DVN 4-APR-75 20:28 25675

Statement/Paragraph, Plex/Substructure, Wastebasket

Responds to 25658 etc.

DVN 4-APR-75 20:28 25675

Statement/Paragraph, Plex/Substructure, Wastebasket

I like the suggestion of calling statement paragraph, and plex substrcutre, and of saving deletes. I think we have to think carefully about the procedures and commands of saving deletes. It doesn't seem to me normally worth while to save units smaller that a statement, but what about a mass substitute? 1

I have some worries about the psychological effect on new users who are unimaginative of calling a statement a papragraph. For example, from time to time it is useful to make sentences up of more than one statment. Are people going to feel needlessly confined because of the name? 2

DVN 4-APR-75 20:28 25675

Statement/Paragraph, Plex/Substructure, Wastebasket

(J25675) 4-APR-75 20:28;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /DPCS([INFO-ONLY]) DIRT([INFO-ONLY]) ; Sub-Collections: SRI-ARC DPCS DIRT; Clerk: DVN;

KEV 4-APR-75 20:50 25676

synchronizing benchmark runfiles

the following two programs are available for synchronizing the running of runfiles for benchmark purposes: 1

[bbnb]<victor>srttst.sav - run this before starting any of your runfiles. it will print out the current date and time and then ask you what time you wish the test to start. enter the time as hh:mm terminated by a cr. 1a

[bbnb]<victor>syntst.sav - run this as the first thing in your runfiles. it will print out the current date and time and tell you when the test is scheduled to start. then it will dismiss until the start time. at the start time it will print out a message saying that the test is starting. 1b

KEV 4-APR-75 20:50 25676

synchronizing benchmark runfiles

(J25676) 4-APR-75 20:50;;; Title: Author(s): Kenneth E. (Ken) Victor/KEV; Distribution: /NPG([ACTION]) RWW([INFO-ONLY]) DCE([INFO-ONLY]) JCN([INFO-ONLY]) ; Sub-Collections: SRI-ARC NPG; Clerk: KEV;

JBP 4-APR-75 21:12 25677

NSW -- Dispatcher/Encapsulator/File-Package for Tool Bearing Hosts

Summary of Meeting between R. Schantz, J. White & J. Postel, on 27 & 28 March 1975. 1

Three topics were discussed: The Dispatcher, The Encapsulator, and The File Package. 2

The Dispatcher 3

The main concerns here are the association between the calling user and the directory assigned for his use. The following strategy allows the user to end up in his own login directory. This then allows the regular access controls of the system to be effective. 3a

The dispatcher performs the server side of the standard Initial Connection Protocol such that the two resulting connections are openned to a new job (which is a PCP job). 3b

Listens on the PCP contact socket L 3b1

L = 25 decimal 3b1a

Selects a new socket pair (S) from the dispatcher's socket name space (directory relative) 3b2

In TENEX, selects a new socket pair (S) from a common tool socket space, by means of using directory relative socket names. 3b2a

Creates a job containing PCP stuff and passes it the host number H, and socket numbers U (remote caller) and S (new local) in the. Creates a new job for each request. 3b3

In Tenex the arguments are passed in the registers: 3b3a

AC0 = H (8 bit host number) 3b3a1

AC1 = U (Absolute 32 bit receive socket name) 3b3a2

AC2 = S (dir rel 15 bit receive socket name) 3b3a3

Sends the socket number S to the calling process and closes the connection, then loops back to the begining. 3b4

The socket sent to the caller is actually S', which is the full 32 bit socket name of the receive socket derived from S, and on TENEX consists of <17 bit directory #><S> 3b4a

The TENEX dispatcher can and will see if a system shutdown is

pending and imminent. If the shutdown is within some interval T, then the dispatcher will not accept any new ICP requests in order to minimize the possibility of users having their tool yanked out from under them. 3c

Two approaches are possible. 1) Ignore the request by sending an immediate CLOSE, or 2) open the send connection and pass some useful status information such as the time we are expected to be back up. (Note that an odd number passed to the caller is a violation of ICP protocol and can be interpreted as a time, or anything else we choose.) Ultimately, we can get as complex as we want to get the proper behavior since selecting the interval T is a problem. There probably exist two types of transactions, short and long. If we select an interval very close to shutdown time, long transaction which don't have a prayer of finishing will be allowed to start. If we make the interval longer, transactions which are short and could possibly finish before shutdown may be rejected and other possible servers may not be available. Generally, I propose that the interval be quite small (maybe 2 minutes), and suggest that ways of alerting the controlling fork created for the new job to the approximate duration of computational service required for this transaction be investigated. 3c1

The new job: 3d

Opens the new 8 bit byte size connections between S and U+3, and between S+1 and U+2. 3d1

Reads from the newly opened connections the pcp CRTPRO message containing the login and accounting parameters for the calling user 3d2

Change login identity of this job to the user supplied . 3d3

Time out and aborts if the login info is not supplied. 3d4

The Encapsulator 4

The focus here was on the Network Virtual Termial Package (NVTP) and the communication between the Front End (FE) and the Tool. Here a major change in strategy was decided on. 4a

Scenario for tool start up: 4b

The User tells the FE he wants to run the tool. 4b1

The FE tells the WM the user wants to run the tool. 4b2

The WM creates a PCP "old tool encapsulator" process at the tool bearing host; this process is passed as startup info the name of the "old tool" subsystem to be run. 4b3

1) The startup info (old tool file name) is effectively passed to the NVT package before it is even opened. This seems a bit funny when it is viewed as more than a special case. 2) In order to get the access control to the "old tool" file right, we must ensure that the job changes to the correct identity given by name, pswrd, acct parms, before the startup info is allowed to be processed. 4b3a

The WM supplies the login parameters to the newly created tool process. The process initialization code is entered and passed the startup info. 4b4

The WM introduces the FE and the tool proceess 4b5

The WM opens he NSW Tool Package and calls he BGNNSW procedure in the tool process. 4b6

The WM returns to the FE the process handle for the tool process and the grammer for the tool. 4b7

The FE interpreting the grammer calls the tool process to open the NVT package. 4b8

The FE locally sets up a user telnet process listening on two sockets (UT & UT+1) . 4b9

The FE calls on the tool process NVT package SETUPNC procedure passing the argument UT. 4b10

SETUPNC (UT) 4b10a

The NVTP initates the tool subsystem as a fork and establishes the connection to the FE's user telnet. The TBH end of these connections feed a NVT (or server telnet) that acts as the primary I/O for the subsystem. The NVTP returns as a note to the FE the local socket numbers used in establishing the connection ST and ST+1. 4b11

NOTE (ST) 4b11a

Both UT and ST are full 32 bit receive socket names. 4b11a1

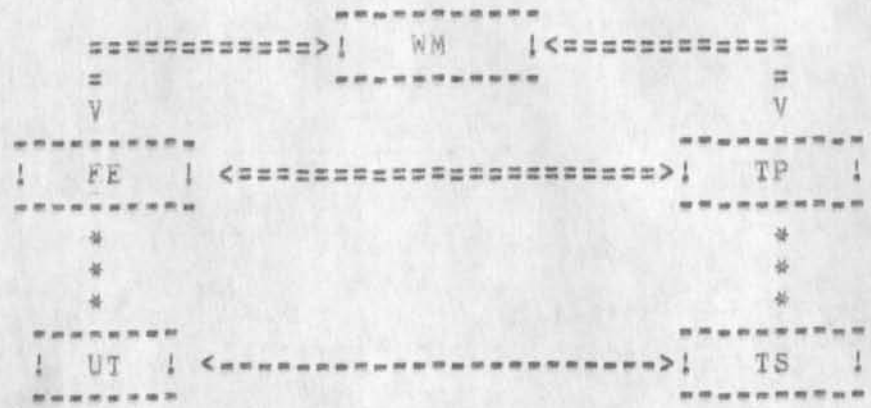
The FE verifies that the telnet connections now established to its user telnet process are in fact from the tool subsystem by

checking the ST socket number returned by the tool process against the actual connections. 4b12

The FE (as directed by the tool grammer) takes input from the users terminal and hands it to its local user telnet for transmission to the tool subsystem. Data arriving from the tool subsystem at the user telnet in the FE is delivered to the users terminal using the routines of the FE. 4b13

The SETUPNC call is left unsatisfied, and therefore allows the NVTP to use help returns to notify the calling process (the FE) of any unusual events (eg subsystem halts). The calling process (the FE) can freeze the NVTP and the tool subsystem by an INTPRO call or abort the use of the tool subsystem by an ABORTPRO call. ABORTPRO will result in closing the NVT. A subsequent SETUPNC will cause the "old tool" to be reinitialized. 4b14

The resulting configuration has PCP communication paths between the FE and the WM, between the FE and the Tool process, between the WM and the Tool process, and has the telnet path between the tool subsystem and the FE's user telnet. 4b15



4b15a

where: 4b15a1

=== indicates a PCP connection 4b15a1a

--- indicates a telnet connection 4b15a1b

*** indicates a control path 4b15a1c

WM is the Works Manager 4b15a1d

FE is the Front End 4b15a1e

TP is the Tool Process 4b15a1f

TS is the Tool Subsystem 4b15a1g

UT is a User Telnet 4b15a1h

The NVTP also acts as a file reference trapper. 4c

The File Package 5

The file package was examined and the essential features abstracted. This resulted in a small set of procedures, and the elimination of the access control aspects of the earlier specification. Also the ability to access portions of files and route the file data on various paths was eliminated. 5a

The relation between file package directories and Tenex directories is one to one. The access rights to directories and files that a caller on a file package has are exactly those of the user-password-account that the process containing the file package is logged in with. 5b

The file package is an interface to the regular operating system file system and uses its access controls. 5c

That is to say that there is no attempt to build up a virtual file system at the file package level. 5d

