular editing commands (not batch	3234e
specific commands),	3234f
	3235
The user then interacts with the Works Manager and the Batch	3235a
Job Package mediated by a grammar to submit the file he has	3235b
created, The grammar and the Batch Job Package will require	3235c
enough information from the user that the Batch Job Package	3235d
can retrieve the input files from File Packages, and store the	3235e
output files. The Batch Job Package will return an identifier	3235f
for this job which can be used to request status information	3235g
at a later time,	3235h
	3236
Some of the information needed to run a batch job could be	3236a

old sndmsg's

in a standard file that the user always appends his file 3236b
 to, OR this type of information could be in a separate file 3236c
 that is included by the grammar in the create job call 3236d
 automatically, and the grammar could call on a function to 3236e
 edit a standard file to contain user and run specific 3236f
 parameters such as User=name, priority, run-time-limit. 3236g

3237

When the job has been processed the user may use an editing 3237a
 tool to examine the output file. Note that the output files 3237b
 have been stored as specified in File Packages and are thus 3237c
 accessible to tools as permitted by the Works manager. 3237d

3238

A discussion of multi-host batch jobs. 3238a

3239

Suppose a user wanted to run a series of batch jobs steps 3239a
 where each step was to be carried out on a different host. It 3239b
 is not difficult to envision a NSW=batch-control-language in 3239c
 which one could say things like: 3239d

old sndmsg's

3240

"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".

3240a

3240b

3240c

3240d

3241

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

3241a

3241b

3242

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.

3242a

3242b

3242c

3242d

3243

3244

3245

 13-JAN-75 23:13:02,10454

3246

Date: 13 JAN 1975 2313-PST

3247

old sndmsg's

From: POSTEL 3248

Subject: batch tool model (comments on carlsons model) 3249

To: postel 3250

3251

3252

3253

3254

3255

< POSTEL, CARLSON,NLS;2, >, 13-JAN-75 13:35 JBP ;;; 3256

Bill: 3257

Here is commented version of your message on batch jobs, some of these 3258

questions were answered by your monday phone call with dick and me, i 3259

hope to be able to prepare a parallel discussion to yours for comparison 3260

-- the main differences are in the break down of functions to particular 3261

processes (wm, fe, grammar, tool, etc.), and in which processes touch 3262

which kinds of files. 3263

old sndmsg's

--jon,

3264

3265

Date: 12 JAN 1975 1136-PDT

3266

From: CARLSON at OFFICE-1

3267

Subject: batch tools

3268

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

3269

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

3270

** How does this model compare with the model presented in the

3270a

documents "RJE-MODEL, and BJP by Postel and the notes by Warshall and

3270b

Millstein ? **

3270c

** What decisions ? **

3270d

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

3270e

3270f

Please evaluate the model and, by 16 Jan 75, send a message indicating

3271

agreement or identify pitfalls in the model by describing scenarios

3272

where it fails, and propose SIMPLE revisions which resolve the pitfalls

3273

old sndmsg's

** Should this suspend progress on the implementation of NSW ? ** 3273a

A batch job cannot communicate with the user during execution, 3274

** Is this a definition or an attribute of batch jobs shared by other 3274a

types of jobs ? ** 3274b

** Millstein defined the terms BATCH, DETACHED, AND INTERACTIVE in a 3274c

useful way, lets use his definitions, ** 3274d

Background jobs on Multics or other time-sharing systems qualify as 3275

batch jobs. 3276

** Does "background" include TENEX Detached Jobs ? ** 3276a

The following classes of batch jobs are of interest: 3277

Predefined NSW Tools: allow a user talking to the Works Manager to 3277a

say the logical equivalent of "execute TESTDATA using CRITERIA as 3277b

input and producing MONTHLY as output." CRITERIA and MONTHLY are 3277c

NSW

fills. Optionally, the user might specify a host, ie "execute 3277d

TESTDATA at UCLA91". 3277e

** "Predefined" is a new term to me perhaps a further 3277e1

explanation

old sndmsg's

would be helpful. ** 3277e2

** Which 360 should we be getting up to speed on NSW/PCP ==
RAND 3277e3

or UCLA ? ** 3277e4

The WM will know whether the TBH requires all files to be
resident before a batch job is submitted, or if it supports 3277e5
delayed staging off files. If files must be prestaged, the WM 3277e6
will move or create the files and remember the local names. 3277e7
3277e8

