



DECUS U.S. CHAPTER SIGs NEWSLETTERS

DATATRIEVE/4GL SIG	DTR
OFFICE AUTOMATION SIG	OA
PERSONAL COMPUTER SIG	PC
ARTIFICIAL INTELLIGENCE SIG	AI
BUSINESS APPLICATIONS SIG	BA
COMMERCIAL LANGUAGES SIG	CL
DAARC SIG	DAR
DATA MANAGEMENT SIG	DMS
EDUSIG	EDU
GRAPHICS SIG	GRA
HARDWARE MICRO SIG	HMS
IAS SIG	IAS
LANGUAGES AND TOOLS SIG	L&T
LARGE SYSTEMS SIG	LS
MUMPS SIG	MMP
NETWORKS SIG	NTW
RSTS SIG	RST
RSX SIG	RSX
RT SIG	RT
SITE MANAGEMENT & TRAINING SIG	SIT
UNISIG	UNI
VAX SYSTEMS SIG	VAX
LIBRARY INFORMATION SECTION	LIB
“HOW TO” SUBMIT AN ARTICLE . . . GROUP FORMS	HOW
SIG INFORMATION SECTION	SIC
QUESTIONNAIRE SECTION	QU

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The Wombat

EXAMINER

and 4GL

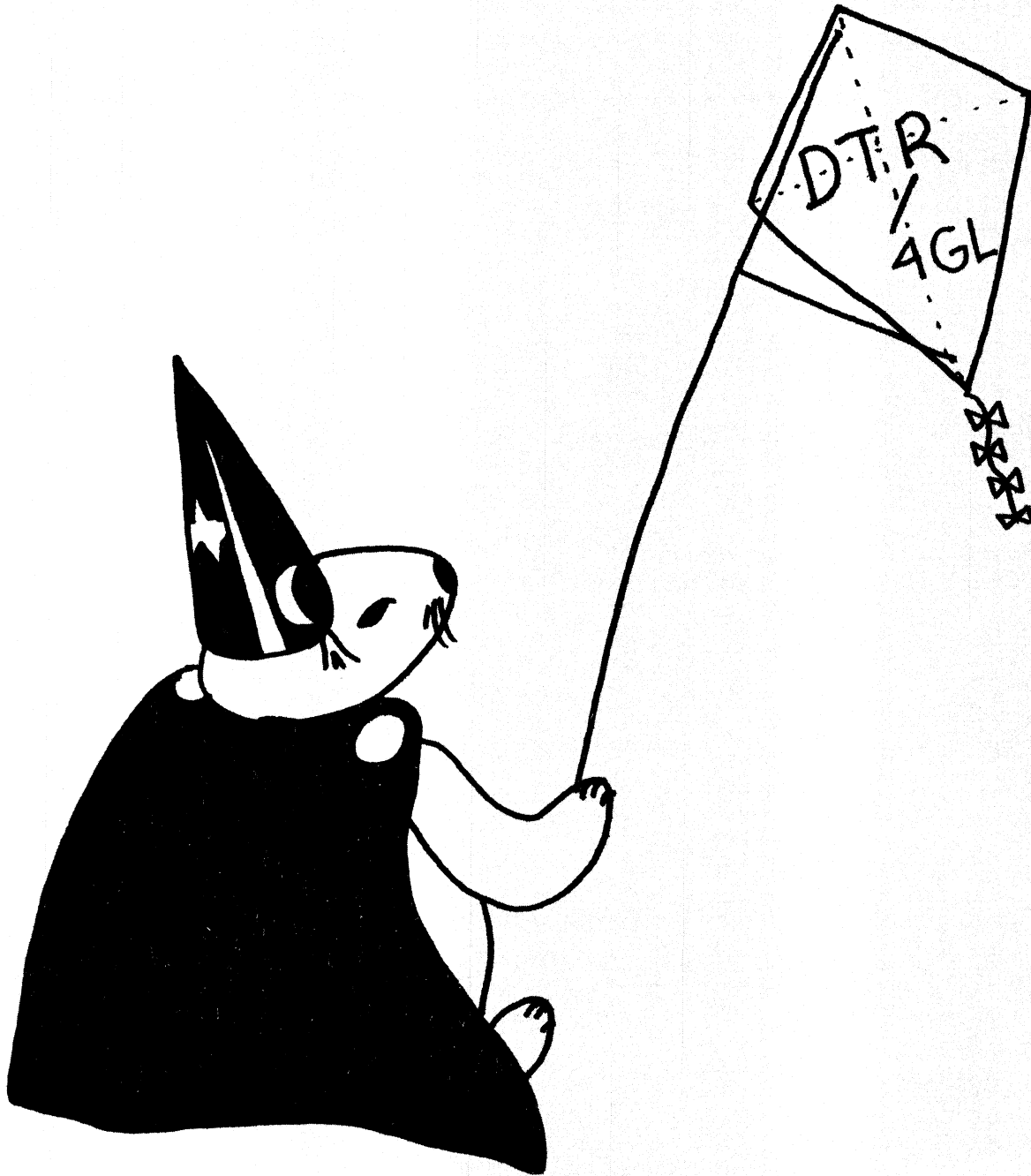
Dispatch

"Increases the Circulation of Anyone in America"

Volume 8

Number 10

DTR



Contributions

Submissions to this newsletter are constantly sought. A submission can be an article, a letter to the Wombat Wizard, a technical tip, or anything of interest to people using or considering Datatrieve or any 4GL product. Technical articles about the use of 3rd party 4GL's which run on Digital hardware are also welcome. Sales material from any source is inappropriate.

Submissions on magnetic media are preferred but hardcopy material can be handled. Authors can direct their submissions to either of the following addresses.

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From the Editor's Pen

Donald E. Stern, Jr. - Warner Lambert Co., Milford, CT

Although I'm busily preparing for the Nashville symposium at this column is being written, it will not be read until after the Symposium has concluded so news of the Symposium will have to wait for a future issue.

The Combined Newsletter, as we know it, is in trouble. Subscriptions have dropped by about 25% over the last six months. Several causes can be attributed to the drop in subscriptions and your Communications Committee is addressing many of them. For example, this section of the newsletter is the second in a pilot project intended to make the newsletter more readable. In addition, we are looking into methods for improving the marketing of the publication. Most important, in my opinion, is that the newsletter contain *quality* material.

In the past, I have found that information contained in the various SIG newsletters has been extremely valuable and, in many cases, not found in any other publication. In order to insure the continued viability of this publication, I'm asking you, the readers, to contribute an article or a tip on an interesting or unusual solution to a problem.

Thanks in advance and I hope to hear from you soon.

Letters to the Editor

Pseudo Array Problem

Dear Editor:

In the February 1987 issue of the Wombat Examiner there is an article titled "Pseudo Arrays in DATATRIEVE" by William M. Leal of the Kentucky Geologic Survey. This article describes the use of a procedure called ROTATE to create three pseudo arrays in DATATRIEVE. The "arrays" described in this article are 6 entries long. When filling these arrays, if there are n items used (where n is less than 6), then the values are put in entries 7-n through 6 rather than in entries 1 through n. I'm not sure if that is the way that the author meant it to be, but I would like to offer a modification to his article to put the items in entries 1 through n.

His article uses the following code segment:

```
FOR COMPANY BEGIN
    DEPT1 = DEPT
    NAME1 = NAME
    SSN1  = SSN
    :ROTATE
END
```

To put the values in the first entries, create a numeric variable I, and use the following code:

```
I = 0
FOR COMPANY BEGIN
    DEPT1 = DEPT
    NAME1 = NAME
    SSN1  = SSN
```



```

        I = I + 1
        :ROTATE
    END
    REPEAT (6 - I) BEGIN
        :ROTATE
    END
END

```

I have enclosed a DATATRIEVE log file to document the function of the author's code and the function of my changes.

Thanks,
Chris Wool

```

DTR> SHOW COMPANY, COMPANY-REC
DOMAIN COMPANY USING COMPANY_REC ON COMPANY.DAT;
RECORD COMPANY_REC USING
01 COMPANY_REC.
    03 DEPT PIC X(5).
    03 NAME PIC X(5).
    03 SSN PIC X(5).
;

```

```

DTR> SHOW ROTATE
PROCEDURE ROTATE
DEPTX = DEPT1; NAMEX = NAME1; SSNX = SSN1
DEPT1 = DEPT2; NAME1 = NAME2; SSN1 = SSN2
DEPT2 = DEPT3; NAME2 = NAME3; SSN2 = SSN3
DEPT3 = DEPT4; NAME3 = NAME4; SSN3 = SSN4
DEPT4 = DEPT5; NAME4 = NAME5; SSN4 = SSN5
DEPT5 = DEPT6; NAME5 = NAME6; SSN5 = SSN6
DEPT6 = DEPTX; NAME6 = NAMEX; SSN6 = SSNX
END PROCEDURE

```

```

DTR> SHOW TEST1
PROCEDURE TEST1
DECLARE DEPT1 PIC X(5).
DECLARE DEPT2 PIC X(5).
DECLARE DEPT3 PIC X(5).
DECLARE DEPT4 PIC X(5).
DECLARE DEPT5 PIC X(5).
DECLARE DEPT6 PIC X(5).
DECLARE DEPTX PIC X(5).
DECLARE NAME1 PIC X(5).
DECLARE NAME2 PIC X(5).
DECLARE NAME3 PIC X(5).
DECLARE NAME4 PIC X(5).
DECLARE NAME5 PIC X(5).
DECLARE NAME6 PIC X(5).
DECLARE NAMEX PIC X(5).
DECLARE SSN1 PIC X(5).
DECLARE SSN2 PIC X(5).
DECLARE SSN3 PIC X(5).
DECLARE SSN4 PIC X(5).
DECLARE SSN5 PIC X(5).
DECLARE SSN6 PIC X(5).

```

```

DECLARE SSNX PIC X(5).
!
READY COMPANY
!
PRINT ALL COMPANY
!
DEPT1 = " "
DEPT2 = " "
DEPT3 = " "
DEPT4 = " "
DEPT5 = " "
DEPT6 = " "
DEPTX = " "
NAME1 = " "
NAME2 = " "
NAME3 = " "
NAME4 = " "
NAME5 = " "
NAME6 = " "
NAMEX = " "
SSN1 = " "
SSN2 = " "
SSN3 = " "
SSN4 = " "
SSN5 = " "
SSN6 = " "
SSNX = " "
!
FOR COMPANY BEGIN
    DEPT1 = DEPT
    NAME1 = NAME
    SSN1 = SSN
    :ROTATE
    END
!
PRINT "1", DEPT1("DEPT"), NAME1("NAME"), SSN1("SSN"), SKIP,
      "2", DEPT2(-), NAME2(-), SSN2(-), SKIP,
      "3", DEPT3(-), NAME3(-), SSN3(-), SKIP,
      "4", DEPT4(-), NAME4(-), SSN4(-), SKIP,
      "5", DEPT5(-), NAME5(-), SSN5(-), SKIP,
      "6", DEPT6(-), NAME6(-), SSN6
!
DEPT1 = " "
DEPT2 = " "
DEPT3 = " "
DEPT4 = " "
DEPT5 = " "
DEPT6 = " "
DEPTX = " "
NAME1 = " "
NAME2 = " "
NAME3 = " "
NAME4 = " "
NAME5 = " "
NAME6 = " "
NAMEX = " "
SSN1 = " "

```

```

SSN2 = " "
SSN3 = " "
SSN4 = " "
SSN5 = " "
SSN6 = " "
SSNX = " "
!
FOR FIRST 3 COMPANY BEGIN
  DEPT1 = DEPT
  NAME1 = NAME
  SSN1 = SSN
  :ROTATE
  END
!
PRINT "1", DEPT1("DEPT"), NAME1("NAME"), SSN1("SSN"), SKIP,
      "2", DEPT2(-), NAME2(-), SSN2(-), SKIP,
      "3", DEPT3(-), NAME3(-), SSN3(-), SKIP,
      "4", DEPT4(-), NAME4(-), SSN4(-), SKIP,
      "5", DEPT5(-), NAME5(-), SSN5(-), SKIP,
      "6", DEPT6(-), NAME6(-), SSN6
END PROCEDURE

```

```

DTR> SHOW TEST2
PROCEDURE TEST2
DECLARE DEPT1 PIC X(5).
DECLARE DEPT2 PIC X(5).
DECLARE DEPT3 PIC X(5).
DECLARE DEPT4 PIC X(5).
DECLARE DEPT5 PIC X(5).
DECLARE DEPT6 PIC X(5).
DECLARE DEPTX PIC X(5).
DECLARE NAME1 PIC X(5).
DECLARE NAME2 PIC X(5).
DECLARE NAME3 PIC X(5).
DECLARE NAME4 PIC X(5).
DECLARE NAME5 PIC X(5).
DECLARE NAME6 PIC X(5).
DECLARE NAMEX PIC X(5).
DECLARE SSN1 PIC X(5).
DECLARE SSN2 PIC X(5).
DECLARE SSN3 PIC X(5).
DECLARE SSN4 PIC X(5).
DECLARE SSN5 PIC X(5).
DECLARE SSN6 PIC X(5).
DECLARE SSNX PIC X(5).
DECLARE I PIC 9.
!
READY COMPANY
!
PRINT ALL COMPANY
!
DEPT1 = " "
DEPT2 = " "
DEPT3 = " "
DEPT4 = " "
DEPT5 = " "
DEPT6 = " "

```

```

DEPTX = " "
NAME1 = " "
NAME2 = " "
NAME3 = " "
NAME4 = " "
NAME5 = " "
NAME6 = " "
NAMEX = " "
SSN1 = " "
SSN2 = " "
SSN3 = " "
SSN4 = " "
SSN5 = " "
SSN6 = " "
SSNX = " "
I = 0
!
FOR COMPANY BEGIN
    DEPT1 = DEPT
    NAME1 = NAME
    SSN1 = SSN
    I = I + 1
    :ROTATE
END
REPEAT (6 - I) BEGIN
    :ROTATE
END
!
PRINT "1", DEPT1("DEPT"), NAME1("NAME"), SSN1("SSN"), SKIP,
      "2", DEPT2(-), NAME2(-), SSN2(-), SKIP,
      "3", DEPT3(-), NAME3(-), SSN3(-), SKIP,
      "4", DEPT4(-), NAME4(-), SSN4(-), SKIP,
      "5", DEPT5(-), NAME5(-), SSN5(-), SKIP,
      "6", DEPT6(-), NAME6(-), SSN6
!
DEPT1 = " "
DEPT2 = " "
DEPT3 = " "
DEPT4 = " "
DEPT5 = " "
DEPT6 = " "
DEPTX = " "
NAME1 = " "
NAME2 = " "
NAME3 = " "
NAME4 = " "
NAME5 = " "
NAME6 = " "
NAMEX = " "
SSN1 = " "
SSN2 = " "
SSN3 = " "
SSN4 = " "
SSN5 = " "
SSN6 = " "
SSNX = " "
I = 0

```

```

!
FOR FIRST 3 COMPANY BEGIN
  DEPT1 = DEPT
  NAME1 = NAME
  SSN1 = SSN
  I = I + 1
  :ROTATE
END
REPEAT (6 - I) BEGIN
  :ROTATE
END
!
PRINT "1", DEPT1("DEPT"), NAME1("NAME"), SSN1("SSN"), SKIP,
      "2", DEPT2(-), NAME2(-), SSN2(-), SKIP,
      "3", DEPT3(-), NAME3(-), SSN3(-), SKIP,
      "4", DEPT4(-), NAME4(-), SSN4(-), SKIP,
      "5", DEPT5(-), NAME5(-), SSN5(-), SKIP,
      "6", DEPT6(-), NAME6(-), SSN6
END_PROCEDURE

```

DTR> :TEST1

DEPT	NAME	SSN
D1	N1	S1
D2	N2	S2
D3	N3	S3
D4	N4	S4
D5	N5	S5
D6	N6	S6

	DEPT	NAME	SSN
1	D1	N1	S1
2	D2	N2	S2
3	D3	N3	S3
4	D4	N4	S4
5	D5	N5	S5
6	D6	N6	S6

	DEPT	NAME	SSN
1			
2			
3			
4	D1	N1	S1
5	D2	N2	S2
6	D3	N3	S3

```
DTR> :TEST2
```

```
DEPT  NAME  SSN
D1    N1    S1
D2    N2    S2
D3    N3    S3
D4    N4    S4
D5    N5    S5
D6    N6    S6
```

```
DEPT  NAME  SSN
1 D1    N1    S1
2 D2    N2    S2
3 D3    N3    S3
4 D4    N4    S4
5 D5    N5    S5
6 D6    N6    S6
```

```
DEPT  NAME  SSN
1 D1    N1    S1
2 D2    N2    S2
3 D3    N3    S3
4
5
6
```

```
DTR> CLOSE
```

The Author Responds

Sorry to hear that the Wombat is irate. As a matter of fact, Chris is correct in his assessment that the results of the FOR loop feed the values into the back of the psuedo-array. In my case, that did not matter; but Chris' code to handle it should do the trick just fine. There is one other way to do it, by modifying ROTATE:

```
REDEFINE PROCEDURE ROTATE
    DEPTX = DEPT6
    DEPT6 = DEPT5
    DEPT5 = DEPT4
    DEPT4 = DEPT3
    DEPT3 = DEPT2
    DEPT2 = DEPT1
    DEPT1 = DEPTX
END_PROCEDURE
```

(NAME & SSN are handled similarly.) This will rotate values into the beginning of the psuedo-array, but they will be in reverse order. I.e., if COMPANY has three entries, then

```
FOR COMPANY BEGIN
    :ROTATE
    DEPT1 = DEPT
END
```

will result in DEPT1 containing the third value of DEPT, DEPT2 containing the second, and DEPT3

containing the first. If the order in which entries are stored in the psuedo-array is not important, this solution will save the extra processing required by Chris' suggestion.

(Caveat: I have not actually run this code; but I have run similar code and know that the idea works.)

Break Logic Breaks

Dear Editor:

In the February 1987 issue of the Wombat Examiner there is an article titled "Handling Break Logic in DATATRIEVE" by William M. Leal of the Kentucky Geologic Survey. There are two errors in this article. The first error is that the author gives a variable the name "SUM". The word "SUM" is a DATATRIEVE keyword. Naming a variable the same as a keyword is a bad practice which can cause unexpected results or error messages. In this case, using a variable called "SUM" will cause the procedure COLLECT to exit with the following error:

```
SUM = SUM + AMT
```

Expected value expression, encountered "=".

The second error is that the code shown at the top of page DTR-17 will not work if there is more than one record in the ACCOUNTS domain for the last department. When there is more than one record for the last department, then the statement "IF DEPT NE LAST_DEPT OR LAST_KEY EQ DEPT" is true for each record, and the procedure PROCESS is executed for each record. This means that the code generates summary lines for all departments until the last, and then generates a listing of all records for the last department. One way around this problem is to use a counter, rather than the last department value. The code then becomes:

```
-> DECLARE KOUNT PIC 9(6).
-> KOUNT = COUNT OF ACCOUNTS
-> DECLARE N PIC 9(6).
   DECLARE UNCOLLECTED PIC 9.
   FOR ACCOUNTS BEGIN
->     N = N + 1
       IF LAST_DEPT EQ " " THEN LAST_DEPT = DEPT
       UNCOLLECTED = 1
       WHILE UNCOLLECTED EQ 1 BEGIN
           IF DEPT EQ LAST_DEPT THEN BEGIN
               :COLLECT
               UNCOLLECTED = 0
           END
->     IF DEPT NE LAST_DEPT OR N EQ KOUNT THEN BEGIN
           :PROCESS
           LAST_DEPT = DEPT
           END
       END
   END
```

The added or changed lines are indicated by a "->" above. I have enclosed a DATATRIEVE log file to document this second problem and my solution to it.

```
DTR> SHOW ACCOUNTS, ACCOUNTS_REC
DOMAIN ACCOUNTS USING ACCOUNTS_REC ON ACCOUNTS.DAT;
RECORD ACCOUNTS_REC USING
01 ACCOUNTS_REC.
   03 DEPT PIC X(5).
```

```

    03 AMT PIC 99.
;

DTR> SHOW COLLECT
PROCEDURE COLLECT
ASUM = ASUM + AMT
END _PROCEDURE

DTR> SHOW PROCESS
PROCEDURE PROCESS
PRINT LAST _DEPT, ASUM
ASUM = 0
END _PROCEDURE

DTR> SHOW BREAK
PROCEDURE BREAK
READY ACCOUNTS
DECLARE ASUM PIC 9(6).
DECLARE LAST _DEPT PIC X(5).
DECLARE UNCOLLECTED PIC 9.
DECLARE LAST _KEY PIC X(5).
FOR ACCOUNTS _LAST KEY = DEPT
FOR ACCOUNTS BEGIN
    IF LAST _DEPT EQ " " THEN LAST _DEPT = DEPT
    UNCOLLECTED = 1
    WHILE UNCOLLECTED EQ 1 BEGIN
        IF DEPT EQ LAST _DEPT THEN BEGIN
            :COLLECT
            UNCOLLECTED = 0
            END
        IF DEPT NE LAST _DEPT OR LAST _KEY EQ DEPT THEN BEGIN
            :PROCESS
            LAST _DEPT = DEPT
            END
        END
    END
END
END _PROCEDURE

DTR> SHOW NEW-BREAK
PROCEDURE NEW_BREAK
READY ACCOUNTS
DECLARE ASUM PIC 9(6).
DECLARE LAST _DEPT PIC X(5).
DECLARE UNCOLLECTED PIC 9.
DECLARE KOUNT PIC 9(6).
KOUNT = COUNT OF ACCOUNTS
DECLARE N PIC 9(6).
FOR ACCOUNTS BEGIN
    N = N + 1
    IF LAST _DEPT EQ " " THEN LAST _DEPT = DEPT
    UNCOLLECTED = 1
    WHILE UNCOLLECTED EQ 1 BEGIN
        IF DEPT EQ LAST _DEPT THEN BEGIN
            :COLLECT
            UNCOLLECTED = 0
            END
        IF DEPT NE LAST _DEPT OR N EQ KOUNT THEN BEGIN

```



```
        :PROCESS
        LAST_DEPT = DEPT
        END
    END
END
END_PROCEDURE
```

```
DTR> READY ACCOUNTS
DTR> PRINT ALL ACCOUNTS
```

```
DEPT  AMT
```

```
ADMIN 10
ADMIN 12
MAIL  11
MAIL  13
SALES 09
SALES 08
SALES 12
```

```
DTR> :BREAK
```

```
LAST
DEPT  ASUM
```

```
ADMIN 000022
MAIL  000024
SALES 000009
SALES 000008
SALES 000012
```

```
DTR> :NEW-BREAK
```

```
LAST
DEPT  ASUM
```

```
ADMIN 000022
MAIL  000024
SALES 000029
```

```
DTR> READY ACCOUNTS WRITE
DTR> STORE ACCOUNTS
Enter DEPT: TRAIN
Enter AMT: 15
DTR> PRINT ALL ACCOUNTS
```

```
DEPT  AMT
```

```
ADMIN 10
ADMIN 12
MAIL  11
MAIL  13
SALES 09
SALES 08
SALES 12
TRAIN 15
```

DTR> :BREAK

LAST
DEPT ASUM

ADMIN 000022
MAIL 000024
SALES 000029
TRAIN 000015

DTR> :NEW-BREAK

LAST
DEPT ASUM

ADMIN 000022
MAIL 000024
SALES 000029
TRAIN 000015

DTR> CLOSE

Cross Referencing Datatrieve

William Leal, Kentucky Geologic Survey

If you have used Datatrieve at all for doing your own development, you have no doubt repeatedly encountered the message "XYZ is undefined or used out of context". Datatrieve unfortunately doesn't tell you just where XYZ was not found or used out of context. Usually it isn't too hard to track down, but if your procedure is large, it may take you a while. If your application grows as mine has to where there are over 4,500 lines of program code in several dictionaries, locating where that error occurred can be a major headache. Finally, in frustration, I developed a cross-referencing procedure that shows me just where every program element occurs. That shows me the spots I need to look at to find the problem. It also gives me valuable information for program development. If I propose a change, I can see more easily what the implications may be.

The procedures are shown below. Here, to get us going, is a sample of the output:

Element	Occurs in	Number of times
AND	INSPREP_MAIN1	1
	INSPREP_MAINT	1
	INSPREP_MAINT_VIOL_L	2
	INSPREP_MAIN_EDIT	1
	INSPREP_MENU1	2
ARRIVE_DATETIME	INSPREP_MAIN_VIOL_L	1
ARRIVE_TIME	INSPREP_MAIN1	2

```

BEGIN .....          INSPREP_CLEAR          1
                      INSPREP_MAIN           2
                      INSPREP_MAIN1         12
                      INSPREP_MAINT         6
                      .
                      .
                      .

```

Here, BEGIN (either as a Datatrieve key-word or as a user-defined element) occurs once in INSPREP_CLEAR, twice in INSPREP_MAIN, etc.

The code that produces this is fairly straightforward:

1. Using DTR EXTRACT, produce a file that contains the Datatrieve material which is to be cross-referenced. Typically, this would be with EXTRACT ALL. If several dictionaries are involved, it is necessary to extract each one separately and then combine the resultant files into one file. A special function DCL_SPAWN allows us to access DCL in order to manipulate the files. (I understand that DTR Version 3.5 is supposed to contain a similar function built in.)
2. Using a DTR procedure, scan through the extracted material and locate all the program elements. A program element is defined as an alphabetic character (A-Z) followed by zero or more alphabetic, numeric (0-9) or special (_ \$) characters. Whenever a REDEFINE line passes by, the name of the item (procedure, domain, etc) is saved. As each element is located, it is output in an INSTANCES file along with the name from REDEFINE. Comments (!...) and quotes ('...', "...") are ignored.
3. Produce a report from the results in INSTANCES. Since duplicates occur, only unique combinations of program element and (context) name are printed.

You will note that Datatrieve key words are included on the report. I considered setting up an exclusion list, but decided not to because: (1) It is possible to use a key word as a program element (EXTRACT as key word and as a domain name); (2) Sometimes it is useful to see which procedures used which commands; (3) The key words don't clutter up the list too much or make it unwieldy.

If you inspect an output closely, you will see that there are more ENDS than BEGINS. This is because Datatrieve stores END-PROCEDURE with a hyphen in many cases, and the cross-referencer will treat that as two words (END and PROCEDURE).

For a command like

```
READY -.FOO.DOMAINX
```

the elements output will be READY, FOO and DOMAINX. In this fashion, -.DOMAINX and -.FOO.DOMAINS will both produce entries for DOMAINX, even if these refer to two separate domains. Similarly, if record structure RECORDX appears in separate subdictionaries, all elements for both instances will be cited as appearing in RECORDX without distinction.

The listing, shown below, is well commented, so no further comment should be necessary. Domains and record structures are shown first, followed by the procedures CROSS_REFERENCE (the main procedure), CROSS_EXTRACT (locates elements) and CROSS_PRINT (prints final report).

```

|-----|
| ----- Domains & Record Structures ----- |

```

```

DELETE EXTRACT;
REDEFINE DOMAIN EXTRACT
USING EXTRACT_REC
ON TEMP.ALL
;

```

```

DELETE EXTRACT_REC;
REDEFINE RECORD EXTRACT_REC
01 EXTRACT.

```

```

!-----
!
!   Define the basic input line as 132 characters.
!   The actual input is variable length, but
!   Datatrieve will take care of that for us.
!
!-----

```

```

05 INPUT_LINE PIC X(132).

```

```

!.....
!   The input line is redefined twice: once for the
!   case of DELETE, once for the case of REDEFINE. In
!   turn, the REDEFINE definition is redefined for
!   cases of REDEFINE RECORD, REDEFINE DOMAIN,
!   REDEFINE TABLE, and REDEFINE PROCEDURE.
!.....
!

```

```

05 DELETE_LINE REDEFINES INPUT_LINE.

```

```

10 DELETE_COMMAND PIC X(6).
10 FILLER PIC X.
10 DELETE_NAME PIC X(50).

```

```

05 REDEFINE_LINE REDEFINES INPUT_LINE.

```

```

10 REDEFINE_COMMAND PIC X(8).
10 FILLER PIC X.
10 TYPE_NAME PIC X(120).
10 RECORD_10 REDEFINES TYPE_NAME.
15 RECORD_TYPE PIC X(6).
15 FILLER PIC X.
15 ENTRY_NAME PIC X(50).

```

```

10 DOMAIN_10 REDEFINES TYPE_NAME.
15 DOMAIN_TYPE PIC X(6).
15 FILLER PIC X.
15 ENTRY_NAME PIC X(50).

```

```

10 TABLE_10 REDEFINES TYPE_NAME.
15 TABLE_TYPE PIC X(5).
15 FILLER PIC X.
15 ENTRY_NAME PIC X(50).

```

```

10 PROCEDURE_10 REDEFINES TYPE_NAME.
15 PROCEDURE_TYPE PIC X(9).
15 FILLER PIC X.
15 ENTRY_NAME PIC X(50).

```

```

;
DELETE INSTANCES;
REDEFINE DOMAIN INSTANCES
USING INSTANCES_REC

```

ON [BILL]TEMP_INSTANCES.DAT

;

DELETE INSTANCES REC;

REDEFINE RECORD INSTANCES_REC

01 ELEMENTS.

05 SEQUENCE NUMBER LONG.

05 INST NAME. !INST NAME is sec key for fast counts

10 INSTANCE PIC X(35). ! Instance of element

10 NAME PIC X(35). ! Name of ele. where ref found

05 TYPE PIC X. ! R=record, D=Domain,

! T=Table, P=Procedure

;

```
----- Procedures -----
```

DELETE CROSS_REFERENCE;

REDEFINE PROCEDURE CROSS_REFERENCE

!

```
=====
!*****
```

!

! Produce a cross-reference listing of selected
! Datatrieve entities. The result will take each
! element (field, variable, procedure, domain,
! record reference) along with DTR keywords (BEGIN,
! END, etc) and show both where they occur and how
! often.

!

```
!*****
!=====
```

!

!

```
!=====
```

!

! Step 1: Extract desired material. Here we extract

! everything from two dictionaries.

!

! The SET DICTIONARY is important: EXTRACT ALL works

! only for the default dictionary.

! EXTRACT -.INSPREP.ALL will cause Datatrieve to try to

! extract an element named ALL from -.INSPREP.

!

```
!=====
!
```

PRINT 'Extracting INSPREP'

SET DICTIONARY -.INSPREP

EXTRACT ALL ON [BILL]TEMP.INSPREP

!

PRINT 'Extracting MISC'

SET DICTIONARY -.MISC

EXTRACT ALL ON [BILL]TEMP.MISC

!

```

!=====
!
!   Step 2:  Combine extracted files to a single file.
!
!   Note:  DCL_SPAWN is a user-written routine that
!   spawns a subprocess.  See WOMBAT Examiner Vol 7 # 11.
!
!=====
!
PRINT 'Copying to common file'
SET DICTIONARY -.CROSS_REFERENCE
DCL_SPAWN('copy temp.insprep+temp.misc temp.all')
DCL_SPAWN('purge temp.*')
!
!=====
!
!   Step 3:  Extract elements from combined file and
!   build up INSTANCES file.
!
!=====
!
PRINT 'Extracting instances from common file'
:CROSS_EXTRACT
!
!=====
!
!   Step 4:  Produce report from INSTANCES file.
!
!=====
!
PRINT 'Producing report'
SET COLUMNS_PAGE = 132
ON TT: ON LPAO: BEGIN
    :CROSS_PRINT
    END
END-PROCEDURE

DELETE CROSS_EXTRACT;
REDEFINE PROCEDURE CROSS_EXTRACT
!
!=====
!*****
!
!   This procedure inputs Datatrieve material which
!   has been extracted and is provided in the domain
!   EXTRACT.  It produces a domain INSTANCES which
!   matches up occurrences of a Datatrieve element and
!   the context in which it occurred.  In scanning,
!   elements are defined as strings beginning with A-Z
!   and containing A-Z, 0-9, _ and $.  Comments and
!   literal strings ('...' or "...") are ignored.
!*****
!=====
!
DECLARE VI WORD.           ! Pointer for word search
DECLARE VJ WORD.           ! Pointer for word search

```

```

DECLARE VLEN WORD.          ! Length of input record
DECLARE VCHAR PIC X.       ! Current char
DECLARE VQUOTE PIC X.      ! Quote character string
DECLARE VTYPE PIC X.       ! Type of context (Proc, etc)
DECLARE VNAME PIC X(35).   ! Context Name
DECLARE VSEQ LONG.         ! Sequence number
DECLARE VINSTANCE PIC X(35). ! Instance element
!
!=====
!
! Set up domains. Note use of DEFINE FILE to initialize
! INSTANCES file. This is in place of ERASE ALL OF since
! it works so much faster.
!=====
!
FINISH ALL
DEFINE FILE FOR INSTANCES KEY=SEQUENCE_NUMBER,
KEY=INST_NAME
READY INSTANCES SHARED WRITE
READY EXTRACT SHARED
!
!=====
!
! Read through EXTRACT domain, skipping DELETE
! lines. Each line is scanned for instances of a
! Datatrieve element, following the rules above.
!=====
!
FOR EXTRACT WITH DELETE COMMAND NE 'DELETE' BEGIN
VLEN = FN$STR_LENGTH(INPUT_LINE||'') ! Get line length
VI = 0 ! Initialize ptrs
VJ = 0 !
!
! So long as I-pointer is before end of line,
! scan through
!
WHILE VI LE VLEN BEGIN
!
! If REDEFINE line, this tells us both
! context name and type
!
IF REDEFINE_COMMAND = 'REDEFINE' THEN BEGIN
!
! Pick off context name
!
VNAME = CHOICE
RECORD_TYPE = 'RECORD' THEN
RECORD 10.ENTRY_NAME
DOMAIN_TYPE = 'DOMAIN' THEN
DOMAIN 10.ENTRY_NAME
TABLE_TYPE = 'TABLE' THEN
TABLE 10.ENTRY_NAME
TABLE_TYPE = 'TABLE' THEN
TABLE 10.ENTRY_NAME
PROCEDURE_TYPE = 'PROCEDURE' THEN

```

```

        PROCEDURE_10.ENTRY_NAME
        ELSE '**'
        END CHOICE
PRINT TAB,VNAME(-)
!
!   Pick off context type as first
!   character
!
VTYPE = TYPE_NAME
!
!   Set I-pointer to large value to
!   terminate scanning
!
VI = 255
END

!
!   If not beyond end of line, scan for an
!   alpha character
!
IF VI LE VLEN THEN BEGIN
    VI = VJ
    VCHAR = ' '
    WHILE VI LE VLEN AND NOT(
        VCHAR BETWEEN 'A','Z') BEGIN
        VI = VI + 1
        VCHAR = FN$STR_EXTRACT(INPUT_LINE,VI,1)
        !
        !   If comment, skip rest of line
        !
        IF VCHAR = '!' THEN VI = 255
        !
        !   If quote character, skip
        !   over rest of quote
        !
        IF VCHAR = '"',""" THEN BEGIN
            VQUOTE = VCHAR
            VCHAR = ' '
            WHILE VI LE VLEN AND
                VCHAR NE VQUOTE BEGIN
                VI = VI + 1
                VCHAR = FN$STR_EXTRACT(INPUT_LINE,
                    VI,1)
            END
        END
    END
    END

!
!   Set J-pointer and scan for
!   rest of element
!
VJ = VI
WHILE VJ LE VLEN AND
    (VCHAR BETWEEN 'A','Z' OR
    VCHAR BETWEEN '0','9' OR
    VCHAR = '_','$') BEGIN
    VJ = VJ + 1
    VCHAR = FN$STR_EXTRACT(INPUT_LINE,VJ,1)
END

```



```

!
! If I-pointer is within the line
! at this point then we have a
! valid element. Pick off
! and output to INSTANCES file.
!
IF VI LE VLEN THEN BEGIN
    VINSTANCE = FN$STR_EXTRACT(INPUT_LINE,VI,
                               VJ - VI)

    STORE INSTANCES USING BEGIN
        ELEMENTS.SEQUENCE_NUMBER = VSEQ
        ELEMENTS.NAME             = VNAME
        ELEMENTS.TYPE             = VTYPE
        ELEMENTS.INSTANCE         = VINSTANCE
        VSEQ = VSEQ + 1          ! Incr seq no
    END
END
END
END
END-PROCEDURE

DELETE CROSS_PRINT;
REDEFINE PROCEDURE CROSS_PRINT
!
!=====
!*****
!
! Report on extracted results by reducing INSTANCES
! to instance and (context) name. Context type is
! not used here, but could be.
!
!=====
!*****
!
!
DECLARE LINSTANCE PIC X(35).
DECLARE TINSTANCE PIC X(35).
DECLARE DOTS PIC X(35)
    DEFAULT '.....'.
!
FOR AA IN INSTANCES REDUCED TO INSTANCE,NAME BEGIN
    TINSTANCE = AA.INSTANCE
    IF LINSTANCE = TINSTANCE THEN BEGIN
        TINSTANCE = ' '
        END ELSE BEGIN
            TINSTANCE = TINSTANCE ||| DOTS
            PRINT SKIP 0
        END
    PRINT TINSTANCE ('Element'), AA.NAME ('Occurs in'),
        COUNT OF BB IN INSTANCES WITH
        BB.INST_NAME = AA.INSTANCE |
        AA.NAME ('Number of times')
    LINSTANCE = AA.INSTANCE
END
END-PROCEDURE

```

Editor's Note:

Two User Defined Functions are used above, DCL_SPAWN and FN\$STR_LENGTH. The DEC supplied function, FN\$DCL (VAX DATATRIEVE V4.0), can be used in place of DCL_SPAWN. The following code can be added to DTRFND.MAR to add the UDF FN\$STR_LENGTH to the DTR shareable image.

```
    ; FN$STR_LENGTH - Returns the length of a string
;
; Output is the length of the string - passed as a longword
; Input is a character string

$DTR$FUN_DEF FN$STR_LENGTH, LIB$LEN, 1
    $DTR$FUN_OUT_ARG TYPE = FUN$K_VALUE, DTYPE = DSC$K_DTYPE_L
    $DTR$FUN_NOOPTIMIZE
    $DTR$FUN_IN_ARG TYPE = FUN$K_DESC, DTYPE = DSC$K_DTYPE_T, ORDER = 1
$DTR$FUN_END_DEF
```

Guide to Optimizing DATATRIEVE Performance

Compiled by: Steven Cordiviola, Kentucky Geological Survey, University of Kentucky, Lexington, Kentucky

A consistent complaint about DATATRIEVE is its negative impact on the system resources. Application programmers not accustomed to how the product works or interacts with the system, shy away from using DATATRIEVE, although its flexibility, functionality, and report writing capabilities make it an excellent product for prototyping and final application development.