Definitions: 5e

The following arguments are used in the subsequent prodcedure definitions: 5e1

name - the complete name of a file in host dependent syntax 5e2

name - CHARSTR 5e2a

In Tenex this includes the version number. 5e2a1

class - a partially specified file name that indicates a set of files in host dependent syntax. 5e3

class - CHARSTR 5e3a

This is really only a special type of "name" as defined above. 5e3a1

In Tenex this is the star (*) notation. 5e3a2

directory - the name of a directory (or directory hierarchy) in host dependent syntax 5e4

directory - CHARSTR 5e4a

Directory = EMPTY should default to the login directory. 5e4a1

Note that in Tenex the directory is not enclosed in angle brackets <>. The WM has to be able to use the same string for a login argument. 5e4a2

filename - the fully qualified name of a file 5e5

filename - LIST (directory, name) 5e5a

classname - the fully qualified name of a class of files 5e6

classname - LIST (directory, class) 5e6a

filelist - a list of file names 5e7

filelist - LIST (filename, ...) 5e7a

classlist - a list of file classes 5e8

classlist - LIST (classname, ...) 5e8a

srclist - list of source files 5e9

srclist - filelist 5e9a

disp - the disposition of the source files, either DELETE or RETAIN. 5e10

disp - BOOLEAN [DELETE = FALSE / RETAIN = TRUE] 5e10a

Note that DELETE makes the operation a rename, while RETAIN makes the operation a copy. 5e10a1

chnl - a port handle. 5e11

chnl - INDEX 5e11a

If chnl is an argument of a procedure the data generated by (or received by) the procedure is transmitted on that physical channel . 5e11a1

filetypelist - a list of file types associated with the filelist that indicate the physical type of the file and the

format of the pcp encoded transmission of the file. The type is represented by a small integer. 5e12

filetypelist - LIST (INDEX, ...) 5e12a

These file types must be enumerated soon. 5e12a1

Procedures: 5f

Listdir (classlist, EMPTY -> filelist) 5f1

The names of the set of files indicated by CLASSLIST are returned in the result FILELIST. 5f1a

This routine would accept (directory, name) pairs of the following variety: (directory, fileclass) which would do the TENEX star thing for that directory, (directory, name) which really asks if that file exists, (directory, empty) which lists all files in that directory, (empty, empty) which lists all files in the connected directory, (empty, fileclass) which does the star thing for the connected directory, etc. etc. 5f1a1

Listdir (classlist, chnl -> EMPTY) 5f2

The names of the set of files indicated by CLASSLIST are transmitted via the physical channel indicated by CHNL. 5f2a

Deletefiles (filelist -> EMPTY) 5f3

The files specified in FILELIST are deleted. 5f3a

Deletefiles (classlist -> filelist) 5f4

The files specified in CLASSLIST are deleted, the names of the deleted files are reported in in FILELIST. 5f4a

Some interesting classes are: (directory, *.*) might clear the entire directory, as might (directory, empty). 5f4a1

Localxfer (srclist, disp, classlist -> filelist) 5f5

The files specified by SRCLIST are assigned names and stored as indicated in CLASSLIST. When a name in CLASSLIST is incomplete a new unique name is generated to complete the name. The actual names used to store the files are returned in the FILELIST result. 5f5a

The retention or deletion of the source files is indicated by DISP. All files in SRCLIST have the same DISP. 5f5b

Localxfer (srclist, disp, filelist -> EMPTY) 5f6

The files specified by SRCLIST are stored as indicated by FILELIST. 5f6a

The retention or deletion of the source files is indicated by DISP. All files in SRCLIST have the same DISP. 5f6b

Getfiles (srclist, filetypelist, disp, chnl) 5f7

The files are sent on the physical channel indicated by CHNL as specified by SRCLIST. 5f7a

The type information in FILETYPELIST is used to determine the mapping from storage format to transmission format for the files. 5f7b

The retention or deletion of the source files is indicated by DISP. All files in SRCLIST have the same DISP. 5f7c

Putfile (filelist, filetypelist, chnl -> EMPTY) 5f8

The files received on the physical channel indicated by CHNL are assigned the names and entered into directories as indicated by FILELIST. 5f8a

The type information in FILETYPELIST is used to determine the best storage format for the files. 5f8b

Putfile (classlist, filetypelist, chnl -> filelist) 5f9

The files received on the physical channel indicated by CHNL are assigned names as indicated by CLASSLIST. When an entry in CLASSLIST is not complete a unique name is assigned to complete the name. The list of new file names is reported in the FILELIST result. 5f9a

The type information in FILETYPELIST is used to determine the best storage format for the file. 5f9b

Discussion: 5g

A convention to be followed whenever two parallel lists are supplied as arguments is that if the second list runs out before the first list, then the last element of the second list is to repeated for every remaining element of the first list. 5g1

Whenever an input argument specifies a class of files or incompletely specifies a file name, then the procedure is to return the complete list of actual file names. Only when the input argument completely specifies all file names completely does the procedure return the EMPTY result. 5g2

Another convention is that the procedures of the file package are to make help returns to their caller on any error. 5g3

Examples of errors tha could be so reported: 5g3a

Source file does not exist 5g3a1

Access control prevent your use of that file 5g3a2

Unrecoverable I/O error 5g3a3

The intent of the help return is to have the file package procedures report the failure of an operation on a per file basis, that is, the help return can indicate the specific file in error. This then allows the caller to resume or abort the procedure with full knowledge of how far it got, or which files were not processed. 5g3b

We can identify three possibilities after error detection and a help call: 5g3b1

1) skip that element and proceed on to next one, 5g3b1a

2) abort the whole call, with or without trying to undo what you've already done, 5g3b1b

and 3) try same element again with newly specified parameters. 5g3b1c

The exact nature of these help calls will become clearer as the implementations proceed. 5g3b2

5g3b3

General comment on file package: 5g4

Note the ramification of this organization for the NSW file transfer utility to access and retrieve files from the various permanent and temporary work spaces (i.e. directories).
Since the File Process (i.e. the process with the file package code; there is only 1, I think, for a WM) is logged in as a single user, and no further passswords are provided

other than to log the FP in, the TBH system must provide a way to allow a special user (i.e. the designated FP) to access all of the directories in the NSW space, while at the same time not allowing public access to these directories. In TENEX we plan to do this using the group mechanism. In MULTICs I think we agreed that arranging the directories properly in the hierarchy would accomplish the same effect.] 5g4a

JBP 4-APR-75 21:12 25677

NSW -- Dispatcher/Encapsulator/File-Package for Tool Bearing Hosts

(J25677) 4-APR-75 21:12;;; Title: Author(s): Jonathan B. Postel/JBP;
Distribution: /NSW([INFO-ONLY]) NPG([INFO-ONLY]) ;
Sub-Collections: SRI-ARC NSW NPG; Clerk: JBP;

JAKE 5-APR-75 15:28 25678

USERG

Marcia, I4-TENEXA is now I4-TENEX and is a server not a user, ISI-DEVTENEX has become USC-ISIB and is also a server, ETAC can stay - it was slated to come on but actually never has to the best of my knowledge, I will have some more host name changes and Liaison changes or additions which I will send to you as soon as I get them unearthed (not many). Jake 1

JAKE 5-APR-75 15:28 25678

USERG

(J25678) 5-APR-75 15:28;;;; Title: Author(s): Elizabeth J. (Jake) Feinler/JAKE; Distribution: /MLK([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: JAKE;

DVN 6-APR-75 14:50 25679

Step Toward ARC and MCA coordinating on NSW User Documentation

Reply to 25668

DVN 6-APR-75 14:50 25679

Step Toward ARC and MCA coordinating on NSW User Documentation

Thanks for your reply to my letter to Warshall. I'm glad you understand Helpd some and hope we can get organized and get something done. I converted [bbnb]<millstein>wm-procedures.txt;1 into and NLS file<bbnb,help,wm-procedures,> via the Copy Sequential command with the two-carriage return option. Look in help by asking for "copy sequential" if you want to learn more about what that does. I have printed it but not studied it; when I have, maybe Tuesday, I will get back in touch, and we can try to arrange a way to work on it together gracefully.

1

DVN 6-APR-75 14:50 25679

Step Toward ARC and MCA coordinating on NSW User Documentation

(J25679) 6-APR-75 14:50;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /KS([ACTION]) DEE([ACTION] dirt notebook please) DIRT([INFO-ONLY]) ; Sub-Collections: SRI-ARC DIRT; Clerk: DVN;

JAKE 6-APR-75 22:07 25680

NICNOTES-4/75

You may be interested in new additions and changes to net. Also includes our 11s - ARC-TSP (current one) and ARC-DEV (future one)

NICNOTES-4/75

In the past month there have been several additions or changes in host names and host addresses. You may wat to check your host address tables to see if you have recorded the following:

1

2 (dec), 2 (oct) - ARC-DEV, Status=USER 1a

13 (dec), 15 (oct) - GUNTER, Status=USER 1b

26 (dec), 32 (oct) - SDAC-44, Status=SERVER 1c

39 (dec), 47 (oct) - SDAC-CCP, Status=USER 1d

46 (dec), 56 (oct) - RUTGERS-10, Status=SERVER 1e

51 (dec), 63 (oct) - SRI-NSC11, Status=USER 1f

56 (dec), 68 (oct) - SUMEX-AIM, Status=SERVER 1g

(Remove NYU as it currently has no Host Addr.) 1g1

57 (dec), 69 (oct) - NSA, Status=unknown at present 1h

86 (dec), 126 (oct) - USC-ISI, Status=SERVER 1i

(previously announced) 1i1

103 (dec), 147 (oct) - SDAC-DP, Status=USER 1j

113 (dec), 161 (oct) - BBN-SAT, Status=USER 1k

115 (dec), 163 (oct) - SRI-IA11, Status=USER 1l

130 (dec), 202 (oct) - ARC-TSP, Status=USER 1m

167 (dec), 247 (oct) - SDAC-NEP, Status=USER 1n

179 (dec), 263 (oct) - SRI-CBC11, Status=USER 1o

244 (dec), 352 (oct) - USC-ISIC, Status=SERVER 1p

The full listing of Hostnames is available from OFFICE-1 via ftp using pathname <Netinfo>hosts.txt.