 ** The idea of prestaging vs delayed staging of files is
 what 3277e8a

 distinguishes BATCH and DETACHED tools in Millstein's
 document, 3277e8b

 lets use one set of definitions. ** 3277e8c

The WM will know the local name of the tool. It will send a 3277e9
message to the TBH of the form "run Local-Tool-Name on 3277e10
Local-File-1, Local-File-2, NSW-File-3 producing Local-File-4
and 3277e11

3278

3279

3280

old sndmsg's

3281

3282

1 3282a

3283

3284

NSW-File-5 using TEXT-ARG-1,TEXT-ARG-2," 3284a

** This assumes that it is easy to distinguish local (to what) 3284a1
 filenames from NSW filenames -- i for one don't buy that 3284a2
 assumption. ** 3284a3

** By now everyone should think in terms of Procedure Call 3284a4
 Protocol. The procedure call your "message" maps into is 3284a5
 defined in the Batch Job Package (BJP) and is named CRTJOB, 3284a6
 CRTJOB (infile, outfile => jobid) 3284a6a

The files in the lists infile and outfile are filenames that 3284a7
 can be handled by file packages, the batch job package calls on 3284a8
 a file package either in the same TBH or another TBH to get the 3284a9
 files for input or store the result files. ** 3284a10

If the TBH does not 3284b

old sndmsg's

support delayed staging, then of course there will be no NSW 3284c
 files in the list. Note that since this message is in an NSW 3284d
 format, we should easily be able to mark local file names, NSW 3284e
 file names, and textual arguments. 3284f

** By "in NSW format" do you mean it is a PCP Call ? ** 3284f1

One implementation (not only one) would have the local tool name 3284g
 be a text file or catalogued procedure. The Foreman component in 3284h
 the TBH would ask the WORKS MANAGER for a correct local name 3284i
 corresponding to each NSW Filename (if there is delayed staging 3284j
 of files). The local filenames and the textual arguments would be 3284k
 substituted into the control file, which would be given to the 3284l
 standard scheduler to be executed at its convenience. The only 3284m
 uses I have thought of for textual arguments thus far are run 3284n
 time parameters like core size, time limit, priority, etc. 3284o

** What is the "Foreman component" ? ** 3284o1

** The textual arguments you suggest are already handled in 3284o2
 every case we know of by parameters in the control file 3284o3
 required by the batch processing facility, why should this 3284o4

old sndmsg's

aspect of host specific job control be replicated in the 3284o5
 general purpose batch job package ? ** 3284o6

The TBH must provide the WM with a job ID. The WM must be able to 3284p
 get job status information for a given JOBID. 3284q

** See the CRTJOB and STSJOB procedures specified in the Batch 3284q1
 Job Package. ** 3284q2

The TBH must signal the WM whenever a job terminates. 3284r

** An interesting point, To do ths the Works Manager must 3284r1
 provide a procedure that a batch job package may call when a 3284r2
 job terminates. ** 3284r3