It is unfair to label DATATRIEVE as a system resource hog. Many of the performance related issues are not caused by DATATRIEVE, but by poor utilization and optimization of VMS and RMS resources. DATATRIEVE makes extensive use of other layered software products, such as FMS, CDD, and VMS SORT. If these components are not "tuned" correctly, or the DATATRIEVE user does not make proper use the advanced features of these tools, then there will be a negative impact on performance. Users must design their DATATRIEVE applications properly and coordinate their work with the system manager to insure a smoother running system. Users and system managers should become familiar with what is happening behind the scenes when using DATATRIEVE.

This paper is designed as an over-all guide to application design considerations and performance management. It is a collection of information from various sources, including DATATRIEVE manuals, DECUS symposia talks, and previous WOMBAT EXAMINER articles. Phil Naecker, Joe Gallagher and the author presented talks at the last two DECUS symposia which detailed four of the most important issues in the proper use of DATATRIEVE: Performance Management for DATATRIEVE Applications (Naecker), Common Data Dictionary Optimization and Performance (Naecker), Advanced RMS File Design and Tuning for DATATRIEVE Performance (Gallagher), and DATATRIEVE Application Design Considerations and Tutorial (Cordiviola).

Another good source of information are the DATATRIEVE/4GL SIG newsletters, pre-symposium seminar notes, and symposia session notes. Some of the material may be difficult to come by if you did not attend the symposia. The SIG, however, tries to publish text based upon talks from the symposia in the Wombat Examiner and 4GL Dispatch, but this requires manpower to transcribe and/or interpret the tapes. The SIG is always looking for volunteers to help in this endeavor.

This guide is intended to be used only as an overview to DATATRIEVE design considerations and performance management. There are very few specifics; the reader is encouraged to read the appropriate references. A brief introduction to application design and performance considerations is necessary to understand why some of the components appear on this list.

There are no "DATATRIEVE-type" files. VAX DATATRIEVE can use RMS (Record Management System) which is the default, DBMS (network database system), or Rdb (relational database system) for actually storing data. DATATRIEVE-11 can only use RMS. Rdb and DBMS handle optimum data storage without much intervention by users. Although both systems have utilities for managing the data, users cannot have a large affect on the over-all performance of these data storage systems.

RMS, conversely, has no automatic file maintenance facilities, but there are many tools available to users to help manage these files. DATATRIEVE is relatively ignorant of the particulars of exactly how data is stored using RMS. Such factors as number of buffers, bucket size, contiguity of file, and indexing structures are of no importance to DATATRIEVE. All these factors and more, however, affect system performance, record manipulation, and file size. Users should at least read the introduction to VAX-11 Record Management Services to understand how RMS files are structured and what factors must be considered to optimizing file design and, hence, performance.

DATATRIEVE is intimately associated with the Common Data Dictionary (CDD). Proper structure of the CDD is extremely important to performance and dictionaries which are unbalanced, contain many versions of old objects, or have many deletes, will cause poor response. The Dictionary Management Utility (DMU) should be used regularly to maintain an optimum dictionary.

Users should also be familiar with DATATRIEVE internals and how procedures are processed (see Sue Harris' Wombat Examiner article, April '86). DATATRIEVE procedures are compiled at run-time. Everything between the outer-most BEGIN-END block is evaluated and compiled, including other procedures. Compile time, however, is only a small fraction of the total procedure execution time except in the cases of very large procedures or CDD access. Once compiled, DATATRIEVE is very similar in performance to "equivalent" 3rd Generation Languages. Keep in mind that compilation is "lost" when the procedure completes. Since compilation is "state-dependent", you cannot use commands which change the environment (like READY) within a BEGIN-END block and is the reason you cannot save compiled procedures. In addition, DATATRIEVE cannot support file operations unless the file system (RMS, Rdb, DBMS) support them.

The guide, provided at the end of this paper, is sorted by System or DATATRIEVE component. The Consideration/Suggestion column should help readers locate an idea quickly. The Discussion column gives a terse abstract of why users should use the suggestions while the Consequences and Results column gives an overview of what system or DATATRIEVE components will benefit from the suggestions. If there have been some performance monitoring for that specific suggestion, the Performance Impacts column attempts to tabulate the results of the benchmarks. Finally, the Reference column tries to steer readers to more information, but only if it appears in the DATATRIEVE manuals or the VMS documentation set. Like all tables, there are some objects that do not properly fit the categories very well. This guide is no exception.

The author encourages feedback to this guide. Information from future articles and symposia will be incorporated and used to update the guide for future.

System / Component	Consideration / Suggestion	Discussion	Consequences or Results	Performance Impacts	References Monitoring Tools
VMS CDD	Balanced Tree	Tree should be as wide as it is deep.	Quick access to any node		\$ DMU
	Purging and Compressing	Remove old versions delete unused space	Faster Dictionary access		\$ DMU Compress
	Use Sub-Dictionaries	Each application use its own dictionary file	Advantage - Easier to maintain - Better security Disadvantages - More Overhead		
DTR Record Definitions	Virtual Fields	Fields which contain a value "on-the-fly"	Virtual Fields do not use any physical space in the file. Updates are quicker		DTR Users Manual Chap 11
	Use BINARY data types over Character	USAGE WORD, REAL vs PIC X, 9, A	Uses less disk space No internal DTR conversions necessary		ibid
	Hierarchical records	Use "OCCURS" clause for fields which have multiple-occurrences	Advantages - all related data in 1 record Disadvantages - difficult to get at subordinate data - can waste storage - hard to add un-planned occurrences - confuse casual users		ibid
	"Flattened" records	Relational approach: a separate file for repeating fields	Advantages - Each occurrence separate record; easy to maintain - easy to manipulate data Disadvantages - More files - more up-front development		ibid
RMS Files	Use Indexed files over sequential	Sequential files store records in order of entry. Indexed files store records according to its KEYed field	Advantages - Quick access using keys - Can delete records within DATWRIEVE	On large files can improve performance: Elapsed 1600-2650% CPU 2100-3000% Direct IO 250-1450%	DTR Users Manual, Chap 12

- Records are inherently sorted on KEYed fields

Disadvantages

- More file overhead Approx. +7% for each key
- Use only on disk media
- Files need maintenance for optimum performance
- more resources needed for certain DTR operations Indexing will decrease system performance by:

	DTR Operation	
	ERASE	STORE
Elapsed	125%	95%
CPU	63%	25%
Direct IO	310%	310%
Page Faults	65%	0%

Search on PRIMARY key rather than ALTERNATE key

Primary key should be unique and non-duplicating. Use GROUP fields to obtain uniqueness. Design applications to eliminate duplicates from most files.

Quicker access to specific record

Using ALTERNATE keys will degrade performance:

	DTR Operation		
	ERASE	FIND	MODIFY
ET	29%	63%	50%
CPU	10%	14%	15%
D. IO	45%	145%	185%
Pg Flt	13%	0%	0%

VMS CONVERT to make Indexed file

Can easily restructure one file type to other within DTR, however, it more efficient to use CONVERT and FDL utilities for this operation because CONVERT bypasses inefficient RMS calls.

Will get much less bucket splits and fragmented files. Can control number of index levels, thereby optimizing bucketsize, resulting in less IO

Benchmarks indicate increased performance by:

	Type of Access		
	Seq.	Random	
ET	74%	15%	\$ EDIT/FDL/optins
CPU	29%	- 6%	\$ CONVERT/ -
Dir IO		99%	FDL=filespec - oldfile newfile

Periodically maintain indexed file using CONVERT and FDL

Constant STOREs and DEL-ETES fragments files, creating poor performance.

Regular maintenance will keep indexed files "clean", thus over-all performance will be improved

Pre-allocate RMS files

Use either FDL or ALLOCATION clause of DTR DEFINE command, by estimating the size you expect file to grow.

Larger allocation, if practical, will improve file performance because there will be less file fragmentation.

User Controlled environment

\$ SET FILE

Users can control their environment to optimize performance

VMS default settings usually not optimized for specific applications

DTR Users Manuals Chap 12

Global buffers

Assign global buffers to indexed files which

Locating a record takes less time if the record's index is

SET FILE/GLOBAL=n - filespec

will give RMS more space to store index structure in memory

stored in one of the buffer areas

Can also assign buffer count for each user.

Most important parameter for optimal record retrieval is having proper number of buffers; if too low, then file access will suffer. If too high, I/O will not improve, but over-all system performance will degrade because the extra un-needed buffer space decreases working-set size and increases page faulting.

\$ SET RMS/INDEX -
/BUFFERS=n

Application Design Considerations

Choose Optimal queries Internally, DTR optimizes its search and sorting routines

Performance can be greatly increased by carefully planning search and sorting criteria

\$ RUN /DEBUG -
SYS\$SYSTEM:DTR32

EQUALS vs CONTAINING vs STARTING WITH Use EQUAL or STARTING WITH constructs when querying for a specific set of records

EQUAL and STARTING WITH take advantage of any indexed keys in records. Be aware that EQUAL and STARTING WITH are case-sensitive, CONTAINING is not.

Can get 2x improvement in queries

DTR Users Manual Chap. 12

FOR vs. FIND Use FOR statements over FINDS whenever application does not require multiple operations on same, relatively small subset of large file.

FINDS create a collection of record pointers. Subsequent operations on the COLLECTION will not use any of the indexing structure and must sequentially step through the file

Changing from a FIND to a FOR construct will decrease resources:

DTR Operation		
	ERASE	MODIFY
Elapsed	26%	17%
CPU	32%	25%
Direct IO	1%	1%
Page Fault	64%	17%

DTR Users Manual Chap 12

CROSS clause and nested FOR loops Use the domain with the common field indexed as the 2nd domain. If both are indexed, put the domain with the fewer records 1st.

DTR will step sequentially thru the 1st domain and use keyed access on the 2nd (or 3rd domains if multiple Cross)

Can improve query times by 2-3 orders of magnitude

DTR Users Manual Chap. 12

DICTIONARY vs DOMAIN TABLES If the no of entries in table is small (<50?) it is usually more efficient to use a DOMAIN TABLE with key index.

DTR will use sequential search thru DICTIONARY TABLE but will take advantage of keys in the DOMAIN tables.

For keyed table lookup, performance increases:

Elapsed	1400%
CPU	2250%
Direct I/O	250%
Page Faults	400%

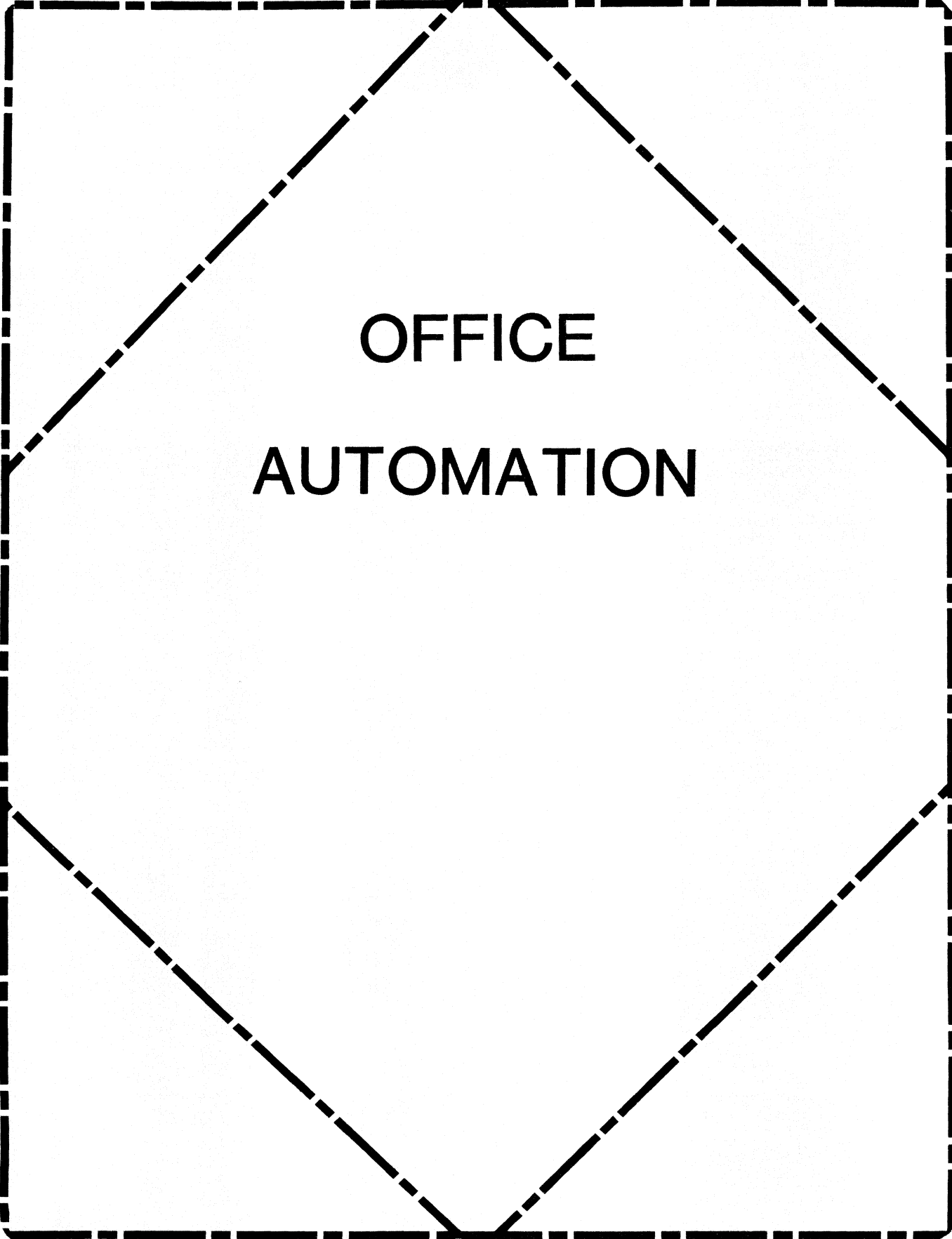
Conditionals vs WITH Avoid using nested FOR loops to control the ex-

DTR will test each occurrence in the conditional and will

ecution of a conditional not use indexing. WITH clause statement. Use WITH or OVER clause in CROSS, will clause clause instead. take advantage of keys.

"Compiled" DATATRIEVE A properly constructed application, making use of menus, can be compiled at the start of each day. The various components of the application would run very quickly because they are already compiled. Every domain will be READied, all TABLES will be loaded, and procedures will be in compiled state. Users will negotiate the application via menus or application-specific commands. Very slow to start-up, but once compiled, the application runs faster. Would be difficult to use for a "fast" report or modify, but for a large day-to-day, static application, can be worth start-up effort.

3rd Generation Language consider moving parts of DATATRIEVE application to another language. Move input/update portions while preserving ad-hoc query and report writing abilities of DATATRIEVE. Since DATATRIEVE can share the same files with any application, other languages could be used to take some of the load off DATATRIEVE because they use system resources more efficiently. Depending on application can get a significant increase in certain areas of performance.



**OFFICE
AUTOMATION**

IN THIS ISSUE...

From the Editor OA-1

- Therese LeBlanc

WPS-Plus Dictionary Repair OA-2-4

- Terry Lowery

From The Editor...

This will be our second DECpage™ style edition of the OA SIG newsletter... what do you think? Is it better with the consistent format, do you prefer it without DECpage formatting, does it really make any difference to you? Please drop me a note, or call and voice your opinion. The new format is on a "trial" basis and we need your input to decide if it should stay this way.

Our feature technical article this month addressed a recurring problem with the Personal Dictionary feature of ALL-IN-1™ and WPS-Plus™. It is submitted by Terry Lowery at E-Systems in Greenville, Texas. We have some more goodies from Terry which will appear in future issues.

Due to an early deadline for submissions in April (because of Symposium) we have a short issue this month. Stay tuned for post-symposium articles and (hopefully) some session reprints in the July issue. Also in July or August we will have the full listing of SIR's (System Improvement Requests) from the Nashville Symposium for you to review and vote on. As well as DEC's response to our voted on list from the Fall, San Francisco Symposium.

Regards,

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WPS-PLUS DICTIONARY REPAIR

Terry A. Lowery, E-Systems, P.O. Box 1056, Greenville, TX 75401

Editors Preface:

Many users have had a problem with the spell check feature "ADD" in version 2.0 or higher of ALL-IN-1 and WPS/VMS. A user who has successfully used and added words to the personal dictionary in the past, is suddenly informed by the system that there is "no personal dictionary available" when they attempt to add a word. The usual response to this is that they call the MIS group and tell them that they know the personal dictionary is there, and has worked in the past, but suddenly is gone. The following article describes one company's solution to this problem.

Article:

Dictionary repair (DR) is an option I added to the spell check dictionary menu. When the user invokes DR, a warning message displays indicated that the old, corrupted dictionary will be copied to a new document, and old dictionary deleted, and the WASTEBASKET emptied. The user is then prompted whether or not to continue with the DR option. If yes, then the script continues. Otherwise, the script exits and displays that no changes have been made. After DR completes, the user is returned to the word processing menu indicating a new dictionary will be created when spell check is invoked again. The user can either re-invoke spell check at that point, or go to the SCD menu and include the old dictionary into the "new" one.

If the user decides to go to the SCD menu first, includes the old dictionary into the new one, then return to the spell check menu (SPELLMENU), the new personal dictionary still will not be used during the next spell check. However, the second time around spell check works great. I corrected this problem by defining .KEY 0 on SCD to OA\$FLD EXIT instead of SPELLMENU. Now when the user presses EXIT SCREEN, the exit is to the Word Processing menu instead of the Spell Check menu. Spell check works like a champ with the corrected dictionary.

I hope this helps others as much as it has helped us...now the users can fix their own dictionaries instead of calling us, thereby allowing us to work on other improvements.

Dictionary Repair Script

```

! LNGSPLRDO.SCP by Terry A. Lowery, E-Systems, Inc.
!
!
!Allows a user to fix a corrupted Spell Check Dictionary
! by copying the current dictionary to a document in a
! folder named OLD DICTIONARY, deleting the dictionary, then
! emptying the wastebasket and returning to the Word Processing
! menu.
!
.LABEL START_PROCEDURE
!
! Gives user chance to stop Dictionary Repair and issues warning.
!
.CLEAR 15,23
.BLOCK 16,10
                                WARNING!!!

The current Personal Dictionary will be copied into the OLD DICTIONARY
folder. The Spell Check Dictionary will then be DELETED and the File
Cabinet WASTEBASKET will be emptied.

.END_BLOCK
  YESNO_PROMPT 'Do you wish to continue with Dictionary Repair? '\OA$FLD_
  .IF OA$PROMPT_TEXT:1 NES "Y" THEN .GOTO NOFIX
!
! Copies personal dictionary to OLD DICTIONARY folder to save words
! currently being used.
!
  .REFRESH 15,24
  DISPLAY Copying Personal Dictionary to OLD DICTIONARY
  FOLDER...\force
  .pause 3
  .IF #LNGSPL TEMP NES "" THEN GET $LNG_KEY_PERS=#LNGSPL_TEMP
  GET $LNG_PERS_TITLE = CAB$.TITLE[$LNG_KEY_PERS]
  GET $LNG_PERS_FOLDER = CAB$.FOLDER[$LNG_KEY_PERS]
  GET #NEWFOLD="OLD DICTIONARY"
  CAB COPY $LNG_KEY_PERS,#NEWFOLD,,"PERSONAL DICTIONARY COPY",
!
! Deletes the current Personal Dictionary
!
  GET OA$PROMPT_HELP="SCD D"
  GET #LNG_T_FOLDER = @#CURDOC:30
  GET #LNG_T_TITLE = OA$CURDOC TITLE

```

```

.REFRESH 19,24
DISPLAY Deleting current corrupted dictionary . . .\FORCE
.PAUSE 3
GET #LNGSPL_TEMP=#LNGSPL_DELDOC=@#CURDOC
CAB DELETE_OR_REFILE #LNGSPL_DELDOC,OA$WASTEBASKET

.LABEL TRY_AGAIN
  CAB NEXT_DOCUMENT #LNGSPL_TEMP,@#CURDOC

.LABEL IN_LOOP
  .IF OA$STATUS == 0 THEN .GOTO CHECK_LAST
  .IF CAB$.DSAB[@#CURDOC] NES "DICTIONARY" THEN .GOTO TRY_AGAIN
  CAB SELECT CAB$.FOLDER[@#CURDOC],,CAB$.TITLE[@#CURDOC],@#CURDOC
  .GOTO CLEAR_UP

.LABEL CHECK_LAST
  .IF #LAST EQS "1" THEN .GOTO CLEAR_UP_LAST
  CAB SELECT #LNG_T_FOLDER,,@#CURDOC
  GET #LAST = "1"
  .GOTO IN_LOOP

.LABEL CLEAR_UP_LAST
  GET @#CURDOC = ""
.LABEL CLEAR_UP
  GET #LAST = "0"
  GET #LNG_TIT = #LNG_T_TITLE

!
! Empties the WASTEBASKET containing the old Personal Dictionary
!
  GET OA$FUNCTION="DISPLAY Emptying the " OA$WASTEBASKET "...\FORCE"
  .PAUSE 3
  GET #DPTEMP=OA$CURDOC_FOLDER
  CAB JANITOR

  .IF #DPTEMP NES OA$WASTEBASKET THEN .GOTO EXIT_PROCEDURE

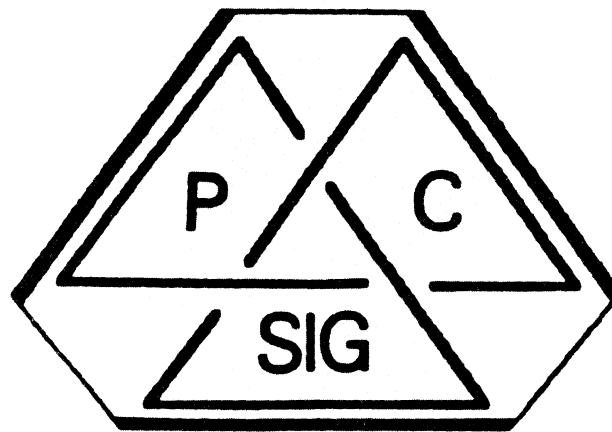
  CAB NEXT_FOLDER OA$WASTEBASKET,@#CURDOC

.LABEL EXIT_PROCEDURE
!
  GET OA$FUNCTION="DISPLAY " OA$WASTEBASKET " has been emptied\FORCE"
  GET $LNG_KEY_PERS=""
  GET #LNGSPL_TEMP = ""
  .PAUSE 3
  FORM WP
  GET OA$FUNCTION="DISPLAY New dictionary will be created when
  SpellCheck
  .EXIT

.LABEL NOFIX
  .REFRESH 19,24
  GET OA$FUNCTION="DISPLAY No changes to current Spelling
  Dictionary...
  GET #LNGSPL_TEMP = ""
  FORM WP
  .EXIT

```

Personal Computer Special Interest Group



Newsletter

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There have been a few changes to the Newsletter and I would like to tell you about them.

DEC Announces the DECrouter 200 (Digital Equipment Corporation)

This is Digital's recent announcement of a brand new networking product for your Personal Computers.

Rainbow Chair's Column (Jarrett)

Lynn Jarrett, our Rainbow Working Group Chairman has a few words to say about the Rainbow and VAXmate.

Lotus 1-2-3 V2.01 For Rainbow... Finally!! (Jarrett)

You've seen it on the Wish List for months, now you can read about actually getting it!

Rainbow Software List Update (Rice)

Our Rainbow Software Version List can help you determine whether or not the version you were shipped is the most recent or if you need to upgrade that package you've been running for years.

Rainbow Wish List (Jarrett)

The Rainbow Wish List lives on, regardless of what DEC may say about the Rainbow! If you are a manufacturer, please take note of what the users want.

LN03R ScriptPrinter Arrives (Jarrett)

Digital has announced a brand new laser printer! This one speaks PostScript!

Using the DECmate with an LN03 (Hahn)

If you have a DECmate and an LN03 printer, you won't want to miss this article about a few undocumented commands in WPS.

DECmate Software List Update (Rice)

Here is a list comparable to the Rainbow Software Version List and the PRO Software Version List for DECmate users.

Using ST225 Drive with P/OS V2.0 (Szuminsky)

An excellent article for those who would like to use the inexpensive third-party ST225 with the PROfessional.

PRO Software List Update (Rice)

This is the list that started it all! read this through to find out whether or not you are running the latest release.

Writing Device Drivers Under P/OS (Ethington, Rice)

Jerry Ethington submitted a PRO device driver to the DECUS Library and Gary Rice has excerpted from Jerry's release notes to make an excellent techie article for PRO users.

PROgramming Quickie (Rice)

Have you ever needed to get file attributes within your own program? Here's how to do that!

Dear fellow PC users,

We are living in a time of great changes in our world, especially in such high-technology fields as computer programming, systems management, etc. Why, within just the past couple of years, I am sure that you can remember many dramatic changes. Can you believe that the term IBM PC-compatible didn't mean anything less than ten years ago?! In fact, the term PC only meant Printed Circuit ten years ago, and a few years before that, it was only a couple of letters.

DECUS has always been in the unique and enviable position of dealing intimately with one of the leaders of technology development, Digital Equipment Corporation. It is ironic that DECUS, being ourselves composed of high-tech leaders, has always been a little behind the tide. The powers the be within DECUS have decided to try to catch up. One of the areas in which we have begun steps toward that is in the area of newsletter production.

Part of this has resulted in a pilot project designed to study the process of submitting the newsletters electronically to DECUS headquarters. This issue of the PC newsletter has been submitted using this new system. Unfortunately, one of the disadvantages to this system is that I can't just insert a page of which I only have hardcopy; it has to be keyed into the system. It is for this reason, that you may find some things missing this month. For instance, the Contact List has not been entered onto the system yet. Neither have the questionnaires and ballots. Hopefully, all of this will be ready in time for the July issue.

I hope that you will enjoy our new format. And, by all means, if you find something you don't like about it, or have some helpful suggestions, let me know. I want to make you happy for this is, in actuality, your newsletter.

Thank you for your support and may the LORD bless you,

Kenneth LeFebvre
Editor

DEC Announces the DECrouter 200

Digital Equipment Corporation, Maynard, Massachusetts

Digital Equipment Corporation made the following announcement on January 26th, 1987:

Announcing the DECrouter 200 V1.0 — Easy PC Interconnection NOW. The DECrouter based on hardware similar to the popular DECserver 200, provides communications between both Digital's and IBM's personal computers and the wide range of systems and resources offered by Ethernet-based DECnet networks. It also provides connectivity for larger systems running asynchronous DECnet-VAX or DECnet-RSX software.

The DECrouter 200 V1.0 is a combination hardware and software product. It consists of communication server software that runs on a dedicated hardware base (DSRVC). The "server box" has eight ports which supports any combination of IBM PCs, IBM PC/ATs, Digital Rainbows and Digital PRO 300 Series, as well as both local and remote connections (modem control on all eight lines). The DECrouter 200 can run all eight lines at speeds up to 19.2Kbps and a maximum throughput rate of over 170 packets per second.

The software provides the DECnet routing functions for up to eight DECnet Phase IV end nodes and allows the end nodes to access the wide range of resources offered Ethernet-based DECnet networks. Systems attached to a DECrouter 200 can access the Ethernet through either local asynchronous lines in the building or remote asynchronous lines from other locations. The DECrouter 200 can off-load much of the communications processing load from the host, thereby freeing up host resources. In particular, it performs the routing functions on the Ethernet to allow Phase IV end nodes not directly connected to the Ethernet to communicate with Phase IV hosts that are directly connected. In addition to performing the routing functions for the end nodes connected to it, the DECrouter 200 can act as³ the designated router on the Ethernet. A designated router is necessary for end nodes to communicate with nodes off the Ethernet.

Phase IV DECnet networks are hierarchical networks that can be segmented into areas. The DECrouter 200 supports only intra-area (Level 1) routing between nodes. It does not support inter-area (Level 2) routing for transporting messages between areas. The DECrouter 200 transports messages between Phase III or Phase IV routing and end nodes in the same area. End nodes connected directly to an Ethernet must use the DECrouter 200 or Phase IV host routing nodes on the same Ethernet for messages routing off that Ethernet (note that this does not mean routing to another area).

The DECrouter 200 implements Phase IV (with extended functionality) DECnet asynchronous DDCMP routing and network management. Phase IV DECnet networks can have up to 64,000 nodes give proper network planning (63 areas, each containing up to 1023 nodes). By partitioning the Ethernet into areas, over 16,000 personal computers — 63 areas x 256 (8 lines per router x 32 routers per Ethernet) — can be connected to one extended Ethernet. The DECrouter 200 can also be used to connect to Phase III nodes; this provides migration of Phase III networks to Phase IV Ethernet nodes.

Rainbow Chair's Column

Lynn Jarrett, DECUS PC Sig Vice Chair and Rainbow Working Group Chair

Most of you probably know by now that the Rainbow will no longer be sold after this month. The announcement was made at DECUS, and I'm really sad about its demise. I'm hoping that we can all hang in there together to try to filter information to each other about new software that's constantly being developed on the Rainbow, as well as share tech hints and tips. And third party developers are still developing new things for the Rainbow in the area of hardware too, so we'll want to keep abreast of those happenings.

In the Rainbow Wish List session at Nashville, DEC did not formally address the wish list items because they stated at the San Francisco Symposium that that one would be the last Rainbow wish list that they would address.

Because so many of the wishes still remain to be taken care of, it is the hope of the PC SIG that third party vendors will take care of many of these remaining wishes of Rainbow users.

Therefore, it is the PC SIG's intent to carry on with the Rainbow Wish List, publishing it in the newsletters and having sessions at symposia. It is our hope that "other" vendors will hear our pleas for help.

Notice that the Lotus update 2.01 is still at the top of the wish list. I'm going to leave it there until I have the update in my hands. Digital and WANG 1-2-3 updates were finally finished last quarter and offered to customers. It's been a long uphill battle, but I feel it's a victory for our SIG and Digital's customers.

Now that I've got a VAXmate on my desk along with a Rainbow, I'm feeling that I've got a lot to be thankful for. The Rainbow has been, and continues to be, a well-engineered, useful tool on the desk. I'm still using it, and I'll continue to use it for sometime.

The VAXmate is proving to be an interesting machine, as well. Right now I'm running PC Pagemaker for desktop publishing, 1-2-3 for spreadsheets, dBase III Plus for database, Mass-11 for word processing, Graphwriter for business graphics and PC/EDT for an editor, plus Norton Utilities, and a few other programs.

The resolution of the monitor is great, and I'm quite impressed by that. More importantly, my VAXmate is running mostly as a diskless workstation, netted to a VAX 780 with VAX/VMS Services. It's an interesting networking concept, and I think it is going to prove to be a very valuable scheme in the area of connectivity in DEC environments.

I've had very good luck with the 20 and 40MB expansion boxes that I've purchased from DMI, Duncan Mac Donald's company. They've been a lifesaver not only because they were available when I needed them, but they are reliable.

Next I'll be looking to plug some hardware into the expansion slots in the box, and I'll report those successes to you as time goes on.

Please fill in the ballot at the end of these newsletters and return it to me ASAP. We need your input. Thanks so much. — *LJ*.

Lotus 1-2-3 V2.01 for Rainbow... Finally!!

Lynn Jarrett, DECUS PC Sig Vice Chair and Rainbow Working Group Chair

If you haven't already heard, Lotus 2.01 is out for the Rainbow! You may purchase it as a new package or you may order the update if you already have a 1-2-3 license.

It's been a long time in coming, but in March LOTUS magazine, it was announced to be shipped in April. As of this writing, I still do not have it in my hands, so I'm keeping it on the Rainbow Wish List until I see it.

The major disappointment was that there was a price to pay, but at least they've given us the opportunity to have it for our Rainbows. As you know if you've been reading these newsletters, we've been requesting LOTUS and Digital to give us users this for about 18 months. I personally believe it will be worth it and in the following graphs, I'll tell you what you're going to get with it and you decide for yourselves what YOU think.

The general enhancements will include:

- 1) A larger worksheet, 256 columns wide by 8192 rows long;
- 2) More efficient memory to enable data to be stored anywhere on the worksheet;
- 3) Faster processing with co-processors— the Intel 8087 and 80287;
- 4) Director access to DOS so that you don't have to exit 1-2-3 to work with DOS commands;
- 5) Internationalization which will make 1-2-3 more adaptable to foreign markets.

New features include:

- 1) String Arithmetic to allow you to calculate and compare using string functions and label entries;
- 2) 39 New @Functions to make it easier to perform special-purpose calculations;
- 3) Linear and Multiple Regression Analysis to allow you to establish the relationship between one column of data and one or more other columns;
- 4) Circulation Reference provides the address of a cell whose formula depends on its own value so that you can find formulas that reference themselves (Great!!!);
- 5) Global Zero Suppression so that you may suppress all display of zeroes if the value of a cell actually equals zero;▫
- 6) Hidden Cells allows you to make selected cells visible so that you may hide confidential information;
- 7) Hidden Columns prevents select columns from displaying on the screen or printing;
- 8) Range Names can now be listed on a table with their corresponding cell addresses;
- 9) Page Break will allow you to indicate where the page break should occur when printing.

Additional features include more flexible graphics, more accessible database, new advanced macro commands, data parse, password protection, early warning, simplified installation procedure, new display driver, eliminates the need to adjust functions, file retrieval time is faster and the financial functions now allow negative and fractional arguments.

The printers supported now include the LA50, LA75, LA100, LA210, LVP16, LN03 and LN03 PLUS.

You may call Lotus at 1-800-TRADEUP to get your update kit. When it arrives, you'll need to send your 1-2-3 system disk along with the requested fee to Lotus to receive the update.

To get the new Lotus 1-2-3 V2.01, you may order it from Digital. The order number is QA528-C3. This is for those of you who are ordering new licenses only.

Happy spreadsheeting!

Rainbow Software List Update

Gary Rice, DECUS PC Sig PROfessional Contributing Editor

In an effort to keep you informed about software being shipped from various vendors, I began this list in September, 1986. This list reflects information that I received as of March 14, 1987. An asterisk by an entry indicates that the item has changed or been added since the last time the list was published. This month, there were **NO** updates.

DEC Software	Rev	Source of Information	Still Avail?	Operating System
CP/M-86/80	1.01	User	Yes	CP/M
DECnet-Rainbow	1.0	DEC	Yes	
GSX-86	1.0	DEC	Yes	CP/M
GW-BASIC	2.01.01	DEC	Yes	MS-DOS
MS-DOS	2.11-1	User	Yes	MS-DOS
Rainbow ATHABASCAN Kit	1.0	DEC	Yes	CP/M
Rainbow CONNECTION	1.0	DEC	Yes	MS-DOS
Rainbow Office Workstation	1.0	DEC	Yes	
WPS-PLUS/Rainbow	1.0	DEC	UNK	

If you have received a shipment of software in the last month (and you DIDN'T get it in a fire sale), please compare the documented REV level to the one I have listed. If your software is more recent (or it isn't listed at all), please let me know so I can update the list. Also, if the source of my information is listed as "DEC", I would appreciate hearing from a user, since I've found that hearing about it from DEC doesn't always mean that it is actually shipping.

I will submit a new list to the PC SIG Newsletter about the 20th of each month.