2

There have also been several changes in Liaison and Liaison network mailbox addresses. Please tell any users who might be using these lists for online mail distribtution to obtain the most recent

listings from OFFICE-1 using pathnames <Netinfo>Liaison.txt and
<Netinfo>Liaison-sndmsg.txt. 3

Please report any errors in any of these lists to Feinler@BBNB. 4

NICNOTES-4/75

(J25680) 6-APR-75 22:07;;; Title: Author(s): Elizabeth J. (Jake) Feinler/JAKE; Distribution: /SRI-ARC([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JAKE; Origin: < FEINLER, NICNOTES-4/75,NLS;3, >, 6-APR-75 22:03 JAKE ;;;;####;

MTACPY Problems Dialog

The following is the beginning of a dialog on the problems I have had trying to use MTACPY to read the PDG Tape to disk at Office-1. 1

3-APR-75 1332-EDT MAYNARD: Request for Help with MTACPY problem.
Distribution: PLUMMER AT BBN, maynard
Received at: 3-APR-75 13:32:06-EDT 1a

Hello, my name is David Maynard , I work at SRI-ARC, I am having a lot
of trouble trying to read a tape (at Office 1) using MTACPY.
Bill Plummer suggested that you may be able to help me .
My tape was written on a Burroughs 6700 and has the following characteristics:
7 Track odd parity, unlabeled, BCL Characters, 800 bpi, and blocked
with 2500 six bit characters per block (10 250char records per block) 1a1

I planned to use MTACPY and create a recsize file then use TAPCNV to convert the funny BCL character set into ASCII. 1a2

I get the following error message from MTACPY repeatedly:
TAPE ERROR, FILE STATUS = 700600,,17
2500 (DEC) SIX-BIT BYTES IN RECORD,
DEVICE STATUS = 100000,,150100 1a3

I control C'ed the Job after about five minutes and 10 such messages, I found 3800 characters in my output file (they looked reasonable), however the recsize file contained only the header statement and no data. 1a4

In looking through the JSYS manual I have come to the conclusion that
my problem is that my block size is not an integral number of words
(36 bit words), Is this really true? Will MTACPY really only work if
the block size in bits MOD 36 is zero? I can't believe this because it implies one couldn't read card image files (80 char, unblocked).
Any help, assitance, or hints you could give me would be greatly appreciated because I am at a loss now for things to try.
Thank You for your time,
Sincerely David Maynard, maynard@bbnb 1a5

3-APR-75 1537-EDT PLUMMER at BBN-TENEXA: mag tape probles

Distribution: MAYNARD AT BBNB
Received at: 3-APR-75 15:14:13-EDT 1b

I cannot help very much except to say: 1b1

1. Mag tape card image files do get read here (maybe once a year!)
2. We have read Burroughs tapes and done the code conversion from their funny code, I think the program was "BCDTAP" but I'm not at all sure.
3. One of those mag tape programs simply reads the tape and writes two files: one has successive characters, the other is a list of record lengths.
4. I will see that the newest versions of those programs are put up on system B for you.
5. Jim Calvin has been working on some of those programs and might have some ideas. 1b2

Good luck!
--Bill 1b3

3-APR-75 2310-EDT CALVIN at BBN-TENEXA: MTACPY
Distribution: MAYNARD AT BBNB
Received at: 3-APR-75 23:09:48-EDT 1c

DAVID, I WILL TRY TO LOOK INTO THE PROBLEM IF I GET TIME TOMORROW.
I WILL BE GONE FROM 4 (EDT) TOMORROW TIL WEDNESDAY SO I MAY NOT FIND ENOUGH INFO TO HELP YOU RIGHT AWAY. OFF HAND ALL I CAN TELL
YOU IS THAT MTACPY & TAPCNV ARE SOMEWHAT OF A CROCK. THEY WORK IN
MOST SIMPLE CASES, HOWEVER, WE7VE HAD A GREAT MANY PROBLEMS RECENTLY...
I'LL LET YOU KNOW WHAT I COME UP WITH.
JIM 1c1

I feel that our best current option is to rewrite the tape, unblocked with a multiple of six characters per record. I plan to pursue this problem with a goal of at least determining the class of tapes MTACPY finds palpable. 2

DSM 7-APR-75 11:45 25681

MTACPY Problems Dialog

(J25681) 7-APR-75 11:45;;; Title: Author(s): David S. Maynard/DSM;
Distribution: /PWO([INFO-ONLY]) EKM([INFO-ONLY]) GAS2([
INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DSM;

DVN 7-APR-75 12:29 25682

Please Add Beverly Boli to DPCS and DIRT

Please add Beverly Boli (BEV) to DPCS, DIRT,and ARC-DEV. Beverly is an expereienced writer and editor who joins ARC today ancd will be working on NSW documumentation. Please take Joan Hamilton off DPCS and DIRT. 1

DVN 7-APR-75 12:29 25682

Please Add Beverly Boli to DPCS and DIRT

(J25682) 7-APR-75 12:29;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /MLK([ACTION]) DEE([ACTION] dpcs and Dirt notebooks please) DPCS([INFO-ONLY]) DIRT([INFO-ONLY]) ARC-DEV([INFO-ONLY]) ; Sub-Collections: SRI-ARC DPCS DIRT ARC-DEV; Clerk: DVN;

CHI 7-APR-75 17:51 25683

Response to 25660: FE-WM Control Functions

Kirk, following are answers to questions you raised in 25660. 1

Universal functions will be control characters. 1a

We omitted the "situation" view because of the large number of control characters being used up. We thought we could make this a command in the NSW-EXEC, although we agree it should be a universal function. 1b

Yes, "available to ... tools" means available to the user while running that tool. The CLI will make these second-level commands in each tool. The tool designer needn't put them there. The user will, of course, be able to issue these after typing the escape character which gets him to the NSW-EXEC. 1c

Your understanding of multiple tool use is correct. My current image is that the CLI will implement an NLS-like stack of tools, but this is not a hard decision. He may have to say which tool he wants to terminate, with the default being the one he was (is) just speaking to. After terminating the command, he could be left in the NSW-EXEC or in a previous tool. We will have to experiment with this somewhat. 1d

CHI 7-APR-75 17:51 25683

Response to 25660: FE-WM Control Functions

(J25683) 7-APR-75 17:51;;; Title: Author(s): Charles H. Irby/CHI;
Distribution: /KS([ACTION]) NPG([INFO-ONLY]) RWW([INFO-ONLY]
) ; Sub-Collections: SRI-ARC NPG; Clerk: CHI; Origin: < IRBY,
FE-CC,NLS;1, >, 7-APR-75 17:46 CHI ;;;;####;

BEV 7-APR-75 19:17 25684

learning nls

Susan is teaching me to use the terminal. It is sure fun! 1

BEV 7-APR-75 19:17 25684

learning nls

(J25684) 7-APR-75 19:17;;;; Title: Author(s): Beverly Boli/BEV;
Distribution: /POOH([INFO-ONLY]) DVN([INFO-ONLY]) ;
Sub-Collections: SRI-ARC; Clerk: BEV;

DVN 8-APR-75 00:22 25685

Count Visibles in Branch Doesnt

This command in the publish subsystem counts only the visibles in the statement you bug, does no go on to the rest of the branch. 1

DVN 8-APR-75 00:22 25685

Count Visibles in Branch Doesnt

(J25685) 8-APR-75 00:22;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /FEEDBACK([ACTION]) ; Sub-Collections: SRI-ARC FEEDBACK; Clerk: DVN;

JBP 8-APR-75 02:00 25686

Re: Systems Analyst's Qualifying Exam

7-APR-75 11:00:31-EDT,370;000000000000
Mail from CCA-TENEX rcvd at 7-APR-75 1100-EDT
Date: 7 APR 1975 0935-EDT
From: DEE at CCA
Subject: "SYSTEMS'S ANALYST'S QUALIFYING EXAM"
To: NETWORK HACKERS:, CURRIER at USC-ISIB 1

I THINK ITS SOURCE WAS MEDIA/SCOPE JUNE 1970 VOL, 14 NO, 6 2

YOU LEFT OUT THE FINAL EXTRA CREDIT QUESTION: 3

EXTRA CREDIT: DEFINE THE UNIVERSE; GIVE THREE EXAMPLES,
------- 4

5

JBP 8-APR-75 02:00 25686

Re: Systems Analyst's Qualifying Exam

(J25686) 8-APR-75 02:00;;; Title: Author(s): Jonathan B. Postel/JBP;
Distribution: /SRI-ARC([INFO-ONLY]) ; Sub-Collections: SRI-ARC;
Clerk: JBP;

POOH 8-APR-75 13:00 25687

augmentation arena

welcome to the land of augmentation with its elves and system crashes
and all sorts of fun. 1

POOH 8-APR-75 13:00 25687

augmentation arena

(J25687) 8-APR-75 13:00;;;; Title: Author(s): Ann Weinberg/POOH;
Distribution: /BEV([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk:
POOH;

KEV 8-APR-75 13:25 25688

a simple minded batch processor proposal

i suspect that it would take about 1-2 days to implement a quick and dirty batch processor to run on bbnb, this processor would ask a user the name of a file to be run (eg runfil, etc), input and output files, the name, password and account of a user, and the time at which to start the job. thus a user could specify work to be performed on hers/his behalf in the middle of the night under light load conditions. please give me any feedback or feelings you have on this and if there is both sufficient interest and need i will see about implementing it.

1

KEV 8-APR-75 13:25 25688

a simple minded batch processor proposal

(J25688) 8-APR-75 13:25;;;; Title: Author(s): Kenneth E. (Ken) Victor/KEV; Distribution: /SRI-ARC([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: KEV;

RLL 8-APR-75 14:03 25689

updating ident file for ARCers

MLK= Hopper says this change wiill not causea problem just increase CPU use,
JCN= if don't want the change please notify MLK so she will not do it, Thaks

RLL 8-APR-75 14:03 25689

updating ident file for ARCers

I would suggest that allrequestsfor additions/deletions from SRI-ARC, ARC-DEV, ARC-APP be cross checked with one another, Inoticedthat someone was added tosri-arcbut not to either of thearc-xxx, Also conversely, added to arc-dev and not to sri-arc, the best thing to do is to put arc-dev and arc-app under sri-arc and only update the latter two, Even then i think people will forget to specify properly, so it is up to ustokeepa watch on these things, thanks
Rob

RLL 8-APR-75 14:03 25689

updating ident file for ARCers

(J25689) 8-APR-75 14:03;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /ML[[ACTION]) JCN([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: RLL;

JBP 8-APR-75 16:13 25690

Add Sattley to NSW Group

Marcia: could you please add Satttley (ident = KS) to the group NSW --jon. 1

JBP 8-APR-75 16:13 25690

Add Sattley to NSW Group

(J25690) 8-APR-75 16:13;;;; Title: Author(s): Jonathan B. Postel/JBP; Distribution: /MLK([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: JBP;

JAKE 8-APR-75 17:06 25691

Write-up for Resource Handbook

HELP!!! I am desperate to get a write-up for Office-1 (and an interest statement for ARC-TSP) for the Resource Handbook. Can any or some or all of you provide such a write-up for me. If not, we may be the only large server without a write-up. I will be glad to edit and can supply the skeleton that JCN gave me several months ago. I need this yesterday of course (end of this week). This is actually a good advertising vehicle if presented properly and I believe is worth doing. Any contributions gladly accepted. Jake 1

JAKE 8-APR-75 17:06 25691

Write-up for Resource Handbook

(J25691) 8-APR-75 17:06;;;; Title: Author(s): Elizabeth J. (Jake) Feinler/JAKE; Distribution: /JCN([ACTION]) DCE([ACTION]) JHB([ACTION]) RLL([ACTION]) RA3Y([ACTION]) MEH([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: JAKE;

L10 List Documentation

[BBNB]<arcsubsys>XL10 now compiles this syntax but does not produce code for it. This L10 version has not been checked out -- report problems to DIA.