RESPONSIBILITIES 3284s

COMPASS- define language for invoking tools(the WM command 3284s1
 language), provide tool for defining other tools to the WM 3284s2
 (CML is part of it, but I don't think all of it), provide a 3284s3
 document telling how to define tools. It must identify 3284s4
 options with regard to numbers and attribbutes of input & 3284s5
 output files, checking of textual arguments, optional files, 3284s6
 warranties, etc. 3284s7

old sndmsg's

** Anthing to say here ?? ** 3284s7a
 TBH Installer= provide a mechanism for accepting WM messages 3284s8
 and invoking tools, Create ident/jobid/account card with info 3284s9
 sent by WM, pro13-JAN-75 23:13:02,10454 3284s10
 Date: 13 JAN 1975 2313-PST 3285
 From: POSTEL 3286
 Subject: batch tool model (comments on carlsons model) 3287
 To: postel 3288
 3289
 3290
 3291
 3292
 3293
 < POSTEL, CARLSON.NLS;2, >, 13-JAN-75 13:35 JBP ;;; 3294
 Bill: 3295
 Here is commented version of your message on batch jobs, some of 3296
 these
 questions were answered by your monday phone call with dick and me. i 3297

old sndmsg's

hope to be able to prepare a parallel discussion to yours for
comparison 3298

-- the main differences are in the break down of functions to
particular 3299

processes (wm, fe, grammar, tool, etc.), and in which processes touch 3300

which kinds of files, 3301

--jon, 3302

3303

Date: 12 JAN 1975 1136-PDT 3304

From: CARLSON at OFFICE=1 3305

Subject: batch tools 3306

< CARLSON, BATCH=TOOLS,NLS;2, >, 12-JAN-75 11:26 WEC ;;;; 3307

I have a simplified model of batch tools which I use to make
decision, 3308

** How does this model compare with the model presented in the 3308a

documents "RJE=MODEL, and BJP by Postel and the notes by warshall
and 3308b

Millstein ? ** 3308c

** What decisions ? ** 3308d

** It would be very helpful to have your comments keyed to the 3308e

old sndmsg's

previously distributed documents. ** 3308f

Please evaluate the Model and, by 16 Jan 75, send a message indicating 3309
 agreement or identify pitfalls in the model by describing scenarios 3310
 where it fails, and propose SIMPLE revisions which resolve the 3311
 pitfalls

** Should this suspend progress on the implementation of NSW ? ** 3311a

A batch job cannot communicate with the user during execution, 3312

** Is this a definition or an attribute of batch jobs shared by 3312a
 other

types of jobs ? ** 3312b

** Millstein defined the terms BATCH, DETACHED, AND INTERACTIVE in 3312c
 a

useful way, lets use his definitions. ** 3312d

Background jobs on Multics or other time-sharing systems qualify as 3313
 batch jobs. 3314

** Does "background" include TENEX Detatched Jobs ? ** 3314a

The following classes of batch jobs are of interest: 3315

Predefined NSW Tools: allow a user talking to the Works Manager to 3315a
 say the logical equivalent of "execute TESTDATA using CRITERIA as 3315b

old sndmsg's

input and producing MONTHLY as output." CRITERIA and MONTHLY are
NSW 3315c

fills. Optionally, the user might specify a host, ie "execute 3315d
TESTDATA at UCLA91". 3315e

** "Predefined" is a new term to me perhaps a further
explanation 3315e1

would be helpful. ** 3315e2

** Which 360 should we be getting up to speed on NSW/PCP ==
RAND 3315e3

or UCLA ? ** 3315e4

The WM will know whether the TBH requires all files to be 3315e5
resident before a batch job is submitted, or if it supports 3315e6
delayed staging off files. If files must be prestaged, the WM 3315e7
will move or create the files and remember the local names. 3315e8

** The idea of prestaging vs delayed staging of files is
what 3315e8a

distinguishes BATCH and DETACHED tools in Millstein's
document, 3315e8b

lets use one set of definitions. ** 3315e8c

The WM will know the local name of the tool. It will send a 3315e9

old sndmsg's

message to the TBH of the form "run Local-Tool-Name on 3315e10
 Local-File-1, Local-File-2, NSW-File-3 producing Local-File-4
 and 3315e11
 3316
 3317
 3318
 3319
 3320
 1 3320a
 3321
 3322
 NSW-File-5 using TEXT-ARG-1,TEXT-ARG-2," 3322a
 ** This assumes that it is easy to distinguish local (to what) 3322a1
 filenames from NSW filenames -- i for one don't buy that 3322a2
 assumption. ** 3322a3
 ** BY now everyone should think in terms of Procedure Call 3322a4
 Protocol. The procedure call your "message" maps into is 3322a5
 defined in the Batch Job Package (BJP) and is named CRTJOB. 3322a6