You can contact me by writing to:

Gary Rice
McDonnell Douglas
5555 Garden Grove Blvd.
MS: K20 77/200
Westminster, CA 92683
(714) 952-6582

or calling:

Rainbow Wish List

Lynn Jarrett, DECUS PC Sig Vice Chair and Rainbow Working Group Chair

1. Lotus Release 2.01.
2. MS-DOS 3.1.
3. Larger memory upgrades and removable hard disks at reasonable prices.
4. Larger than 20MB hard disks and controllers.
5. Nationwide TRUMP upgrades— update from a 100A to 100B.
6. Printer drivers for LN03 and more non-DEC printers on all DCS software.
7. A second COMM port that doesn't require you to disconnect the hard disk controller to put it in.
8. Come up with an ANSI.SYS device driver like that of IBM that would give people the ability to redefine the function keys. This could allow users the use of extended sequence for color or monochrome shading that DEC could add as well as give the users the ability to run many IBM programs on their Rainbows.
9. MS-DOS installable graphics driver similar to GSX-86.
10. Rainbow versions of RBase 5000, Framework, Thinktank, and Borland's Sidekick.
11. A new ROM upgrade for the Rainbow that would include support for an IBM PC compatible character set. (This would allow Rainbow users to easily run all the programs that take advantage of all the IBM PC graphic characters.)
12. More software packages overall— for business and personal use, as well as updates on dBase III, WordStar, etc.
13. Concurrent MS-DOS.
14. Better basic documentation with purchase of each unit, i.e. BIOS, firmware listing and schematics.
15. Software Reset and Halt Keys.
16. Terminal mode to support the additional keys of the LK201 keyboard.
17. Larger print buffers built into printers.
18. Remove copy protection from DCS and DDS software.
19. Coordination between local DEC Field Service offices and Atlanta Hotline Support Center.

20. ASSIGN command.
21. Cheaper maintenance prices.
22. Rainbow Draw and Paint.
23. VT220 and VT240 emulation software.
24. Lap-top or portable Rainbow.
25. Rainbow LAN without the need for a VAX.
26. Field Service support for third-party wares such as the disk controller and formatter as well as for the clock boards that are on the market.
27. Full featured GW-Basic compiler.
28. "Open" Winchester utility that allows users to specify disk geometry to take advantage of great third-party disk prices.
29. Direct Ethernet access for the Rainbow; i.e., a board that plugs into the Rainbow that doesn't preclude the use of a hard disk.
30. Liberal trade-in allowance on Rainbow to VAXmate.
31. Ability to read and write to RX33 diskette drive upgrade kit.
32. Monitor connections for CAD products.
33. DEC support for third party vendors wanting to develop and market hardware and software for Rainbows.
34. Ability to use CP/M BACKUP to back up the entire hard disk (all users) in one command.
35. Discount for buying the same software package that runs on both CP/M and MS-DOS.

The ballot can be found in the Questionnaire section of this copy of the SIG Newsletters.

LN03R ScriptPrinter Arrives

Lynn Jarrett, DECUS PC Sig Vice Chair and Rainbow Working Group Chair

DEC is now shipping its new desktop eight page-per-minute laser printer, the LN03R ScriptPrinter.

This printer incorporates the *PostScript* page description language from Adobe Systems, Inc. and works with MS-DOS on VAXmates running applications that produce *PostScript*, VMS or ULTRIX running applications that produce *PostScript*, VMS using host-resident translators from ANSI/sixels, ReGIS or Tektronix 4010/14 protocols to *PostScript*, and ULTRIX using the Transcript package to produce *PostScript*.

The ScriptPrinter is to be used mostly for departmental electronic publishing and CAD/CAM graphics.

The output is 300 dpi (dots per inch). There are 29 resident type faces built in some of which include Courier, Times, Helvetica, ITC Avant Garde Gothic, New Century Schoolbook, ITC Lubalin Graph, ITC Souvenir typeface family and symbols set. There are 2MB of RAM for full-page graphics.

There is a conversion kit for the LN03 and the LN03 Plus to the LN03R. In the MS-DOS arena, Aldus' Pagemaker and Lotus' Manuscript will output quality documents to the LN03R.

Digital brought this printer into the line because *PostScript* is extremely popular in the newer applications of desktop publishing. It should be a big seller in Digital environments. Interestingly, IBM has also adopted *PostScript* as well.

Using the DECMATE with an LN03

Pierre Hahn, SUNY, Stony Brook, New York

The above combination makes for an admirable pair. The WPS-8 software which is now up to Revision 2.1.3 or 2.2.1 (depending on which DECMATE you have) lends itself to using the LN03 with very little problem. The addition of font cartridges to the LN03 allows for proportional spacing, italics, bold, in various size of fonts from 24 points (24/72 of an inch) to 8 points (small) - see DECdirect Catalog for details.

One of the draw backs with the LN03, is that it has only one dispensing paper tray. If you want to have a letter, with the first page on letterhead and the continuation pages on blank paper, you must insert the letterhead paper and then use blank paper for the balance of the printout, not always feasible if you share a printer and it is not next to your DECMATE.

You can eliminate the the problem of letterhead in various ways:

- 1) Don't use letterhead paper (tacky).
- 2) Use different font size for the head of the letter (not a bad alternative), store your creation in a library document for instant recall.
- 3) Buy a cartridge from Compugraphic Corporation (Wilmington, MA), the supplier of DEC cartridges, only expensive if you change phone number or mail code often.
- 4) Make up your own using graphics. Impossible, you say to do graphics from WPS-8 on the DECMATE. Not so. There are some undocumented (and therefore not supported by Atlanta Hot Line) commands which allow you to send escape sequences and turn on the graphics of the LN03 and if your LOGO or letterhead is not too complicated you can do it!!

There are two control commands (<GOLD> [] which allow you to do graphics on the LN03. They are PRINTER and PRINTER GRAPH. The command is entered on the first line following START CONTROL.

PRINTER

PRINTER allows you with TRANS_MIT to send control characters to the LN03. The LN03 Programmer Reference Manual is a necessity, the manual number is EK-OLN03-RM-00n (where n = revision number).

For example try the following paying special attention to the spaces:

```
----- START CONTROL -----  
PRINTER  
COMMENT this will print the VT-100 style of DIGITAL logo  
TRANS_MIT CR LF LF LF ESC /+0/ ESC /o lqwqwqwqwqwqk/ CR LF  
TRANS_MIT / x x x x x x x x/ CR SI / d i g i t a l/ CR LF  
TRANS_MIT ESC /o mqvqvqvqvqvqvj/ CR LF SI  
----- END CONTROL -----
```

The various control characters you can send are listed in the code table of the LN03 (same as for the LA50, LA75, LA100) they are BS, HT, LF, VT, FF, CR, SO, SI, CAN, SUB, ESC, etc..

Another example, to draw lines making a frame around the paper would be as follows:

```
----- START CONTROL -----  
PRINTER  
COMMENT - write comment here  
TRANS MIT ESC /[2 I/  
COMMENT draw x-line;x-start;y-start;length;width
```

```

TRANS_MIT ESC /[0;25;25;5710;10!|/
TRANS_MIT ESC /[0;25;7675;5710;10!|/
COMMENT draw y-line;x-start;y-start;length;width
TRANS_MIT ESC /[1;25;25;7650;10!|/
TRANS_MIT ESC /[1;5735;25;7650;10!|/
TRANS_MIT ESC /[7 I/

```

----- START CONTROL -----

PRINTER GRAPH

This command turns on the SIXELS graphics of the LN03 in DECIPOINT. There is information on SIXELS graphic in various manuals, such as the LA50, LA75, LA100 etc. This is not too difficult. to design a LOGO use graph paper, draw what you want, and translate to SIXEL. There will be more on this subject in future issues. I have not had a chance to exercise this option past the below simple example.

----- START CONTROL -----

```

PRINTER GRAPH
COMMENT sixel graphic of Digital's logo (first letter only)
--
!200?!15~!6N~~~-
!200?!4~^NNFFF!4fn!6?~~~-
!200?~~~p!5?^!4~!6?~~~-
!200?!5~}}!7{!6{~~~-
!200?!24B-----

```

----- START CONTROL -----

The PRINTER GRAPH starts the graphic where the writing left off, you therefore have to make sure you are at the proper place on your paper before you turn it on.

There are restriction to both PRINTER and PRINTER GRAPH hard returns in the wrong spot will stop the graphic mode. A soft return may also do the same, you will have to experiment or wait till I have had a chance to do same.

One last comment - do not call Atlanta for help - they do NOT support undocumented items. Have fun and let the PC SIG know of your results. If you wish to share send the information to Pierre M. Hahn, SUNY - HSC - T10, Stony Brook, NY 11794. (Email: PHAHN@SBCCMAIL.BITNET).

DECmate Software List Update

Gary Rice, DECUS PC SIG PROfessional Contributing Editor

In an effort to keep you informed about software being shipped from various vendors, I began this list in September, 1986. This list reflects information that I received as of March 14, 1987. An asterisk by an entry indicates that the item has changed or been added sine the last time the list was published. This month, there were NO updates.

DEC Software	Rev	Source of information	Still Avail?	Operating System
COS-310	9.3	User	UNK	COS-310
DECmate CP/M-80	2.1W	User	Yes	CP/M
DECmate DBMS	1.0	DEC	Yes	
DECmate Graphics Terminal Emulator	2.0	DEC	Yes	
DECmate II Construction Business	1.0	DEC	Yes	
DECmate II Construction Management	1.0	DEC	Yes	

DECmate Master Menu	1.11	DEC	Yes	Menu
DECmate MS-DOS	1.0	DEC	Yes	MS-DOS
DECmate Office				
Workstation	2.0	DEC	Yes	
DECmate TYPEasy	1.0	DEC	Yes	
DECmate WPS	2.1	User	Yes	WPS
DECmate WPS DECspell Verifier	2.1	DEC	Yes	WPS
DECmate WPS Natural Languages	1.02	DEC	Yes	WPS
Graphtalk	1.0(3.27)	User	UNK	MS-DOS
MS-DOS	2.11-1	DEC	Yes	MS-DOS
Multiplan	1.05	User	UNK	CP/M
OS/278	V2-VB3	User	UNK	OS-278
R:BASE 4000	1.1	DEC	Yes	MS-DOS

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Gary Rice
 McDonnell Douglas
 5555 Garden Grove Blvd.
 MS: K20 77/200
 Westminster, CA 92683
 (714) 952-6582

or calling:

Using ST225 drive with POS 2.0

Neil J. Szuminsky, University of Pittsburgh, Pittsburgh, PA

Being a frugal person, I have been following the discussions in this newsletter and on the PDL bulletin board that have described using the Seagate ST225 drive on the PRO. Since I use both RS/1 and PRO/Tool Kit, I wanted to have both available on one drive (I had resorted to swapping drives). I was discouraged with the lack of support under POS 2.0 but decided it was worth the risk to order a drive, I could resort to having my controller upgraded by Horizon and still be ahead of the game.

According to the DW driver listing in the Tool Kit fiche, POS 2.0 was intended to support 3 drives, the 5 meg RD50, 10 meg RD51 and a 20 meg drive labeled as RD52. This 20 meg drive was expected to have 8 heads and 374 sectors in contrast to the ST225s 4 heads and 614 sectors. I reasoned that if I could alter the DW driver to match the ST225s configuration I'd have it made.

Finding the DW driver in POS.SYS was then the problem. After several false starts, including reviewing an ASCII dump of the entire POS.SYS file, I hit upon the idea of searching for the disk sizes, both maximum blocks and number of cylinders. Unfortunately I couldn't determine how to read the POS.SYS file so I resorted to an intermediate, an octal dump generated by \$DMP. Searching through this octal dump with a simple BASIC program was easy and in no time (well two days anyway) I had targeted in on block 162. Reviewing the octal dump of this block to the listing of the DW driver showed that I hit paydirt.

I then used ZAP in absolute mode to go in and change the following positions in POS.SYS on a copy of the PROSYSTEMV2 disk:

162:770 to 000004 from 000010 (number of heads)
 162:776 to 001146 from 000566 (number of cylinders)
 163:004 to 114577 from 135377 (number of blocks)

I then used this PROSYSTEMV2 disk to initialize the ST225. Unfortunately when I checked the VIEW option, I found that I still only had 10 meg.

Almost resigned to writing another check, I sat down to review the DWDRV listing again, this time concentrating on how the system decides the disk size. I couldn't figure that out (maybe someone who knows Macro could help us with that) but since I didn't need this copy to automatically determine disk size, I saw a way that I could force the system to go through the Dwty20 code by simply inserting a NOP (000240) at the end of the Dwty10 code (position 162:756 of POS.SYS). This time when I used the copy of PROSYSTEMV2 to initialize the ST225 I found 39245 blocks! 20 meg finally!

It may not be the most elegant, but it seems to be working. I've already got the Tool Kit, FORTRAN, Basic+2, VLINK and Pascal loaded. These will be followed by RS/1 later this week. Of course I'm already wandering when I'll go to an even larger disk!

Hope you can use this information!

++++

My sincere thanks to Neil for providing this ZAP patch to the PRO community. P/OS version 2 is a very comfortable operating system. If all you needed from P/OS version 3 was more disk space, the upgrade was an unpleasant way to get it. Now, that isn't true after all. It's nice to see someone else who takes the PRO seriously.

Gary Rice

PRO Software List Update

Gary Rice, DECUS PC Sig PROfessional Contributing Editor

In an effort to keep you informed about software being shipped from various vendors, I began the following list in April, 1986. This list reflects information that I received as of March 14, 1987. An asterisk by an entry indicates that the item has changed or been added since the last time the list was published.

DEC Software	Last Rev	Source of info	Still Avail?	P/OS v3 Supported?
20/20	1.0.54	User	Yes	UNK
Athena/Graph	1.0	DEC	Yes	UNK
BASIC-11/RT-11	(Replaced - See BASIC-PLUS/RT-11)			
BASIC-PLUS/RT-11	3.0	DEC	Yes	N/A
CT*OS	1.0	DEC	Yes	UNK
Design Graphix				
/Executive	1.0	User	Yes	Yes
Easyentry	3.0B	DEC	Yes	UNK
FORTTRAN IV/RT-11	2.6	DEC	Yes	N/A
LOGO	1.4	DEC	Yes	UNK
MAIL-PLUS	1.0	DEC	No	N/A
MJA Accounts Payable	5.2	DEC	Yes	UNK
MJA Accounts Receivable	5.2	DEC	Yes	UNK
MJA General Ledger	5.2	DEC	Yes	UNK
MJA Order Entry				
/Inventory	5.2	DEC	Yes	UNK
MJA Payroll & Personnel	5.2	DEC	Yes	UNK
NPL Information Management	1.4	DEC	No	UNK
Phoenix-PRO	1.0A	DEC	Yes	UNK
P/OS (Diskette)	1.8	DEC	No	No

P/OS (Hard Disk)	3.1	User	Yes	N/A
PRO 2780/3780	1.2	DEC	No	No
PRO Application Starter Kit	1.0	DEC	Yes	No
PRO/Associate	1.0	DEC	No	No
PRO/BASIC	1.4	DEC	Yes	Yes
PRO/Comm (diskette)	1.7	DEC	No	No
PRO/Comm (hard disk)	3.0	DEC	Yes	Yes
PRO/CPM-80	1.1	DEC	UNK	UNK
PRO/Datatrieve	2.0	User	Yes	Yes
PRO/DECnet	2.0	DEC	Yes	Yes
PRO/FORTRAN-77 Debug	(Replaced - See PRO/Toolkit Symbolic Debugger)			
PRO/IVIS	3.1	DEC	Yes	Yes
PRO/Laboratory Subroutine Lib.	1.2	DEC	Yes	Yes
PRO/NAPLPS	1.0	DEC	No	No
PRO/Office Workstation	2.0	DEC	Yes	Yes
PRO/PRODUCER Toolkit	1.6	DEC	Yes	Yes
PRO/RDT	1.1	DEC	Yes	Yes
PRO/Scientific Subroutine Lib.	1.3	DEC	UNK	No
PRO/SIGHT	1.0	User	Yes	Yes ¹
PRO/SNA	1.1	DEC	No	No
PRO/Smart Mailer	1.0	User	Yes ²	Yes
PRO/Toolkit	3.1	User	Yes	Yes
PRO/Toolkit BASIC-PLUS-2	2.3	DEC	Yes	Yes
PRO/Toolkit COBOL-81	2.4	DEC	Yes	Yes
PRO/Toolkit DIBOL	1.7	DEC	Yes	Yes
PRO/Toolkit FORTRAN-77	5.0	User	Yes	Yes
PRO/Toolkit PASCAL	*1.3	*User	Yes	Yes
PRO/Toolkit Real Time Library	2.1	DEC	Yes	Yes
PRO/Toolkit Symbolic Debug	2.0	DEC	Yes	Yes
PRO/UNIX	2.0	DEC	Yes	N/A
PRO/Videotex	1.0	DEC	Yes	UNK
Professional CTS-300	1.0	DEC	Yes	N/A
Professional Real Time Lib/RT-11	1.0	DEC	Yes	N/A
PROSE PLUS	2.0	User	Yes	Yes
RS/1	12.0	User	Yes	UNK
RSX Host Toolkit	3.0	DEC	Yes	Yes
RT-11	5.3	DEC	Yes	N/A
Supercomp-20	1.28	User	No	UNK
Synergy	2.0	User	Yes	Yes
VAX Host Toolkit	3.0	DEC	Yes	Yes
WPS/Plus	1.0	DEC	Yes	Yes ¹

¹ Restrictions apply or modifications required

² This product is available thru the DECUS "Tape" Library ONLY

3rd Party Software (alphabetically)	Vendor	Rev	Info Source	Still Avail?	P/OS v3?
D-M-DRIVER for P/OS	PROTO SYSTEMS	V2/V3a	Vendor	Yes	Yes
Fingraph	Graphic M*I*S	2.0	DEC	No	UNK
IT*OS	Intermation	5.2	User	Yes	UNK
Online Disk					
Unfragmentor	By Hand	1.4e	Vendor	Yes	Yes
PRO/Menu Manager	Wasatech Computer	1.0	User	Yes	No
PRO/Session Logger	By Hand	2.0	Vendor	Yes	Yes
RDM Relational					
Data Manager	Interactive Tech.	4.0L	User	Yes	Yes
TK!Solver	Software Arts	1.(2A)	User	No	UNK

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Writing Device Drivers Under P/OS

Jerry Ethington, Prolifix, Inc., Frankfort, KY
 Annotated by Gary Rice, DECUS PC Sig PRO Contributing Editor

The following article is a collection of excerpts from the release notes supplied with a public domain memory disk that I received from Jerry Ethington of Prolifix, Inc. at the Fall '86 DECUS Symposium in San Francisco. While some of the information may appear to be only relevant to Jerry's device driver, I decided to include it for clarity. Some of the subsequent information expands on the driver specific notes in a general way.

PROLOD release notes

PROLOD is a system server task which is called via the POSSUM library to load device drivers. The task image is named LB:[ZZSYS]PROLOD.TSK and it is automatically installed by the system at boot time. The installed task name is \$LOAD.

Since PROLOD was not ready for release at the time P/OS version 2.0 was shipped, a PROLOD server has been provided with the file name PROLODV2.TSK. For P/OS version 2.0 or 2.0A ONLY, you must copy this file to LB:[ZZSYS]PROLOD.TSK to use loadable drivers. For P/OS version 3.0 and later, the file is already included on the distribution kit and will be automatically installed with the rest of P/OS.

There is a minor bug with the PROLODV2.TSK distributed on the P/OS V3.0 PRODCL2 floppy; it is corrected in the task image with this distribution, and an indirect command file for ZAP to apply the correction to the PROLODV2.TSK distributed on a P/OS version 3.0 kit is also included. The problem is that the documented feature of assigning the logical name PROLOD\$MSG the equivalence of 0 to cause PROLOD to type diagnostic messages on your terminal will not work on 2.0 systems. Analysis of the

problem shows that it is either a documentation error in the TLOG\$ series of macros, or a bug in the TLOG\$ macros themselves, take your pick. The bottom line is that if you code the source of a program using any of the TLOG\$ macros (TLOG\$, TLOG\$C, or TLOG\$\$S), and you place a zero in the third field, which is currently reserved, as opposed to just leaving the field blank, the DPB generated when assembling on a 3.0 system will be 10. words instead of the 9. words generated on a 2.0 system. The DPB will be regarded as invalid on a 2.0 system, and the request will always fail with the error IE.SDP, indicating invalid DIC or DPB size. PROLOD does not check for the cause of the failure; it just assumes the translation failed due to the absence of the logical, and skips typing the output message. The ZAP patch corrects the DPB to a 2.0-compatible DPB, and then everything works fine. By the way, if you desire your code to work on pre-3.0 systems, the fix currently is to leave the third field of a TLOG\$ macro blank instead of placing a zero in it. This causes a DPB to be generated that will work on all versions of P/OS.

There are several errors in the version 2.0 Tool Kit "Guide to Writing an I/O Driver and Advanced Programmer Notes" which could confuse the driver developer.

I - The illustration of the KRB in figures 4-13 and 4-15 is incorrect. The first two words shown are K.ICSR and K.SLT. These two words are actually located between K.PRM and K.VCT as follows:

K.PRM	Driver dependent storage	
K.ICSR	interrupt controller CSR	
K.SLT	reserved	slot number
K.VCT/K.CON	vector/4	contrl.index
.	.	.
.	/	/
.	/	/
.	.	.

II - Many of the labels, such as \$DAT, described in the manual imply the the device name is optional. It is not optional. The label in the example mentioned should be of the form \$xxDAT where "xx" is the logical device name associated with the first DCB in the driver's database (D.NAM).

III - The "dev" argument in the GTPKT\$, DDT\$, and INTSV\$ macro is described as being optional. It is not.

IV - The order of the last two DDT\$ macro arguments are reversed (p4-5). The correct format is:

DDT\$ dev,nctrlr.iny,inx.ucbsv.new.buf.opt

V - The sample driver BMDRV has no "#" characters due to the text preparation method used. Also, the following labels (and any references to them) are incorrect:

<i>Documented as:</i>	<i>Should be:</i>
\$DAT	\$BMDAT
\$DCB	\$BMDCB
\$END	\$BMEND

VI - The description of the PROLOD call is in error. The correct description and format of the argument list follow:

STATUS,REQUEST,FNAM,FNAMSZ

where,

STATUS	The address of an eight word status block
REQUEST	The address of a word containing a request value corresponding to the operation to be performed. The defined decimal values are: <ol style="list-style-type: none"> 1 Load a driver and bring online all associated controllers and units. 2 Unload a driver after successfully bringing all associated controllers and units offline.
FNAM	The address of a word which contains the two ASCII characters from which the actual driver task and symbol table filenames may be derived by PROLOD. The derived name is of the form LB:[ZZSYS]xxDRV.TSK and LB:[ZZSYS]xxDRV.STB. Both files must be present to successfully load a driver.
FNAMSZ	The size of the aforementioned two bytes (in bytes).

VII - The CTB definition description was not documented. The following macro excerpt describes the CTB:

```

;+
; CONTROLLER TABLE (CTB)
;
; THE CONTROLLER TABLE IS A CONTROL BLOCK THAT CONTAINS A VECTOR
; OF KRB ADDRESSES. THIS VECTOR MAY BE ADDRESSED BY THE CONTROLLER
; INDEX TAKEN FROM THE INTERRUPT PS BY $INTSI.
;
;-

      .ASECT
      .=177754

L.CLK:'L'   .BLKW 8.           ;START OF CLOCK BLOCK (CLK BLK IS
                               ;OPTIONAL, AND DRIVER DEPENDENT.
                               ;ALLOCATION OF THESE 8 WORDS IS NOT
                               ;REQUIRED IN THE DRIVER'S DATABASE
                               ;UNLESS USED BY THE DRIVER ITSELF)
L.DID:'L'   .BLKW 1           ;HARDWARE DEVICE ID (WORD ALLOCATION
                               ;ALWAYS REQUIRED. MAY BE 0.)
L.ICB:'L'   .BLKW 1           ;ICB CHAIN FOR THIS CTB
L.LNK:'L'   .BLKW 1           ;CTB LINK WORD
L.NAM:'L'   .BLKW 1           ;GENERIC CONTROLLER NAME (ASCII)
L.DCB:'L'   .BLKW 1           ;DCB ADDRESS OF THIS DEVICE
L.NUM:'L'   .BLKB 1           ;NUMBER OF KRB ADDRESSES IN TABLE
L.STS:'L'   .BLKB 1           ;CTB STATUS BYTE
L.KRB:'L'   .BLKW 1           ;START OF KRB ADDRESSES.
;
; NOTE: THE SYMBOL $XXCTB:: IS DEFINED FOR EACH CTB, WHERE THE
; SYMBOL IS NOT THE START OF THE CTB, BUT INSTEAD THE START OF
; THE KRB TABLE AT THE END OF THE CTB (L.KRB). THE SYMBOL XXCTB
; (NO"$") IS GENERATED BY THE DDT$ MACRO AND IS USED TO IDENTIFY THE

```

```

; WORD IN THE DRIVER WHICH CONTAINS THE ADDRESS OF THE CONTROLLER'S
; CTB IN PRIMARY POOL. XXCTB IS REFERENCE BY THE CODE GENERATED IN THE
; INTSV$ MACRO WHEN DETERMINING THE UCB ADDRESS.
;

```

```

;+
; CONTROLLER TABLE STATUS BYTE BIT DEFINITIONS
;-

```

```

LS.CLK='B'1           ;CLOCK BLOCK AT TOP OF CTB (1=YES)
LS.MDC='B'2           ;MULTIDRIVER CTB. (1=YES)
LS.CBL='B'4           ;CLOCK BLK LINKED INTO CLK Q (1=YES)
LS.CIN='B'10          ;CONT. USE COMMON INT TABLE (1=YES)
LS.NET'B'=20          ;THIS IS DECNET DEVICE.
                      ;ICB LISTHEAD IN K.PRM,
                      ;L.DCB INVALID (1=YES)

```

Developer suggestions

1. Before attempting to load your device driver, be sure to load and run XDT, so that you are prepared to handle any problems which may arise.
2. PROLOD attempts to return a meaningful error message to the developer if and only if the logical name "PROLOD\$MSG" with the equivalence name "0" is defined. Multiple errors may be detected in the course of loading and sanity checking the driver and its database.
3. If your driver fails to load, correct the problem and reboot.
4. Do not depend on any registers being preserved by \$IODON. In particular this means R5 may under some circumstances (overlapped I/O completion) be trashed.

Error Codes

The error codes that PROLOD returns as server dependent errors are:

- 0. Illegal request format
- 1. File not a valid driver task image
- 2. Privileged command
- 3. Inconsistent argument length
- 4. Illegal request function code
- 5. Illegal unit name format specified
- 6. Specified unit not found
- 7. Illegal controller name specified
- 8. Specified controller not found
- 9. Failed to offline device
- 10. I/O error on input file
- 11. Failed to bring device online
- 12. Controller already online
- 13. Unit already online
- 14. File has illegal STB format
- 15. Device not found in system
- 16. Illegal device name specified
- 17. Database not found in system or driver
- 27. Partition/region not in system
- 33. Device not mounted
- 34. File not contiguous
- 35. Open failure on file
- 40. Task image I/O error in file

- 46. Partition too small
- 50. Illegal driver task APR usage
- 51. Partition/region is a common
- 60. Driver already resident
- 61. Driver being loaded or unloaded
- 62. Insufficient pool space
- 63. Loadable driver support not in system
- 64. Driver not loaded
- 65. Driver cannot be unloaded, still online
- 66. Device is attached, busy, online and/or mounted
- 68. Invalid driver data base at offset in file
- 69. Driver built with wrong executive STB file
- 70. Warning - KRB interrupt vector too high
- 72. Warning - KRB interrupt vector in use
- 73. Symbol is undefined in file
- 74. Symbol is doubly defined by file
- 75. Illegal value for symbol in file
- 76. Driver dispatch table is inconsistent
- 77. CTB is not supported by driver — not loaded
- 78. Cannot load/unload a pseudo device
- 79. Too many symbols of the form in file
- 80. CTB does not exist
- 81. DCB table for CTB is full
- 82. KRB table of CTB will not accept KRB
- 83. KRB not in loadable data base
- 84. CTB name is a duplicate
- 85. Warning - loadable driver larger than 4K
- 86. Partition/region is not a common
- 87. KRB is not offline
- 88. Illegal use of partition or region

Examples

The following macro program illustrates a PROLOD call. Another technique for calling PROLOD is the DCL command "LOAD" on version 3.0 or later systems.

```
.TITLE    LOAD - Example PROLOD call

.mcall   qiow$$,exit$$ ;request system macros
;
; This task requests PROLOD to load the driver XXDRV from LB:[ZZSYS]
;
start:   mov     #loarg,r5      ;get args for sample call to PROLOD
        call    prolod        ;load the driver
        ;print status block always
        mov     #stat,r2      ;point to status args
        mov     #fmt,r1       ;output format
        mov     #outbf,r0     ;output buffer
        call    $edmsg        ;format it
        qiow$$ #io.wlb,#5,#5,,,<#outbf,r1> ;print it
        exit$$               ;exit

;
; local data
;

loarg:.word    4                ;four arguments (simple load call)
```

```

        .word      stat          ;pointer to eight word status block
        .word      rqst         ;pointer to PROLOD request
        .word      fnm          ;pointer to filename size
        .word      fnmsiz       ;pointer to size (in bytes) of fnm
stat:    .blkw      8.          ;eight word status block
fnmsiz: .word      fnmsz       ;word containing size of fnm
rqst:   .word      1           ;load (and online all) request
fnm:    .ascii    /XX/        ;driver name
                                   ;implied filename
                                   ; "LB:[ZZSYS]XXDRV.TSK" and
                                   ; "LB:[ZZSYS]XXDRV.STB"
fnmsz=. -fnm                    ;name extension
                                   ; (as this can't be spec'd)

outbf:  .blkb      132.        ;output buffer for status display
fmt:    .asciz    /%Nload request status: %N%8P/ ;output buffer format
                                   ; string

        .even

        .end      start

```

ZAP Patch

The ZAP patch that Jerry mentioned in his notes was included on the diskette he gave to me. I have reproduced the contents of that file below.

PROLODZAP.COMD

```

prolodv2.tsk
2.135560/
5317v
4717

11v
1
x

```

The use of ZAP to apply this patch is described in the PRO/Toolkit Command Language and Utilities Manual.

PROgramming Quickie

Gary Rice, DECUS PC Sig PROfessional Contributing Editor

The PRO operating system P/OS is shipped with a resident library known as POSSUM. IN that library are several user callable routines that perform various PRO related functions. In this series of examples, I will show you how to use the PROATR routine from that library. The routine can tell you many things about files on your system.

This example shows you how to determine what the file attributes are for a series of files. The program is written in FORTRAN and is followed by the linker command file required to build the task.

```

C GETATR.FTN - This routine gets the file attributes for the files
C              in the DW1:[USERFILES] directory
C
C Version:    1.0
C

```

```

C Author: Gary Rice
C
C Created: March 14, 1987
C
C Revised: N/A
C
C Inputs: None
C
C Outputs: None
C
C Notes: LUN #2 is used to access the file header
C
C*****
C
C PROGRAM GETATR
C
C
C 10 FORMAT (I5)
C 20 FORMAT (' Record attribute: ',04)
C
C LOGICAL*1 T, F
C
C BYTE MASK(2)
C BYTE ATTR, TYPE
C
C INTEGER*2 BUFFER(16), FILEID(3), LIST(3), STATUS(8), NAME(5)
C INTEGER*2 SIZE, FREBYT, TEMP, LUN, REQUEST, SORT
C
C INTEGER*4 HIVBN, EOFVBN
C
C CHARACTER*20 FILE
C
C
C COMMON /STORE/ ATTR,TYPE,SIZE,HIVBN,EOFVBN,FREBYT
C
C EQUIVALENCE (BUFFER(1), ATTR) ! Map the buffer to its parts
C EQUIVALENCE (TEMP, MASK(1)) ! Allow BYTE references to TEMP
C
C
C Begin
C
C T = .TRUE.
C F = .FALSE.
C CALL ERRSET (36,T,F,T,F) ! End of file condition
C
C OPEN (UNIT=1,NAME='SY:[0,0]USERFILES.DIR',TYPE='OLD',SHARED,
+ READONLY,FORM='UNFORMATTED',RECORDTYPE='FIXED',
+ ACCESS='DIRECT')
C
C REQUEST = 0 ! Request is "GET attributes"
C MASK(1) = 4 ! Attribute code for "record"
C MASK(2) = "40 ! Size of BUFFER array in bytes
C LIST(1) = TEMP ! Set up the attribute list
C CALL GETADR(LIST(2), BUFFER(1)) ! Get the BUFFER address
C LIST(3) = 0 ! Mark the end of the list
C LUN = 2 ! Pick an unused LUN for the data lookup

```

```

I = 0          ! Init the directory entry pointer
CALL ERRSNS   ! Clear the error buffer - just in case
150 I = I + 1  ! Point to the next directory entry
READ (1'I,ERR=200) FILEID(1),FILEID(2),FILEID(3),(NAME(J),J=1,5)
IF (FILEID(1) .EQ. 0) GOTO 150 ! File was deleted
C
CALL PROATR (STATUS, REQUEST, LIST, FILEID, LUN)! Get the info
C
CALL R5OASC (9,NAME(1),FILE(1:9))      ! Convert the file name to
ASCII
FILE(10:10) = '.'
CALL R5OASC (3,NAME(4),FILE(11:13))    ! Convert TYPE to ASCII
FILE(14:14) = ';'
ENCODE (5,10,FILE(15:19)) NAME(5)     ! Convert ver. # to ASCII
SORT = BUFFER(3)                       ! \
BUFFER(3) = BUFFER(4)                   ! > Reverse hi & lo order words
BUFFER(4) = SORT                        ! /   of HIVBN
SORT = BUFFER(5)                       ! \
BUFFER(5) = BUFFER(6)                   ! > Ditto for FREBYT
BUFFER(6) = SORT                        ! /
TYPE *, '      ', FILE
TYPE *, '      Record type: ',TYPE
WRITE (5,20) ATTR                       ! ATTR is a bit mask and in OCTAL
TYPE *, '      Record size: ',SIZE
TYPE *, '      Space used: ',EOFVBN
TYPE *, ' Space allocated: ',HIVBN
TYPE *, ' First free byte: ',FREBYT
TYPE *, (BUFFER(K), K=8,16)
GOTO 150
200 CLOSE (UNIT=1)
END

```

Command file to link the previous program

```

GETATR/FP/CP=GETATR
LB:[1,5]PROF77/LB
/
;
; EQUATE P/OS SYMBOLS TO LUNS
;
GBLDEF=TT$LUN:0
GBLDEF=WC$LUN:0
GBLDEF=MS$LUN:5
GBLDEF=HL$LUN:0
GBLDEF=MN$LUN:0
;
; DEFINE EVENT FLAG
;
GBLDEF=TT$EFN:1
;
; DEFINE CLUSTER SCHEME
;
LIBR=POSSUM:RO
CLSTR=PROF77,POSRES,RMSRES:RO
//

```

The program gathers the information about the record structure of the files it accesses. Now, here is what it all means:

TYPE contains the record type. If:

- TYPE = 1 then the file contains fixed length records. This is typical of task (.TSK) files and direct access data files.
- TYPE = 2 then the file contains variable length records. All files created with EDT, PROSE or PROSE PLUS are of this type.
- TYPE = 3 then the file has variable length records that are sequenced. This attribute is set if the file is a RELATIVE file with VFC. I've never worked with RELATIVE files, so I can't really say anything more about them or this attribute.

ATTR contains the record attributes generally associated with printing. If:

- ATTR = 0 then the file has NO printing instructions. This is the same as coding "CARRIAGECONTROL='NONE'" in your FORTRAN OPEN statement.
- ATTR = 1 then printing is controlled by the first character of the record (ie: "CARRIAGECONTROL='FORTRAN'").
- ATTR = 2 then each record is displayed on a separate line. ("CARRIAGECONTROL='LIST'")
- ATTR = 4 then the 2 byte sequence number field is to be used as print control information. This attribute is NOT SUPPORTED by RMS or FCS for print control support.
- ATTR = 8 then the records don't cross block boundaries on the disk.

Note that ATTR is a bit mask. It is therefore possible to get a combination of numbers. There appears to be a documentation error, though since my indexed sequential files routinely return a value of 41 (octal) in this field. By definition, that is IMPOSSIBLE.

SIZE contains the record length of fixed length records or the record length of the largest record in a variable length record file (in characters or bytes).

HIVBN contains the number of blocks allocated to the file. Note that this is NOT necessarily the number of blocks USED in the file.

EOFVBN contains the number of blocks USED by the file.