L10 List Documentation

Introduction 1

An L10 list is an ordered set of L10 data structures called "elements". For each element, the run-time package maintains a "list element descriptor" (DESCR) which contains: 1a

1) the element's type: NULL, INTEGER, STRING, LIST, (arbitrary storage) BLOCK, and any others we care to define, 1a1

2) the element's value, if representable in 18 bits, or its address otherwise, 1a2

3) a bit indicating whether the DESCR contains the element's value or address, 1a3

4) a bit indicating whether or not the element resides in storage allocated by the run-time package, which must be released whenever the element is replaced or deleted, 1a4

If the element is itself a list, any allocated storage associated with IT must be released as well, and so on to arbitrary depth. 1a4a

Associated with every list is an upper bound M on the number of elements in the list, which is assigned either at compile time, if the list is declared, or at allocate time, if space for the list is obtained via the storage allocator. At any point in time, every list is also characterized by another number L, which is the current number of elements in the list. The elements of a list are subscripted one through L. 1b

General List Syntax 2

List Names 2a

List names are identifiers, as are other stores in L10. A reference to a list involves writing a "full-word-left-hand-side" inside # signs. Any of the constructs L10 allows on the left hand side of an arithmetic assignment, that designates a full WORD is a full-word-left-hand-side. That full-word is taken to be the list location. 2a1

Examples: 2a2

#name# --name is a declared list or REF containing a list address. 2a2a

#[array[j]]# --array[j] contains a list address. 2a2b

#[getadr(indx)+sbase]# --results of getadr + sbase is list address. 2a2c

A list element is written as a list name followed by '[expression '] where the expression designates the subscript value. 2a3

In the following we will write #list# for any list and #list#[i] for any list element designation. 2a4

List Assignments 2b

There are four types of assignment involving lists: 2b1

Element Assignment 2b2

#list#[i] _ list-element 2b2a

Changes the specified element. 2b2b

Sublist Assignment 2b3

#list#[i TO j] _ #<',> listpart [one or more listparts with commas] 2b3a

Changes the specified elements. 2b3b

List Assignment 2b4

#list# _ #<',> listpart 2b4a

Changes the entire list. 2b4b

List Append 2b5

#list# !_ #<',> listpart 2b5a

Appends to the current end of the list 2b5b

The syntax of list-element and listpart will be defined below. 2b6

Element Manipulation 3

Read 3a

The following may be used as a primary element in any arithmetic expression (just as a number can): 3a1

DESCR #list#[i] 3a1a

This denotes the descriptor of the ith element of the list (a WORD). Use with caution. 3a1a1

ELEM #list#[i] 3a1b

This denotes the value assiciated with the ith element. Types and values are: 3a1b1

NULL: value = zero; 3a1b1a

INTEGER: the integer; 3a1b1b

STRING: the address of the string; 3a1b1c

LIST: the address of the list; 3a1b1d

BLOCK: the address of the block. 3a1b1e

Write 3b

Assuming i <= L: 3b1

#list# [i] _ list-element 3b1a

replaces the current ith element of the list with the provided list element. The list-element syntax indicates what the element is, where to get it, and what to do with the original copy (if any). The old #list#[i] is lost and any allocated storage is released. #list# is used in the general sense. List-element is one of the following: 3b2

NULL --#list# [i] becomes a NULL element. 3b2a

#string# -- the element becomes a copy of the string. 3b2b

"lit-string" --the element becomes a copy of the literal string. 3b2c

expression --the element is type integer with value of expression. 3b2d

Note this could be ELEM #list# [j]. 3b2d1

COPY #list# [j] --a copy of that element is put in #list# [i]. 3b2e

COPY DESCR expression --a copy of that element is put in #list# [i]. 3b2f

The expression MUST be a descriptor or ABORT(baddescr) will occur. 3b2f1

MOVE #list# [j] --the element is MOVED to #list# [i]. 3b2g

The element #list# [j] becomes NULL. 3b2g1

USE expression --the expression is taken as a descriptor and stored. 3b2h

The descriptor should be obtained from run-time package routines so that proper storage allocation is done. "USE DESCR #list#[j]" is specifically prohibited as that would copy the descriptor but not the element. 3b2h1

LIST(listpart, ... listpart) --the element becomes that list. 3b2i

The list is generated and an appropriate descriptor is stored in #list#[i]. 3b2i1

Create 3c

If i > L, the assignment operation (above) is interpreted as: 3c1

#list# !_ NULL, NULL, ..., list-element 3c1a

where the number of NULLs is given by: i-L-1. The append operator (!_) is described later. 3c2

List Manipulation 4

Delete 4a

The statement: 4a1

#list# _ ; 4a1a

deletes all elements and sets the length to zero. 4a2

Note: #list# _ NULL yields a list with one (null) element. 4a3

Append 4b

The statement: 4b1

#list# !_ listpart, listpart, ... listpart 4b1a

appends the designated list elements onto the list. 4b2

Write 4c

The statement: 4c1

#list# _ listpart, listpart, ... listpart 4c1a

is logically equivalent to: 4c2

#list# _ ; 4c2a

#list# !_ listpart, listpart, ... listpart 4c2b

Syntax 4d

A listpart is one of the following: 4d1

COPY #list# --copy each element of #list# and use it. 4d1a

Same as COPY #list#[1], COPY #list#[2], ... COPY #list#[L] 4d1a1

COPY #list# [i TO j] --copy each element i thru j and use them. 4d1b

MOVE #list# --move each element of #list# to destination. 4d1c

This means each element of #list# becomes NULL; 4d1c1

MOVE #list# [i TO j] --move elements i thru j to destination. 4d1d

This means each of #list# [i to j] become NULL; 4d1d1

ELEM #list# --put the values of each list element in the destination as integers. 4d1e

ELEM #list# [i TO j] --as above but for elements i thru j. 4d1f

list-element --(as defined above) 4d1g

Examples: 4e

#lista# _ COPY #listb# 4e1

Copies all elements of listb and puts (new) descriptors for them into lista, lista.L = listb.L when finished. 4e1a

#lista#[i] _ LIST(COPY #listb#) 4e2

A (unnamed) copy of listb is created and a descriptor for it is placed in #lista#[i], lista,L = i when finished. 4e2a

#lista# ←_ MOVE #listb# [1 TO 2] 4e3

#listb#[1] and #listb#[2] become NULL. The elements previously there are moved to #lista# [L+1] and [L+2], lista,L is bumped by 2 when finished. 4e3a

Sublist Manipulation 5

Write 5a

The statement: 5a1

#list# [i TO j] _ listpart, ..., listpart 5a1a

is logically equivalent to: 5a2

#list# _ 5a2a

MOVE #list# [i], ..., MOVE #list# [i-1], 5a2a1

listpart, ..., listpart, 5a2a2

MOVE #list# [j+1], MOVE #list# [M] 5a2a3

Observe that this can change the length of the list. Also note that to null each of #list# [i TO j] requires a FOR loop since 5a3

#list# [i TO j] _ NULL 5a3a

replaces all of i thru j with one null element. 5a4

Length Manipulation 6

The current M and L for list "list" are denoted, respectively, by: 6a

list,M and list,L 6a1

Both attributes are read-only by programmer convention. It is in generally unsafe, for example, to perform: 6b

list,L _ 0 6b1

to null a list (as one might do with an L10 string), since allocated storage blocks may be lost in the process. 6c

List Declaration 7

A list is declared at compile-time with a declaration statement of (for example) the following form: 7a

LOCAL LIST list [length] 7a1

This statement creates a local variable called "list" of type LIST, and sets: 7b

M=length and L=0 7b1

A runtime-computed initial value may be supplied: 7c

LOCAL LIST list [m] _ listpart, ..., listpart 7c1

is logically equivalent to: 7d

LOCAL LIST list [m] 7d1

#list# _ listpart, ..., listpart 7d2

Corresponding declaration statements exist of course for non-local lists,, except that initial value may not be specified. 7e

If the list grows to exceed the max length specified at declaration time, it will be moved to allocated storage and allow to grow further (up to a system maximum). In particular, a list may be declared with a max length of zero by omitting the length syntax altogether. In that case allocated storage will be used at the first reference. 7f

Examples: 7g

LOCAL list; 7g1

(lista) LIST [25]; 7g2

DECLARE LIST qp[3], qz; 7g3

Internal Format 8

The internal PDP-10 format of a list is: 8a

list: XWD M,,L 8a1

storwd 8a2

ledl (list element descriptor) 8a3

... 8a3a

```
   ledM                                                              8a4

Where storwd is a runtime package word that is used to indicate if
(and where) the list resides in allocated storage. A value of zero
means that the list has not been referenced. In that case M
designates the number of (following) words that may be used for
elements.                                                            8b

The internal PDP-11 format of a list is:                             8c

   M                                                                 8c1

   L                                                                 8c2

   list: storwd                                                      8c3

   led1                                                              8c4

      ...                                                            8c4a

   ledM                                                              8c5

(ledr) RECORD % PDP-10 list element descriptor%                      8d

   ledval [18], %address/value of element%                           8d1

   ledtyp  [9], %element type                                        8d2

      NULL=0 INTEGER=1 STRING=2 LIST=3 BLOCK=4%                      8d2a

   ledimd  [1], %ledval contains value if TRUE%                      8d3

   ledalo  [1]; %element space allocated if TRUE%                    8d4

(ledr) RECORD % PDP-11 list element descriptor%                      8e

   ledval [11], %address/value of element%                           8e1

   ledtyp  [3], %element type                                        8e2

      NULL=0 INTEGER=1 STRING=2 LIST=3 BLOCK=4%                      8e2a

   ledimd  [1], %ledval contains value if TRUE%                      8e3

   ledalo  [1]; %element space allocated if TRUE%                    8e4
```