old sndmsg's

CRTJOB (infiles, outfiles => jobid) 3322a6a

The files in the lists infiles and outfiles are filenames that 3322a7
 can be handled by file packages, the batch job package calls on 3322a8
 a file package either in the same TBH or another TBH to get the 3322a9
 files for input or store the result files. ** 3322a10

If the TBH does not 3322b
 support delayed staging, then of course there will be no NSW 3322c
 files in the list. Note that since this message is in an NSW 3322d
 format, we should easily be able to mark local file names, NSW 3322e
 file names, and textual arguments. 3322f

** By "in NSW format" do you mean it is a PCP Call ? ** 3322f1

One implementation (not only one) would have the local tool name 3322g
 be a text file or catalogued procedure. The Foreman component in 3322h
 the TBH would ask the WORKS MANAGER for a correct local name 3322i
 corresponding to each NSW Filename (if there is delayed staging 3322j
 of files). The local filenames and the textual arguments would be 3322k
 substituted into the control file, which would be given to the 3322l
 standard scheduler to be executed at its convenience. The only 3322m

old sndmsg's

uses I have thought of for textual arguments thus far are run 3322n
time parameters like core size, time limit, priority, etc. 3322o

** What is the "Foreman component" ? ** 3322o1

** The textual arguments you suggest are already handled in 3322o2
every case we know of by parameters in the control file 3322o3
required by the batch processing facility, why should this 3322o4
aspect of host specific job control be replicated in the 3322o5
general purpose batch job package ? ** 3322o6

The TBH must provide the WM with a job ID. The WM must be able to 3322p
get job status information for a given JOBID. 3322q

** See the CRTJOB and STSJOB procedures specified in the Batch 3322q1
Job Package. ** 3322q2

The TBH must signal the WM whenever a job terminates. 3322r

** An interesting point. To do ths the Works Manager must 3322r1
provide a procedure that a batch job package may call when a 3322r2
job terminates. ** 3322r3

RESPONSIBILITIES 3322s

COMPASS= define language for invoking tools(the WM command 3322s1

old sndmsg's

language), provide tool for defining other tools to the WM 3322s2
 (CML is part of it, but I don't think all of it), provide a 3322s3
 document telling how to define tools. It must identify 3322s4
 options with regard to numbers and attributes of input & 3322s5
 output files, checking of textual arguments, optional files, 3322s6
 warranties, etc. 3322s7

** Anthing to say here ?? ** 3322s7a

TBH Installer= provide a mechanism for accepting WM messages 3322s8
 and invoking tools, Create ident/jobid/account card with info 3322s9
 sent by WM, provide for status probing, signal WM when tools 3322s10

3323

3324

3325

3326

3327

2

3327a

3328

3329

old sndmsg's

complete, provide a reasonable way to send output reports onto 3329a
the ARPANET, Provide a document telling how to install 3329b
additional tools on that machine. 3329c

** Shouldn't "a mechanism for accepting WM messages" be a 3329c1
"mechanism for accepting and making PCP Calls", ** 3329c2

General Issue: How does the WM know how much space to allocate 3329d
for output files? COMPASS to take responsibility for 3329e
formulating and documenting some reasonable answer. 3329f

** How does anybody know ? ** 3329f1

Sequences of NSW Batch Tools: One can envision jobs consisting of 3330
several "standard" NSW batch tools to be run in succession on the 3331
same TBH. On many hosts, the scheduling algorithm will make it 3332
advantages to have the sequence lumped into a multi-activity job. 3333
Yet the WM should know when each activity completes, and have some 3334
options with regard to file disposition and conditional tool 3335
invokation. Passing files between activities may also necessitate 3336
control stream changes. 3337