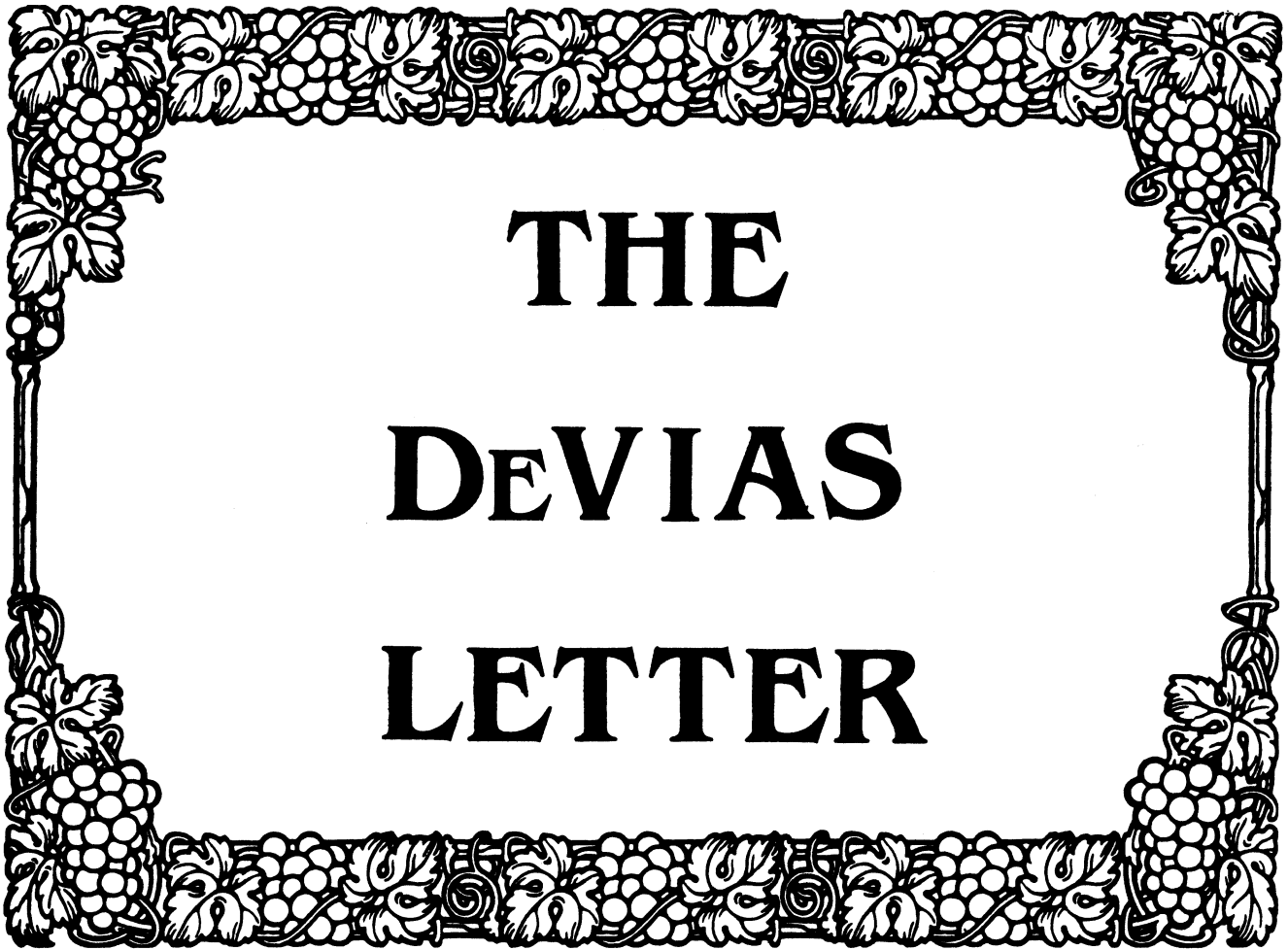
FREBYT is a number from 0 thru 512 that points to the first free byte in the last block of the file.

Note: I have found that the values contained are NOT always accurate. The blocks allocated sometimes shows up as LESS than the blocks used.

The values contained in the remaining fields of the buffer are undocumented except in cryptic notes indicating that they are used by RMS. I have attempted to map the values that appear to RMS data structures such as the FAB, RAB and other blocks, but no match seems obvious.

For those of you familiar with the DUMP utility, the fields and values are IDENTICAL to the fields and values you see when you "dump" the header of a file. (ie: \$.DMP TI:=FILE.DAT/HD/BL:0)

This example assumes that you have PRO/Toolkit including the document set and Toolkit FORTRAN. However, you can use ANY of the Toolkit languages or MACRO to call the PROATR routine. PROATR is documented in the Executive Reference Manual. You should refer to it while you study the program. This will aid you in understanding what the various structures in the program do.



THE DEVIAS LETTER

IAS

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DR/DB Disk Handler Patch

The following edit procedures should be applied to any DR.MAC and/or DB.MAC, (and to DRMU.MAC and DBMU.MAC if they are used.) In an effort to support users of earlier versions of IAS, the editor prefers to supply solutions in this form rather than a SLP command file, (which would only work with the current version.) Its a good idea to keep the original .MAC source file around, so that if DEC comes out with a SLP correction patch, it can be applied to the virgin file, and then this patch added.

1. Locate the line:

```
DRVBSY: .WORD 0 ; DRIVE BUSY BIT MASK
```

and insert the following line after it

```
SAVPB2: .WORD 0 ; Save Parameter word 2
```

2. In the routine "ALMR:" locate the line:

```
CALL @#..ALMR ; ALLOCATE UMRS
```

and insert the following line BEFORE IT

```
MOV R.PB+2(R1),SAVPB2 ; Save low 16-bits of add
```

3. In the routine "ECC:" locate the line:

```
MOV R.PB+2(R1),R1 ;; GET LOW 16 BITS....
```

And replace it by the following lines:

```
TST UMRFLG ;; Are we using UMR'S ?
BEQ 1$ ;; Br if not
MOV SAVPB2,R1 ;; Get low 16 bits of 22
BR 2$ ;; skip 18 bit code
1$: MOV R.PB+2(R1),R1 ;; Get low 16 bits of 18
2$:
```

The handler should then be re-assembled and task built using the standard DEC command files, and included into your system via a sygen.

Hardware guru's note: Although the DR and DB handlers do overlapped "operations", only one UMR transfer can be occurring at any time. One does not have to buffer R.PB+2 separately for each drive.

Ten Years Ago Today

The June 1977 Multi-Tasker contained:

A continuation of the discussion concerning publication of SPR's. It seemed that large quantities of SPR's that met the previously printed guidelines for publication were not published. At that time, almost 90% of SPR's that were sent to the SIG were not published in the Software Dispatch. In the editor's words, "Decisions to publish or not publish specific SPR's have been made arbitrarily and capriciously, and generally did not follow the guidelines published in the last Multi-Tasker." The editor strongly urged users to send a copy of SPR's to the editor, for inclusion in the Multi-Tasker. (Your current editor STILL requests the same consideration, ed.)

In the Suggestions column, an excerpt of an SPR warned that the system system directive EXEC\$ could fail under the following conditions:

1. You issue an EXEC\$ directive.
2. Your requested task is placed on the MRL, behind a task of higher priority.
3. Your parent task receives a status of success.
4. When your offspring task's turn comes to execute, if there is still no room in memory, the offspring task is deleted from the MRL.

A questionnaire was included asking for reader response concerning charging for the Newsletters, and the relative value of DECUSSCOPE. Questions included:

"Do you Read DECUSSCOPE ?"

"Should DECUSSCOPE be eliminated, and the DECUSSCOPE funds be applied to paying for SIG newsletters ?"

The index for Volumn 7, (January through June of 1977,) Showed that the last 6 issues totalled 36 pages.

```

; .TITLE XON
;
; PROGRAM TO PLACE A CONTROL-Q IN THE INPUT BUFFER
; OF A TERMINAL PRESENTLY IN X-OFF CONDITION.
;
; THE TT HANDLER MUST BE RE-LINKED TO GENERATE TT.STB
;
; XON/PR,XON/-SP=XON
; LB:[1,1]EXEC.STB/SS
; LB:[1,1]TT.STB/SS
; /
; TASK=...XON
; //
; TKB WILL GENERATE AN ERROR 'LOAD ADDRESS OUT OF RANGE'
;
; MCR>XON TTX (WHERE XX IS TERMINAL NUMBER)
;
; .MCALL EXIT$$,GMCR$,DIR$
;
CH.XON=21
M$$PRI=4
START: DIR$ #GETMCR ;GET MCR COMMAND LINE
MOV #GETMCR+G.MCRB,R0 ;POINT TO BUFFER
ADD #4,R0 ;SHOULD BE AT "TT"
CMP (R0)+,#"TT" ;BETTER BE
BNE END ;EXIT IF NOT
CALL $COTB ;CONVERT TERMINAL NUMBER TO OCTAL
MOV R1,DEVUN ;SAVE UNIT NUMBER
CMPB R2,#15 ;TERMINATED ON CAR-RET
BEQ OK ;IF SO OK
CMPB R2,#': ;OR COLON AFTER NUMBER ?
BEQ OK ;IF SO,OK
CMPB R2,#33 ;OR ESCAPE
BNE END ;ITS OK TOO
MOV #.ATLLH,R0 ;START ATL SCAN
10$: MOV (R0),R0 ;GET NEXT ATL ENTRY
CMP R0,#.ATLLH ;THROUGH ATL ?
BEQ END ;BR IF FELL THRU
MOV A.TD(R0),R1 ;GET STD ADDRESS OF TASK
CMP #<^RTT.>,S.TN(R1) ;IS THIS TT.... ?
BNE 10$ ;BR IF NOT
CMP #<^R...>,S.TN+2(R1)
BNE 10$
MOV #77406,-(SP) ;SET TO MAP TO TT.... TASK HEADER
MOV A.HA(R0),-(SP)
CALL @#..SPD1 ;MAP TO TASK HEADER
CMP (SP)+,(SP)+ ;CLEAR STACK
MOV #77406,-(SP) ;SET FOR A 4-K READ/WRITE REGION
MOV @#20000+H.PA2,-(SP) ;MAP PAR 2 TO TT'S APR2
CALL @#..SPD2
CMP (SP)+,(SP)+ ;CLEAR STACK
MOV #77406,-(SP) ;SET FOR A 4-K READ/WRITE REGION
MOV @#20000+H.PA3,R1 ;GET PURE AREA GCD ADDRESS
MOV G.BA(R1),-(SP) ;SET BASE ADDRESS OF PURE AREA
CALL @#..SPD3

```

```

CMP (SP)+,(SP)+
MOV .PUDBA,R0 ;NOW START PUD SCAN
LOOP: CMP #"TT,U.DN(R0) ;FOUND A TT
BNE NEXT ;NO
CMPB DEVUN,U.UN(R0) ;YES, CHECK UNIT
BEQ FOUND ;IF OK, CONTINUE
NEXT: ADD #U.SZ,R0 ;ELSE BUMP TO NEXT PUD UNIT
CMP R0,.PUDEA ;AT END YET
BLO LOOP ;BR IF NOT
BR END ;ELSE EXIT
FOUND: MOV U.SL(R0),R4 ;GET TERMINAL ENTRY ADDRESS
BEQ END ;BR IF NOT INITIALIZED
BIC #SC.XOF,(R4) ;ELSE CLEAR THE FLAG
MOV T.INUM(R4),R3 ;GET OFFSET INTO INTERFACE TABLE
ADD #IFCTBL,R3 ;POINT TO START OF TABLE
MOVB I.FLG(R3),R3 ;GET INTERFACE TYPE
BIC #17760,R3 ;BLANK FLAGS TO TYPE BITS
BMI END ;SKIP IF SOMETHING WRONG
CMP R3,#IT.VMX ;CHECK UPPER BOUND
BGT END ;TOO
ASL R3 ;CONVERT TO WORD OFFSET
TST L.RSUM(R3) ;VERIFY ROUTINE IS THERE
BEQ END ;SKIP IF NOT
CALL @L.RSUM(R3) ;CALL LINE DEPENDANT RESUME ROUTINE
END: EXIT$$ ;AND EXIT
;
; DISPATCH ROUTINE FOR LINE ENABLE
; THIS WILL CHANGE DEPENDING ON TERMINAL TYPES YOU HAVE
;
L.RSUM: .WORD DLIE ;DL INTERRUPT ENABLE
; .WORD DCIE ;DC INTERRUPT ENABLE
; .WORD DZIE ;DZ INTERRUPT ENABLE
;
DEVUN: .WORD 0 ;SAVED UNIT NUMBER
GETMCR: GMCR$
;
; INTERRUPT ENABLE ROUTINES
DLIE: MOV T.EPA(R4),R0 ;GET EXTERNAL PAGE ADDRESS
BIS #DL.XIE,D.LXCS(R0) ;TURN INTERRUPT BACK ON
RETURN
DCIE: MOV T.EPA(R4),R0 ;GET EXT PAGE ADDRESS
BIS #DC.XIE,D.CXCS(R0) ;TURN INTERRUPT BACK ON
RETURN
DZIE: CALL MXSET ;SET UP REGISTERS
MOV (R5),R5 ;GET EXTERNAL PAGE ADDRESS
BIS R1,D.ZXCR(R5) ;ENABLE INTERRUPTS
MOVB #0,D.ZXBF(R5) ;GIVE HARDWARE CHAR IT NEEDS
1$: RETURN
;
MXSET: MOVTC ISL,R0 ;MULTIPLEXED INTERFACE SETUP ROUTINE
MOV #1,R1 ;GET SUBLINE NUMBER
ASH R0,R1 ;SET FOR SHIFT
MOV T.INUM(R4),R5 ;NOW HAVE BIT IN CORRECT POSITION
ADD #IFCTBL,R5 ;GET INTERFACE TABLE OFFSET
RETURN ;MAKE ABSOLUTE
.END START

```

Ask Dr. Dumbkopf

Erik Von Der Blauen PpD, HD, LSMFT

The XON program has been very helpful at our institution. It is invaluable for turning on a terminal that the user has XOFFed, (making one look like a wizzard.) Its also very helpful for handling things like printer that do flow control via XOFF, but can't be coaxed into doing an XON if they run out of paper and you foolishly turn them off to unjam a paper jam or whatever.

The program also resets the interrupt enable bit. Certain conditions have been found where noise, static etc. can turn of the receive interrupt enable bit, thus also effectively shutting down the line. The only other cure we know for this malady, (unless you really know interface hardware and are good with OPen,) is to re-boot the system.

There are some strings attached to programs that do flying re-programming of other programs. Being privileged tasks, they are dangerous. (Even I, guru that I am have been known to crash a system.) Untill debugged, try them out in the evening. Also, an experienced user should tailor this program, only after understanding the working of the dispatch table at L.RSUM and being sure what the terminal type values (IT.xx) are on your system.

To tailor the program for your place you must do the following:

1. Re-build the TT handler, (although you do not have to generate a task image or do a sysgen,) Change the task build file to generate a MAP file (generate a cross-ref using the /CR switch,) and a symbol table file, (.STB)
2. Examine the cross-ref area of the map file for symbols of the form: "IT.DL", "IT.DC", "IT.DZ", etc. There should also be a symbol "IT.VMX"
3. Edit the dispatch table at location "L.RSUM:" to reflect the types of interfaces present on your system. The numbers may change. Typically interface types go from 0 to IT.VMX. The first interface type defined in your CONFIG.MAC file (usually a DL for the console) will have type =0, the next will have type equal to 1 etc. For example, if you only have DL and DZ interfaces, IT.DL will be 0, IT.DZ and IT.VMX will be 1. The first word of the dispatch table should be DLIE, the second (and last) word should be DZIE, and the DCIE code should be removed from the program.
4. If you don't want to enable XON on that type interface put a 0 in the table for that type, otherwise put in the address of the appropriate routine.
5. Code for other interfaces, (DH, DJ, etc.) is similiar to the DL, DC and DZ. Just take the DL or DZ code and change D.ZXCR to D.HXCR, etc.

The author of this version has not tried other interface types. If you see a problem with your hardware, drop a line.

Der speed of Elektriccity is something dat der average person does not tink about, but it is a big ting to der computer designer and to del elektrikal engineer. If an enchineer forgets to tink about dis speed, he will make mistakes in his design. I will discuss der differences betwen poor elektrical design und der good design.

Everybody knows dat elektriccity travels at 186000 miles per zec-ond, (exzept in Poland, where dir poor condition of der wires slows it down.) What is nodt well known, (because it vas discovered by a poor unkle of mine, who did not have der money to pay for der page charges for der important Physics journals,) is dat der speed of 186000 miles per zecond is only de top speed dat elektriccity can get to on der long straightaway. Dis liddle known fact has der profound effekt on der elektrical design.

If you go for a drive in der country and look a der big barns with der lightening rods on der top of der roof you will see der common mistake. Der wires go along der roof, and den make der sharp bend and go down der wall. If der bend is too sharp, der elektriccity at its high speed may actually misjudge der turn, and go flying off der wire. Und if it does, who knows vat it will run into. Von should have der easy turns in der wires so dat der elektriccity gets to der ground widout running off of der wire.

Chust look at what Seymore Cray did when he designed der Cray computer. Der computer dat Seymore made is zo fast dat he says it can execute der zimple infinite loop in only 15 seconds CPU time. Why does der Cray go so fast? When Seymore vas vacationing in Europe, he found der copy of my unkle's work in der small used bookstore in Chermany. Vat he read amazed him. He immediately used dat paper to redesign his Cray-1 computer, und he made der computer round, so dat der elektriccity did not have to slow down all der time to make der sharp bends. Und you thought he made der ting round just to save on having to buy chairs, didn't you? Vell now you know der true story!

Chust last veek I vas asked to help out at a place dat daid der response time on der terminals vas lousy. Vy vas it so bad? Dey had der terminal wires going down der desk, making der sharp turn, along der floor, making anudder sharp turn, up der wall, vell, you get der idea. I had dem put der nice easy turns in der vire, und der response time vent down by der factor of three. Und I never even thought about page fault rates or der vorking set sizes.

Zo next time you tink about laying out your computer system, give der wire layout a lot of konzideration. It may chust speed up der operation der whole lot.

Leverage

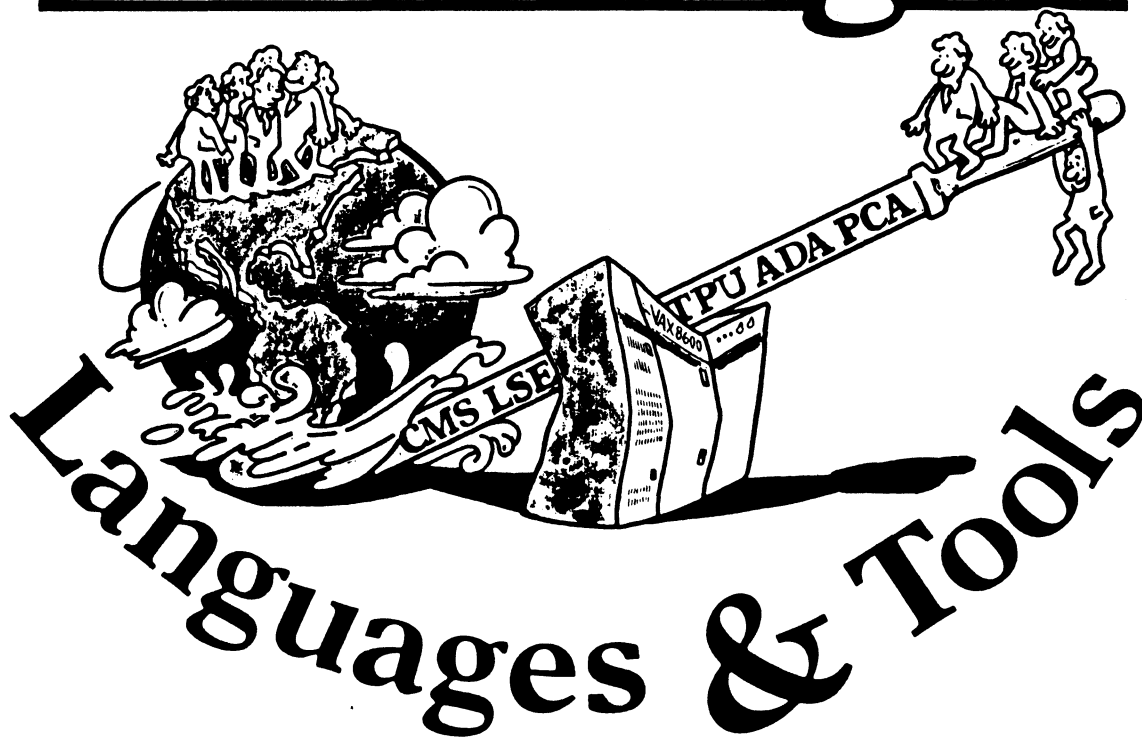


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EDITOR'S NOTES

In this issue of *Leverage* are several items which I hope will prove of interest. In the area of SIG activities, we have an announcement of the Public Domain Software Working Group for Languages and Tools, as well as a discussion of the first SIG tape produced by L&T. The Public Domain article should have been included prior to Nashville, but was received too late for publication. My apologies if this has caused any inconvenience.

Also in this issue are two submissions from our loyal friends within Digital. Pamela Blotcky of CSSE sent us the results of their questionnaire from the Fall Symposium, and Kevin Harris submitted a trip report from the most recent Fortran Standard Committee meeting. Appended to Kevin's report is an interesting letter he forwarded, which details some of the arguments for the radically evolving standard.

Finally, we have yet another installment of Earl Cory's "Fun With DCL" column.

In the questionnaire section of the Newsletters is a new L&T Wishlist Questionnaire. If you truly believe all of the Digital Software products are perfect and complete, you are excused from filling out this questionnaire. Otherwise, please take the time to answer it, and return it to the indicated address.

I hope very soon to have a list of the L&T "Masters" to publish. This is very close to complete, and only minor technical difficulties kept it from appearing in this issue. Stay tuned, and if you have any questions, criticisms, or comments, please let me know.

Al Folsom
Leverage Editor

**DECUS Languages and Tools SIG
Public Domain Software Working Group**

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A working group has recently been formed to make public domain software tools conveniently available to the DECUS community.

To this end, we are establishing a software library collection of substantial products from the public domain. Our library is starting with Gnu Emacs, Icon, the Software Tools, and $\text{T}_{\text{E}}\text{X}$ and $\text{L}\text{A}\text{T}_{\text{E}}\text{X}$ with LN03 fonts. We will keep current copies of these products in our library and will make it available to the LUGs and to the regular DECUS library.

We will also produce SIG tapes at every U.S. chapter symposium. These generally contain smaller and less formal submissions ranging from LSE templates to $\text{L}\text{A}\text{T}_{\text{E}}\text{X}$ document styles to programming standards. Our first tape, collected at the 1986 symposia in Dallas and San Francisco includes everything mentioned above and much more.

In the future, we will be looking for more products to add to our collection, keeping up to date copies of everything, and reviewing and collecting the smaller SIG tape submissions for our library. There is labor involved here. We need a few serious volunteers to join the working group to make all of this happen. If you are interested, contact Tony Scandora this week at the symposium or any time at Argonne.

Our first efforts have turned out to be pretty much for VAX/VMS. That was not our intent. We are not a VAX/VMS SIG and are certainly interested in all of the operating systems that DECUS members use. If you have the time to champion your favorite operating system, join the working group.

There will be a public domain languages and tools software panel, session LT069 on Thursday evening at 7:00 in the Jefferson room. This is your chance to hear about what's available, to tell others about your favorite products, and of course, to volunteer your services.

FUN WITH DCL

This column is a feature of the Languages and Tools section of the combined newsletter. Each month I will present some DCL commands or command procedures that have been found to be useful by me (or you) in software development. Useful hints and tricks that may be done with DCL will be included.

I am not restricting this to VAX/VMS. RT-11, RSTS/E, RSX-11M, all have DCL to some level. I encourage each of you to send us any DCL procedures, symbols, one-liners, etc. that you find to be useful. Address your suggestions to me or Al Folsom, the *Leverage* newsletter editor.

How do you find the volume label on a disk pack? A good question and one easy to answer in most situations. The procedure is:

```
$ Mount/override=identification ddcu:  
MOUNT-I-MOUNTED, VOLUME_NAME mounted on ddcu:
```

There is the volume name. If doing this from a command procedure, the next step would be:

```
$ Diskname = F$Getdvi("ddcu:", "VOLNAM")
```

The symbol DISKNAME can then be used as needed. A use I have found for this is in automatic disk mounting procedures during system bootstrap.

Now for the rub. How do you do this in a VAXcluster?

In a VAXcluster configuration, the first CPU up is able to do things in this "traditional" manner. But the next CPU up is unable to access the disk because it is remotely mounted. F\$GETDVI returns a null string.

Now for the trick. When a remotely mounted disk is mounted with the wrong label, i.e. DUMMY, the message:

```
%MOUNT-F-INCVOLLABEL, incorrect volume label  
-MOUNT-I-VOLIDENT, label = "VOLUME_NAME", ...
```

is returned.

In the following section of a command procedure, the messages are directed to a file, Dummy.Tmp. The file is then opened, read, and deleted. The last four lines are used to extract the volume label and mount the disk.

```

$ Define/User Sys$Output Dummy.Tmp
$ Define/User Sys$error Dummy.Tmp
$ Mount/Noassist/System/Cluster ddcu: DUMMY
$
$ Open/Read File Dummy.Tmp
$ Read File Line
$ Read File Line
$ Close File
$ Delete/NOLOG Dummy.Tmp;*
$
$ Place = F$Locate("", Line)
$ Diskname = F$Extract(place+1, 12, Line)
$ Diskname = F$Edit(Diskname, "COMPRESS,TRIM")
$ Mount/Noassist/System/Cluster ddcu: 'Diskname'

```

Earl S. Cory

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Languages & Tools SIG TAPE LT86A

The DECUS Languages and Tools SIG proudly presents this, its first SIG tape. The submissions were collected from users at the 1986 Spring and Fall Symposia in Dallas and San Francisco and distributed as received.

The SIG tapes contain useful software and documentation that people like you have graciously placed in the public domain. Many thanks go to these people and their companies. These tapes are only as good as their submissions. To keep the tapes strong, contribute something of your own at the next symposium or send it directly to the editor, who prefers VMS backup tapes, but can read almost anything in almost any format.

None of Digital Equipment Corporation, DECUS, the Languages and Tools SIG, Argonne National Laboratory, and the editor deserve or will accept any credit or blame for the contents of this tape or the consequences of its use. If you find or fix a bug or enhance something, send it back to the author. The librarian will be happy to forward bug reports, bug fixes, enhancements, suggestions, and of course, praise to the appropriate people.

The SIG will produce tapes at future symposia, and will do its best to publish current versions of popular products such as TeX, Icon, the Software Tools, and GNU Emacs. Anyone who sends a submission to the editor on a 2400' tape or a TK50 before the Nashville Symposium in April will have the tape returned with the entire Nashville tape on it. This particular tape is mostly VMS-specific, but PDP-11, 36 bit, and Unix submissions are welcome and encouraged. The next tape will have an updated version of the Software Tools for RSX. If you need the tape in tar, TOPS, or some other format, contact the editor. The SIG is interested in languages and tools for all operating systems.

This tape is in three VMS Backup savesets. The first, LT86A.BCK, contains [LT86A...], which contains the following:

- [.APCE] Rick Stacks, Arkansas Department of Pollution Control & Ecology
Extended-EVE+
- [.DEPROC] TeX and LaTeX support for DECUS proceedings
Barbara N. Beeton, American Mathematical Society
- [.EATON...] Earl Cory, Eaton Corporation
C programming standards; miscellaneous command files and utilities
- [.EVEPLUS] EVE Plus - extensions to EVE
submitted by Digital as unsupported
- [.FERMILAB...] Frank J. Nagy, Fermi National Accelerator Laboratory
 - [.EDTX] EDT eXtended
 - [.EXTRACTOR] extract source comments for Runoff or TeX
 - [.FERMILIB] definitions and subroutines you wish came with VMS
 - [.GETUAI] \$GETUAI extensions
 - [.MAKEINCS] translate Bliss .REQ files to Fortran and C
 - [.PROCEDURES] general utility command procedures
 - [.TABS] spaces - tabs, understands Fortran
 - [.TRMPRINT] print on terminal's printer port
 - [.XDFO] eXtract Definitions From Object code, reads an object file, creates definitions for several languages
- [.FLOWERS] Jeff Flowers, Pilot Executive Software, Inc.
Subset of Emacs written in TPU
- [.GNU.EMACS...] GNU Emacs
 - [.DISTRIB_GNUEMACS...] Version 17.VMS-4 for VMS, based on 17.02
VMS port by Mukesh Prasad, Network Switching Systems
submitted by Marty Sasaki, Harvard Science Center
 - [.NEW_UNIX_VERSION...] a later version that doesn't work on VMS

[.ICON] Icon V6.0 for VAX/VMS and V5.9 for MSDOS
submitted by Ken Harris, Unico, Inc.

[.INFOC] Multi-network bulletin board comments on C language
submitted by Joel M. Snyder, University of Arizona

[.LSI...] Kent McPherson, Lear Siegler, Inc.

[.LATEX] Additional styles, help, and LSE templates

[.LSE] LSE templates for TPU and LSE

[.TPU] TPU extensions

[.UTIL] misc. utilities

[.MERRITT] Del Merritt, Computer Sciences Corporation
how to use callable CMS, CMS library editor

[.NIELAND] M. Edward (Ted) Nieland, Ames Laboratories & Systems Research Laboratories, Inc.
EDT-Plus - extensions to TPU EDT emulator

[.RIGS] Wayne E. Baisley, Rockwell International/Graphic Systems Division
C library extensions: system, string functions

[.RLAURB] R. L. Aurbach, Monsanto
IdxTeX - index generator for LaTeX documents
GloTeX - glossary generator for LaTeX documents

[.SWTOOLS] Software Tools Users Group latest version for VMS
submitted by David Martin, Hughes Aircraft

[.VANTASSLE] Ray Van Tassle, Motorola
C utilities: GREP, CBU (C beautifier), LST (lister), XRF (cross referencer)

The second saveset, TEX.BCK, contains [TEX...], a complete VMS port of TeX and METAFONT, and the third saveset, LNO3CM.BCK, contains a full set of LNO3 TeX fonts, courtesy of John Sauter, DEC. If you are going to use TeX, you probably really want to use LaTeX, which is documented in "LaTeX, A Document Preparation System," by Leslie Lamport, published by Addison-Wesley, 1985, and available in many bookstores. If you use plain TeX, you must get a copy of "The TeXbook," by Donald E. Knuth, published by Addison-Wesley and the American Mathematical Society, 1984, and also available in many bookstores. If you have an old book by Knuth called "TeX and METAFONT - New Directions in Typesetting," it describes an unrecognizable, ancient version of TeX. Don't waste your time reading the old book.

Everyone is encouraged to join the TeX Users Group. Information on membership is available from TUG, P.O. Box 9506, Providence, RI 02940, USA (phone 401-272-9500). TUG members receive issues of the Users Group bulletin, called TUGboat, which reports on all sorts of TeX-related news, including notices about who has installed TeX on what kind of system and what kind of printers. Yearly dues are about \$30. TUG also runs occasional user group meetings, and TeX classes, as announced in TUGboat.

These are on a single 6250 bpi reel, a single TK50, or three 1600 bpi reels.

Tape edited by:

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RESULTS OF DIGITAL/CSSE's FALL'86 DECUS QUESTIONNAIRE

Pamela M. Blotcky

DIGITAL EQUIPMENT CORP., CSSE/Languages and Tools

April, 1987

1 INTRODUCTION

Customer Services Systems Engineering (CSSE) is an organization within DIGITAL whose purpose it is to ensure that DIGITAL's customer services organizations are prepared to support new products. One aspect of this job is to represent the needs of the customer services organizations, and the customers they serve, during the development cycle of new products.

Feedback from customers is vital in performing this task. As one means of collecting this information, CSSE/Languages and Tools developed a questionnaire that was distributed (via the Languages and Tools SIG folder) to attendees at Spring '86 and Fall '86 DECUS symposia.

This article describes the results of the Fall '86 survey. These results have also been distributed to a number of organizations within DIGITAL. 89 of you took the time to respond to this survey, and we thank you very much for doing so.

Note that not all people answered every question, so in some cases, the total number of responses to a particular question is less than 89.

This questionnaire will be distributed at future DECUSes.

2 PRODUCT-SPECIFIC CONCERNS

We asked, "Is there any particular software product that CSSE should examine in order to resolve problems pertaining to product functionality, product quality, service offerings, or administrative problems (ordering, SDC, etc.)

If so, please indicate the product, and describe the problem."

I was struck by the similarity between these responses and the ones I received from the Spring '86 survey. In both cases, VAX C and its documentation, problems with information management products (especially FMS and Rdb) and telephone support problems emerged as the

most significant problems.

The VAX C development group is already aware of these problems, and is addressing them. Problems with the information management products were forwarded to the CSSE organization responsible for those products. Enhancement of telephone support for all products is an on-going focus of CSSE.

3 GRAPHICS

The responses given to this section of the questionnaire were forwarded to the CSSE engineer responsible for graphics products.

56 people plan to use graphics for display, 39 for human interface.

We asked "What tools do you feel you need in order to accomplish this?"

Full-screen graphics editors, a good windowing package, device independence, a good graphics interface for graphic laser printers, GKS, and ReGIS were the most popular answers to this question.

4 VMS

1. We asked the users to rate VMS as to QUALITY and PERFORMANCE using the following scale:

1 excellent	2 good	3 fair	4 poor	5 unacceptable
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QUALITY:

1 - 38	2 - 42	3 - 3
--------	--------	-------

PERFORMANCE:

1 - 13	2 - 53	3 - 13	4 - 1
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2. We asked "are you satisfied with the frequency of VMS releases?"

YES - 61 (69%, up from 61% in the Spring '86 survey).

would like more frequent releases - 2

would like less frequent releases - 8

3. We asked "what kind of services, not currently offered by DIGITAL, do you feel are needed at your site?"

Many responded to the question with requests for more design, analysis and verification tools, and services that assist in establishing configuration management using DEC's tools.

Some asked for improvements in the turn-around time and quality of answers given by the telephone support center.

Performance consulting, tuning, and inexpensive resource utilization measurement (to justify purchase of more hardware) were requested.

One person felt that there was a need for more contact with software-knowledgeable sales people. ("We never hear anything except at DECUS.")

4. We asked " what tools are missing under VMS, which you feel are needed for your daily system management task?"

The most frequent requests were for programs to aid with tape management, self-tuning, and performance analysis, better monitoring tools, inexpensive network management tools for small networks, configuration management, and integration of software development tools.

5. How do you manage your backup tape/disk library? What features would be of use to you in maintaining your backup media library?

By far, the most popular way to do this was to do daily incrementals, weekly backups (either incremental or full), and full monthly backups. Most daily backups were kept for 2 weeks. Most monthly backups were kept for 3-6 months.

Archivers and tape management programs were the most frequently requested features. Several people also asked for resolution of BACKUP bugs.

5 SECURITY

Responses to this section of the questionnaire were sent to the CSSE engineer concerned with security on VMS, and to the developers of SES/VMS.

The SES/VMS developers replied with a description of SES/VMS, which I will reprint here before going on to the questionnaire results. Many of the requested security features are already included in this new service package.

The VMS Security Enhancement Service is a software security consulting package that provides many features of mandatory access controls, security auditing and labelled output for VMS. It provides your system administrator or system security officer (SSO) with the software to devise a system-wide security policy that helps safeguard users' data and software from security threats. The most distinguishing characteristic of mandatory access controls is that the security policy is beyond direct user control and is centrally and uniformly established by the system manager. Furthermore, these controls do not replace standard VAX/VMS security features, but rather augment them with an additional mandatory access control policy.

VMS Security Enhancement Service provides the SSO with the ability to classify users and data at different sensitivity levels. This guarantees that users will not be able to:

- o access data to which they are not entitled
- o pass data to users who are not authorized to access that data.

It also allows the SSO to

- o audit attempts to bypass mandatory access controls
- o restrict users to specific terminals
- o restrict printed output to specific printers
- o regulate files to specific disks
- o place sensitivity labels on users information and printed output.

The first release is Version 4.4, numbered to correspond to the prerequisite VAX/VMS release.

Here are the questionnaire results:

Using VMS Security Features - 59 (66%, up from 56% in the Spring '86 survey)
Not using Security Features - 17
Features used - ACLS, login security, UIC-based file protection

We asked "What services would you like to see that DEC is not currently offering?"

o mandatory access controls (especially integrity). Protected subsystems --

This is offered in SES/VMS.

o SPRINT as a standard DEC product --

SPRINT offers custom labeling of spooled output (flag pages, page headers, trailers, etc.) and a log of what was printed.

A subset of SPRINT (most of the formatting functions) is part of SES/VMS. Some improvements were made; for instance, one of its formatting routines was rewritten, reducing the time needed to format a flag page from 30 seconds to less than 1 second!

o DOD and DOE approval for both VMS and DECnet --

We're assuming that this means National Computer Security Center evaluation. VMS 4.2 was evaluated as a C2 system; later versions of VMS are under evaluation.

There are no criteria for secure networks, thus there is no way to get DECnet evaluated. The NCSC tried writing some criteria for networks (aka the Brown Book, in contrast to the system criteria, the Orange Book) but threw it out; A rather graphic slide at the last Computer Security Conference showed a Brown book going into a trash can.

We asked "Which layered products are you using? What VMS Version?"

Fortran, Pascal, CMS, MMS, DTR and FMS were the layered products most frequently used in secure environments. Some people also made use of COBOL, BASIC, DBMS, Rdb, CDD, All-in-1 and TPU.

The majority of users were running under VMS V4.4. Several are running under VMS V4.2.

6 TRAINING

We asked "Is there a course, not currently offered by DIGITAL, which you feel is badly needed? If so, please indicate the best medium for the course (CAI - computer-aided instruction; SPI - self-paced instruction; LEC/LAB - lecture/lab). If you indicated lecture/lab, how many people would you send to the course in the coming year?"