DIA 8-APR-75 19:52 25692

L10 List Documentation

(J25692) 8-APR-75 19:52;;; Title: Author(s): Don I. Andrews/DIA;
Distribution: /NPG([INFO-ONLY]) POOH([INFO-ONLY]) RWW([
INFO-ONLY]) ; Sub-Collections: SRI-ARC NPG; Clerk: DIA;
Origin: < ANDREWS, L10LISTS.NLS;2, >, 8-APR-75 17:58 DIA ;;;;####;

JAKE 8-APR-75 21:17 25693

printer hassle

jim, dean mentioned that he and harvey have gotten most of the programming done on the printer so that it will handle output to printer and that it is awaiting your approval of syntax. would it be possible just to let them go ahead with the understanding that the command language might change if needed. this printer thing is such a hassle, every little bit (pun) helps. jake 1

JAKE 8-APR-75 21:17 25693

printer hassle

(J25693) 8-APR-75 21:17;;;; Title: Author(s): Elizabeth J. (Jake) Feinler/JAKE; Distribution: /JCN([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: JAKE;

KIRK 8-APR-75 21:48 25694

Hello

Dear Kirk,

Did FEEDBACK give you the word on the help bugs you've been encountering? Harvey Lehtman (the reluctant help accessing system coder) said he fixed the problem with getting into a loop when quitting help but he couldn't reproduce the other problems you encountered and so cannot fix them. ... Dirk forwarded your message to me. It is good to hear that you read Helpd; certain people here were afraid it might prove unreadable. If you have any questions or suggestions, I'm looking for feedback. ... It IS rare to meet someone else with the first name Kirk. 1

KIRK 8-APR-75 21:48 25694

Hello

(J25694) 8-APR-75 21:48;;;; Title: Author(s): KirK E. Kelley/KIRK;
Distribution: /KS([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk:
KIRK;

DVN 8-APR-75 22:43 25695

For Batch Processor

Response to (25688,)

For Batch Processor

Assuming it could run commands branches and the like, such a processor could be extremely useful to publications people running the output processor and printing the result or running other automated editing operations. 1

DVN 8-APR-75 22:43 25695

For Batch Processor

(J25695) 8-APR-75 22:43;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /KEV([ACTION]) DMB([ACTION] dpcs notebook please) FEEDBACK([ACTION]) DPCS([INFO-ONLY]) ; Sub-Collections: SRI-ARC FEEDBACK DPCS; Clerk: DVN;

DVN 8-APR-75 22:59 25696

New Custodian of the DPCS notebook.

There has been some confusion about Dee's ident. It is DMB, not DEE.

DVN 8-APR-75 22:59 25696

New Custodian of the DPCS notebook,

Dee Brooks is taking over from Joan Hamilton as custodian of the DPCS notebook, I encourage anyone who sends items to this distribution to add a copy for action to Dee (ident DMB) with a parenthetical comment to put the item in the DPCS notebook,. For information about parenthetical comments, ask Help about "distribute effects", 1

DVN 8-APR-75 22:59 25696

New Custodian of the DPCS notebook,

(J25696) 8-APR-75 22:59;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /DPCS([ACTION]) DMB([ACTION] dpcs notebook please) DEE([INFO-ONLY] This may explain some strange journal items that came to you) ; Sub-Collections: SRI-ARC DPCS; Clerk: DVN;

DVN 8-APR-75 23:03 25697

New Custodian of the DIRT notebook,

Some confusion has been noted about Dee's ident. It is DMB, not DEE.

DVN 8-APR-75 23:03 25697

New Custodian of the DIRT notebook.

Dee Brooks is also taking over from Joan Hamilton as custodian of the DIRT notebook. I encourage anyone who sends items to this distribution to add a copy for action to Dee (ident DMB) with a parenthetical comment to put the item in the DIRT notebook. For information about parenthetical comments, ask Help about "distribute effects".

1

DVN 8-APR-75 23:03 25697

New Custodian of the DIRT notebook.

(J25697) 8-APR-75 23:03;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /DIRT([ACTION]) DMB([ACTION] DIRT notebook please) DEE([INFO-ONLY] This may explain some strange journal items that came to you) ; Sub-Collections: SRI-ARC DIRT; Clerk: DVN;

DVN 8-APR-75 23:30 25698

Files We Need and Can't Get at BB&N

We are still not able to get files archived for the former SRI-ARC directory <docudocumentation> which is now <arcdocuementation> at BB&N. Those files are getting more valuable with age and we need several for practical purposes as soon as poisslble. Our needs include making a COM version of the Microprocessor Technology paper, supplying an old version of the NSF proposal to the people down stairs, and recovering a chapter for use in the final report on 1868. 1

We are still not able to look at journal catalogs online. We are trying to whip the final report in to shape this week. We need those files both to make the references correct and to run makeref later in the week so we can finish the report and SRI can get paid. 2

DVN 8-APR-75 23:30 25698

Files We Need and Can't Get at BB&N

(J25698) 8-APR-75 23:30;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /JCP([ACTION]) FEEDBACK([ACTION]) JCN([ACTION]) DMB([ACTION] dpcs notebook please) DPCS([INFO-ONLY]) ; Sub-Collections: SRI-ARC FEEDBACK DPCS; Clerk: DVN; Origin: < VANNOUHUYS, FILEBITCH.NLS;2, >, 7-APR-75 13:06 DVN
;;;;####;

DMB 9-APR-75 12:03 25699

adding idents to arc-dev

please add my ident (dmb) to the arc-dev group 1

DMB 9-APR-75 12:03 25699

adding idents to arc-dev

(J25699) 9-APR-75 12:03;;;; Title: Author(s): Delorse M. Brooks/DMB; Distribution: /MLK([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: DMB;

RLL 10-APR-75 13:00 25700

instead of the batch processor

In every byte of humor thee is a bit of seriousness!!!!

RLL 10-APR-75 13:00 25700

instead of the batch processor

Instead of spending 2-3 man days on batching, how about creating a multihost journal system. (or do I have my days and years mixed up.....) 1

instead of the batch processor

(J25700) 10-APR-75 13:00;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /KEV([INFO-ONLY]) JDH([INFO-ONLY]) JCN([INFO-ONLY]) JHB([INFO-ONLY]) RA3Y([INFO-ONLY]) DVN([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: RLL;

RCO 10-APR-75 13:10 25701

messages for rene'

anyone needing to contact me during the weekday hours can do so by calling up x2460 (security) and asking that pageboy #14 be buzzed, give security the message you want conveyed to me and they will notify me of it.....(!) rene' 1

RCO 10-APR-75 13:10 25701

messages for rene'

(J25701) 10-APR-75 13:10;;;; Title: Author(s): Rene C. Ochoa/RCO;
Distribution: /SRI-ARC([INFO-ONLY]) ; Sub-Collections: SRI-ARC;
Clerk: RCO;

KS 9-APR-75 16:10 25702

Reply to your 25694.

Dear Kirk:

Yes, FEEDBACK and I have been carrying on quite a correspondence, usually via SNDMSG after NLS kicked me out on a "Data Base Portrayal Trouble". Indeed, the problem with the loop has been corrected, and I can now get out of Help with ^X. On the other problem, I send Sandy(FEED) a blow-by-blow listing of my path through Helpland up to the point of Portrayal Trouble, and she has responded saying that that pinpointed the problem. (I believe I CC'd Lehtman at BBNB that message.) If anyone needs to consult that listing for further tests, I'll keep it in my directory for awhile. Is is [BBNB]<SATTLEY>FEED30204.MSG;3. Since then I've gotten to the same point, following a different Help path (different terms) and, interestingly, it blew up again exactly 26 inches of TI paper down from the original Help call. If it would be of any value, I can transcribe that path too.

Yes, I felt HELPD was pretty understandable, on the whole. I'll start converting Millstein's WM-PROCEDURES into that form, rpobably next week, and then I'm sure I'll have lots of questions. I'll be in touch.

Kirk

1

KS 9-APR-75 16:10 25702

Reply to your 25694.