** Why should the works manager notice the jobstep completion for 3337a

old sndmsg's

multistep one host jobs ? It may be very difficult to get access 3337b
to this information in any case. ** 3337c

Responsibilities: UCLA should take the lead in resolving these 3337d
issues, with inputs from COMPASS and all TBH installers. 3337e

"Perfect" Batch Control Streams: contain only local file names. We 3338
want to discourage these in the NSW, but must provide the capability 3339
so users don't have to leave the NSW just to type in a few simple 3340
control cards and run a batch job on their own machine. All the TBH 3341
must do is append the ident/jobid/account into to the control stream 3342
and retrieve status and output. 3343

** This doesn't seem right to me ??? ** 3343a

Responsibilities: 3343b

COMPASS: WM must accept a command like "run file at place"n, 3343b1
move the file, signal TBH to invoke it 3343b2

** BY "file" are you now referring to a control file ? ** 3343b2a

TBH Installer: responsible for start-up, status and output 3343b3
reporting. 3343b4

Batch Control Streams Containing NSW Filenames: the user builds a 3344

old sndmsg's

job control stream ready to run, except he wants to refer to files 3345
 by NSW names. In general case, would also want to be able to defer 3346
 file movement(not this year). Solution to delayed staging of files 3347
 should use same TBH features as for predefined NSW Tools. 3348

** The user wants a nsw-wide control file that is like the 3348a
 existing host specific control files but allows each job step to 3348b
 be executed on a different host. The user can construct such a 3348c
 file with any text editor or perhaps a special control file 3348d
 construction tool. When the user wants to have this control file 3348e
 "executed" a tool is called upon to translate (by calling on the 3348f
 works manager) the nsw filenames to file package file names and to 3348g
 call the appropriate batch job packages for each job step. ** 3348h

Responsibility 3348i

SRI: build an interactive tool which works on typewriter 3348i1
 terminals as well as displays and replaces NSW filenames with 3348i2
 LOCAL names. Eventually, will instead simply identify some of 3348i3
 the names as NSW names and will also be able to handle 3348i4

3349

old sndmsg's

3

	3350
	3351
	3352
	3353
	3353a
	3354
	3355
priority etc. After the substitutions are complete, the tool	3355a
will invoke the WM to initiate the job	3355b
** This aside on typewriter terminals and display terminals	3355b1
is out of place and shows a lack of conviction that the	3355b2
front end will provide means to use a range of terminal	3355b3
classes to use thae same tools. **	3355b4
COMPASS and TBH Insjallers are responsible for providing the	3355c
same capabilities as for "perfect" batch control streams and	3355d
(eventually) as for NSW defined tools.	3355e
	3356
-----	3357

old sndmsg's

3358

3359

3360

3361

3362

3363

3364

3365

3366

3367

3368

3369

3370

3371

3372

3373

3374

3375

14 JAN 75

JBP 14-JAN-75 15:08 25105

old sndmsg's

3376

3377

3378

3379

3380

3381

3382

3383

3384

3385

3386

3387

3388

3389

3390

3391

3392

3393

• • • •

JBP 14-JAN-75 15:08 25105

old sndmsgfs

- 3394
- 3395
- 3396
- 3397
- 3398
- 3399
- 3400
- 3401
- 3402
- 3403
- 3404
- 3405

JBP 14-JAN-75 15:08 25105

old sndmsg's

(J25105) 14-JAN-75 15:08;;; Title: Author(s): Jonathan B.
Postel/JBP; Distribution: /JBP([INFO-ONLY]) ; Sub-Collections:
SRI-ARC; Clerk: JBP; Origin: < POSTEL, MESSAGES,NLS;2, >,
14-JAN-75 14:30 JBP ;;;;####;