LSE,TPU
EVE EDITOR
TOOLS INTRO/OVERVIEW/EXAMPLES
INTEGRATING DEC TOOLS
USING DEC VMS EFFECTIVELY FOR SW DEVEL
HOW TO USE CMS/MMS
REAL-WORLD PERFORMANCE
PERFORMANCE MANAGEMENT
WPS+
CONCEPTS, DESIGN OF RDB APPLICATIONS
2
DESIGN OF SYS USING RDB, ACMS
TECHNICAL WRITING FOR PROGRAMMERS
VAX DEBUG
ADVANCED SYSTEM MANAGEMENT
NETWORKING MANAGEMENT
HOW TO WRITE APPLIC THAT USE DECNET
PSI
IBM/SNA GATEWAY MGMT
PITFALLS OF VMS
UP
SECURITY
RMS INTERNALS
ALL-IN-1 ADVANCED PROGRAMMING
BONE-HEAD VAX (FOR OLD IBM USERS)
IBM PC
SYSTEM SEMINAR, SYSTEM TROUBLE SHOOTING

CAI (3 REQUESTS)
CAI
SPI
SPI, CAI
LEC/LAB
SPI
LEC/LAB - WOULD SEND 4
SPI, LEC/LAB
ON-SITE
LEC/LAB (IN FRANCE) - WOULD SEND

LEC/LAB - WOULD SEND 10

CAI (BUNDLED WITH VMS)

LEC/LAB - WOULD SEND 3
CAI, LEC/LAB - WOULD SEND 3
LEC/LAB - WOULD SEND 3
ALL MEDIUMS, PLUS DISCUSSION GRO

LEC/LAB - WOULD SEND 1
LEC/LAB
LEC/LAB, CAI, SPI. WOULD SEND 5
LEC/LAB - WOULD SEND 5
CAI
LEC/LAB - WOULD SEND 10

7 SERVICE DELIVERY

7.1 SDC

The following is a sample of the comments we received regarding SDC problems. A list of all of the problems has been sent to SDC management.

Bad media, SDC is too slow, shipments are not always complete (causing storage problems until the whole system comes in).

Big problem in France with All-in-1 and WPS+.

For one year, my local sales rep was not able to clear up a problem with

another DEC sales office (in Los Angeles. I'm in Palo Alto). As a new VAX and DEC user, I started on VMS V4.0 with a full doc set. For one year, I receive no other mailings of doc-set changes. I am on V4.4 with no doc in-between. DEC offices are so split up that they can not communicate with each other. I do not know who to blame for this lack of service delivery.

We had a GPX-II before the local support people had ever been trained. Lots of problems; no one knew how to diagnose them.

unable to get media for VMS V4.4. Have not recieved MMS V2.1. Have contacted local office for several months.

Lately, our products have been arriving long after those for another company in the same town (Orlando, FL).

They insist on UPS rather than US mail.

7.2 TELEPHONE SUPPORT

NO CONTRACT - 9 SATISFIED - 35 NOT SATISFIED, no comment - 5

The following comment was a typical response:

"They take too long to reply. DEC people need more training in other DEC products and problems."

Dispatching was also cited as a problem ("it's too hard to get to a knowledgeable person").

However, in emergency situations, or in dealing with a known problem, the telephone support center was very prompt.

7.3 SALES

We asked the following 2 questions regarding knowledge of DEC products:

1. Are you sufficiently aware of DIGITAL's software product offerings, their features and benefits, to develop solutions to your business needs?

YES - 48 NO - 13
The best information comes from DECUS. - 2 responses.

2. Have DIGITAL salespeople and software specialists been able to answer your questions, or promptly provide you with information, peraining to DIGITAL

software products?

YES - 31 SOMETIMES - 9 NO - 17

7.4 CONSULTING

We asked "If you have utilized DEC's consulting service, were you satisfied with the results?"

YES - 17 NO - 7

8 people had made use of DECstart. All reported that they were satisfied with the results.

d i g i t a l

I n t e r o f f i c e M e m o r a n d u m

To: Languages + Tools SIG

Date: 18-Feb-1987

From: Kevin Harris

Dept: Technical Languages

SUBJ: FORTRAN (X3J3) Standards Committee 103nd Meeting

On February 9-13th, 1987, I attended the 103nd meeting of the ANSI X3J3 Standards Committee, held at the Holiday Inn in Torrance, Ca. The meeting was hosted by Jim Matheny, representing CSC. The meeting was entirely devoted to processing comments received from the members in the recent letter ballot.

1 THE BALLOT COMMENTS

The letter ballot to forward the draft Fortran 8x document (called X3J3/S8) was approved by a vote of 29-7 at the conclusion of the vote on 10-Jan-1987. The negative ballots were: Harris (DEC), Hendrickson (Cray), Lakwara (Peritus), Moss (SLAC), Phillips (Boeing), Rolison (Unisys), and Weaver (IBM). Ordinarily, this situation would result in a few minor editorial changes, the writing of a few letters to the dissenters, and a vote to forward the edited document to X3.

Rather than a few major comments, the membership took this opportunity to thoroughly review the technical content of the language. As a result, over 3000 individual comments on the editorial and substantive content of the document were received. This was far too many to process at one meeting. In fact, aside for allowing the members to make speeches about their ballots, the committee devoted the entire meeting to categorizing the comments and making editorial changes.

2 THE COMMITTEE

There were 36 voting members at the time of this meeting. A total of 29 members were present or represented. No members joined, dropped or were put on provisional status. Several visitors attended the meetings on one or more days. Among them was Jay Wiley representing DECUS who attended the Monday, Wednesday, and Thursday sessions.

3 THE ACTIONS

The work was divided into mornings and afternoons. Mornings were spent on items requiring official committee action, so we met in full

committee. Afternoons were spent in section-based subgroups preparing work for full committee action.

3.1 Full Committee

The steering committee met during the previous weekend and did a preliminary pass over the comments. Each comment was placed into one of the following categories:

- o 1 - Purely editorial, typesetting errors, etc., local in its effect, effects only the document, not the F8X language.
- o 2A - Editorial, but with a wider effect.
- o 2B - Editorial, potentially controversial, with a wider effect.
- o 3 - Substantive, effects the F8X language as well as the document, complete, local, with no subgroup recommendation needed.
- o 4 - Substantive, incomplete proposal or significant subgroup attention required before full committee action.
- o 5 - Off limits, rejected, substantive change with major language content.

To get an idea of the magnitude of the problem, there were thousands of category 1 comments, hundreds of category 2 comments, a few hundred category 3 and 4 comments, and a couple dozen category 5 comments. Along with these categorizations, an initial disposition code was given, as follows:

- o ** - Proposal complete, acceptance recommended.
- o * - Acceptance recommended, proposal incomplete or covered by another change.
- o R - Rejection recommended.

Four different lists of the comments were produced. The first was by Lloyd Campbell, chairman of the editorial committee. He did a monumental job of sorting the comments according to section and page, cutting and pasting the related comments together so they could be viewed side by side with the main document. The result was 176 pages long, almost as thick as the main document.

The second list was produced by Dick Hendrickson of Cray. This used 1 line/comment and was sorted by section, page, and line. It included the initial disposition code for each item and a reference back to the submitter. The third and fourth lists were the same, but sorted by author and disposition code, respectively, rather than by textual

position. Each of the Hendrickson lists was 65 pages long.

The availability of these lists was invaluable for cross checking the various comments and deciding on where major problems still existed.

For the bulk of the comments, the steering committee intends that the disposition on the final version of the printed lists will constitute the official committee response. For the category 5 and some other comments, a specific response will be written and voted by the committee. This will include most of the DEC comments.

During the week of the meeting, the full committee met each morning and made a preliminary pass over the ballots. For each ballot, the disposition changes recommended by the members and the subgroups were read aloud so the membership could update its lists. The ballot author was given the opportunity to make a short presentation and discuss his major issues with the committee. Since most members voted yes, many made no comments. All of the NO voters made heartfelt speeches about their concerns about sending up this document.

Jay Wiley also made a such a speech, on behalf of DECUS. While not a member of X3J3 (neither is there an official SHARE rep), DECUS is recognized by the committee as representing a large body of users, and that they are not simply puppets of DEC's views. Jay did, however, offer considerable support for DEC's position, as it turns out. His main points:

1. DECUS shares many of the concerns discussed in the NO ballots.
2. A new standard is needed now - controversial items should be dropped to insure availability of the non-controversial ones.
3. The committee should err on the side of conservatism because so many features are untested.
4. His experience as bidder on DOD contracts has led him to adopt the KISS (Keep It Simple, Stupid) principle for all complex technical issues such as this.
5. Based on hard experience, he greatly fears the inevitable need to help debug optimizing compilers.
6. If the major vendors do not provide efficient implementations, the standard will be a failure. And major vendors are not in favor of the standard, nor are they promising efficient implementations.
7. Language "beauty" is irrelevant - the committee must look at hard economic reality.
8. See the DECUS straw ballot for the best current cross section of DECUS opinion.

9. When this S8 document is distributed to the public, please insure that it is clearly labeled as "draft", that its contents can and probably will change before it becomes a standard, and that the committee has not reached consensus on many important issues.

By the end of the week, perhaps half of the ballots had received final dispositions. This appearance of progress is misleading, however. We voted on between 500 and 1000 "minor" editorial matters, in large "summaries" of proposals, basically references to ballot comments by page and line. Thus, in essence, we trusted to the editorial committee on most of these matters. Some ballots whose comments contained only such minor editorial items were completely processed. So, the tally of 1/2 complete is based on the sum of the "no comment" and "minor comment only" categories. No ballots with any category 3, 4, or 5 items were completed.

Final action on some category 4 issues was achieved, a summary:

1. Implementation conformance. Fortran-77 has about the lowest level of implementation conformance requirement of any of the language standards. It simply states that the processor to correctly execute standard conforming programs. The European members have been working for several years to tighten up the rules for Fortran 8x. Several ballots mentioned this topic. They were evaluated and a proposal written for this meeting. It was crafted mostly by Miles Ellis from Oxford. It imposes the additional requirement that a processor be capable of reporting, in a submitted program unit, syntax extensions beyond the numbered syntax rules and labeled constraints, and the use of any obsolescent or deprecated features. It also recommends, but does not require, that documentation accompany the implementation and describe the extensions. This proposal passed unanimously. The main reason was that the major vendors are already required to perform essentially this level of checking by Federal Information Processing Standard (FIPS) 69.

A few of the numbered syntax rules and labeled constraints were adjusted to insure that this checking requirement did not require link-time or run-time checks, and that compile time checks were not difficult. The net result is somewhat more checking than the VAX implementation of /STANDARD=(SYNTAX, SOURCE_FORM).

2. Host Association. With the advent of internal subprograms, the issue of name scope instantly comes up. This has been inadequately treated for many years and was the source of several major ballot comments. The issue is complicated in Fortran by the IMPLICIT statement and the associated default typing rules. Brian Smith of Argonne led the effort to nail down the rules once and for all, under the heading of "host association". The result was a multi-part proposal with a complicated set of rules for dealing with IMPLICIT. It passed over the objections of Larry Rolison of Unisys, which

has had an implementation of internal subprograms for many years - with an incompatible set of scoping rules.

3. The IDENTIFY statement. The text on this topic was incorrect, vague, and hard to understand in several places. Several users and vendors had criticized it heavily. The subgroup worked all week on this problem and rewrote several pages of text. After witnessing this effort, it seems clear that the IDENTIFY statement provides significantly less capability than I originally thought. For example, it allows you to identify the diagonal of a matrix, but not the tri-diagonal.
4. Syntax of SELECT CASE statement. This allowed a meaningless combination which happened to result from a simple and obvious use of the syntax. This was remedied by revising the syntax rules.

In reviewing this construct, it suddenly became clear that this is like a SELECTONE construct in BLISS, rather than a true CASE. The semantics are to search down the list, evaluating each case in turn, and selecting the first that matches. There is nothing wrong with this, except that X3J3 is suggesting (in Appendix B) that the Computed GOTO construct be deprecated in favor of the SELECT CASE. On VAX, that would lead to a serious performance degradation. On this basis, it would appear that the deprecation is not justifiable.

5. The VALUES= and NULLS= clauses are inappropriate in namelist READ, they are removed from it.
6. Glossary. John Reid from Harwell in England has been working on a Glossary for several years. A combination of circumstances has kept it out of the main document until now, but it was officially added at this meeting. It is certain to be a continuing source of controversy over the precise definitions, however it is very useful when reading the document.

Many other category 3 and 4 items were discussed. However, most of these require much more work before they can be resolved in full committee. At least two dozen such major issues remain to be processed before the document can possibly be ready to forward to X3.

3.2 Subgroup Work

In the afternoons, the subgroups concerned with the individual sections met, as did the editorial committee, to process the comments. The editorial committee confined itself to the category 1 and 2 comments. The subgroups mainly confined themselves to evaluating the preliminary dispositions of comments, and evaluating major problems identified on several ballots.

FORTRAN (X3J3) Standards Committee 103rd Meeting

I participate in Subgroup 17, devoted to Program Units and Procedures (sections 11 and 12). These sections were written in a very tight style with the result is that many people do not understand the material or its motivation.

This situation led to a large number of comments resulting from small typos and misunderstandings. Generally, it was necessary to completely revisit all initial dispositions of comments in this section. We completed reviewing all category 3, 4, and 5 items, and R items for these sections, but not the category 1 and 2 items. There was a disturbingly large number of items assessed as editorial that were actually substantive, and vice versa. Many of the comments were questions that had "obvious" answers. Only about 1/4 of the category 3 and 4 items were discussed in full committee at this meeting.

3.3 Status Of DEC Ballot Items

The committee discussed the DEC ballot for approximately 30 minutes on Wednesday. I made two points in my initial speech before the summary of the ballot itself:

1. DEC had several goals behind the form and content of the comments:
 1. We do not want to simply obstruct public comments, although we have been accused of this in print.
 2. We wanted to avoid generalizations that have been used in the past, such as the size, complexity, or potential failure of the language.
 3. We do not want to waste time on small details, that is what the public comment period itself is for.
 4. We wanted to comment only on a few items, so as not to dilute the points on the major problems.
 5. We did want to suggest possible solutions to problems that are certain to draw many comments during public comment, and thus must be dealt with.
2. I stated that I expected the committee to provide a written response to the DEC comments - a category 5 rating was not adequate. (assuming they are not acted upon)

The steering committee reacted to my second point by assigning members to draft a response for X3J3 to vote on. My insistence on a written response was picked up and echoed by several other NO voters, and led the chair to declare that all category 5 comments will be given a written response.

FORTRAN (X3J3) Standards Committee 103rd Meeting

To my surprise, the steering committee took the INCLUDE recommendation to heart and gave it a category 4 rating. The chair insisted on taking a straw vote on this item. It passed by the margin of 15-12-5. Kurt Hirschert is assigned to write a proposal for the next meeting. I suggested that he propose essentially the VAX Fortran model.

3.4 March Meeting

Because of the crushing number of comments, the steering committee has decided to hold an unscheduled meeting in March, in Albuquerque. Administratively, the March meeting will be an extension of this 103rd meeting rather than a truly extra meeting. Thus, non-attendance won't count toward provisional status, there will be only one set of minutes for both meetings, etc.

A poll of the membership indicates that there will be only a marginal quorum in March. As such, it was stated by the chair that the meeting will be devoted to editorial work and preparing proposals for the next scheduled meeting, in May, rather than passing final action on substantive issues of concern to many members.

4 UPCOMING MEETINGS

The next X3J3 meetings are scheduled for:

1. 104th meeting: May 11-15, 1987. Bellvue, Wa. - Boeing
2. 105th meeting: August 10-14, 1987. Liverpool, England - U. of Liverpool.
3. 106th meeting: November 9-13, 1987. Ft. Lauderdale, Fl. - Gould
4. 107th meeting: February 8-12, 1988. To Be Determined
5. 108th meeting: May 9-13, 1988. Champaign-Urbana, Ill. - U. of Ill.
6. 109th meeting: August, 1988. Colorado - NCAR.

[end of DECUS103.MEM]

ORGANISATION EUROPEENNE POUR LA RECHERCHE NUCLEAIRE
EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

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Mr Bill Hancock, CSP
Consultant,
2510 Limestone Lane,
Garland, Texas 75040
Etats-Unis

15 January 1986

Dear Mr. Hancock,

I have been asked by Alan Silverman to send you a few comments about our general attitude towards Fortran 8x. To begin with I should explain what type of environment we do not have, either here at CERN or within the high-energy physics community generally. We are not a homogeneous organization, able to satisfy our computer hardware requirements from a single source, and to base all our software on products provided by that vendor. We are not in the attractive situation that we can liaise with that single vendor, to have it provide us with a stream of software upgrades well adapted to our needs, and to have it assume responsibility for long-term compatibility. On the contrary, even on the CERN site we have large mainframes from three major vendors, IBM, CDC and DEC, as well as hundreds of smaller machines from a variety of other manufacturers. In W. Europe as a whole, we are confronted with a still wider range of hardware. As an example, within the collaboration of 35 institutes for which I work, we use five different types of mainframe, not including some exotic ones in the Soviet Union. Note that we have virtually no influence on the procurement policy of most of these institutes. Some background is given in the document marked [1].

Our applications software must run on all these machines. This imposes on us severe constraints about the use of our chosen language, FORTRAN 77, and in particular a total prohibition on the use of any extensions *however tempting they may be*. We prepare carefully designed guidelines for use by physicist/programmers to help them write portable code, see for instance the document marked [2]. The situation we are then in is that we are using, in 1986 and for some years to come, a language designed a decade ago, knowing full well that most compilers and other languages offer superior facilities, but ones whose use by us is barred. Although this is a serious limitation, and often a frustrating one, it has for us the overwhelming advantage that we can move applications software from machine to machine, and from institute to institute, with only minor changes.

What for us is the way forward? We could change to another language, but the only conceivable alternative to FORTRAN is ADA, and we are not yet ready for such a dramatic step. We could try to persuade all institutes to acquire the same hardware, and then use freely the language extensions provided by the chosen vendor. Not only is this impossible on political grounds, it would make it impossible for us to choose at any given moment that hardware which most closely corresponds to our particular need. We cannot do number-crunching on VAXes, nor use a CRAY for on-line tasks. The *only* way forward is to stick to the standard, and to move with the standard as it evolves. We are thus totally dependent on new standards for improved and new language features. (This would be true within a few years even if we changed to another language). Hence our interest in the work of X3J3,

and our dismay that DEC and IBM are opposed to what it is producing. More background is in the document marked [3].

It might be questioned whether FORTRAN 8x is actually what physicists want. I conducted a survey five years ago to find out, and enclose the result as document [4]. The overwhelmingly positive response would be just as strong today, apart from some misgivings about the EQUIVALENCE statement becoming deprecated, and the absence of a pointer data type. I conducted a similar survey of European IBM sites for SEAS, and the picture was similar. The preliminary results were in the minutes of the February 1984 meeting of X3J3, and I enclose the final ones as document [5]. We feel very strongly about the array handling features and the BIT data type — these are both very important for our work.

To summarise, it is clear that evolving standards are, for us, the only way to obtain access to new language features (in any language). The draft being prepared by X3J3 represents what we consider to be a large but necessary step forward. If it is not a 100% fit to our requirements, then we have to accept that, as standards imply consensus, and we are not the only users in the world. At the same time, we try to influence in various ways the direction and content of the work. It is likely that we shall vote for its acceptance, and we shall regard it as a tragedy if negative votes at X3 snatch this succulent fruit from our grasp.

I trust this information is of some use to you. I would be most happy to answer any questions you might have, and look forward to meeting you possibly one day at CERN.

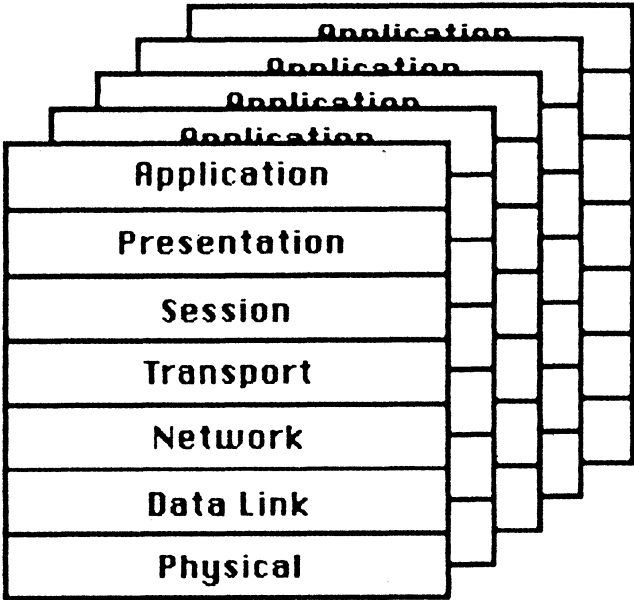
Yours sincerely,

Michael Metcalf

C.C.: A. Silverman, D.O. Williams

NETwords

The NETWORKS SIG Newsletter



Distributed Database Issues and Solutions

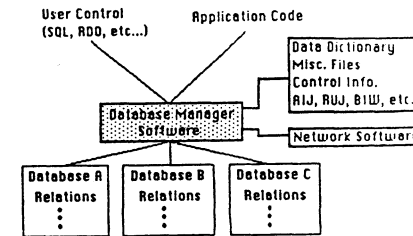
Bill Hancock
Staff Consultant
ERI Training
462 Broadway
New York, NY 10013
(212) 334-1240

Current Status:

- o INGRES/Star has been announced as a fully distributed database utilizing DECnet and/or TCP/IP networks
- o Several R&D projects are underway to solve the distributed problem. One experimental relational database, *EZFIND*, has been seen operating on various dissimilar processors in a fully distributed mode.
- o DEC has been working on a distributed version of Rdb/VMS for some time
- o Other relational database vendors have announced intent or plans to implement distributed databases

Accessing Information in a distributed environment:

Typical Relational Database Structure



What is a Distributed Database?

The connecting of databases on different systems through the use of a network to make all databases appear as one to the user or to a program.

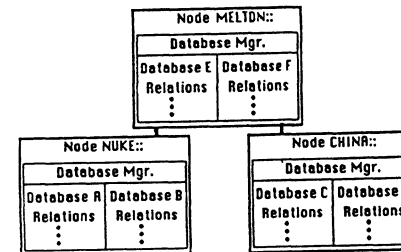
Benefits of a Distributed Database:

- o Less overall load on single processors
- o "Divide and conquer" data problems
- o Less chance of total corruption of data elements of overall database
- o Easier inclusion of subset databases after initial configuration
- o Easier addition of new systems and applications
- o Placement of data nearest to where it will be used

Problems of Distributed Databases:

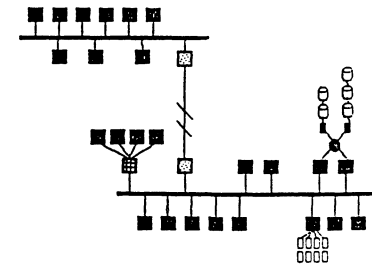
- o No information on all nodes as to what is available at what node
 - o No "distributed" data dictionary
 - o Segmentation of data
 - Horizontally, at the row level
 - Vertically, at the column level
 - o Two-stage commit of data problem
 - Commit is made and local database is told that commit is complete
 - Second stage is remote database acknowledges that commit is done
- Problems surface in:
1. What happens if the remote system fails on the commit
 2. What happens if the network fails on the commit
 3. How are rollbacks and recover operations handled
 4. How is the information about the commit operation distributed to other nodes and when

Distributed Problem:



- o The network must be integrated into the database access facility
- o Database must also be sophisticated enough to handle network issues such as:
 - Indexing
 - Locational service
 - Security
 - Queueing Delay
 - Etc...

Typical Topology of a Local Area Network



Problems:

Databases could be on any node
Different nodes will have different capabilities and characteristics
Network delays can cause serious problems
Others...

Potential Solutions:

- o Database service that provides a "copy" capability of segments without updates
- o Database service that allows segments with updates
- o Index service feature
- o Update and notification facility
- o Treat the network as a database
- o Others...

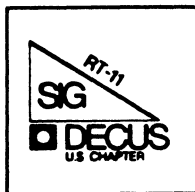
Why should you watch distributed database developments?

- o With the approach of ISDN, the need for distributed databases will become increasingly critical
- o Databases are being used more and more as the "engine" for application generators and 4GLs. As a result, there will be more databases used than ever before by more and more novice DBAs and users.
- o Networks are beginning to interconnect more and more and with the need to reduce communications costs, the need to distribute information closer to the user will become increasingly necessary.
- o Management of large corporations is changing from a management role to a leadership role. As a result, the direct management of data will be directed towards the user.
- o Distribution of knowledge in most corp. is poor at this time. With office automation, mgrs will want to access knowledge that is collected by a corporation in a rapid, distributed way

THE
**mini-
tasker**

DECUS

RT-11 SIG NEWSLETTER



Notes from the RT-11 World

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The RT-11 SIG DOES solicit signed articles for insertion in the mini-tasker, on or about bugs, features, hints, kinks, nifty things, etc., all about the RT-11 and/or RT-32 operating systems and their environments. Write it up, send it to me (with a note to rewrite if you wish), and I will try and get it in an upcoming issue.

Symposia

This issue's copy has to be in the DECUS office by April 17th, to meet an early deadline caused by the Nashville symposia. Therefore, by the time you read this, Nashville will be an old story, and Anaheim will be just around the corner.

Gary Sallee picked up a suggestion in San Francisco that there should be a list of alternative (and possibly more affordable) housing. In this issue we are printing a listing Gary produced of 98 hotels and 8 RV parks. As Gary states, "NO GUARANTEES!, NO RECOMMENDATIONS!". He also mentions that while some hotels will lower rates if you mention DECUS, others will RAISE rates. Thanks, Gary.

On-line distribution of RT-11 SIG TAPE DISCONTINUED!

Tom Shinal reports that he has terminated his employment with (where he was) and as such has found it necessary to terminate the on-line distribution of the RT-11 SIG TAPE. The experiment ran about a year, and was extremely successful, logging hundreds of hours.

Tom has been quoted as saying "I may restart the service with my new venture, at which time I'll let the DECUS library and the RT-11 SIG know."

Best wishes, Tom, in your new endeavor. Tom's new address is in the RT-11 SIG directory. There is also new information for Ned Rhodes and Brad Lubell. (Ask Ned about his trip to Nashville with Tom Shinal and Jack Peterson.)

Who has TK-50 tapes under RT-11?

Rally Barnard has raised the question as to whether or not the RT-11 community has enough TK-50's to make it worth while to distribute the RT-11 SIG Tape on a TK-50 cartridge.

Within the RT-11 Steering Committee, Bill Walker thinks it is a great idea (he has a TK-50 and no 9-track), Nick Bourgeois prefers the current 9-track (he doesn't have a TK-50), I don't care (I have both) others don't care (they have neither). Bob Perry of NLO thinks NLO should distribute 9-track, and LUG's should convert to TK-50, as has been done in the past.

Based on this brief, and biased, survey -- our final conclusion is that we would like to know what YOU have, and YOUR preferences. Please write me (or call and leave a message) and let me know whether your site has or plans to have, 9-track tape (800 or 1600 bpi, please), TK-50's, both, or neither.

When is Not Defined Defined?

Chris Doran has responded to Nick Bourgeois's letter over the use of the (N)DF MACRO assembler conditional. He raises a philosophical question over which behavior is right -- and quotes RSX and VMS in stating a point. Being COBOL oriented myself, he may also have been quoting Greek. Nick has a copy of the letter, and will have a comment in the next issue. Stay tuned in.

Handler / Utility Interface for RT-11

Marty Gentry and Linda Banche of the RT-11 Development Team have submitted a paper discussing the fact that "The long range goal of the RT-11 Handler Architecture is to place ALL device dependent information within the handlers." May I only say lets make the "long" range goal the "short" range.

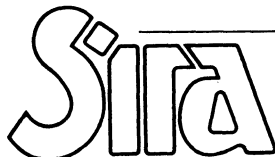
And finally, I am always looking for something of interest to print.

My Micro/PDP-11/73 only has RX-50 (and cartridge tape for backup only). My "Compact" Micro-VAX II has both a TK-50 and a TS-05, therefore the following:

Please send your submissions to the mini-tasker (on RX-50, 1600 bpi magnetic tape, TK-50, or pieces of paper) to me at:

The RT-11 mini-tasker		The RT-11 mini-tasker
Bill Leroy, Editor		Bill Leroy, Editor
The Software House, Inc.		The Software House, Inc.
P. O. Box 52661	(OR)	2964 Peachtree Road, NW #300
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Telephone 404 / 231-1484 during somewhat strange hours, Eastern time.



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Mr Bill Leroy (RT-11 Mini-Tasker),
The Software House, Inc.,
PO Box 52261,
Atlanta, GA 30355-0661

3rd April 1987

Dear Bill,

When is Not Defined Defined?

Nick Bourgeois, in Mini-Tasker, March 1987, p RT-4, raises an interesting question over the use of the (N)DF MACRO assembler conditional.

His example can be simplified to:-

```
.IIF NDF, BLACK, BLACK = 0  
BLACK = BLACK+1
```

One might expect BLACK to be set to 1, but in fact, you get 2. The reason is that MACRO is a two pass assembler. On pass 1, BLACK is undefined, so it gets set to 0 and then incremented to 1. But on pass 2, it is defined, so it doesn't get cleared, but does get incremented to 2.

The RSX assembler gives the same result, not suprisingly since it uses much of the same code, unless you apply its (now undocumented) /PASS:1 switch, which means that only a second pass is done on the file. Then, you get 1 as Nick expected. Maybe the fact that you can get different results with and without it is the reason the /PA switch has been dropped. I seem to recollect that at one time you could get different results if you suppressed the object file, but I think that problem has now been cleared up.

Interestingly, the MACRO-32 assembler of VMS (which doesn't have a /PASS option) does give 1 with the above code.

Which behaviour is right is a philosophical question, and I doubt whether you will get much joy with an SPR.

Those with an interest in MACRO oddities may like to ponder on why you get an error if, in Nick's original example, you give the macro an argument, say GREEN, and change the .IIF line to:

```
.IIF B GREEN, BLACK=0
```

but not if you place a comma between B and GREEN (which is not necessary if the condition is an arithmetic one, e.g. EQ).

Yours sincerely,

Chris Doran
Chris Doran,
Computer Manager

RT-3

To: RT mini-tasker
Subject: Anaheim Extended Hotel List

March 16, 1987

There was a suggestion at the San Francisco Symposium that there should be a list of alternate lodging. Enclosed is such a list for the area of the Anaheim Convention Center. The list is sorted by city, by street name, by street number. The information is intended for December 7 to 11, 1987.

There are no guarantees. This information is all hear say. The user takes all responsibility. There are no recommendations. You should request confirmation of all pertinent data in writing from the motel.

An explanation of some fields is in order. "Direction:" is compass and distance from the convention center as estimated from AAA map 2494. "Kitchen:" means that rooms with kitchens are available at extra cost. "2P/2B-\$" is the daily price for 2 people with 2 beds; you can figure the other prices. Prices listed are the lowest of a range; larger rooms or larger beds are often higher priced. There is a local bed tax that will add to any rate quoted. "Restaurant:" is the closest place that serves breakfast.

The four streets surrounding the Anaheim Convention Center are Harbor Blvd, Katella Ave, West St, and Orangewood Ave. Most of the motels listed are on one of these four streets. The odd street numbers are on the west and north sides of the street. The even street numbers are on the east and south side of the street.

The convention center parking lot is covered and guarded and costs \$3.00 per day. It is just a few yards from the center so that you can return to your car easily during the day. The exit is spiked but not chained so a late hour exit is ok. Pickups, campers, and motor homes may park on the top level or in the outer uncovered lot, where the height limit is 13 feet for either place. The entrance is the same for all vehicles.

Gathering this list was an experience. I will share some local lore. The prices given are at best estimates. If December bookings are slow in mid-October then prices are likely to drop \$10. If December bookings are high in mid-November then prices are likely to rise \$10. Some motels will lower the rates if you mention DECUS. Some will raise the rates if you mention DECUS. Some people refused to give a December price so the price given is the High Season price. The second week in December is normally the slowest week of the year for the tourist trade. The weeks of the 7th and the 14th are very good to see the southern California tourist spots.

If you have any additions, suggestions or corrections, please send them.

Gary F. Sallee
19912 Fernglen Drive
Yorba Linda, CA 92686
(714) 970-2864

RT-4

			1	
			1	
Ball Rd			0	
	W		1	H
	e		2	a
	s		0	r
	t		0	b
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Cerritos Ave	S			
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D'land Hotel		Disneyland	B	I-5
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			0	d
Katella Ave			0	
	1100	1000	600	1 500
			8	
		Convention Center	0	
			0	
			2	
			0	
Orangewood Ave			0	
			0	
			2	
			1	
			0	
			0	

List Hotel 3:
 Direction: E 2.3 Miles Type: Motel Major St: Katella Ave Cross St: State College Blvd
 Name: Anaheim Angel Inn Units: 61 Rates: 1P=\$30 2P/1B=\$32 2P/2B=\$34 Coin Laundry: N
 Kitchens: N (714)634-9121 (800)358-4400 (CAL) (800)435-4400 (USA) ()
 Addr: 1800 E. Katella Ave, Anaheim, 92805 Affiliation: No Location No.
 Restaurant: Restaurant Direction: Next Door Meals:

List Hotel 4:
 Direction: N 4.0 Miles Type: Motel Major St: Cal-91 at Raymond Ave Cross St: Orangethorpe
 Name: Akua Motor Hotel Units: 62 Rates: 1P=\$34 2P/1B=\$38 2P/2B=\$42 Coin Laundry: Y
 Kitchens: Y () (714)871-2830 () ()
 Addr: 1018 E. Orangethorpe Ave., Anaheim, 92801 Affiliation: None Location No.
 Restaurant: Restaurant Direction: On Site Meals:

List Hotel 5:
 Direction: NE 1.0 Miles Type: Hotel Major St: Harbor Blvd Cross St: Katella Ave
 Name: Grand Hotel Units: 243 Rates: 1P=\$39 2P/1B=\$42 2P/2B=\$47 Coin Laundry: N
 Kitchens: N () (714)772-7777 () ()
 Addr: 1 Hotel Way, Anaheim, 92802 Affiliation: None Location No.
 Restaurant: Restaurant Direction: On Site Meals: B L D

List Hotel 6:
 Direction: N 3.7 Miles Type: Motel Major St: Harbor Blvd Cross St: Cal-91 (Riverside Fwy)
 Name: Comfort Inn - North Units: 117 Rates: 1P=\$42 2P/1B=\$42 2P/2B=\$48 Coin Laundry: N
 Kitchens: N () (714)635-6461 () ()
 Addr: 1251 N. Harbor Blvd, Anaheim, 92801 Affiliation: Comfort Inn Location No.
 Restaurant: Restaurant Direction: Meals:

List Hotel 7:
 Direction: NW 2.6 Miles Type: Motel Major St: I-5 at Lincoln Ave Cross St: Walnut St
 Name: Broadway Motel Units: 28 Rates: 1P=\$20 2P/1B=\$22 2P/2B=\$24 Coin Laundry: N
 Kitchens: N () (714)535-3502 () ()
 Addr: 300 N. Manchester Ave, Anaheim, 92801 Affiliation: No Location No.
 Restaurant: Restaurant Direction: Meals:

List Hotel 8:
 Direction: W 5.5 Miles Type: Motel Major St: Ball Rd Cross St: Cal-39 (Beach Blvd)
 Name: Quality Anaheim - West Units: 100 Rates: 1P=\$38 2P/1B=\$42 2P/2B=\$45 Coin Laundry: Y
 Kitchens: N () (714)220-0100 (800)228-5151 ()
 Addr: 727 S. Beach Blvd, Anaheim, 92804 Affiliation: Quality Inn Location No.
 Restaurant: Restaurant Direction: On Site Meals: B L D

List Hotel 9:
 Direction: W 5.5 Miles Type: Motel Major St: Ball Rd Cross St: Cal-39 (Beach Blvd)
 Name: The Mediterranean Inn Units: 29 Rates: 1P=\$25 2P/1B=\$25 2P/2B=\$28 Coin Laundry: N
 Kitchens: N () (714)761-3111 () ()
 Addr: 733 S. Beach Blvd, Anaheim, 92804 Affiliation: None Location No.
 Restaurant: Restaurant Direction: Meals:

DHOTEL.LST DECUS December 7-11, 1987 Anaheim Extended Hotel List March 16, 1987 Page H-2
 No Guarantees. No Recommendations.

List Hotel 10:
 Direction: W 5.5 Miles Type: Motel Major St: Ball Rd Cross St: Cal-39 (Beach Blvd)
 Name: Travelodge Tiffany Inn Units: 42 Rates: 1P=\$32 2P/1B=\$38 2P/2B=\$38 Coin Laundry: N
 Kitchens: Y () (714)761-4255 (800)255-3050 ()
 Addr: 735 S. Beach Blvd, Anaheim, 92804 Affiliation: Travelodge Location No.
 Restaurant: Restaurant Direction: Meals:

DHOTEL.LST DECUS December 7-11, 1987 Anaheim Extended Hotel List March 16, 1987 Page H-1
 No Guarantees. No Recommendations.