(J25702) 9-APR-75 16:10;;;; Title: Author(s): Kirk Sattley/KS;
Distribution: /KIRK([ACTION]) HGL([INFO-ONLY]) ;
Sub-Collections: NIC; Clerk: KS;

DSM 9-APR-75 17:03 25703

NLS'izing PDG Files

This Journal item documents the procedure which should be used to convert ascii text files containg the PDG data files derived from the B6700 into well structured text files. I have also included a list of files which I used to test the procedure , and then shipped to Office-1. 1

The following branch documents the proper sequence of NLS commands to suck up the ascii text file into NLS. It can be used as a process commands branch. You must be connected to the directory which contains the file pdgprogram. The file names in the branch should be edited of course to correspond to the desired input and target files. 2

(commands) 3

create file targetfile 3a

set viewspecs w 3b

Execute programs compile procedure pdgprogram,inseq1 3c

copy sequential pdgsample,asciitargetfile,dtwo 3d

Files transferred to directory <Scott> at Office-1 4

(scott,pdgdata,) 4a

A 61 Page NLS file containing 1683 statements which represent the data from the first 481 entries in the contracts data file. 4a1

(scott,pdgprogram,) 4b

An NLS file containg the procedure which must be used to perform the copy sequential command upon the files received from the B6700. 4b1

<SCOTT>pdgsample.ascii;1 4c

An Ascii text file containing the first 10 entries of the test file. 4c1

(scott,pdgsample,) 4d

An NLs file containing the first 10 entries from the contracts data file. 4d1

Additional task areas needing work are as follows: 5

Standardizing the procedure for going from a B6700 7-track tape to an ascii text file at Office-1. 5a

I am assuming PWO will perform this task, Workable operational procedures must be set up, and the most efficient blocking factor for the tape which is compatible with the MTACPY program at Office-1 must be determined. 5a1

Measuremnet of the efficiency of the ascii/NLS transformation. 5b

I will perform these measurements and report my findings to PWO. 5b1

Improvement of the ascii-nls transformation. 5c

If PWO determines that effort is needed in this area, and provided I can find time to spend on this task, I will work on improving both the efficiency of this transformation, and upon it's user interface. 5c1

DSM 9-APR-75 17:03 25703

NLS'izing PDG Files

(J25703) 9-APR-75 17:03;;; Title: Author(s): David S. Maynard/DSM;
Distribution: /PWO([ACTION]) GAS2([INFO-ONLY]) MCS([INFO-ONLY
]) ; Sub-Collections: SRI-ARC; Clerk: DSM;

POOH 10-APR-75 16:21 25704

Business Cards Again

I am going to send in another order for COM business cards. Anyone who is interested, please come see me. 1

POOH 10-APR-75 16:21 25704

Business Cards Again

(J25704) 10-APR-75 16:21;;;; Title: Author(s): Ann Weinberg/POOH; Distribution: /SRI-ARC([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: POOH;

KIRK 10-APR-75 19:54 25705

Look what they've done to my song, ma

The policy of having new NLS users spend valuable computer time blindly deleting every reference in the glossary that says "X: See x" is destroying valuable information for a questionable esthetic improvement. I request that it be stopped immediately. A much more reasonable course given that we have the resources to have humans munge through the glossary, would be to just delete the first "X" leaving the "See x". 1

KIRK 10-APR-75 19:54 25705

Look what they've done to my song, ma

(J25705) 10-APR-75 19:54;;;; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /DVN([ACTION]) POOH([ACTION]) SRL([ACTION])
BEV([ACTION]) PKA([ACTION]) ; Sub-Collections: SRI-ARC; Clerk:
KIRK;

KIRK 10-APR-75 20:41 25706

Ampersand => Dollarsign

If UD does not object, I would like to make the change in the running system as it is felt the transition for users may be much harder if we waited until NLS-9 is brought up.

KIRK 10-APR-75 20:41 25706

Ampersand => Dollarsign

Under our contract to ISI, ampersand is to be made a valid character useable in statement names. This necesitates changing the character for external name searches to be dollar sign. Ampersand was a poor choice for external name searches as it is much more appropriate as a valid character in a statementname (the only replacement for that function being the cumbersome "-and-"). Dollar sign is more of a delimiter type character and quite appropriate for an external name search which is an expensive process as address searches go. 1

KIRK 10-APR-75 20:41 25706

Ampersand -> Dollersign

(J25706) 10-APR-75 20:41;;;; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /JHB([ACTION]) EKM([INFO-ONLY] copy to ekm) ;
Sub-Collections: SRI-ARC; Clerk: KIRK;

DMB 11-APR-75 10:47 25707

morning message

good morning susan, are you ready for the picnic today? i am!
after dicksmess was complete this morning, i thought i would practice
sending a message. i received a message this morning from marcia to
say that my ident has been added to arc-dev(?) oh well, i'de better
go now, see you latter, tell pam good morning for me, i didn't know
how to send her a message! 1

DMB 11-APR-75 10:47 25707

morning message

(J25707) 11-APR-75 10:47;;;; Title: Author(s): Delorse M. Brooks/DMB; Distribution: /SGR([ACTION]) SGR([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DMB;

DVN 11-APR-75 12:16 25708

Journal Nondelivery

The journal has given me nothing, not even uathor copies of several things I have sent, since the 8th. The things I sent go to other people OK. 1

DVN 11-APR-75 12:16 25708

Journal Nondelivery

(J25708) 11-APR-75 12:16;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /FEED([ACTION]) JDH([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: DVN;

ISI Meeting Report

At the meeting held at ARC on Friday 4 April the following items were discussed by people from ISI (Dick Mandell, Jeff Rothenberg, and Ron Tugender) and from ARC (Charles Irby, Harvey Lehtman, Karolyn Martin, and Elizabeth Michael): 1

1. Dick Mandell presented two possible methods for dealing with the problem of multiple modifiers of a Base message file. These general approaches are based on the use of what ISI calls a PUF (Partial Update File). Harvey and Charles were concerned about the changes required in NLS to implement the outlined design and have agreed to evaluate other methods (possibly making use of the temporary modifications code existing in NLS.) Since the PUF concept is basic to the CoICO IA project and any other code modifications required (e.g., a sequence gernerator and address conversion package), this evaluation must take place this week. 1a

2. Ron presented the new view of the structure of the message files. It seemed quite reasonable. While an additional property type (access) is necessary, it will be managed by the ISI people. Primitives permitting use of and access to properties in the file will be made available to them. Specifications of the primitives will be provided this week. 1b

3. We discussed the document Dick sent up two week's ago on 21-MAR-75 dealing with various requirements of the IA NLS interface. We then listed the items which remain incomplete and ordered them according to their necessity to the IA project . We also estimated the cost (in pre BBNB mandays!) There are currently about 6 man weeks left in the ISI-ARC contract. If it becomes clear that the more important items on the list are not getting done in time, ARC must alert ISI so a modified working arrangement can be developed. Perhaps the mix of ARC coding/ISI coding could be modified with ARC taking a larger role in design and debugging aid if necessary. 1c

4. ISI would like an accounting of charges to date with a list of accomplishments. Dick Watson was not available at the time the request was made. We will send the information down upon his return. 1d

List of desired modifications/developments for IA project-- Priority: A highest, C lowest. Estimates in (pre-BBNB) mandays spent by ARC. These estimates have an uncertainty factor due to the recent change in our working environment brought about by the disappearance of our PDP-10. 2

1. Evaluation of PUF approach 2a

priority: A 2a1

Estimate: 1 2a2

2. Puf design/implementation 2b

Priority: A 2b1

Estimate: 10 2b2

3. Sequence generator-- specs by ISI, Design and implementation by ISI with assistance from ARC. 2c

Priority: A 2c1

Estimate: 3 2c2

4. Search techniques 2d

a. Hooks into sequence generator 2d1

Priority: A 2d1a

Estimate: 1 2d1b

b. Control over case matching 2d2

Priority: A 2d2a

Estimate: 1 2d2b

c. Anchoring 2d3

Priority: C 2d3a

Estimate: 1 2d3b

d. Search in branch primitive 2d4

Priority: C 2d4a

Estimate: 1 2d4b

5. Virtual text 2e

Priority: B 2e1

Estimate: 10 2e2

6. Address expression elements 2f

a. Conversion routines 2f1

Priority: A 2f1a

Estimate: 3 2f1b

b. Handles 2f2

Priority: A 2f2a

Estimate: 1 2f2b

c. Temporary markers 2f3

Priority: C 2f3a

Estimate: 1 2f3b

d. Intermediate returns 2f4

Priority: C 2f4a

Estimate: 3 2f4b

7. Open and close file x-level procedures with parameters to open with particular access 2g

Priority: A 2g1

Estimate: 1 2g2

8. Property x-routines 2h

a. Specification 2h1

Priority: B 2h1a

Estimate: 1 2h1b

b. Implementation 2h2

Priority: B 2h2a

Estimate: 3 2h2b

9. Additional changes to x-routines for ISI needs 2i

Priority: A 2i1

ISI Meeting Report

Estimate: 3

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ISI Meeting Report

(J25709) 11-APR-75 13:16;;; Title: Author(s): Harvey G. Lehtman/HGL; Distribution: /RWW([INFO-ONLY]) CHI([INFO-ONLY]) EKM([INFO-ONLY]) KJM([INFO-ONLY]) DSM([INFO-ONLY]) HGL([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: HGL; Origin: < LEHTMAN, MEETING,NLS;3, >, 11-APR-75 13:08 HGL ;;;;####;

JEW 11-APR-75 17:09 25710

Revised PCP Tenex Internal Process Structure

Introduction 1

This document supercedes PCPTNXINT, which claimed to describe the internal structure of a PCP process on Tenex. Briefly, I've moved all system (i.e. PCP) code out of the PFs and into the CF. The PF, which now contains only user code, obtains the services it needs from the Distributed programming System (DPS) by means of JSYSs which the CF implements by means of Tenex's JSYS trap facility. This approach makes for a more satisfactory interface between user and system code, and will no doubt ease the job of debugging. Furthermore, if these same services ever come to be provided by the monitor, then the JSYS-oriented interface will, of course, be just the right thing. 1a

Two of the four JSYSs implemented by the CF -- IVDPS and RRDPS -- provide the PFs with access to a whole set of virtual JSYSs (VJSYSs) implemented by the CF. The other two JSYSs -- GTDPS and PTDPS -- provide the CF with access to a set of virtual JUSRs (VJUSRs; virtual jump-to-user's) implemented by the PFs! 1b

My apologies for the terseness of this document, but time and computer resources are scarce. The reader is assumed to have as background for this present offering, a thorough understanding of the several more verbose PCP-related documents which have preceded it. 1c

The primary purpose of this document is to present to process implementers the details of their interface with DPS. The services provided by DPS are largely as described in previous documents, with the following major exceptions: 1d

1) fewer restraints upon the internal PF makeup 1d1

2) more flexible processor management 1d2

3) the ability to run different package sets in different processors (via the "subprocess" concept) 1d3

A Tenex process (and Tenex only, since subprocesses are not remotely manipulable) consists of one of more "subprocesses", the first called the "process leader" and created as part of the process' creation. Each subprocess consists of one or more "processors" (i.e. PFs), the first called the "subprocess leader" and created as part of the subprocess' creation. 1d3a

4) the ability to pass arbitrary "startup information" to processes, subprocesses, and processors 1d4

5) the ability to give "scope" to the handles for certain created entities 1d5

6) the ability to lock a data store 1d6

7) event and lock mechanisms for intra-process synchronization 1d7

8) a new data type, INDEX, which may be used to represent an integer in the range [1, 2**15-1] 1d8

Comments, especially reports of bugs/deficiencies or questions, are requested ASAP. 1e