List Hotel 1:
 Direction: E 2.0 Miles Type: Motel Major St: Katella Ave Cross St: State College Blvd
 Name: Ramada Inn Units: 240 Rates: 1P=\$42 2P/1B=\$48 2P/2B=\$48 Coin Laundry: N
 Kitchens: N () (714)979-8088 (800)228-2828 (CAL) (800)228-0586 (USA)
 Addr: 1331 E. Katella Ave, Anaheim, 92805 Affiliation: Ramada Inn Location No.
 Restaurant: Dugout Restaurant/Lounge Restaurant Direction: On Site Meals:

List Hotel 2:
 Direction: E 2.2 Miles Type: Motel Major St: Katella Ave Cross St: State College
 Name: Anaheim Stadium Travelodge Units: 72 Rates: 1P=\$43 2P/1B=\$47 2P/2B=\$50 Coin Laundry: N
 Kitchens: N () (714)634-1920 (800)255-3050 ()
 Addr: 1700 E. Katella Ave, Anaheim, 92805 Affiliation: Travelodge Location No.
 Restaurant: Restaurant Direction: Next Door Meals:

List Hotel 11:
Direction: W 5.5 Miles Type: Motel Major St: Ball Rd Cross St: Cal-39 (Beach Blvd)
Name: Roadway Inn - Anaheim Units: 74 Rates: IP=\$36 2P/1B=\$50 2P/2B=\$40 Coin Laundry: Y
Kitchens: Y (714)995-5700 (800)228-2000 (USA) (800)665-8822 (CANADA) ()
Addr: 800 S. Beach Blvd, Anaheim, 92804 Affiliation: Roadway Inn Location No.
Restaurant: Restaurant Direction: Meals:

List Hotel 12:
Direction: W 5.5 Miles Type: Motel Major St: Ball Rd Cross St: Cal-39 (Beach Blvd)
Name: Rainbow Inn Units: 42 Rates: IP=\$36 2P/1B=\$36 2P/2B=\$36 Coin Laundry: Y
Kitchens: N () (714)995-6800 () ()
Addr: 831 S. Beach Blvd, Anaheim, 92804 Affiliation: None Location No.
Restaurant: Restaurant Direction: Meals:

List Hotel 13:
Direction: W 4.0 Miles Type: Motel Major St: Ball Rd Cross St: Brookhurst Ave
Name: Quality Inn - Brookhurst Units: 91 Rates: IP=\$42 2P/1B=\$48 2P/2B=\$48 Coin Laundry: N
Kitchens: Y () (714)999-1220 (800)228-5151 ()
Addr: 711 S. Brookhurst Ave, Anaheim, 92804 Affiliation: Quality Inn Location No.
Restaurant: Restaurant Direction: On Site Meals:

List Hotel 14:
Direction: W 4.0 Miles Type: Motel Major St: Ball Rd Cross St: Brookhurst St
Name: Polynesian Motel Units: 28 Rates: IP=\$20 2P/1B=\$22 2P/2B=\$24 Coin Laundry: N
Kitchens: Y () (714)778-6892 () ()
Addr: 641 S. Brookhurst St, Anaheim, 92804 Affiliation: None Location No.
Restaurant: Restaurant Direction: Meals:

List Hotel 15:
Direction: W 4.0 Miles Type: Motel Major St: Ball Rd Cross St: Brookhurst St
Name: Brookhurst Lodge Motel Units: 32 Rates: IP=\$22 2P/1B=\$24 2P/2B=\$27 Coin Laundry: Y
Kitchens: Y () (714)776-2600 () ()
Addr: 701 S. Brookhurst St, Anaheim, 92804 Affiliation: None Location No.
Restaurant: Restaurant Direction: Meals:

List Hotel 16:
Direction: N 2.0 Miles Type: Motel Major St: Harbor Blvd Cross St: I-5 (Santa Ana Fwy)
Name: Tropic Hotel Units: 25 Rates: IP=\$25 2P/1B=\$25 2P/2B=\$35 Coin Laundry: Y
Kitchens: Y (714)535-2801 () () ()
Addr: 899 S. Harbor Blvd, Anaheim, 92805 Affiliation: None Location No.
Restaurant: Restaurant Direction: Meals:

List Hotel 17:
Direction: N 2.0 Miles Type: Motel Major St: Harbor Blvd Cross St: Ball Rd
Name: Sandman Inn Units: 92 Rates: IP=\$30 2P/1B=\$32 2P/2B=\$34 Coin Laundry: Y
Kitchens: N (714)956-5730 (800)372-6644 (CAL) (800)235-3399 (USA) (800)235-3388 (CANADA)
Addr: 921 S. Harbor Blvd, Anaheim, 92805 Affiliation: None Location No.
Restaurant: Restaurant Direction: On Site Meals: B L D

List Hotel 18:
Direction: N 2.0 Miles Type: Motel Major St: Harbor Blvd Cross St: Ball Rd
Name: Frontier Motel Units: 31 Rates: IP=\$25 2P/1B=\$25 2P/2B=\$28 Coin Laundry: N
Kitchens: N (714)774-1818 () () ()
Addr: 933 S. Harbor Blvd, Anaheim, 92805 Affiliation: None Location No.
Restaurant: Carrow's Restaurant Direction: Next Door Meals: 24 HRS

List Hotel 19:
Direction: N 1.5 Miles Type: Motel Major St: Harbor Blvd Cross St: Ball Rd
Name: Concord Inn Units: 82 Rates: IP=\$36 2P/1B=\$36 2P/2B=\$36 Coin Laundry: N
Kitchens: Y (714)533-0300 (800)624-7936 () ()
Addr: 1111 S. Harbor Blvd, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Restaurant Direction: On Site Meals:

List Hotel 20:
Direction: N 1.0 Miles Type: Motel Major St: Harbor Blvd Cross St: Ball Rd
Name: Anaheim Travelodge at the Park Units: 260 Rates: IP=\$58 2P/1B=\$64 2P/2B=\$68 Coin Laundry: Y
Kitchens: N () (714)758-0900 (800)255-3050 ()
Addr: 1221 S. Harbor Blvd, Anaheim, 92805 Affiliation: Travelodge Location No.
Restaurant: Restaurant Direction: On Site Meals:

List Hotel 21:
Direction: N 1.0 Miles Type: Motel Major St: Ball Rd Cross St: I-5 at Harbor Blvd
Name: Howard Johnson's Motor Lodge Units: 320 Rates: IP=\$70 2P/1B=\$72 2P/2B=\$78 Coin Laundry: Y
Kitchens: N () (714)776-6120 () ()
Addr: 1380 S. Harbor Blvd, Anaheim, 92802 Affiliation: Howard Johnson's Location No.
Restaurant: Restaurant Direction: On Site Meals: B L D

List Hotel 22:
Direction: N 0.6 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: The Sands Motel Units: 24 Rates: IP=\$32 2P/1B=\$32 2P/2B=\$32 Coin Laundry: N
Kitchens: N () (714)774-1324 () ()
Addr: 1520 S. Harbor Blvd, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Restaurant Direction: Meals:

List Hotel 23:
Direction: N 0.6 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Carousel Motel Units: 130 Rates: IP=\$39 2P/1B=\$39 2P/2B=\$42 Coin Laundry: Y
Kitchens: N (714)758-0444 (800)422-7307 (CAL) (800)854-6767 (USA) (800)621-0032 (CANADA)
Addr: 1530 S. Harbor Blvd, Anaheim, 92802 Affiliation: AAA Location No.
Restaurant: Denney's Restaurant Direction: 1/2 block Meals: B L D

List Hotel 24:
Direction: N 0.6 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Tropicana Motel Units: 200 Rates: IP=\$44 2P/1B=\$48 2P/2B=\$48 Coin Laundry: Y
Kitchens: Y (714)635-4082 (800)422-7430 (CAL) (800)854-9360 (USA) (800)642-6043 (CANADA)
Addr: 1540 S. Harbor Blvd, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Denny's Restaurant Direction: 2 doors away Meals: B L D

List Hotel 25:
Direction: N 0.5 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave.
Name: Park Vue Motel Units: 90 Rates: IP=\$31 2P/1B=\$32 2P/2B=\$34 Coin Laundry: Y
Kitchens: Y (714)772-5721 (800)422-4470 (CAL) (800)854-0199 (USA) ()
Addr: 1570 S. Harbor Blvd, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Restaurant Direction: Next Door Meals:

List Hotel 26:
Direction: N 0.5 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Desert Inn Motel Units: 61 Rates: IP=\$38 2P/1B=\$42 2P/2B=\$46 Coin Laundry: Y
Kitchens: N (714)772-5050 (800)433-5271 (CAL) (800)433-5270 (USA) (800)433-5279 (CANADA)
Addr: 1600 S. Harbor Blvd, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Denny's Restaurant Direction: Next Door Meals: 24 HRS

List Hotel 27:

Direction: N 0.5 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Anaheim Marco Polo Motel Units: 58 Rates: 1P=\$34 2P/1B=\$38 2P/2B=\$42 Coin Laundry: Y
Kitchens: N (714)635-3630 (800)624-3940 (CAL) (800)854-8005 (USA) (800)523-9170 (CANADA)
Addr: 1604 S. Harbor Blvd, Anaheim, 92802 Affiliation: No Location No.
Restaurant: Denny's Restaurant Direction: Next Door Meals: B L D

DHOTEL.LST DECUS December 7-11, 1987 Anaheim Extended Hotel List March 16, 1987 Page H-4
No Guarantees. No Recommendations.

List Hotel 28:

Direction: N 0.5 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Best Western Anaheim Inn Units: 88 Rates: 1P=\$52 2P/1B=\$52 2P/2B=\$56 Coin Laundry: Y
Kitchens: N (714)774-1050 (800)528-1234
Addr: 1630 S. Harbor Blvd, Anaheim, 92802 Affiliation: Best Western Location No.
Restaurant: Restaurant Direction: On Site Meals:

List Hotel 29:

Direction: N 0.5 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Saga Motel Units: 102 Rates: 1P=\$40 2P/1B=\$42 2P/2B=\$44 Coin Laundry: Y
Kitchens: N (714)772-0440 (800)422-4402 (CAL) (800)854-6097 (USA) ()
Addr: 1650 S. Harbor Blvd, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Restaurant Direction: Meals:

List Hotel 30:

Direction: N 0.5 Miles Type: Hotel Major St: Harbor Blvd Cross St: Katella Ave
Name: Hyatt Anaheim Units: 300 Rates: 1P=\$75 2P/1B=\$87 2P/2B=\$87 Coin Laundry: N
Kitchens: N (714)772-5900 ()
Addr: 1700 S. Harbor Blvd, Anaheim, 92802 Affiliation: Hyatt Location No.
Restaurant: Restaurant Direction: On Site Meals: B L D

List Hotel 31:

Direction: N 0.5 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Best Western Cosmic Age Lodge Units: 156 Rates: 1P=\$38 2P/1B=\$38 2P/2B=\$42 Coin Laundry: Y
Kitchens: N (714)635-6550 (800)528-1234
Addr: 1717 S. Harbor Blvd, Anaheim, 92802 Affiliation: Best Western Location No.
Restaurant: Restaurant Direction: Next Door Meals:

List Hotel 32:

Direction: N 0.5 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Fantasy Motor Inn Units: 120 Rates: 1P=\$28 2P/1B=\$28 2P/2B=\$36 Coin Laundry: Y
Kitchens: N (714)774-8111 (800)521-5628 ()
Addr: 1734 S. Harbor Blvd, Anaheim, 92802 Affiliation: Convention Center Inn Location No.
FANTASY
Restaurant: In. House of Pancakes Restaurant Direction: Across Street Meals: B L D

List Hotel 33:

Direction: N 0.5 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Best Western Galaxy Motel Units: 98 Rates: 1P=\$34 2P/1B=\$34 2P/2B=\$38 Coin Laundry: Y
Kitchens: N (714)772-1520 (800)528-1234
Addr: 1735 S. Harbor Blvd, Anaheim, 92802 Affiliation: Best Western Location No.
Restaurant: Restaurant Direction: Next Door Meals:

List Hotel 34:

Direction: N 0.5 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Candy Cane Motel Units: 129 Rates: 1P=\$32 2P/1B=\$32 2P/2B=\$38 Coin Laundry: N
Kitchens: N (714)774-5284 ()
Addr: 1747 S. Harbor Blvd, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Restaurant Direction: Next Door Meals:

List Hotel 35:

Direction: E 0.3 Miles Type: Hotel Major St: Harbor Blvd Cross St: Katella Ave
Name: Holliday Inn - Anaheim Units: 313 Rates: 1P=\$68 2P/1B=\$76 2P/2B=\$76 Coin Laundry: Y
Kitchens: N (714)750-2801 ()
Addr: 1850 S. Harbor Blvd, Anaheim, 92802 Affiliation: Holliday Inn Location No.
Restaurant: Restaurant Direction: On Site Meals: B L D

List Hotel 36:

Direction: E 0.3 Miles Type: Hotel Major St: Harbor Blvd Cross St: Katella Ave
Name: Inn At The Park Units: 500 Rates: 1P=\$63 2P/1B=\$73 2P/2B=\$73 Coin Laundry: N
Kitchens: N (714)750-1811 ()
Addr: 1855 S. Harbor Blvd, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Restaurant Direction: On Site Meals: B L D

DHOTEL.LST DECUS December 7-11, 1987 Anaheim Extended Hotel List March 16, 1987 Page H-5
No Guarantees. No Recommendations.

List Hotel 37:

Direction: S 0.6 Miles Type: Motel Major St: Harbor Blvd Cross St: Orangewood Ave
Name: Convention Center Inn Units: 123 Rates: 1P=\$38 2P/1B=\$38 2P/2B=\$48 Coin Laundry: Y
Kitchens: N (714)740-2500 (800)521-5628 (USA-CAN) ()
Addr: 2017 S. Harbor Blvd, Anaheim, 92802 Affiliation: Peter Pan Motr Lodge Location No.
Restaurant: Mr. Steak Restaurant Direction: On Site Meals: B L D

List Hotel 38:

Direction: S 0.6 Miles Type: Motel Major St: Harbor Blvd Cross St: Orangewood Ave
Name: Peter Pan Motor Lodge Units: 76 Rates: 1P=\$30 2P/1B=\$34 2P/2B=\$40 Coin Laundry: Y
Kitchens: Y (714)750-0232 (800)521-5628 (USA-CAN) ()
Addr: 2029 S. Harbor Blvd, Anaheim, 92802 Affiliation: Convention Centr Inn Location No.
Restaurant: Mr. Steak Restaurant Direction: On Site Meals: B L D

List Hotel 39:

Direction: S 0.6 Miles Type: Motel Major St: Harbor Blvd Cross St: Orangewood Ave
Name: Raffles Inn Anaheim Units: 122 Rates: 1P=\$44 2P/1B=\$56 2P/2B=\$56 Coin Laundry: Y
Kitchens: Y (714)750-6100 (800)233-6593 (CALIF) (800)843-6551 (USA) ()
Addr: 2040 S. Harbor Blvd, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Baker's Square Restaurant Direction: 1 block Meals: 24 HRS

List Hotel 40:

Direction: S 0.6 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Anaheim Paul Bunyan Travelodge Units: 120 Rates: 1P=\$39 2P/1B=\$45 2P/2B=\$47 Coin Laundry: Y
Kitchens: Y (714)971-9393 (800)255-3050
Addr: 2060 S. Harbor Blvd, Anaheim, 92802 Affiliation: Travelodge Location No.
Restaurant: No Restaurant Direction: Meals:

List Hotel 41:

Direction: S 0.8 Miles Type: Motel Major St: Harbor Blvd Cross St: Orangewood Ave
Name: Anaheim Carriage Inn Units: 67 Rates: 1P=\$28 2P/1B=\$34 2P/2B=\$36 Coin Laundry: Y
Kitchens: Y (800)345-2131 (CAL) (800)331-2131 (USA) ()
Addr: 2125 S. Harbor Blvd, Anaheim, 92802 Affiliation: No Location No.
Restaurant: Restaurant Direction: Next Door Meals:

List Hotel 42:

Direction: S 0.8 Miles Type: Motel Major St: Harbor Blvd Cross St: Orangewood Ave
Name: Modernaire Motel Units: 54 Rates: 1P=\$32 2P/1B=\$36 2P/2B=\$36 Coin Laundry: Y
Kitchens: N (714)971-5556 ()
Addr: 2145 S. Harbor Blvd, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Carl's Jr. Restaurant Direction: Next Door Meals: B L D

List Hotel 43:

Direction: S 0.8 Miles Type: Motel Major St: Harbor Blvd Cross St: Orangewood Ave
Name: Harbor Inn Travelodge Units: 128 Rates: IP=\$38 2P/1B=\$44 2P/2B=\$48 Coin Laundry: N
Kitchens: N (714)750-3100 (800)255-3050 () ()
Addr: 2171 S. Harbor Blvd, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Restaurant Direction: On Site Meals: B L D

List Hotel 44:

Direction: S 0.8 Miles Type: Motel Major St: Harbor Blvd Cross St: Chapman Ave
Name: Comfort Inn Units: 65 Rates: IP=\$36 2P/1B=\$42 2P/2B=\$46 Coin Laundry: N
Kitchens: N (714)750-5211 (800)228-5151 () ()
Addr: 2200 S. Harbor Blvd, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Restaurant Direction: Next Door Meals:

List Hotel 45:

Direction: N 1.0 Miles Type: Motel Major St: Katella Ave Cross St: Haster St
Name: Penny Sleeper Inn Units: 205 Rates: IP=\$29 2P/1B=\$33 2P/2B=\$33 Coin Laundry: Y
Kitchens: N (714)991-8100 (800)854-6118 () ()
Addr: 1441 S. Manchester Ave, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Restaurant Direction: On Site Meals: B L D

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No Guarantees. No Recommendations.

List Hotel 46:

Direction: N 1.5 Miles Type: Motel Major St: West St Cross St: Ball Rd
Name: Conestoga Hotel Units: 253 Rates: IP=\$65 2P/1B=\$75 2P/2B=\$75 Coin Laundry: N
Kitchens: N () (714)535-0300 () ()
Addr: 1240 S. Walnut St, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Restaurant Direction: On Site Meals: BBB L D

List Hotel 47:

Direction: N 1.9 Miles Type: Motel Major St: I-5 at Ball Rd Cross St: West St
Name: Anaheim Park Motor Inn Units: 114 Rates: IP=\$24 2P/1B=\$39 2P/2B=\$39 Coin Laundry: N
Kitchens: N () (800)258-4400 (CAL) (800)248-4400 (USA) ()
Addr: 915 S. West St, Anaheim, 92802 Affiliation: No Location No.
Restaurant: No Restaurant Direction: Meals:

List Hotel 48:

Direction: N 1.5 Miles Type: Motel Major St: West St Cross St: Ball Rd
Name: Flamingo Motel Units: 43 Rates: IP=\$24 2P/1B=\$24 2P/2B=\$28 Coin Laundry: N
Kitchens: N (714)774-6556 (800)872-5533 (CAL) (800)523-8453 (USA-CAN) ()
Addr: 1212 S. West St, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Restaurant Direction: Across Street Meals: B L D

List Hotel 49:

Direction: N 0.6 Miles Type: Hotel Major St: Katella Ave Cross St: West St
Name: Emerald of Anaheim Units: 508 Rates: IP=\$78 2P/1B=\$88 2P/2B=\$88 Coin Laundry: N
Kitchens: N () (714)999-0990 () ()
Addr: 1717 S. West St, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Restaurant Direction: On Site Meals: B L D

List Hotel 50:

Direction: N 0.6 Miles Type: Motel Major St: Katella Ave Cross St: West St
Name: Best Western Apollo Inn Units: 135 Rates: IP=\$38 2P/1B=\$38 2P/2B=\$42 Coin Laundry: Y
Kitchens: N () (714)772-9750 (800)528-1234 ()
Addr: 1741 S. West St, Anaheim, 92802 Affiliation: Best Western Location No.
Restaurant: Restaurant Direction: On Site Meals:

List Hotel 51:

Direction: N 0.6 Miles Type: Motel Major St: Katella Ave Cross St: West St
Name: Lamplighter Motel Units: 56 Rates: IP=\$30 2P/1B=\$34 2P/2B=\$38 Coin Laundry: Y
Kitchens: N (714)774-2136 (800)422-4235 (CAL) () ()
Addr: 1799 S. West St, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Restaurant Direction: Next Door Meals: B L D

List Hotel 52:

Direction: N 0.6 Miles Type: Motel Major St: West St Cross St: Katella Ave
Name: Princess Motel Units: 32 Rates: IP=\$44 2P/1B=\$48 2P/2B=\$56 Coin Laundry: N
Kitchens: N (714)774-6427 (800)654-0507 (CAL) () ()
Addr: 1769 S. West St, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Restaurant Direction: Meals:

List Hotel 53:

Direction: N 1.4 Miles Type: Motel Major St: Harbor Blvd Cross St: Ball Rd
Name: International 6 Motel Units: 26 Rates: IP=\$24 2P/1B=\$26 2P/2B=\$28 Coin Laundry: N
Kitchens: Y () (714)533-2570 () ()
Addr: 414 W. Ball Rd, Anaheim, 92805 Affiliation: None Location No.
Restaurant: Restaurant Direction: Meals:

List Hotel 54:

Direction: N 1.4 Miles Type: Motel Major St: Harbor Blvd Cross St: Ball Rd.
Name: Anaheim Friendship Inn Units: 33 Rates: IP=\$36 2P/1B=\$39 2P/2B=\$43 Coin Laundry: Y
Kitchens: Y () (714)774-3882 3882 () ()
Addr: 426 W. Ball Rd, Anaheim, 92805 Affiliation: No Location No.
Restaurant: Restaurant Direction: Meals:

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No Guarantees. No Recommendations.

List Hotel 55:

Direction: N 2.0 Miles Type: Motel Major St: Harbor Blvd Cross St: Ball Rd
Name: Best Western Station Inn Units: 58 Rates: IP=\$42 2P/1B=\$42 2P/2B=\$46 Coin Laundry: Y
Kitchens: Y () (714)991-5500 (800)528-1234 ()
Addr: 989 W. Ball Rd, Anaheim, 92802 Affiliation: Best Western Location No.
Restaurant: Restaurant Direction: Next Door Meals:

List Hotel 56:

Direction: N 1.5 Miles Type: Hotel Major St: Ball Rd Cross St: West St
Name: Sheraton - Anaheim Hotel Units: 500 Rates: IP=\$65 2P/1B=\$75 2P/2B=\$75 Coin Laundry: Y
Kitchens: N () (714)778-1700 () ()
Addr: 1015 W. Ball Rd, Anaheim, 92802 Affiliation: Sheraton Location No.
Restaurant: Restaurant Direction: On Site Meals: B L D

List Hotel 57:

Direction: N 1.5 Miles Type: Motel Major St: Ball Rd Cross St: Harbor Blvd
Name: Adventurer Inn Units: 45 Rates: IP=\$26 2P/1B=\$29 2P/2B=\$29 Coin Laundry: N
Kitchens: N (714)520-0101 (800)851-7272 (CAL) (800)231-6452 (USA) ()
Addr: 1030 W. Ball Rd, Anaheim, 92802 Affiliation: No Location No.
Restaurant: Restaurant Direction: Across Street Meals:

List Hotel 58:

Direction: N 1.5 Miles Type: Motel Major St: West St Cross St: Ball Rd
Name: Best Western Anaheim Stardust Units: 102 Rates: IP=\$38 2P/1B=\$42 2P/2B=\$46 Coin Laundry: N
Kitchens: N () (714)774-7600 (800)528-1234 ()
Addr: 1057 W. Ball Rd, Anaheim, 92802 Affiliation: Best Western Location No.
Restaurant: Restaurant Direction: Next Door Meals:

List Hotel 59:

Direction: N 1.0 Miles Type: Hotel Major St: Ball Rd Cross St: West St
Name: Disneyland Hotel Units: 1120 Rates: IP=\$89 2P/1B=\$89 2P/2B=\$89 Coin Laundry: N
Kitchens: N (714)778-6600 (213)636-3251 (800)854-6165 (USA) ()
Addr: 1150 W. Cerritos Ave, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Restaurant Direction: On Site Meals: B L D

List Hotel 60:

Direction: E 0.2 Miles Type: Hotel Major St: Harbor Blvd Cross St: Katella Ave
Name: Quality Inn Units: 281 Rates: IP=\$39 2P/1B=\$49 2P/2B=\$49 Coin Laundry: N
Kitchens: N () (714)750-3131 (800)228-5151 ()
Addr: 616 W. Convention Way, Anaheim, 92802 Affiliation: Quality Inn Location No.
Restaurant: Restaurant Direction: On Site Meals: B L D

List Hotel 61:

Direction: E 0.1 Miles Type: Hotel Major St: Harbor Blvd Cross St: Katella Ave
Name: Anaheim Marriott Hotel Units: 1043 Rates: IP=\$93 2P/1B=\$99 2P/2B=\$99 Coin Laundry: N
Kitchens: N (714)750-8000 (800)228-9290 () ()
Addr: 700 W. Convention Way, Anaheim, 92802 Affiliation: Marriott Location No.
Restaurant: Restaurant Direction: On Site Meals: B L D

List Hotel 62:

Direction: E 0.1 Miles Type: Hotel Major St: Harbor Blvd. Cross St: Katella Ave
Name: anaheim Hilton and Towers Units: 1600 Rates: IP=\$72 2P/1B=\$88 2P/2B=\$88 Coin Laundry: N
Kitchens: N () (714)750-4321 () ()
Addr: 777 W. Convention Way, Anaheim, 92802 Affiliation: Hilton Location No.
Restaurant: Restaurant Direction: On Site Meals: B L D

List Hotel 63:

Direction: E 1.2 Miles Type: Hotel Major St: I-5 at Katella Ave Cross St: Haster St
Name: Hotel Ibis Units: 227 Rates: IP=\$56 2P/1B=\$60 2P/2B=\$62 Coin Laundry: N
Kitchens: N (714)520-9696 (800)221-4542 () ()
Addr: 100 W. Freedman Way, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Restaurant Direction: On Site Meals: B L D

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No Guarantees. No Recommendations.

List Hotel 64:

Direction: E 1.0 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Rip Van Winkles Inn Units: 64 Rates: IP=\$42 2P/1B=\$42 2P/2B=\$44 Coin Laundry: N
Kitchens: N (714)776-6210 () ()
Addr: 301 W. Katella Ave, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Rigo's Restaurant Direction: On Site Meals: B L D

List Hotel 65:

Direction: E 0.7 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Riviera Motel Units: 22 Rates: IP=\$32 2P/1B=\$36 2P/2B=\$36 Coin Laundry: N
Kitchens: Y (714)776-9100 () ()
Addr: 410 W. Katella Ave, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Franky Lee's Restaurant Direction: Across Street Meals: B L D

List Hotel 66:

Direction: E 0.7 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Westward Ho 7 Seas Motor Inn Units: 175 Rates: IP=\$28 2P/1B=\$30 2P/2B=\$34 Coin Laundry: N
Kitchens: N () (800)472-4313 (CAL) (800)854-4345 (USA) ()
Addr: 415 W. Katella Ave, Anaheim, 92802 Affiliation: Westward Ho Location No.
Restaurant: Restaurant Direction: Meals:

List Hotel 67:

Direction: E 0.7 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Little Boy Blue Motel Units: 67 Rates: IP=\$24 2P/1B=\$24 2P/2B=\$26 Coin Laundry: N
Kitchens: N (714)635-2781 () ()
Addr: 416 W. Katella Ave, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Jolly Roger Restaurant Restaurant Direction: 1 Block Meals: B L D

List Hotel 68:

Direction: E 0.7 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Islander Motel Units: 34 Rates: IP=\$24 2P/1B=\$28 2P/2B=\$38 Coin Laundry: N
Kitchens: Y (714)778-6565 (714)535-6567 () ()
Addr: 424 W. Katella Ave, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Jolly Roger Restaurant Restaurant Direction: 1 Block Meals: B L D

List Hotel 69:

Direction: E 0.7 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Samoa Hotel Units: 46 Rates: IP=\$30 2P/1B=\$34 2P/2B=\$40 Coin Laundry: N
Kitchens: N (714)776-2815 () ()
Addr: 425 W. Katella Ave, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Jolly Roger Restaurant Restaurant Direction: 1 Block Meals: B L D

List Hotel 70:

Direction: E 0.7 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Lucky 7 Motel Units: 53 Rates: IP=\$30 2P/1B=\$34 2P/2B=\$34 Coin Laundry: N
Kitchens: N (714)772-7550 () ()
Addr: 435 W. Katella Ave, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Denny's Restaurant Direction: 1 Block Meals: B L D

List Hotel 71:

Direction: E 0.7 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Ivanhoe Motel Units: 56 Rates: IP=\$32 2P/1B=\$34 2P/2B=\$38 Coin Laundry: N
Kitchens: N (714)772-5260 () ()
Addr: 444 W. Katella Ave, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Hansa House Restaurant Direction: 1/2 Block Meals: B L D

List Hotel 72:

Direction: E 0.5 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Anaheim Alcha Travel Lodge Units: 51 Rates: IP=\$36 2P/1B=\$41 2P/2B=\$41 Coin Laundry: N
Kitchens: N () (714)774 8710 () ()
Addr: 505 W. Katella Ave, Anaheim, 92802 Affiliation: Travelodge Location No.
Restaurant: Restaurant Direction: Next Door Meals:

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No Guarantees. No Recommendations.

List Hotel 73:

Direction: E 0.4 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Rudimar Motel Units: 25 Rates: IP=\$48 2P/1B=\$48 2P/2B=\$48 Coin Laundry: N
Kitchens: N () (714)635-8110 () ()
Addr: 615 W. Katella Ave, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Jolly Roger Restaurant Restaurant Direction: Cross Street Meals: B L D

List Hotel 74:

Direction: E 0.3 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Jolly Roger Inn Hotel Units: 185 Rates: IP=\$48 2P/1B=\$50 2P/2B=\$50 Coin Laundry: N
Kitchens: N (714)772-7621 (800)446-1555 (CAL) (800)854-3184 (CON-USA) ()
Addr: 640 W. Katella Ave, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Jolly Roger Inn Restaurant Direction: On Site Meals: B L D

List Hotel 75:

Direction: E 0.1 Miles Type: Motel Major St: Katella Ave Cross St: Harbor Blvd
Name: Alpine Hotel Units: 41 Rates: IP=\$38 2P/1B=\$40 2P/2B=\$42 Coin Laundry: N
Kitchens: N (714)535-2186 (800)772-4422 (CAL) () ()
Addr: 715 W. Katella Ave, Anaheim, 92802 Affiliation: No Location No.
Restaurant: Restaurant Direction: Next Door Meals:

List Hotel 76:

Direction: E 0.6 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Musketeer Motel Units: 37 Rates: IP=\$28 2P/1B=\$28 2P/2B=\$35 Coin Laundry: Y
Kitchens: N (714)774-8065 () () ()
Addr: 733 W. Katella Ave, Anaheim, 92802 Affiliation: None Location No.
Restaurant: In. House of Pancakes Restaurant Direction: Next Door Meals: B L D

List Hotel 77:

Direction: E 0.6 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Heidi Motel Units: 30 Rates: IP=\$27 2P/1B=\$27 2P/2B=\$32 Coin Laundry: N
Kitchens: N (714)533-1979 () () ()
Addr: 815 W. Katella Ave, Anaheim, 92802 Affiliation: None Location No.
Restaurant: In. House of Pancakes Restaurant Direction: 1 Block Meals: B L D

List Hotel 78:

Direction: N 0.2 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Magic Carpet Motel Units: 137 Rates: IP=\$29 2P/1B=\$33 2P/2B=\$33 Coin Laundry: Y
Kitchens: Y (714)772-9450 (800)422-1556 (CALIF) (800)843-3145 (USA) (800)843-3146 (CANADA)
Addr: 1016 W. Katella Ave, Anaheim, 92802 Affiliation: Magic Carpet Motel Location No.
Restaurant: In. House of Pancakes Restaurant Direction: Next Door Meals: B L D

List Hotel 79:

Direction: N 0.2 Miles Type: Motel Major St: Harbor Blvd Cross St: Katella Ave
Name: Magic Lamp Motel Units: 79 Rates: IP=\$27 2P/1B=\$31 2P/2B=\$33 Coin Laundry: Y
Kitchens: Y (714)772-7242 (800)422-1556 (CALIF) (800)843-3145 (USA) (800)843-3146 (CANADA)
Addr: 1030 W. Katella Ave, Anaheim, 92802 Affiliation: Magic Carpet Motel Location No.
Restaurant: In. House of Pancakes Restaurant Direction: Next Door Meals: B L D

List Hotel 80:

Direction: W 0.5 Miles Type: Motel Major St: Katella Ave Cross St: West St
Name: Best Western Stovall's Inn Units: 290 Rates: IP=\$42 2P/1B=\$42 2P/2B=\$46 Coin Laundry: Y
Kitchens: N () (714)778-1880 (800)528-1234 ()
Addr: 1110 W. Katella Ave, Anaheim, 92802 Affiliation: Best Western Location No.
Restaurant: Restaurant Direction: On Site Meals: B L D

List Hotel 81:

Direction: W 0.5 Miles Type: Motel Major St: Katella Ave Cross St: West St
Name: Best Western Fabulous Space Units: 98 Rates: IP=\$34 2P/1B=\$34 2P/2B=\$38 Coin Laundry: N
Kitchens: N () (714)776-0140 (800)528-1234 ()
Addr: 1176 W. Katella Ave, Anaheim, 92802 Affiliation: Best Western Location No.
Restaurant: Restaurant Direction: Next Door Meals:

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No Guarantees. No Recommendations.