Blocks 2

Some of the arguments and results of certain VJUSRs and VJSYSs are stored in "blocks". A block is M+1 contiguous words of memory, of which the first contains a header (XWD M,L) and the next L, data. "ABC (x)s" stands for the Address of a Block CONTAINING zero or more x's (or exactly one, if "s" is absent), "ABF (x)s" stands for the Address of a Block FOR zero or more x's (or exactly one, if "s" is absent). 2a

JSYSs 3

IVDPS (JSYS DPS+0)
Invokes VJSYS. 3a

ACCEPTS IN 3a1

0: XWD 3a1a

event handle to be signalled / 0 (meaning block), 3a1a1

VJSYS number 3a1a2

1-3: VJSYS arguments 3a1b

RETURNS + 3a2

1: unsuccessful, error number in 1 3a2a

2: successful, 3a2b

systemcall handle in 0 / VJSYS results in 1-3 3a2b1

RRDPS (JSYS DPS+1)
Retrieves results of VJSYS. 3b

ACCEPTS IN 3b1

0: systemcall handle 3b1a

RETURNS + 3b2

1: unsuccessful, error number in 1 3b2a

2: successful, VJSYS results in 1-3 3b2b

GTDPS (JSYS DPS+2)
Gets VJUSR arguments from DPS, 3c

ACCEPTS IN 3c1

0: usercall handle 3c1a

1-3: ABF (...) 3c1b

wherever ABC (...) called for by VJUSR argument description 3c1b1

RETURNS + 3c2

1: unsuccessful, error number in 1 3c2a

2: successful, 3c2b

XWD 3c2b1

requesting processor handle, 3c2b1a

requesting process handle / 3c2b1b

0 (meaning local DPS environment) in 0, 3c2b2

VJUSR arguments in 1-3 3c2b3

PTDPS (JSYS DPS+3)
Returns VJUSR results to DPS, 3d

ACCEPTS IN 3d1

0: XWD 3d1a

error code / 0 (meaning successful), 3d1a1

usercall handle 3d1a2

1-4: VJUSR results 3d1b

(or, if error code specified,
byte pointer to ASCIZ diagnostic in 1) 3d1b1

RETURNS + 3d2

1: unsuccessful, error number in 1 3d2a

2: successful 3d2b

VJSySs for manipulating remote processes 4

Processes 4a

CRTPS (VJSYS 1)
Creates remote process. 4a1

ACCEPTS IN 4a1a

1: byte pointer to ASCIZ process address 4a1a1

2: XWD 4a1a2

ABC (PCPB36 startup info) / 0 4a1a2a

(meaning EMPTY), 4a1a2a1

ABC (byte pointers to 4a1a2b

ASCIZ user name, password, and account) 4a1a2b1

RETURNS IN 4a1b

1: process handle 4a1b1

DELPS (VJSYS 2)
Deletes previously created remote process. 4a2

ACCEPTS IN 4a2a

1: process handle / 0 (meaning all) 4a2a1

RETURNS IN 4a2b

1: cost in cents 4a2b1

ITDPS (VJSYS 3)
Introduces two remote processes to one another. 4a3

ACCEPTS IN 4a3a

1: XWD 4a3a1

ABC (PCPB36 startup info 1) / 0 4a3a1a

(meaning EMPTY), 4a3a1a1

process handle 1 4a3a1b

2: XWD 4a3a2

ABC (PCPB36 startup info 2) / 0 4a3a2a

(meaning EMPTY), 4a3a2a1

process handle 2 4a3a2b

3: flags 4a3a3

B0 on: logical channel only 4a3a3a

RETURNS IN 4a3b

1: introduction handle 4a3b1

2: XWD ph12, ph21 4a3b2

SEPPS (VJSYS 4)
Separates two previously introduced remote processes, 4a4

ACCEPTS IN 4a4a

1: introduction handle / 0 (meaning all) 4a4a1

RETURNS IN 4a4b

1: cost 1 in cents 4a4b1

2: cost 2 in cents 4a4b2

Packages 4b

OPNPK (VJSYS 5)
Opens remote packages, 4b1

ACCEPTS IN 4b1a

1: XWD scope, process handle 4b1a1

2: XWD 4b1a2

ABC (4b1a2a

ABC (PCPB36 startup info) / 0 4b1a2a1

(meaning EMPTY) 4b1a2a1a

)s / 0 (meaning all EMPTY)) 4b1a2a2

ABC (byte pointer to ASCIZ package name)s 4b1a2b

CLSPK (VJSYS 6)
Closes previously opened remote packages, 4b2

ACCEPTS IN 4b2a

1: process handle 4b2a1

2: XWD 4b2a2

ABF (cost in cents)s / 0 (meaning discard), 4b2a2a

ABC (package handle)s / 0 (meaning all) 4b2a2b

Procedures 4c

CALPE (VJSYS 7)
Calls/resumes remote procedure, 4c1

ACCEPTS IN 4c1a

1: XWD 4c1a1

flags, 4c1a1a

B0 on: resume, rather than call 4c1a1a1

B1 on: ignore NOTEs 4c1a1a2

B2 on: ignore HELPs 4c1a1a3

B3 on: abort procedure on COROUTINE return 4c1a1a4

call handle / addr of Tenex-format procedure selector 4c1a1b

2: XWD 4c1a2

ABC (PCPB36 argument list mask) / 0 4c1a2a

(meaning LIST (INDEX [CALLER])), 4c1a2a1

ABC (ABC (PCPB36 argument) / 0 (meaning EMPTY))s / 0 4c1a2b

(meaning none) 4c1a2b1

3: XWD 4c1a3

ABC (PCPB36 result list mask) / 0 4c1a3a

(meaning LIST (INDEX [CALLER])), 4c1a3a1

ABC (ABF (PCPB36 result) / 0 (meaning discard))s / 0 4c1a3b

(meaning discard all) 4c1a3b1

RETURNS IN 4c1b

1: call handle / 0 (if PERMANENT return) 4c1b1

2: XWD type, subtype 4c1b2

3: cost in cents (if PERMANENT return) 4c1b3

INTPE (VJSYS 10)
Interrupts previously called/resumed remote procedure, 4c2

ACCEPTS IN 4c2a

1: XWD 4c2a1

flags, 4c2a1a

B0 on: abort, rather than suspend 4c2a1a1

call handle / 0 (meaning all; abort only) 4c2a1b

Data Stores 4d

CRTDT (VJSYS 11)
Creates remote data store, 4d1

ACCEPTS IN 4d1a

1: XWD 4d1a1

scope, 4d1a1a

addr of Tenex-format data store selector 4d1a1b

2: ABC (PCPB36 initial value) / 0 4d1a2

(meaning EMPTY) 4d1a2a

DELDT (VJSYS 12)
Deletes previously created remote data store, 4d2

ACCEPTS IN 4d2a

1: addr of Tenex-format data store selector 4d2a1

RDDT (VJSYS 13)
Reads remote data store, 4d3

ACCEPTS IN 4d3a

1: XWD 4d3a1

ABF (PCPB36 value) / 0 (meaning discard), 4d3a1a

addr of Tenex-format data store selector 4d3a1b

WRDT (VJSYS 14)
Writes remote data store, 4d4

ACCEPTS IN 4d4a

1: XWD 4d4a1

ABC (PCPB36 value) / 0 (meaning EMPTY), 4d4a1a

addr of Tenex-format data store selector 4d4a1b

LCKDT (VJSYS 15)
Locks remote data store, 4d5

ACCEPTS IN 4d5a

1: XWD 4d5a1

scope, 4d5a1a

addr of Tenex-format data store selector 4d5a1b

2: lock type 4d5a2

RETURNS IN 4d5b

1: datalock handle 4d5b1

ULKDT (VJSYS 16)
Unlocks previously locked remote data store, 4d6

ACCEPTS IN 4d6a

1: XWD process handle, datalock handle 4d6a1

Channels 4e

CRTCH (VJSYS 17)
Creates channel between two remote processes, 4e1

ACCEPTS IN 4e1a

1: XWD process handle 1, process handle 2 4e1a1

RETURNS IN 4e1b

1: channel handle 4e1b1

2: XWD port handle 1, port handle 2 4e1b2

DELCH (VJSYS 20)
Deletes previously created channel between two remote processes, 4e2

ACCEPTS IN 4e2a

1: channel handle / 0 (meaning all) 4e2a1

VJSYSs for manipulating local process 5

Subprocesses 5a

CRTSP (VJSYS 21)
Creates local subprocess, 5a1

ACCEPTS IN 5a1a

1: byte pointer to ASCIZ subprocess address 5a1a1

2: XWD 5a1a2

scope, 5a1a2a

ABC (PCPB36 startup info) / 0 5a1a2b

(meaning EMPTY) 5a1a2b1

RETURNS IN 5a1b

1: subprocess handle 5a1b1

DELSP (VJSYS 22)
Deletes previously created local subprocess. 5a2

ACCEPTS IN 5a2a

1: subprocess handle / 0 (meaning all) 5a2a1

RETURNS IN 5a2b

1: cost in cents 5a2b1

Processors 5b

CRTPR (VJSYS 23)
Creates local processor. 5b1

ACCEPTS IN 5b1a

1: XWD scope, subprocess handle 5b1a1

2: ABC (PCPB36 startup info) / 0 (meaning EMPTY) 5b1a2

RETURNS IN 5b1b

1: processor handle 5b1b1

DELPR (VJSYS 24)
Deletes local processor. 5b2

ACCEPTS IN 5b2a

1: processor handle / 0 5b2a1

(meaning all within subprocess but leader) 5b2a1a

RETURNS IN 5b2b

1: cost in cents 5b2b1

SIPR (VJSYS 25)
Signs in local processor. 5b3

ACCEPTS IN 5b3a

1: byte pointer to ASCIZ process name 5b3a1

```
      (ignored except from first process-leader processor)   5b3a1a
   2: XWD                                                    5b3a2
      ABF (PCPB36 [sub]process[or] startup info),            5b3a2a
      ABC (byte pointer to ASCIZ package name)s              5b3a2b
         (indexed by internal package handle)                5b3a2b1
   3: QWD                                                    5b3a3
      first page of subprocess-global storage                5b3a3a
         (ignored except from subprocess leader),            5b3a3a1
      last page of subprocess-global storage                 5b3a3b
         (ignored except from subprocess leader),            5b3a3b1
      PSI channel for VJUSR request event / -1               5b3a3c
         (meaning channel-less event),                       5b3a3c1
      PSI channel for forced signout event / -1              5b3a3d
         (meaning channel-less event)                        5b3a3d1
RETURNS IN                                                   5b3b
   1: XWD                                                    5b3b1
      event handle by which DPS will request VJUSR           5b3b1a
         (event code = XWD usercall handle, VJUSR number),   5b3b1a1
      event handle by which DPS will request signout / 0     5b3b1b
         (if B0 and B1 and B2 below on)                      5b3b1b1
   2: flags                                                  5b3b2
      B0 on: local process is at root of tree                5b3b2a
      B1 on: local subprocess is process leader              5b3b2b
      B2 on: local processor is subprocess leader            5b3b2c
```