List Hotel 82:

Direction: W 0.5 Miles Type: Motel Major St: Katella Ave Cross St: West St
Name: Abby's Anaheim Inn Units: 30 Rates: IP=\$40 2P/1B=\$44 2P/2B=\$48 Coin Laundry: Y
Kitchens: N () (800)826-4007 (CAL) (800)882-7900 (USA) ()
Addr: 1201 W. Katella Ave, Anaheim, 92802 Affiliation: Best Western Location No.
Restaurant: Restaurant Direction: Cross Street Meals: B L D

List Hotel 83:

Direction: NW 4.0 Miles Type: Motel Major St: Brookhurst St Cross St: Lincoln Ave
Name: Ana-Lin Motel Units: 23 Rates: IP=\$21 2P/1B=\$23 2P/2B=\$26 Coin Laundry: N
Kitchens: Y () (714)535-8446 () ()
Addr: 2123 W. Lincoln Ave, Anaheim, 92801 Affiliation: No Location No.
Restaurant: Restaurant Direction: half block Meals:

List Hotel 84:

Direction: NW 4.0 Miles Type: Motel Major St: Lincoln Ave Cross St: Brookhurst St
Name: Granada Inn Units: 81 Rates: IP=\$39 2P/1B=\$42 2P/2B=\$45 Coin Laundry: N
Kitchens: Y () (714)774-7370 () ()
Addr: 2375 W. Lincoln Ave, Anaheim, 92801 Affiliation: None Location No.
Restaurant: Restaurant Direction: On Site Meals: L D

List Hotel 85:

Direction: S 0.5 Miles Type: Motel Major St: Harbor Blvd Cross St: Orangewood Ave
Name: Captain's Quarters Units: 63 Rates: IP=\$26 2P/1B=\$30 2P/2B=\$30 Coin Laundry: N
Kitchens: N (714)971-9000 (800)422-7337 (CAL) (800)854-7123 (USA) ()
Addr: 620 W. Orangewood Ave, Anaheim, 92802 Affiliation: None Location No.
Restaurant: Restaurant Direction: Meals:

List Hotel 86:

Direction: S 8.0 Miles Type: Motel Major St: Harbor Blvd Cross St: Adams Ave
Name: Belcongo Motel Units: 34 Rates: IP=\$32 2P/1B=\$32 2P/2B=\$38 Coin Laundry: Y
Kitchens: Y (714)545-9428 () () ()
Addr: 2665 N. Harbor Blvd, Costa Mesa, 92626 Affiliation: None Location No.
Restaurant: Coco's Restaurant Direction: 1/2 Block Meals: B L D

List Hotel 87:

Direction: N 5.0 Miles Type: Motel Major St: Harbor Blvd Cross St: Orangethorpe Ave
Name: Fullerton Travelodge Units: 45 Rates: IP=\$36 2P/1B=\$42 2P/2B=\$44 Coin Laundry: N
Kitchens: N (714)871-3833 (800)255-3050 (USA) () ()
Addr: 815 S. Harbor Blvd, Fullerton, 92632 Affiliation: Travelodge Location No.
Restaurant: Denny's Restaurant Direction: 1 Block Meals: B L D

List Hotel 88:

Direction: N 5.0 Miles Type: Motel Major St: Harbor Blvd Cross St: Orangethorpe Blvd
Name: Willow Tree Lodge Units: 63 Rates: IP=\$31 2P/1B=\$34 2P/2B=\$36 Coin Laundry: Y
Kitchens: N (714)871-5430 () () ()
Addr: 1015 S. Harbor Blvd, Fullerton, 92632 Affiliation: None Location No.
Restaurant: Denny's Restaurant Direction: Next Door Meals: B L D

List Hotel 89:

Direction: S 0.8 Miles Type: Motel Major St: Harbor Blvd Cross St: Orangewood Ave
Name: Pitcarain Motor Hotel Units: 86 Rates: IP=\$29 2P/1B=\$29 2P/2B=\$32 Coin Laundry: Y
Kitchens: N (714)971-5521 () () ()
Addr: 11751 S. Harbor Blvd, Garden Grove, 92640 Affiliation: None Location No.
Restaurant: Belisle's Restaurant Direction: 1 Block Meals: B L D

List Hotel 90:

Direction: S 0.8 Miles Type: Motel Major St: Harbor Blvd Cross St: Chapman Ave
Name: Cavalier Motor Lodge Units: 93 Rates: IP=\$28 2P/1B=\$30 2P/2B=\$30 Coin Laundry: N
Kitchens: N (714)750-1000 (800)621-5185 (CAL) (800)821-2768 (USA) ()
Addr: 11811 S. Harbor Blvd, Garden Grove, 92640 Affiliation: None Location No.
Restaurant: Belisle's Restaurant Direction: 1 Block Meals: B L D

List Hotel 91:

Direction: S 0.8 Miles Type: Motel Major St: Harbor Blvd Cross St: Chapman Ave
Name: Best Western Angels Inn Units: 55 Rates: IP=\$34 2P/1B=\$38 2P/2B=\$40 Coin Laundry: N
Kitchens: N () (714)9710255 (800)528-1234 ()
Addr: 11851 S. Harbor Blvd, Garden Grove, 92640 Affiliation: Best Western Location No.
Restaurant: Restaurant Direction: Next Door Meals:

List Hotel 92:

Direction: S 2.0 Miles Type: Motel Major St: Harbor Blvd Cross St:
Name: Fire Station Motel Units: 104 Rates: IP=\$27 2P/1B=\$28 2P/2B=\$28 Coin Laundry: Y
Kitchens: Y (714)534-4090 () ()
Addr: 12625 S. Harbor Blvd, Garden Grove, 92640 Affiliation: None Location No.
Restaurant: McDonald's Restaurant Direction: Cross Street Meals: B L D

List Hotel 93:

Direction: E 5.0 Miles Type: Motel Major St: Katella Ave Cross St: Cal-55 (Newport Fwy)
Name: El Matador Motel Units: 29 Rates: IP=\$32 2P/1B=\$34 2P/2B=\$34 Coin Laundry: N
Kitchens: N (714)639-2500 () ()
Addr: 1300 E. Katella Ave, Orange, 92667 Affiliation: None Location No.
Restaurant: Noom's Restaurant Direction: 4 Doors Away Meals: 24 HRS

List Hotel 94:

Direction: E 5.5 Miles Type: Motel Major St: Katella Ave Cross St: Cal-55 (Newport Fwy)
Name: Colony Motel Units: 30 Rates: IP=\$32 2P/1B=\$35 2P/2B=\$40 Coin Laundry: N
Kitchens: N (714)639-1121 () ()
Addr: 1930 E. Katella Ave, Orange, 92667 Affiliation: None Location No.
Restaurant: Wendy's Restaurant Direction: 1 Block Meals:

List Hotel 95:

Direction: S 4.0 Miles Type: Motel Major St: Harbor Blvd Cross St: 1st St
Name: Best Inn Motels Units: Rates: IP=\$ 2P/1B=\$ 2P/2B=\$ Coin Laundry: N
Kitchens: N (714)554-4040 (800)223-7472 (CAL) (800)952-4800 (USA) (714)554-2820
Addr: 609 N. Harbor Blvd, Santa Ana, 90703 Affiliation: Best Inn Motels Location No.
Restaurant: Restaurant Direction: Meals:

List Hotel 96:

Direction: S 4.0 Miles Type: Motel Major St: Harbor Blvd Cross St: 17th St
Name: Pueblo Motel Units: 60 Rates: IP=\$32 2P/1B=\$32 2P/2B=\$40 Coin Laundry: N
Kitchens: N (714)554-2190 () ()
Addr: 1501 N. Harbor Blvd, Santa Ana, 92703 Affiliation: None Location No.
Restaurant: Denny's Restaurant Direction: 2 Lights away Meals: B L D

List Hotel 97:

Direction: W 5.0 Miles Type: Motel Major St: Katella Ave Cross St: Cal-39 (Beach Blvd)
Name: Comfort Inn Units: 38 Rates: IP=\$30 2P/1B=\$34 2P/2B=\$40 Coin Laundry: N
Kitchens: N () (714)750-5211 () ()
Addr: 11632 S. Beach Blvd, Stanton, 90680 Affiliation: Comfort Inn Location No.
Restaurant: Restaurant Direction: Meals:

List Hotel 98:

Direction: S 1.8 Miles Type: Motel Major St: West St Cross St: Garden Grove Blvd
Name: Rodeway Inn Units: 66 Rates: IP=\$38 2P/1B=\$42 2P/2B=\$46 Coin Laundry: Y
Kitchens: Y (714)636-1555 (800)841-5401 (CAL) (800)841-5402 (USA) ()
Addr: 12052 W. Garden Grove Blvd, Garden Grove, 92640 Affiliation: Rodeway Inn Location No.
Restaurant: Restaurant Direction: Meals:

-End of extended hotel list-

RV Park 1:

Direction: S 0.6 Miles Type: RV Park Major St: Harbor Blvd Cross St: Orangewood Ave
Name: Anaheim Overnight Trailer Park Spaces: 20 Rates: 2P/20' = \$ Coin Laundry: N None
(714)750-1721 () ()
Addr: 2156 S. Harbor Blvd, Anaheim, CA 92802 Affiliation: LIMIT 24 FT.

RV Park 2:

Direction: N 0.8 Miles Type: RV Park Major St: West St Cross St: Ball Rd
Name: Kampgrounds of America Inc Spaces: 220 Rates: 2P/20' = \$25 Coin Laundry: Y
(714)533-7720 () ()
Addr: 1221 S. West St, Anaheim, CA 92802 Affiliation: KOA LIMIT 40 FT.

RV Park 3:

Direction: N 0.6 Miles Type: RV Park Major St: West St Cross St: Ball Rd
Name: Anaheim Junction Camp Grounds Spaces: 124 Rates: 2P/20' = \$21 Coin Laundry: Y Store
(714)533-0641 () ()
Addr: 1230 S. West St, Anaheim, CA 92802 Affiliation: LIMIT 35 FT.

RV Park 4:

Direction: N 1.2 Miles Type: RV Park Major St: West St Cross St: Ball Rd
Name: Vacationland R-V Park Spaces: 406 Rates: 2P/20' = \$22 Coin Laundry: Y Store
(714)533-7270 () ()
Addr: 1343 S. West St, Anaheim, CA 92802 Affiliation: Good Sam LIMIT FT.

RV Park 5:

Direction: N 2.0 Miles Type: RV Park Major St: Harbor Blvd Cross St: Ball Rd
Name: Travelers World R V Park Spaces: 300 Rates: 2P/20' = \$19 Coin Laundry: Y Store
(714)991-0100 () ()
Addr: 333 W. Ball Rd, Anaheim, CA 92805 Affiliation: LIMIT 38 FT.

RV Park 6:

Direction: S 1.8 Miles Type: RV Park Major St: Harbor Blvd Cross St: Ball Rd
Name: Travel Country RV Park Spaces: 173 Rates: 2P/20' = \$12 Coin Laundry: Y StoreClose
(714)530-2822 () ()
Addr: 12721 S. Harbor Blvd, Garden Grove, CA 92640 Affiliation: Good Sam

RV Park 7:

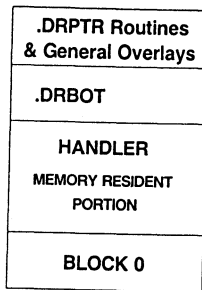
Direction: S 1.6 Miles Type: RV Park Major St: Harbor Blvd Cross St: Ball Rd
Name: C C Camperland Spaces: 80 Rates: 2P/20' = \$20 Coin Laundry: Y SmallStore
(714)750-6747 (800)422-6746 (800)4CAMPING ()
Addr: 12262 S. Harbor Blvd, Garden Grove, CA 92640 Affiliation: LIMIT 32 FT.

RV Park 8:

Direction: E 2.5 Miles Type: RV Park Major St: Katella Ave Cross St: Cal-57 (Orange Fwy)
Name: Orangeland R V Park Spaces: 212 Rates: 2P/20' = \$20 Coin Laundry: Y Store
(714)633-0414 () ()
Addr: 1600 W. Struck Ave, Orange, CA 92667 Affiliation:

-End of RV Park list-

Layout of handler file



DIGITAL

Calling service routine

- o DRCALL
 - o R0 Handler Routine
 - o R1 GETVEC Routine
 - o R2 \$\$SLOT*2
 - o R3 Type Code
 - o R4 Read Routine
 - o R5 \$Entry Word
- o ERROR CONDITION

DIGITAL

Handler / Utility Interface

DIGITAL

PHILOSOPHY

The long range goal of the RT-11 Handler Architecture is to place ALL device dependent information within the handlers.

DIGITAL

NOP WORD

The NOP word (1012) is a flag word in the memory-resident handler (as well as the file). It consists of a NOP (240) with flag bits

```
0 0 0 0 0 0 0 0 0 1 0 1 r U L R F
```

DIGITAL

```
0 0 0 0 0 0 0 0 0 1 0 1 r U L R F
```

- o The "r" bit is reserved.
- o If the "U" bit is set, this handler has an UNLOAD entry point.
- o If the "L" bit is set, this handler has a LOAD entry point.
- o If the "R" bit is set, this handler has a RELEASE entry point.
- o If the "F" bit is set, this handler has a FETCH entry point.

DIGITAL

Handler MACROS

```
.DRAST      .DRBEG      .DRBOT      .DRDEF
.DREND      .DRINS      .DRFIN      .DRSET
.DRVTB
.DREST      .DRPTR      .DRSPF      .DRTAB
.DRUSE
```

DIGITAL

.DRPTR

- Syntax: .DRPTR [fetch=n][,release=n][,load=n][,unload=n]
- o Places pointers at locations 2 to 10
 - o Locations 10-16, 34, 36 are reserved
 - o Points to service routines
 - o 2 blocks long
 - o USRBUF
 - o Used during
 - o Bootstrap operation load
 - o .FETCH and .RELEASE requests
 - o LOAD and UNLOAD commands
 - o Job abort (release argument)

USER POINTER TABLE

This word contains the offset from the beginning of block 0 to the 1st entry in the User Pointer Table.

The entries of the UPT are 3 words long and consist of:

RAD 50 ID
USER DEFINED
USER DEFINED

The first word is an ID code chosen by the user.
The second word is a value or pointer relating to the ID.
(RT SIG provide registry?)

DIGITAL

.DREST

Syntax: .DREST [class=n][,mod=n][,data=n][,type=n][,replace=n]

Stores extended device information

- o Device classification
- o Variants of classification
- o Internal data tables accessible by SPFUN 372
- o Internal data table type
- o Table in block 0 containing disk geometry information

DIGITAL

.DRTAB

Syntax: .DRTAB type, addr, size

- o Pointer to list of handler data tables
- o Invoked once for each table entry
- o Last entry issue with no arguments
- o Locations
 - 70 -1 indicates use
 - 72 pointer to list
 - 74 size in bytes

DIGITAL

CQE Word in File

The CQE word (1010) is used as a flag word in the handler file.

F	D	reserved
---	---	----------

- o If the "F" bit is set, the handler is not fetchable (same meaning as DVM.NF).
- o If the "D" bit is set, there are more vectors to display in a table following the standard vector table.

DIGITAL

Class argument:

DVC.UK	0	Unknown device class
DVC.NL	1	NULL handler class
DVC.TT	2	Terminal class
DVC.TP	3	RESERVED
DVC.DK	4	RT-11 file structured disk class
DVC.MT	5	Magtape class
DVC.CT	6	Cassette tape class

DIGITAL

Class argument:

DVC.LP	7	Printer class
DVC.DE	10	DECnet executive class
DVC.DP	11	DECnet protocol class
DVC.DL	12	DECnet port (line) class
DVC.NI	13	Ethernet port class
DVC.PS	14	Pseudo-handler class
DVC.VT	15	Virtual terminal port class

DIGITAL

.SPFUN 372

Syntax:

.SPFUN #AREA, #CHAN, #372, #BUFFER, #DIRECTION, #SUBCODE

Direction

+1	Read Table
-1	Write Table

Subcode

0

DIGITAL

.DRUSE

Syntax: .DRUSE type,addr,size

User defined tables or service routines

Location 106 points to table

End table with no arguments

RAD50	POINTER	SIZE
-------	---------	------

LIST METHOD

EXAMPLES

- o .DRSPF <360,370,371,365>
- o .DRSPF <360,365>
- o .DRSPF <370,371>

DIGITAL

EXTENSION TABLE METHOD

- o arg IS POINTER TO TABLE
- o TABLE NOT IN BLOCK 0
- o POINTER PRECEDED BY PLUS SIGN (+)
- o ADDRESS MUST HAVE HIGH BIT CLEARED

DIGITAL

MOD argument:

	0	No variant or information
DVM.DX	1	RX01 compatible drive
DVM.DM	2	device has extra error word
DVM.NF	200	device can only be loaded (not fetchable)

DIGITAL

REPLACEMENT GEOMETRY

The Replacement Geometry Table has 6 byte sized entries
(just perfect for canapes):

Reserved	S
Blocks to Skip	
Sectors in Table	
Tracks / Cylinder	
Sectors / Track	
2**N Sec / Block	

S 1 means some are replacable
 Block to skip From last data block to bad sector table
 N Where 2**N sectors per block

EXTENSION TABLE METHOD

TABLE CONTAINS:

- o 1 OR MORE .DRSPF
- o arg = MINUS SIGN (-)
- o arg2 = LIST OF FUNCTION CODES
- o MUST HAVE SAME FIRST 2 DIGITS
- o TERMINATED BY .WORD 0

DIGITAL

EXAMPLE:

```
.DRSPF <377,376,350,367>
.DRSPF +XSPFTB
```

XSPFTB:

```
.DRSPF -,<200,202,207>
.DRSPF -,<222,224>
.WORD 0
```

DIGITAL

.DRSPF

Syntax: .DRSPF arg[,arg2]

- o Defines special function codes
- o Can be specified in two ways
 - o List method
 - o Extension table method

DIGITAL

LIST METHOD

- o List of one or more codes
- o Locations 22 - 30
- o 3 unique ordered combinations
based on first 2 digits
- o Each list enclosed in brackets (< >)
- o Separated by commas
- o Do not use arg2

DIGITAL

SPFUN CODES

SPFUN codes are values between 200 and 377. For the SPFUN words in Block 0 they are thought of as an NNX and XXN pair.

Example: 374 is 37X and XX4

All the SPFUN code with the same NNX are stored in the same word, the XXN value is used to select bits to set in that word:

370	020
-----	-----

374 and 370 would be stored as:

370	021
-----	-----

DIGITAL

.AUDIT AND .MODULE

The .Audit location contains a rad50 value identifying the major release (e.g., V05).

The .Module location(s) contain edit level information about individual source files in the module.

100000 means N/A

177777 means end of list

DIGITAL

DISPLAY AND INSTALL CSRs

The Install CSR is at 176. It is checked by installation code. The Display CSR(s) begin at 174 and are a list descending, terminated by a 0.

If the Install CSR is 0, the first Display CSR is currently (V5.3) displayed by RESORC.

NEWSLETTER OF THE VAX SYSTEMS SIG



Our Mascot

Pageswapper

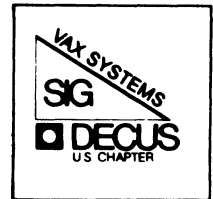


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Larry Kilgallen, PAGESWAPPER Editor
Box 81, MIT Station
Cambridge, MA 02139-0901
USA

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Please do not submit program source, as that is better distributed on the VAX SIG tape.

Please do not submit "slides" from DECUS Symposia presentations (or other meetings) as they are generally a very incomplete treatment for those readers of the Pageswapper who are not so fortunate as to be able to travel to Symposia. Please DO write articles based on such slides to get the content across to a wider audience than is able to attend.

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Selective Procedure verification

Bob De Wolf
System Engineer
1055 N. Richman Ave
Fullerton, CA 92635

When you first begin to use it, the DCL procedure verification feature seems convenient. It allows you to run a DCL procedure with verification on or off. If you have it on, it displays each line of the procedure as it is executed, after string substitution has been performed. If the procedure is complex, or if it calls other procedures, there will be a great deal of output, and it will be time consuming and difficult to locate the area of interest.

One way to reduce the amount of output when a procedure calls other procedures is to use selective procedure verification. Selective procedure verification allows verification to be turned on for one file only. If other procedures are called, verification will be turned off. In this way, one can avoid getting verification output from procedure files that are not suspected of having a problem.

Selective procedure verification can be implemented by adding the following entry and exit sequences to each command procedure:

Entry:

```
$ SAVE VER=F$VERIFY(0)
$ IF 'F$LOCATE("(file=name)",DCL_VFY) .NE. 'F$LENGTH(DCL_VFY) *
  THEN SET VERIFY
```

Exit:

```
$ SET NOVERIFY
$ IF SAVE_VER THEN SET VERIFY
```

To turn on verification, the user defines the global symbol DCLVFY as follows:

```
$ DCL_VFY:=(file=name1)(file=name2)(file=name3)...
```

The file names listed are the names of files to be verified. Usually only one file will be verified at a time, but it is possible to verify several.

To turn off verification, the user defines the global symbol DCLVFY to be the null string.

When any procedure is entered and the file name is listed in the verification symbol, verification is enabled. If the file name is not listed in the symbol, verification would be turned off. When the procedure is exited, verification is restored to the state that it had before entry.

When any of the selected procedures is executing, verification will be enabled. Otherwise it will be disabled. This is highly desirable when debugging a set of nested procedures.

A useful side effect of this system is that if you are debugging a procedure and you have verification enabled for that procedure, you can run any other utility procedure (to, for example change directories etc.) and verification will be automatically disabled.

AN SIR

This system provides excellent verify control and it would be worthwhile to implement it within DCL so that it would not be necessary to use entry and exit sequences. Before this can happen, more people need to be aware of it. Give it a try, and look for it on the next SIR ballot.

Methods of Checksumming Programs Under VMS

Arthur T. McClinton Jr
MITRE Corporation

BACKGROUND

Verifying that computer software has not been modified is a common problem to both secure and non-secure systems. This implied threat presents itself when new releases of the operating system are prepared and delivered. The vendor should assure himself that he is applying patches to the correct version of the program. In the secure arena the implied threat presents itself both when new releases of the operational programs are prepared and delivered as well as during maintenance activities.

One approach to this problem is a process called "checksumming." A checksum is the process of reading every record in the file and summing the values in the 32 bit words (with overflow) to form a single 32 bit value with is associated with the file. The process may or may not recognize executable images and give separate checksum's for each separate load section of the image.

ANALYSIS

In checking various methods that could be used to validate an image on the DEC VAX/VMS system, the software functions ANALYZE/IMAGE and an undocumented VMS utility called CHECKSUM were identified.

ANALYZE/IMAGE provides of information about the image but does not perform a checksum. This information includes a list of the patches to the image and a version number. Conceivably, a user could modify an image in such a way as to not change the version number or use the official "patch area". This would result in ANALYZE/IMAGE thinking that the program was unmodified.

CHECKSUM has existed at least since VMS 4.0. It is undocumented (and at present not supported) but does provide a way of determining if the file has been modified. It consists of a program to read the file and calculate a 32 bit checksum. In the default mode (CHECKSUM/FILE) the entire file is read and checksummed. If the optional (CHECKSUM/IMAGE) is used, the various sections of the executable image are checksummed separately. The output from CHECKSUM is in the symbol CHECKSUM\$CHECKSUM. Thus the normal method of executing the program is shown in figure 1.

I have written a command procedure to checksum SYSS\$SYSTEM and compare the the results to the checksum previously taken. This procedure is included as table 1. The use of this or a similar command procedure at boot time could verify that the operating system and user programs have not been modified. It will take 10-15 minutes to scan all of the files on the disk and perform the checksum operation. Thus perhaps the best way to perform this would be in background while the system starts up. The results could be sent as an alarm message.

Other uses of the CHECKSUM command include verification that only CMS was used to access files that are under configuration management control. I have heard stories of programmers using the VMS "PATCH" command to access files that are under CMS. This type of technique clearly has many applications.

EXAMPLES

Method of Checksumming any file

```
$CHECKSUM foo.bar  
$$SHOW SYMBOL CHECKSUM$CHECKSUM
```

Method of Checksumming an executable file

```
$CHECKSUM/IMAGE SYSS$SYSTEM:PASCAL.EXE  
file SYSS$SYSROOT:[SYSEXE]PASCAL.EXE;l2  
image section %D'1' checksum is %X'8D4B4D4E'  
image section %D'2' checksum is %X'00022901'  
image section %D'4' checksum is %X'00FD337A'  
image section %D'6' checksum is %X'0000F98C'  
image section %D'8' checksum is %X'A3CF1EBD'
```

```
image section %D'10' checksum is %X'090C8745'  
image section %D'12' checksum is %X'6B39BC26'  
image section %D'13' checksum is %X'54C233C7'  
image section %D'14' checksum is %X'581934C7'  
image header checksum is %X'2DB7C2A6'  
checksum of all image sections is %X'40958C67'
```


INPUT/OUTPUT

A SIG Information Interchange

A form for INPUT/OUTPUT submissions is available at the back of the issue.

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```
=====
Note 503.3           File Transfer to IBM           3 of 4
"Jim Buckley"       16 lines 13-APR-1987 19:14
-< Bag it and go with 3780 Emulator >-
=====
```

We also are transferring files from a 750 to an IBM 3083. We however use DEC's 3780 emulator with great success. We have recently expanded our network and are implementing DEC's SNA Gateway. This looks like a good product but has some shortcomings in the file transfer area addressed better with the 2780/3780 emulator.

We'll have both around for some time to come. Please give me a call if you want any further recommendations. If you go with the 3780 emulator, I can provide lots of useful .COM files and corresponding JCL needed for the IBM side.

James L. Buckley
COM/Electric Co.
2421 Cranberry Highway
Wareham MA, 02571
(617)*291*0950 x3224

```
=====
Note 503.4           File Transfer to IBM           4 of 4
"Chris Erskine"     8 lines 16*APR-1987 13:28
-< SNA transfer >-
=====
```

From what I have seen, the 2780/3780 emulator may be losing support. I have not yet heard of support for it on the bus if the future which everyone is designing hardware for (the BI bus :- (). We have not had any problem with the SNA RJE workstation and have used FAL.COM to route the output files to user's directories and notify them that the file has been received. We have even added support to execute a batch job for given files when they arrive.

Chris Erskine
6001 Adams Rd.
Bloomfield Hills, MI 48013
(313) 258-4049

```
=====
Note 529.6           WPS+ Printer tables           6 of 7
"Bob Hassinger"    12 lines 10-APR-1987 08:29
-< PTU and Printer Table documentation... >-
=====
```

We just got our first documentation update kit for WPS*PLUS/VMS V2.1. It consists of a manual called "Guide to Modifying Printer Tables" (AA-JV17A-TE). It contains a lot of information on printer tables and the use of PTU that was not in the material published in the OA Newsletter. It also explains about a limit of 15 new entries when using PTU and how to use EDT if you want to go beyond that limit.

It also indicates that PTU and it's use are now "supported" by the CSC (telephone support service) although the results are not of course (i.e. they support FORTRAN but not the programs you write with it).

Bob Hassinger
Liberty Mutual Research Center
71 Frankland Road
Hopkinton, MA 01748
617*435*9061

=====
Note 529.7 WPS+ Printer tables 7 of 7
"Jack Patteeuw" 7 lines 11-APR-1987 07:23
 ^< PTU in V2.2 ^<

Good information, Bob ! I never got that manual with my V2.1 update kit.

Official word from DEC is that V2.2 of ALL-IN-1 is in SDC and should begin shipping immediately (whatever that means). According to what I read, V2.2 is the first version in which DEC will officially support PTU for customers.

Jack Patteeuw
Ford Motor Co.
Electrical and Electronics Division
31630 Wyoming
Livonia, MI 48150
313-323-8643

=====
Note 560.12 DECnet Node Isolation Needed 12 of 12
"Nora Miller" 24 lines 17-APR-1987 17:01
 ^< a possible hardware solution? ^<

I am not an expert, or even very knowledgeable, but I am in the process of purchasing a product which seems to do what I understand you to need. The product is the TransLan III Bridge from Vitalink. It is intended to bridge two Ethernet networks across longer distances than DEC's Lan Bridge can handle. One of the pertinent features is the ability to identify a node as "local only" so that traffic from the other network never reaches it, or so that only certain traffic can reach it.

This may be an expensive way to isolate your node, but I believe it will do what the replies from John Osudar and Jamie Hanrahan are discussing, without writing drivers.

However, I may be wrong.

Nora Miller
Northwest Power Planning Council
850 SW Broadway, Suite 1100

Portland, OR 97205
503-222-5161

=====
Note 564.6 SYNCHRONOUS AUTODIALING 6 of 6
"Chris Erskine" 6 lines 31-MAR-1987 09:49
 ^< Source for an Autodialer ^<

There are companies out there which produce async 801 type dialers. One that I have worked with is from Codex which was tied to both Codex and Racal Vadic modems. I used this unit to do autodialing for both HASP and 3780 RJE systems. If I recall, the modem plugs into the 801 and allows the 801 to place the call as if you did it using a phone.

Chris Erskine
6001 Adams Rd.
Bloomfield Hills, MI 48013
(313) 258-4049

=====
Note 569.5 Ethernet VAXcluster 5 of 8
"David Shepperd" 22 lines 31-MAR-1987 20:17
 ^< A very local LAVC ^<

Although DEC does not (or has not) said that there can be more than one boot member, there is a way to do it if you've licensed the systems accordingly: If you boot from a local disk with VAXCLUSTER set to 2 and you've created a LAVC authorization file with the same password in it as all the other systems you intend to include in the cluster, then the system will join an existing cluster or form a new one if it is the first. You needn't worry about cluster partitions because each system has to locally mount the other systems disks (unless they come up later and do a MOUNT/CLUSTER on their disks). The obvious disadvantage here is that you don't have a common system disk with but the advantage is that your system is on a cluster and can access all the other system's disks as with any other cluster yet it uses its local disks for most of the heavy disk I/O. You can establish one node as the GOD:: node such that it is up the most and would be the first (or nearly the first) to boot on which to place the cluster common files such as SYSUAF, NETUAF, JBCSYSQUE, RIGHTSLLIST and any others you may have. This is way

we do it and have been for some time now. It's real neat, I like it.

David Shepperd
Atari Games Inc
675 Sycamore
PO BOX 361110
Milpitas, Ca 95035*1110
(408) 434*1711

=====
Note 569.6 Ethernet VAXcluster 6 of 8
"Gus Altobello" 5 lines 15-APR*1987 00:15
-< Multi-cluster nodes? >*

I've heard some stories about DEC working on allowing a node to be a member of multiple clusters.

Has anyone else heard of this, and if so could you mix CI and NI clusters on a single node?

Gus Altobello
PO Box 11274
Hauppauge, NY 11788
516/435*7036

=====
Note 569.7 Ethernet VAXcluster 7 of 8
"Jack Patteeuw" 7 lines 15-APR*1987 16:01
-< Not yet ... >*

This question was asked at several technical discussion with DEC at the last symposium.

Although no one would specifically say when, it was very strongly hinted that a node would eventually be able to participate in two clusters simultaneously (ie. a CI and a NI cluster) and that the maximum number of nodes in a cluster would probably jump to 255.

Jack Patteeuw
Ford Motor Co.
Electrical and Electronics Division

31630 Wyoming
Livonia, MI 48150
313*323*8643

=====
Note 569.8 Ethernet VAXcluster 8 of 8
"Larry Kilgallen" 25 lines 17-APR*1987 05:31
-< I think it is one cluster with two media >*

I think the only "yes" answer that could be given is not to "member of two clusters", but to the OTHER phrasing of the question in San Francisco, asking for a "mixed cluster" of CI and NI members. The clusterness of the connection between nodes is not the cable, but the software. If it were not for performance considerations, DEC could implement an RS232 cluster (actually the performance might be so bad that MTBF would be shorter than boot time). I think the thing they acknowledged as a goal in San Francisco was to have ONE CLUSTER with both CI and NI members and some sort of server code in the executive to move SCS*level packets off one wire and onto the other (when appropriate).

As to the number of nodes, DEC has long admitted the field in question is a byte. There is a hardware limitation on the CI (would more nodes require an active Star Coupler and what would that do to "single point of failure" calculations) but there is also a performance consideration as the number of nodes is increased. Does division of the "estate" of a fallen member by the (remains of the) distributed lock manager take any less time by having more parties to the discussion? I think not. If DEC should instantly bump the permissible member number to 254 rather than to some intermediate value, I would have considerable hesitation before wiring up a cluster fully loaded to the new limit.

Larry Kilgallen
Box 81, MIT Station
Cambridge, MA 02139*0901

=====
Note 574.8 Cluster time coordination. 8 of 8
"Gus Altobello" 17 lines 15*APR*1987 00:06
-< Just an idea... >*

I've used proxy logins between two of our nodes since I have some minor management duties on the remote node and don't wish to work at it.

Since my remote account has needed privileges, I have written the remote LOGIN.COM to grant the privileges I need if the access type is NETWORK.

In this way, you could have a proxy on your "slave" node which allowed you into an account having the proper privileges to allow the \$SET TIME. A bit of judicious tinkering should get you a captive account which does nothing BUT set the time, give proper inputs. Node spoofing (as in .7) is possible in any network (especially Ethernet) but using circuit passwords might help, if you're not overly critical on that point.

Gus Altobello
PO Box 11274
Hauppauge, NY 11788
516/435*7036

=====
Note 577.17 Questions/Comments on TPU 17 of 17
"Offline Submission" 16 lines 10*APR-1987 18:25
-< Response to .1 >*

VTEDIT (DECUS Library Number VAX-193) is a TPU interface without the notion of "forward/backward" movement. It emulates the VTEDIT keyboard macro of TECO (who remembers? VMS V2.0!) and incorporates most of EVE+, including rectangular cut/paste and more: automatic case control, automatic indentation... Try it!

Gerhard Weck Infodas GmbH Rhonstr. 2 D*50000 Koeln 71 West Germany

Telephone: +49-221*709120

Date: April 1, 1987

=====
Note 580.15 ODS*2 Specification Wanted 15 of 15
"Bruce R. Mitchell" 3 lines 9*APR*1987 09:27
-< ODS*2 Spec Coming >*

The Multi-Tasker editor is pleased to announce that the ODS-2 spec (* less the RMS*specific sections *) will be published in the May issue of The RSX Multi-Tasker.

Bruce R. Mitchell
Machine Intelligence and Industrial Magic
PO Box 816
Byron, MN 55920
(507) 284-9202

=====
Note 590.3 VAX 11/750 Word Processor 3 of 3
"Jim Buckley" 24 lines 13*APR*1987 17:42
-< MASS-11 Experiences good. >*

Likewise, we did a review of the word processing market recently.

We determined that MASS-11 was the best fit for our company. We successfully run it on a MicroVAX II for 20-35 users without any noticeable degradation in response. This should be comparable to a 750 (somewhat). Our configuration is as follows:

MicroVAX II (H9xxx series Cabinet)
2 RAXx drives
9 Mb memory

We have not been able to saturate the MicroVAX II (used for most WORD PROCESSING users). MASS-11 seems to be comfortable with approx 1000 block of memory per process although we allow users as much as they need. Memory is cheap as long as you don't buy DEC's and can catch other vendors near the end of their fiscal year.


```
=====
Note 603.9          Using TK50 for BACKUP          9 of 10
"Jim Buckley"      24 lines 13-APR-1987 18:25
-< PLEASE NO!!! NO THAT!! NOT A TK50!!!!!! >^
-----
```

I've had all of the above problems with both TK50 drives I've worked with on separate MV IIs. Judging from the previous replies, I can only think that we've got a bad batch. (Both drives are >1 year old).

HOWEVER !!!! THERE IS NOTHING MORE AGGREGATING than having to reboot your system because the tape controller has forgotten where it is on the tape. During BACKUP, when the system is requesting the next tape, ANY response often brings the same question: ENTER (Y) TO CONTINUE:

About 1/3 the time, this situation occurs--- no way to continue the BACKUP...reboot and continue. Our operator has successfully recovered from this situation once, but can not remember how it was done. (Probably with a size 10 EE). I will never (repeat NEVER!) attempt to do a back with a TK50 if it can be avoided at all.!!

Both TK50s and controllers have been replaced a number of times with the problems recurring to this date. We now prefer to backup over the network and use RA60 packs to do emergency restores when needed.

Bottom line ***- GET A TU81 Plus !!!!

WORTH IT!!

James L. Buckley
COM/Electric Co.
2421 Cranberry Highway
Wareham MA, 02571
(617)-291-0950 x3224

```
=====
Note 603.10        Using TK50 for BACKUP          10 of 10
"David Shepperd"  10 lines 15-APR-1987 20:43
-< When the chips are down...rev, that is... >^
-----
```

Re .8, there is indeed a bug in the firmware that screws up everything if there ever is a problem with the tape OR you accidentally request a MOUNT without a tape installed and ready OR with a tape installed but write protected. Only a system manager can know the agony that is felt being 5 hours into a 5.2 hour backup and typing a Y to BACKUP's next tape prompt before the drive comes ready. Arghh! Reboot is the only solution we found before getting new firmware, which incidentally, does apparently fix that problem. Call field circus and insist that they put in the new code, it's worth it.

David Shepperd
Atari Games Inc
675 Sycamore
PO BOX 361110
Milpitas, Ca 95035-1110
(408) 434-1711

```
=====
Note 607.5        DECserver 200 application ports - how?  5 of 7
"Chris Erskine"  17 lines 31-MAR-1987 11:48
-< Using Reverse LAT for modems >^
-----
```

At this site I am currently using an Ethernet Terminal Server connected to a modem connected from a Local> prompt but also use reverse LAT to get to the port. A simple

SET HOST/DTE LTAn

does work. At another site that I am working at, we are using DECserver 200's and it also works.

There are a couple of things to keep in mind.

- 1) When you create the port under LCP, set it for NOQUEUE. This helps prevent problems of queueing extra connects which people decide they do not want to wait for.
- 2) Reverse LAT does not establish the connection to the port until the first write is issued to the device. This does not cause us any problems because we have to wake up the modem before we use it.

The site which uses the DECserver 200's is even using All-in-none to access the modems.

Chris Erskine
6001 Adams Rd.
Bloomfield Hills, MI 48013
(313) 258-4049

```
=====
Note 609.4      Utility to read/write IBM tapes      4 of 5
"Jim Buckley"   41 lines 13*APR#1987 18:45
               =< MTEXCH is great! but try /OPTCD=Q >-
-----
```

I've used the aforementioned program MTEXCH with great success! We are a large IBM shop (at "Corp." headquarters) and must receive lots of data/programs in "IBM" format (EBCDIC with or without labels). MTEXCH has handled them all very well.

Don't overlook IBM's ability to create tapes in ANSI standard format (HA! - no such thing) but at least IBM systems CAN generate text files directly readable on a VAX with nothing but MOUNT and COPY commands.

To generate a files on tape in ASCII readable on most machines use the following JCL:

```
//ddname          UNIT=tapeunit,
                  DCB=(RECFM=FB,LRECL=nn1,BLKSIZE=nn2,OPTCD=C
                  LABEL=(1,BLP)
```

I may be slightly off with some of this, it has been quite awhile since I've needed to use it (every second has been a pleasure). See a qualified system programmer (we use MVS). The critical items of note are "nn1" and "nn2". These number be integer values also used in the DCL on the VAX side to read the tape:

```
$ ALLOCATE MTA0: TAPE
$ MOUNT/FOR/RECORD=nn1/BLOCK=nn2 TAPE
$ COPY TAPE my_IBM_stuff.big_blue
```

If you can not control how IBM tapes are generated, please look in past VAX SIG tapes, I can not remember from where I picked this up, it was at least 2 years ago. If you can't find it, I can provide a copy. The author's name is embedded in the code (I think).

To the author of MTEXCH -- Thank you very much!! - It has been a godsend!.

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COM/Electric Co.
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Wareham MA, 02571
(617)-291-0950 x3224