SDPR (VJSYS 26)
Signs out local processor. 5b4

RDYPR (VJSYS 27)
Readys local processor for next service request (INIPK / TRMPK / LCAPE / LRDDT / LWRDT). 5b5

Channels 5c

SNDCH (VJSYS 30)
Outputs portion of PCPB36 data structure on local channel. 5c1

ACCEPTS IN 5c1a

1: XWD flags, port handle 5c1a1

B0 on: data structure aborted 5c1a1a

2: ABC (portion) / abort depth 5c1a2

RCVCH (VJSYS 31)
Inputs next portion of PCPB36 data structure from local channel. 5c2

ACCEPTS IN 5c2a

1: XWD ABF (portion), port handle 5c2a1

RETURNS IN 5c2b

1: flags 5c2b1

B0 on: end of data structure 5c2b1a

B1 on: data structure aborted 5c2b1b

Locks 5d

CRTLK (VJSYS 32)
Creates local lock. 5d1

RETURNS IN 5d1a

1: lock handle 5d1a1

DELLK (VJSYS 33)
Deletes local lock. 5d2

ACCEPTS IN 5d2a

1: lock handle / 0 (meaning all) 5d2a1

SETLK (VJSYS 34)
Sets local lock. 5d3

ACCEPTS IN 5d3a

1: XWD 5d3a1

scope (value ALL illegal), 5d3a1a

lock handle 5d3a1b

2: lock type 5d3a2

RETURNS IN 5d3b

1: lockset handle 5d3b1

REMLK (VJSYS 35)
Unsets local lock. 5d4

ACCEPTS IN 5d4a

1: lockset handle 5d4a1

Events 5e

CRTEV (VJSYS 36)
Creates local event. 5e1

ACCEPTS IN 5e1a

1: XWD 5e1a1

scope (value ALL illegal), 5e1a1a

PSI channel to be interrupted when event signalled 5e1a1b

(for scope PROCESSOR only) / -1 (meaning none) 5e1a1b1

RETURNS IN 5e1b

1: event handle 5e1b1

DELEV (VJSYS 37)
Deletes local event. 5e2

ACCEPTS IN 5e2a

1: event handle / 0 (meaning all) 5e2a1

SIGEV (VJSYS 40)
Signals a local event. 5e3

ACCEPTS IN 5e3a

1: event handle 5e3a1

2: completion code 5e3a2

TSTEV (VJSYS 41)
Tests for signalled local event. 5e4

ACCEPTS IN 5e4a

1: event handle 5e4a1

RETURNS IN 5e4b

1: completion code / 0 (meaning unsignalled) 5e4b1

WAIEV (VJSYS 42)
Waits for any of a list of local events to be signalled. 5e5

ACCEPTS IN 5e5a

1: ABC (event handle)s 5e5a1

RETURNS IN 5e5b

1: block offset to signalled event handle 5e5b1

2: completion code 5e5b2

VJUSRs implemented by (every processor in) every subprocess 6

Packages 6a

INIPK (VJUSR 1)
Initializes local package for subprocess. 6a1

ACCEPTS IN 6a1a

1: internal package handle 6a1a1

RETURNS IN 6a1b

1: package version number 6a1b1

TRMPK (VJUSR 2)
Terminates local package for subprocess. 6a2

ACCEPTS IN 6a2a

1: internal package handle 6a2a1

Procedures 6b

LCAPE (VJUSR 3)
Calls/resumes local procedure on behalf of remote process. 6b1

ACCEPTS IN 6b1a

1: 6b1a1

XWD 6b1a1a

internal package handle, 6b1a1a1

ABC (ASCIZ procedure name) 6b1a1a2

/ 0 (meaning resume) 6b1a1b

2: XWD 6b1a2

call handle, 6b1a2a

ABC (6b1a2b

ABC (PCPB36 argument) / 0 (meaning EMPTY) 6b1a2b1

)s / 0 (meaning none) 6b1a2b2

RETURNS IN 6b1b

1: ABC (6b1b1

ABC (PCPB36 result) / 0 (meaning EMPTY) 6b1b1a

)s / 0 (meaning none) 6b1b1b

LINPE (VJUSR 4)
Interrupts previously called/resumed local procedure
on behalf of remote process. 6b2

ACCEPTS IN 6b2a

1: XWD 6b2a1

flags, 6b2a1a

B0 on: abort, rather than suspend 6b2a1a1

call handle 6b2a1b

Data Stores 6c

LRDDT (VJUSR 5)
Reads local data store on behalf of remote process, 6c1

ACCEPTS IN 6c1a

1: XWD 6c1a1

ABC (PCPB36 element selector) / 0 6c1a1a

(meaning whole data store), 6c1a1a1

internal package handle 6c1a1b

2: ABC (ASCIZ data store name) 6c1a2

RETURNS IN 6c1b

1: ABC (PCPB36 value) / 0 (meaning EMPTY) 6c1b1

LWRDT (VJUSR 6)
Writes local data store on behalf of remote process, 6c2

ACCEPTS IN 6c2a

1: XWD 6c2a1

ABC (PCPB36 element selector) / 0 6c2a1a

(meaning whole data store), 6c2a1a1

internal package handle 6c2a1b

2: ABC (ASCIZ data store name) 6c2a2

3: ABC (PCPB36 value) / 0 (meaning EMPTY) 6c2a3

VJUSRs implemented by process leader 7

Processes 7a

OKIPS (VJUSR 7)
OKs introduction of remote process to local process, 7a1

ACCEPTS IN 7a1a

1: XWD 7a1a1

ABC (PCPB36 startup info) / 0 7a1a1a

(meaning EMPTY), 7a1a1a1

new process handle 7a1a1b

OKSPS (VJUSR 10)
OKs separation from local process of previously introduced remote process, 7a2

ACCEPTS IN 7a2a

1: old process handle 7a2a1

Packages 7b

OKOPK (VJUSR 11)
OKs opening of local package by remote process, 7b1

ACCEPTS IN 7b1a

1: XWD scope, new package handle 7b1a1

2: XWD 7b1a2

ABC (PCPB36 startup info) / 0 7b1a2a

(meaning EMPTY), 7b1a2a1

ABC (ASCIZ package name) 7b1a2b

RETURNS IN 7b1b

1: subprocess handle 7b1b1

OKCPK (VJUSR 12)
OKs closing of local package by remote process, 7b2

ACCEPTS IN 7b2a

1: XWD 7b2a1

```
        %permanent% SUCCESS=1/FAILURE=2/ABORTED=3/                          8a5a
        %temporary% COROUTINE=1/HELP=2/                                     8a5b
        %ephemeral% NOTE=1]                                                 8a5c
    results-                                                                8a6
        %success/failure/coroutine%  any, ... /                             8a6a
        %aborted% %error name%   INDEX, %diagnostic% CHARSTR /              8a6b
        %note%    %event name%   INDEX, %description% any /                 8a6c
        %help%    %problem name% INDEX, %description% any                   8a6d
Code  INDEX                                                                 8b
    (event, error)                                                          8b1
Completion code  INTEGER (non-zero)                                         8c
Cost  INTEGER                                                               8d
Data store selector                                                         8e
    LIST (%ph% INDEX, %pkh% INDEX, %data store% CHARSTR [,
    %element% ESELECTOR*, ...])                                             8e1
Depth  INTEGER                                                              8f
Diagnostic  CHARSTR                                                         8g
Element selector                                                            8h
    <BOOLEAN [KEY=TRUE / INDEX=FALSE]> %element% any/INDEX                  8h1
Handle  INDEX                                                               8i
    (systemcall, usercall, process [SELF=1/SUPER=2], subprocess
    [SELF=1/LEADER=2], processor [SELF=1/LEADER=2], package,
    internal package, call, introduction, channel, port, lock,
    lockset, datalock, event)                                               8i1
Lock type  BOOLEAN [READ=TRUE/WRITE=FALSE]                                  8j
Login parameter  CHARSTR                                                    8k
    (user, password, account)                                               8k1
```

Revised PCP Tenex Internal Process Structure

Name CHARSTR 81

(process, package, data store) 811

Number INDEX 8m

(VJSYS, VJUSR, version) 8m1

Procedure selector 8n

LIST (%ph% INDEX, %pkh% INDEX, %pname% CHARSTR) 8n1

Process address CHARSTR 8o

<host address> <SP> <intrahost address> 8o1

Host address is decimal host addr or standard host name. 8o1a

Intrahost address is SAv filename on Tenex. 8o1b

Scope INDEX [PROCESSOR=1/SUBPROCESS=2/PROCESS=3/ALL=4] 8p

Startup info any 8q

Subprocess address CHARSTR 8r

<intrahost address> 8r1

PCPB36 Data Structure Format 9

Bit 0 If set, key data structure follows 9a

Bits 1-13 Unused (zero) 9b

Bits 14-17 Data type 9c

EMPTY =1 INTEGER=4 LIST=7 9c1

BOOLEAN=2 BITSTR =5 9c2

INDEX =3 CHARSTR=6 9c3

Bits 18-20 Unused (zero) 9d

Bits 21-35 Value or its length 9e

EMPTY unused (zero) 9e1

BOOLEAN 14 zero-bits + 1-bit value (TRUE=1 / FALSE=0) 9e2

JEW 11-APR-75 17:09 25710

Revised PCP Tenex Internal Process Structure

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