```
=====
Note 609.5      Utility to read/write IBM tapes      5 of 5
"Derek Fields"  8 lines 15*APR#1987 08:24
               =< My IBM->DEC experience >-
-----
```

Oh, I wish I had read this a month ago! Not only was all of the data for my new system on a IBM system, but when the data center created the tape, they created 12 different files, each with a different record and block size - What a nightmare. My solution was similar to the previous one...I had them redo the files so that they all had the same record and block size and put them onto tape in ASCII format. Then a simple MOUNT/FOR/BLOCK=/RECORD= worked fine. We looked into ANSI labelling, but gave up as too complicated.

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NEW JERSEY BOARD OF PUBLIC UTILITIES
1100 RAYMOND BLVD
NEWARK, NJ 07102
201-648-2417

=====
Note 613.8 ACL Problems 8 of 10
"Jack Patteeuw" 26 lines 1*APR*1987 07:11
 * < More on ACL in a image > *
=====

re: .5

"Another key to successful design in this area seems to be that it must allow users to grant access without involving the system manager."

Larry I disagree with your statement. It is already possible today to write an application that would temporarily grant an "identifier" to a user so that he could access an object. The problem is making certain to remove that identifier before exiting the image. This is not an easy thing to do for an inexperienced VMS programmers.

The only solution I see in this case therefore is the INSTALL option where the System Manager grant the INSTALLED image an identifier.

It would certainly be nice if DEC products like DTR and Rdb would have additional identifiers granted to them while they were running, such as DTR or RDB as well as ones that the programmer specified in his procedure. That way the database file could be protected with an ACL that read something like

(IDENTIFIER=DTR+READ_PROC,ACCESS=READ)

(IDENTIFIER=DTR+UPDATE_PROC,ACCESS=READ+WRITE)

Jack Patteeuw
Ford Motor Co.
Electrical and Electronics Division
31630 Wyoming
Livonia, MI 48150
313*323*8643

=====
Note 613.9 ACL Problems 9 of 10
"Larry Kilgallen" 12 lines 1-APR*1987 22:36
 - < Protected subsystems > -
=====

re: .8

I don't know how to have a (non-privileged) program grant an identifier which the user cannot grant herself. The whole point is to get away from system manager involvement with a new type of ACL protecting FOO.DAT:

(IMAGE=DISK\$FOO:[LARRY]FOOWRITE.EXE,ACCESS=READ+WRITE),

(IMAGE=DISK\$FOO:[LARRY]FOOREAD.EXE,ACCESS=READ)

Certainly there is no way to do it now; that is why DEC efforts are required to provide such a capability.

Larry Kilgallen
Box 81, MIT Station
Cambridge, MA 02139*0901

=====
Note 613.10 ACL Problems 10 of 10
"Jack Patteeuw" 21 lines 6-APR*1987 16:43
 * < Your Right!! (slist.Dat) ??? > -
=====

re: .9

The documentation on \$GRANTID (page SYS-292 V4.4) does state that CMKRNL privilege is require to invoke this service so, in fact, a PRIVILEGED program could achieve the desired effect.

I guess where I got messed up was the statement that the DYNAMIC attribute "allows the unprivileged holder to add or remove the identifier from the process rights list." Key here is that the process must already be the "holder" of the identifier. I'm not certain what good it does to remove an identifier from a process, especially if the user can do it himself from DCL or his own program.

In conclusion, I guess I'd like to see it both ways. Your proposal Larry, certainly makes it easy for third party developers to protect their data bases without involving the System Manager. My way (see .2) makes it very simple for us "System Manglers" to protect things without having to modify existing programs.

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=====
Note 616.1 Experience w/RDB,RALLY,TEAMDATA? 1 of 1
"DEREK FIELDS" 13 lines 15-APR-1987 08:32
-< An INGRES user >-

Last August, we started a full*scale search for a new database manager for our new 8500. Originally, we had planned to use Rdb and we looked at RALLY and TEAMDATA as add*ons. The reason we rejected these is that they do not take advantage of what we consider to be SOTA in 4th generation languages, to the extent there is one. I won't go into the details, but we settled on INGRES and have been quite satisfied. We are less interested in benchmarks for search and retrieval as we are for ease of development and INGRES has excellent 4GL tools for developing applications. This has significantly decreased our costs for experienced programmers and increased our productivity. As an example, I am completing a project that we estimated at 1 man*year under Rdb. With INGRES, the time was cut at least in half, and closer to 4 man*months.

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=====
Note 619.2 unwanted formfeed 2 of 3
"Bob Hassinger" 6 lines 31-MAR-1987 09:11
-< Do you need to turn the system off a night? >*

Maybe this is becoming more of a problem as we get more MicroVAXes out there that people want to turn off at night. I think most larger VAXes have normally been left on all the time so startup related issues were not so much of an issue.

Do you really need to turn your system off at night?

Bob Hassinger
Liberty Mutual Research Center
71 Frankland Road
Hopkinton, MA 01748
617*435*9061

=====
Note 619.3 unwanted formfeed 3 of 3
"Chris Erskine" 5 lines 31-MAR-1987 12:24
-< Eliminating Extra <FF> to Printers >*

A rumor that I got from MILUG for the <FF> after the default setup or reset command is to enclose the escape sequence within the Device Control String '<ESC>P' and the String Terminator '<ESC>/'. I have not tried this but it sounds good.

Chris Erskine
6001 Adams Rd.
Bloomfield Hills, MI 48013
(313) 258-4049


```
=====
Note 621.0      Ethernet Multicast Messages      2 replies
"John P. McGrath"      24 lines   5*APR*1987 01:06
*****
```

We are developing a system that features a data base distributed across many MicroVAX II nodes which are connected by DECNET/EtherNet. Some of the frequently accessed data is duplicated on each node. Although the redundant data is not updated frequently, it must be kept the same on all the nodes. We now have only 9 nodes on the system, but more are on the way, and want the system to work well for very large numbers of nodes ** hundreds or maybe thousands.

I would like to have an image running on each node that would send out a message to all other nodes when an update is required. I do not want it to loop through a list of every node in the system, sending an update message to each. From what I have read, what I think I should be using is EtherNet Multicast messages. But I have many questions about how to use them. The Networking manual mentions them and describes the format of a Multicast address, but refers you to the I/O User's manual for more information. The I/O User's manual doesn't even mention DECNET.

Does this mean that in order to send a Multicast message, I have to bypass DECNET altogether? Is there any reasonably efficient way to accomplish this within DECNET?

Are there any books or manuals out that would make learning about DECNET a little easier than reading the DEC Networking manual?

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Software Consulting Services
3162 Bath Pike
Nazareth, PA 18064
(215) 837*8484

```
=====
Note 621.1      Ethernet Multicast Messages      1 of 2
"Larry Kilgallen"      35 lines   5*APR*1987 09:43
      * < DECnet does not offer Multicast > *
*****
```

The multicast and broadcast capabilities of Ethernet are not made available to programmers making DECnet calls. To use these features you must be making raw Ethernet (or 802.3) calls.

There is no analogy to a broadcast message in DECnet, as it is a connection-based protocol set. All data is sent in a point-to-point manner between processes which have agreed to set up a connection.

Your options are to set up (semi-)permanent connections and use them to pass the notice of required update or to set up connections periodically to pass this information. The latter method would be easier in the other (non-DECnet) type of protocol set where the base services are datagram-based ("connectionless"). Even in that situation, however, you have a thorny problem of acknowledgement. How do you KNOW the information about the required update has been spread to all nodes?

This problem of notification regarding the need for update seems to be analogous to problems encountered by those who implement network software when they need to update routing tables in various nodes. Look at descriptions of how DECnet, TCP/IP, AppleTalk, etc. handle this problem to get some ideas. (Of course none of this is difficult if you can guarantee that none of your nodes or communications links are ever down for any reason. :-))

If you are considering thousands of nodes, try not to use raw Ethernet access, because someday somebody will want one of those nodes to be at the end of a 9600 baud leased line and your update notification scheme will be blown out of the water.

Larry Kilgallen
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```
=====
Note 622.2          DECNET Permanent Servers          2 of 3
"Mark Hyde"        7 lines    6*APR*1987 13:09
    * < to let several servers get going in a hurry > *
-----
```

Actually, according to the DECnet folks, it's there to allow you to start up several permanent servers in a hurry from things like STARTNET.COM. If it didn't wait, subsequent accesses would use the same NETSERVER again, and the additional ones would not get started.

mark

Mark Hyde
Digital Equipment Corp
360 Interstate North Parkway
Suite 600 IP01*6/C2
Atlanta, Ga 30339

```
=====
Note 622.3          DECNET Permanent Servers          3 of 3
"John P. McGrath"  33 lines   11*APR*1987 16:43
    * < Am I confused? > *
-----
```

I still don't see any reason to put the "wait 0:00:20" in NETSERVER.COM.

The 20 second wait occurs just before it goes back to wait for any more inbound connects. NETSERVER\$TIMEOUT specifies how long it will wait.

It is my understanding that the link is already broken at the point that it is doing this wait. It should be broken when NETSERVER.EXE exits. (By the way, does anybody know how NETSERVER.EXE passes control to the network command procedure. Does it create another DCL command level like doing an "@procedure_file"?)

As for starting up permanent servers, why not just start them with a series of opens, followed by closes:

```
$ open link1 "NODE::""TASK=STARTPERM""
$ open link2 "NODE::""TASK=STARTPERM""
```

```
$ open link3 "NODE::""TASK=STARTPERM""
.
.
$ close link3
$ close link2
$ close link1
```

I haven't tried this, but I can see no reason why it would not work. The system I am working on does not start up any permanent servers at boot time. I would rather not create any more permanent servers than I need. However some operations may establish several links in a very short period of time. This guarantees that a new server has to be created for each link.

So who is confused, DEC or me?

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```
=====
Note 624.0          warning on Monitor Ethernet command  No replies
"M. Erik Husby"    25 lines    8*APR*1987 08:03
-----
```

I tried the patching suggested in the April 1987 Pageswapper article "Undocumented Monitor Display Classes" and managed to crash two of my VAXes.

I am running VMS 4.4 on a 785 and a microVAX II connected by ethernet.

I copied and patched Monitor.Exe to allow me to use the "Monitor Ethernet" command. Tried it on the microVAX where it appeared to work. Copied the image to the 785 and started it there. In a little while both machines crashed. Numerous messages on the console about aged packet loss. The 785 crash said the process was NULL and problem was pagefault with IPL above ASTDEL.

I am not sure that it was the patched Monitor or the fact that I was using my VAXmate to allow me to log in to both machines at once. I had two vt220 Emulator windows going.

There may be a good reason why these commands are not enabled.
Proceed with caution.

M. Erik Husby
Project Software & Development
14 Story St.
Cambridge, MA. 02138
(617) #661 #1666

```
=====
Note 625.0      Are there TU81+'s that work?      3 replies
"Terry C. Sproul"      8 lines  8=APR#1987 10:48
-----
```

We have installed a TU81-plus (actually upgraded our TU81). We have tried all the things one is supposed to: /NOCRC /BLOCKSIZE=all#sorts#of#numbers etc. etc. We are using a 780 with two RA81's and two UNIBUSES. To the untrained (or trained) eye, the TU81-plus goes no faster than the TU81. DIGITAL field service has been out innumerable times, we have gotten acres of advice, and none of it works. Does anyone have a TU81 that actually does what is advertised?

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3666 GRAND AVENUE
OAKLAND CA 94610
(415) 832 #5606

```
=====
Note 625.1      Are there TU81+'s that work?      1 of 3
"Jack Patteeuw"      17 lines  9=APR#1987 16:23
      * < What about /BUFFER COUNT ? > *
-----
```

My understanding of the TU81+ is that it has a large internal buffer and it is MANDATORY that this buffer be kept as full as possible for the TU81+ to stream. Adding additional buffers (/BUFFER COUNT=5) on the VAX side will help (see BACKUP#33 where it specifically recommends this for TU8x devices). You may also have to bump the WSQUOTA of the account that you normally use for tape operations to accommodate this.

I'm not a hardware expert but I'm certain that it is important to know what else is on the UNIBUS that your tape controller is on (you probably don't want it on the same UNIBUS as the UDA50 or a DEUNA or DELUA) and which UNIBUS slot the controller is in. Lower slot numbers have higher priority. Watch out as this may cause other devices to time out !

P.S. The /BUFFER COUNT=5 works well on ALL types of tape drive so if you got the memory, use it !!

Jack Patteeuw
Ford Motor Co.
Electrical and Electronics Division
31630 Wyoming
Livonia, MI 48150
313 #323 #8643

```
=====
Note 625.2      Are there TU81+'s that work?      2 of 3
"Jim Buckley"      10 lines  13=APR#1987 19:28
      * < 780 to slow? > *
-----
```

Yup, we got one and it works as advertised. It is used on an 8500. I don't know if a smaller machine could provide data to the tape cache fast enough. Even a few users (~ 20) can make the TU81+ wait for the CPU (running BACKUP). Re: .1 # I concur, check loading on your bus and any other factors which may present a bottle neck to the tape drive.

Have you tried to test the drive off hours? With /BUFF=5?

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```
=====
Note 625.3          Are there TU81+'s that work?          3 of 3
"Gus Altobello"    18 lines 14*APR*1987 22:49
                  * < Ours seems ok, but... > *
*****
```

Our upgraded TU81+ is connected to an 8600, and does indeed run faster than before the upgrade. The heavier the system load, the less likely you'll get the condition of having data ready for transfer when the drive looks for it (this being the only way the streaming works).

It seems to be a worthwhile upgrade.

However, if you are still stuck back on VMS V4.3, be warned that processes will need PHY IO privilege in order to do a BACKUP/REWIND command on the drive. This was a most disconcerting discovery. I'm told this is fixed in V4.4...

I'm also told that in V4.3, only BACKUP has the smarts needed to take full advantage of the TU81+. Could there be limitations on which utilities can utilize the cache in later versions?

Gus Altobello
PO Box 11274
Hauppauge, NY 11788
516/435*7036

```
=====
Note 626.0          Backups and All*in*1                  4 replies
"DEREK FIELDS"    12 lines  9*APR*1987 07:39
*****
```

We are bringing up a new installation: an 8530 running VMS 4.5 with All*in*1 and Ingres. In trying to decide on appropriate backup procedures, we have concluded that the standard daily incremental and weekly image backup procedure will provide us with ample protection. However, we have heard that it is not possible to successfully perform incremental backups of All*in*1 files when users are in All*in*1. Our understanding is that All*in*1 keeps certain files open whenever users are in it and these files would therefore be missed during the incremental. Clearly, if we can not backup crucial indexes, etc., the incremental backup would be essentially worthless. Any suggestions would be greatly appreciated.

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```
=====
Note 626.1          Backups and All*in*1                  1 of 4
"George Walrod"    1 line   9*APR*1987 11:19
                  * < /IGNORE=INTERLOCK > *
*****
```

Have you looked into using /IGNORE=INTERLOCK on your BACKUPS?

George Walrod
4260*b chain bridge rd
fairfax, va 22030

```
=====
Note 626.2          Backups and All*in*1                  2 of 4
"Larry Kilgallen" 29 lines 10*APR*1987 06:49
                  * < /IGNORE=INTERLOCK has hazards > *
*****
```

/IGNORE=INTERLOCK does not guarantee that individual files are restored in a consistent state. That is why it is not the default. Even if RMS pursues a careful*write policy, which I presume that it does, you could have already copied the index buckets but not the corresponding data buckets when a change is made, making the copy you have on tape internally inconsistent. My own preference is to not have a copy on tape rather than have on tape a copy of dubious quality.

One could somewhat lessen the chances of the above problem by doing a BACKUP/IGNORE=INTERLOCK/VERIFY, meaning that the state of the file was the same on two consecutive passes. This presumes a lot of DCL to throw away the copy if it fails the verify (generally copying disk*to*disk from the live file and then going to tape with the copy is the best way to be able to "throw away" the copy). Note that this requires backing up on a file*by*file basis (at least from the live file).

Another problem not raised in .1 is the fact that with multiple disk files (which I assume All*in*1 has), the problem is really one of a multiple*file database. All the files should be backed up in a consistent state with respect to one another.

By far the easiest solution is to reserve a particular time of the day to kick the users off. It shouldn't take long to do incrementals disk to disk of the crucial files.

Larry Kilgallen
Box 81, MIT Station
Cambridge, MA 02139#0901

=====
Note 626.3 Backups and All*in*1 3 of 4
"DEREK FIELDS" 4 lines 10*APR*1987 07:09
=< Necessary All*in*1 files >#

OK...let's say that I am successful in finding a time when I can kick my users off for some period of time, a questionable proposition at best, can anyone identify what the crucial All*in*1 files are, aside from the documents themselves?

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201-648*2417

=====
Note 626.4 Backups and All*in*1 4 of 4
"Jack Patteeuw" 22 lines 11*APR*1987 07:16
=< Whats crucial to ALL*IN*1 ? >#

In ALL*IN*1 EVERYTHING is crucial !

As Larry said, ALL*IN*1 uses a multi*file data base that has pointers to everything. It should be obvious that any backups should be done when there is NO file activity on any of the files (although I personally don't have the luxury of time to do it this way). One way to do this is to temporarily shutdown ALL*IN*1 (see the A1 System Manager Reference Manual).

If in the event of things, if your system does crash and you need to rebuild the "file cabinet" there are tools (one of which is referred to as the "carpenter" for big repairs !) to fix up your data base (oops, "file cabinet").

Finally to answer your question more specifically (ie. "What are the crucial files in ALL*IN*1"), it will be obvious if you do a \$ SHOW DEVICE/FILE on the disk(s) where you have it installed and on the user disk (A1 does lots of file I/O so you should try to spread it out over as many disks as you can). Also, take a look at the April 1987 Wombat Examiner (the newsletter of the Datatrieve SIG). It has a very nice article on this exact topic !!

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313*323*8643

=====
Note 627.0 730 foreign device boot? No replies
"Bruce R. Mitchell" 3 lines 9*APR*1987 09:32

Is there any way to get a 730 to hardware boot an RM02/3 emulator? I have a 730 here w/o the standard IDC, and would like to boot the thing from an Emulex SC/21, but can't figure out how to do it.

Bruce R. Mitchell
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PO Box 816
Byron, MN 55920
(507) 284*9202

=====
Note 630.0 Queue Manager Too Slow 5 replies
"Offline Submission" 14 lines 10#APR#1987 18:26
=====

Having 25 print queues in a VAXcluster under VMS V4.3 (two 8600 and one 750), the response time to show or modify and use those queues is about 2*3 minutes at peak use. The problem, we had guessed, is in JBCSYSQUE.DAT contention. Can anyone help me?

Carlos L. Johnson
Honedá 975 Posi 8
Santiago, Chile
S.A.

Telephone: (052) 728072

Date: March 25, 1987

=====
Note 630.1 Queue Manager Too Slow 1 of 5
"John P. McGrath" 7 lines 11#APR#1987 17:07
-< JBCSYSQUE needs cleanup? >*

~~~~~  
If you have ever had a lot of jobs in your queues (a thousand or so) then it may be that JBCSYSQUE.DAT is in bad shape. I had this happen and noticed that the queue manager behaved poorly afterwards. What I did to fix it was to wait till all of the queues were empty, then I did a START/QUEUE/MANAGER/NEW\_FILE and then recreated all of my queues. There may be other ways to clean up JBCSYSQUE.DAT, perhaps the RMS CONVERT utility.

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Software Consulting Services  
3162 Bath Pike  
Nazareth, PA 18064  
(215) 837\*8484

=====  
Note 630.2 Queue Manager Too Slow 2 of 5  
"Jack Patteeuw" 7 lines 13#APR-1987 15:53  
\* < CONVERT ! >\*

#####  
Yes, CONVERT does work and you don't have to wait until the queues are empty either. Just make certain that you STOP/QUEUE/MANAGER first !

Create the FDL with ANALYZE/RMS/FDL SYSS\$SYSTEM:JBCSYSQUE.DAT and then do a CONVERT/FDL=JBCSYSQUE.FDL SYSS\$SYSTEM:JBCSYSQUE.DAT SYSS\$SYSTEM:JBCSYSQUE.DAT.

Jack Patteeuw  
Ford Motor Co.  
Electrical and Electronics Division  
31630 Wyoming  
Livonia, MI 48150  
313\*323\*8643

=====  
Note 630.3 Queue Manager Too Slow 3 of 5  
"James Littlefield" 5 lines 14#APR#1987 07:34  
\* < JBCSYSQUE.DAT Characteristics >\*

#####  
It's interesting to note that the JBCSYSQUE.DAT file is formatted 512 byte, fixed-length records. If CONVERT is improving the response time, then the problem is probably too many non-contiguous extents. I wonder if the file could be manually created with larger initial size, contiguous, larger default extent size, etc...

James Littlefield  
170 Aquidneck Ave  
Middletown, RI 02840  
(401) 849\*8440

=====  
Note 630.4 Queue Manager Too Slow 4 of 5  
"M. Erik Husby" 16 lines 14\*APR\*1987 10:12  
#< Queue manager comments >#  
\*\*\*\*\*

I noticed the slowness of the Queue manager when 4.1 came out. We had a queue that would gather a lot of files during the day and process them at night (a lot == 500+). Dec's solution was a none solution \*\* lessen the number of files in the queue. We were able to do that but learned something interesting in the meantime.

Someone at Digital designed a shared queue manager using a file that required sequential access!!! The queue manager needs to read the whole file for most operations.

We also start the queue manager with

Start/Queue/Manager/Buffer\_Count=100 which improves performance in the cluster somewhat.

We were told a new and improved queue manager is coming in VMS V5

M. Erik Husby  
Project Software & Development  
14 Story St.  
Cambridge, MA. 02138  
(617)\*661\*1666

=====  
Note 630.5 Queue Manager Too Slow 5 of 5  
"John Osudar" 28 lines 14\*APR\*1987 19:21  
#< rhetorical question >#  
\*\*\*\*\*

Is it true that the people who wrote the VMS Job Controller are the same ones who wrote RSX BRU? ("...he asked sarcastically...") Not only is the queue manager SLOOOOOOOOW, it's not the most robust piece of software ever written for VMS... We've written several symbionts, and use several other "user#written" ones from various printer manufacturers. There have been numerous occasions on which one of those symbionts hiccuped and wrote something to SYS\$OUTPUT: \*\* which is a no\*no

for symbionts, as their SYS\$INPUT: and SYS\$OUTPUT: are both mailboxes for talking to JOBCTL. When that happens, JOBCTL very robustly prints a series of error messages on the console ("invalid mailbox message received" or some such phrase), then says it read an end-of-file on the mailbox and DIES a horrible death. Sure, they "fixed" this with /RESTART \*\* so it restarts the queue that caused this mess in the first place, which usually leads to a recurrence of the same problem (within the queue manager's timeout period, of course). And THAT causes the queue manager to die permanently (or until you restart it manually), and leaves all queues stopped, batch jobs with processes running but not in any queue, some symbionts active with devices allocated but queues stopped, etc. Recovery then consists of anything from typing several hundred commands to stop all the right processes, clean up the queues, and restart things, to sneaking into the computer room and typing "HALT" and "BOOT" on the console (and then telling a hundred irate users, "Gee, I don't know WHY it crashed...")

That's why it warms my heart, truly, to hear that VMS V5 will have a new, improved queue manager. I just hope it's less "new" and more "improved"...

John Osudar  
Argonne National Laboratory  
9700 S. Cass Ave.  
Bldg. 205 A\*051  
Argonne, IL 60439\*4837  
(312) 972\*7505

=====  
Note 631.0 RA81 FCT File Format No replies  
"Offline Submission" 13 lines 10\*APR\*1987 18:34  
\*\*\*\*\*

We need to know the FCT file internal format of the RA81 disk device. The FCT file is the last track of the device. If you have any information, please contact us.

Software Support Group  
Universidad Simon Bolivar  
Centro de Informacion Y Computation  
Valle de Sartenejas \* MYS P.B.  
Caracas 1081 Venezuela

Telephone: (582) 9621119

March 13, 1987

```
=====
Note 632.0          VAXStation II UISDC          3 replies
"John Stitzinger"  12 lines  11*APR*1987 02:19
*****
```

Has anyone used UISDC, the low level interface to the VAXStation II QVSS graphics board? We sure could use some more detailed information than is provided in the UIS manuals. We get some interesting displays on the screen but not what we had in mind. We particularly need to know the proper way to tell the driver that we have updated the scan line map.

John Stitzinger  
HRB Singer  
PO BOX 60  
300 Science Park Rd  
State College, PA 16801  
(814)238\*4311

```
=====
Note 632.1          VAXStation II UISDC          1 of 3
"Jack Patteeuw"    4 lines  11*APR*1987 07:27
                   * < Should you be using UIS ? > *
*****
```

I don't know the answer to your question, but are you certain that you want to continue with UIS ? DEC has publicly announced their intention to go to X\*Windows and that UIS support will only be continued for a few more years.

Jack Patteeuw  
Ford Motor Co.  
Electrical and Electronics Division  
31630 Wyoming  
Livonia, MI 48150  
313\*323\*8643

VAX-44

```
=====
Note 632.2          VAXStation II UISDC          2 of 3
"Frank J. Nagy"    8 lines  11*APR*1987 11:24
                   * < UIS: The only game in town > *
*****
```

Unfortunately, UIS is the only game in town under VMS. We are just starting our development of UIS\*based applications for a new, distributed control system. We wish X\*Windows were here now but we just can't wait. In addition, we are having some problems with UIS relative to event handling; there are time windows where if an AST happens your application will hang or blow up or UIS will blow up or the MicroVAX will crash. Sigh!

Frank J. Nagy  
Fermilab  
PO Box 500 MS/220  
Batavia, IL 60510  
(312)840\*4935

```
=====
Note 632.3          VAXStation II UISDC          3 of 3
"Jack Patteeuw"    11 lines  13*APR*1987 16:24
                   * < Go to the source ! > *
*****
```

I was surprised to read an article in the GAPSIG Newsletter this month (yes, I read ALL of them !) which indicated that X\*Windows for VMS would probably NOT be available till next year (1988).

This is contrary to what was presented to me a DEC workstation conference a few months ago. A high ranking DEC individual stated that it should be available "this year" and that both DEC and MIT "had it running in the lab". Furthermore, he suggested that for an advanced copy I contact MIT directly!!

Does anybody have the "official" DEC word on availability ?

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313\*323\*8643

VAX-45

=====  
Note 633.0 Announcing the VT330 and the VT340 !! 3 replies  
"Jack Patteeuw" 36 lines 11\*APR\*1987 07:49  
\*\*\*\*\*

God, I just love the \*\*SMELL\*\* of new hardware (or is it new cars ?) !!!

Please excuse any misinformation as I am doing this from my "cache" memory.

The VT330 and VT340 supersede the VT240 and VT241 (no replacement for the VT220, yet). The VT330 is a monochrome graphics terminal and the VT340 is a color graphics terminal. Following are the list of features common to both:

- o 800 x 500 pixel resolution
- o Larger (15" ?) CRT
- o All electronics contained within CRT housing (ie. no pizza box and \*\*NO\*\* fan !)
- o Tilt and swivel base
- o Supports TEK 4010/14 emulation. VT340 supports TEK 410x color emulation. ReGIS is supported. No definite word on GKS support.)
- o 3 RS#232 ports which can be configured as 3 communication ports or 1 communications, 1 printer, 1 mouse (?)
- o Can support multiple simultaneous VMS sessions over one communications. port with appropriate \*\*OPTIONAL\*\* (ie. \$\$\$) software. "Session" key for one keystroke session changes.
- o Priced less than the VT240 and VT241 ! Contact DEC's
- o Electronic Store (800-323-3366) for exact pricing.

- o Products should begin shipping in May

Jack Patteeuw  
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Electrical and Electronics Division  
31630 Wyoming  
Livonia, MI 48150  
313-323-8643

=====  
Note 633.1 Announcing the VT330 and the VT340 !! 1 of 3  
"Frank J. Nagy" 18 lines 11\*APR\*1987 11:20  
\* < More on VT330 and VT340 > \*  
\*\*\*\*\*

Follow\*up on Jack's information on VT3xx terminals:

- o The larger screen is 14" FLAT CRT.
- o Claimed to be 5 times faster than VT24x graphics! (About time!)
- o The Session Support Utility (SSU) software costs \$\$\$ BUT is surprising inexpensive.
- o You can have 2 sessions in action at one over a single serial line with SSU (sort of like a micro DECServer) UT you can have BOTH sessions displayed on the terminal at once!

We are looking forward to buying one each (VT330 and VT340) for evaluation. Oh, new hardware...

Frank J. Nagy  
Fermilab  
PO Box 500 MS/220  
Batavia, IL 60510  
(312)840-4935

```
=====
Note 633.2   Announcing the VT330 and the VT340 !!       2 of 3
"Jack Patteeuw"      28 lines 13*APR*1987 16:12
      * < As it becomes available ... > *
-----
```

More info:

- o VT330 has 14" FLAT Screen
- o VT340 has 13" Color monitor which can display 16 colors out of a palette of 4,096
- o DEC proprietary graphics mode (GKS ?) is 5 time faster than VT240
- o 19K of local text memory with enhanced block mode operations (whatever that means ! VMS still doesn't support block mode for our VT131's !)
- o 2 screens of local graphics
- o 3 ports can be configured as 1 communications, 1 printer and 1 mouse or 2 communications and 1 mouse to provide 2 "hardware" sessions
- o "Session" software only supports 2 sessions (Q\*ZAV\*UZ)
- o Firmware in \*\*REMOVABLE\*\* cartridge
- o 25th line status
- o extended warranties (24 and 36 months) available

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```
=====
Note 633.3   Announcing the VT330 and the VT340 !!       3 of 3
"Jack Patteeuw"      3 lines 15*APR*1987 16:08
      * < Correction ! > *
-----
```

The VT340 does \*\*NOT\*\* emulate Tek 410x !! Only Tek 4010/14 is provided. (sigh) Wake up DEC and smell the coffee ! Your competition does, why can't you !!

Jack Patteeuw  
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```
=====
Note 634.0   NETSERVERS: a question and a warning      No replies
"John P. McGrath"    26 lines 11*APR*1987 16:55
-----
```

The application I am working on does a lot of network access, and I have had a number of problems related to NETSERVER.COM. For example, see what happens if you change the protection on NETSERVER.LOG, removing OWNER:D permission. Every time a server is started, it tries to purge out the NETSERVER.LOG files. After a thousand or so of the log files build up, every new server that comes in spends a very long time trying to purge out the logs and generates a large log file full of protection violation messages. Since it is busy trying to clean up the log files, when the next connection request comes in, it must create another server, and another log file, and so on. It builds up over time until finally your system is doing nothing but trying to purge server log files.

I would like to write my own version of NETSERVER.COM and invoke it through NETSERVER\$COMMAND. The system has regularly run cleanup procedures, so we can get rid of the purging. Since all access to the account in question will be in network or batch mode, and we are writing all of the procedures, we can dispense with all the checks to see if the default directory, UIC, priority, or symbols such as "IF" have been changed.

Does anybody know if there is any problem in doing this? I do not want control ever to get back to SYS\$SYSTEM:NETSERVER.COM. What happens in the case of an error while the link is established? If my procedure does not do an exit, might it get by my procedure and back to SYS\$SYSTEM:NETSERVER.COM?

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Nazareth, PA 18064  
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=====  
Note 635.0 CALLABLE EDITORS IN MAIL No replies  
"James Littlefield" 7 lines 13\*APR\*1987 09:03  
-----

I'm not sure how many people are aware of it, but there is a way to create/edit mail messages without creating a subprocess. Simply define the following logical name:

\$ DEFINE MAIL\$EDIT CALLABLE\_XXX

where "xxx" is either "TPU" or "EDT".

James Littlefield  
170 Aquidneck Ave  
Middletown, RI 02840  
(401) 849\*8440

=====  
Note 636.0 DEC enters third-party hardware market ! No replies  
"Jack Patteeuw" 7 lines 13\*APR\*1987 16:36  
-----

DEC is now selling a Ethernet Board for IBM PC's !!

This board is packaged up with all the necessary licenses to make your PC an end-node on DECNET. The package can be purchased with (DEPCA\*KA) or without (DEPCA\*BA) a LK250 keyboard and DEC mouse. Contact the DEC Electronic Store (800\*332\*3366) for pricing. Available pending FCC approval.

Jack Patteeuw  
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Electrical and Electronics Division  
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=====  
Note 637.0 New Version of MRGATE No replies  
"Jack Patteeuw" 14 lines 13\*APR\*1987 16:51  
-----

V2.1 of the Message Router Gateway (MRGATE) will now translate WPS+ to ASCII so ALL\*IN\*1 user can send EMAIL to other ALL\*IN\*1 users as well as to VMS users and the VMS user won't get the silly "non\*ASCII data found here" message when OA\$MTI\_TRNS is set to 0 !!!

Another neat thing to do with MRGATE is to have your VMSmail automatically sent to ALL\*IN\*1 !! You can do this by setting the VMSmail forwarding address to

Al\_user::Al::MRGATE

You can even set this forwarding address for the user by using the MAILUAF.COM utility in SYS\$SYSTEM !!

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=====  
Note 638.0 TK50 Transfer Problem No replies  
"Jeffrey fox" 5 lines 16\*APR\*1987 07:51  
-----

We have a microVAX running VMS V4.4 and a LSI\*11/23 running RT\*11. Both systems have a TK50 on them. We have been unable to write to the TK50 and then read it on the other system. We have tried using FILEX on the RT\*11 system and EXCHANGE on the VMS system. Any help in this matter would be appreciated.

Jeffrey fox  
university of dayton

research institute  
300 college park ave  
dayton oh 45469  
513#254#8724

```
=====
Note 639.0      TSV05 at 100 ips.      No replies
"Jim Littlefield"  11 lines  16#APR#1987 10:44
-----
```

The TSV05 supports a 100 ips stream mode. Unfortunately, DEC doesn't (at least on the uVAX). The interesting thing is the fact that the IVP procedure provided with the driver is written to test BOTH 25 ips and 100 ips modes! Why test it if it doesn't work?!

I suspect DEC disabled streaming because their controller is too slow. I've seen the same Cipher drive with an Emulex TC03 controller run in streaming mode using BACKUP/BUFFER=5 with practically no repositions.

What gives? Does anyone know what has to be done (jumpers, etc.) to make the drive stream?

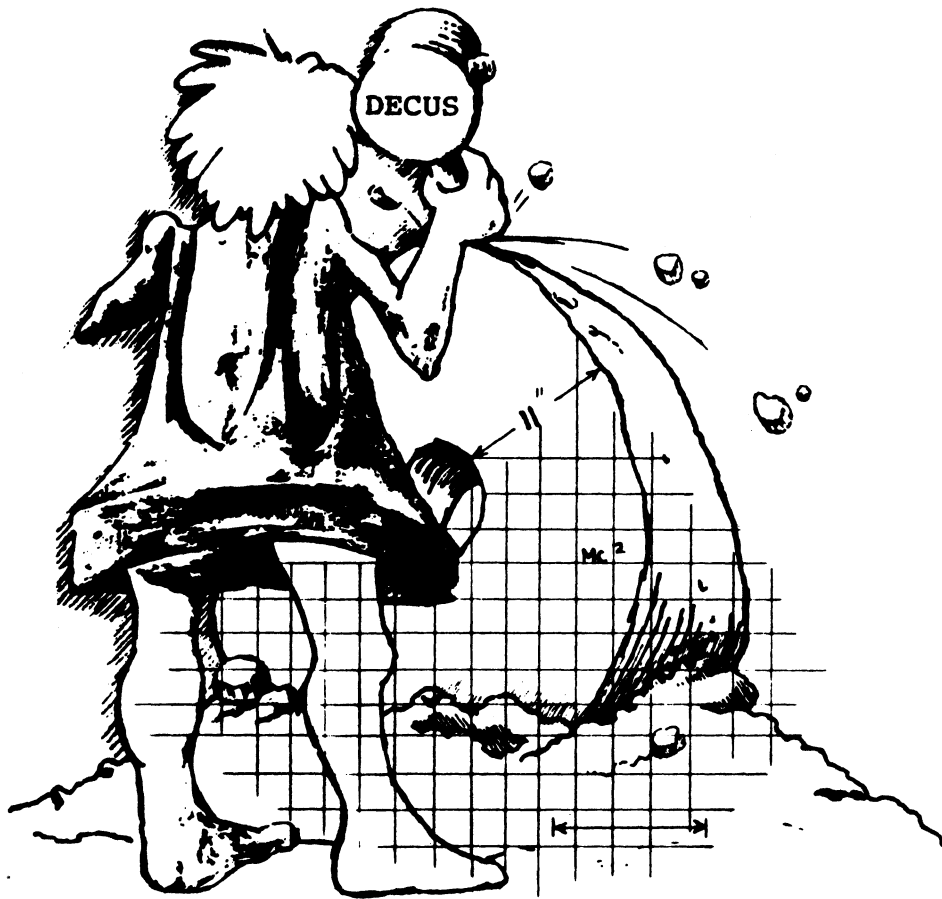
James Littlefield  
170 Aquidneck Ave  
Middletown, RI 02840  
(401) 849#8440

\*

\*



# LIBRARY





## LIBRARY ANNOUNCEMENT

The Library has the following list of products available on the TK50. Each tape (media code TC) sells for \$194.00 (U.S. only), and will be treated as a regular Library product.

VAX-LIB-1 VAX LIBRARY TAPE #1  
VAX-LIB-2 VAX LIBRARY TAPE #2  
VAX-LIB-3 VAX LIBRARY TAPE #3  
VAX-LIB-4 VAX LIBRARY TAPE #4  
VAX-LIB-5 VAX LIBRARY TAPE #5  
VAX-SPLIB-1 SPECIAL VAX LIBRARY TAPE #1  
VAX-SPLIB-2 SPECIAL VAX LIBRARY TAPE #2

V-SP-24 PORTACALC  
V-SP-43 RSX SIG COLLECTION, SPRING '85, NEW ORL.  
V-SP-46 VAX SIG COLLECTION, SPRING '85, NEW ORL.  
V-SP-48 BEST OF PC-8088 COLLECTIONS 1-8  
V-SP-49 VAX SIG COLLECTION, FALL '85, ANAHEIM  
V-SP-50 RSX SIG COLLECTION, FALL '85, ANAHEIM  
V-SP-51 PC-8088 COLLECTION #9  
V-SP-52 VAX SIG COLLECTION, SPRING '86, DALLAS  
V-SP-53 KERMIT DISTRIBUTION  
V-SP-54 PC-8088 COLLECTION #10  
V-SP-55 RSX SIG COLLECTION, SPRING '86, DALLAS  
V-SP-58 LATEX, TEX  
V-SP-60 RSX SIG COLLECTION, FALL '86, SAN FRANCISCO  
V-SP-61 VAX SIG COLLECTION, FALL '86, SAN FRANCISCO

11-SP-47 PORTACALC  
11-SP-18 C LANGUAGE SYSTEM  
11-SP-84 RSX SIG COLLECTION, SPRING '85, NEW ORL.  
11-SP-90 RSX SIG COLLECTION, FALL '85, ANAHEIM  
11-SP-92 RSX SIG COLLECTION, SPRING '86, DALLAS  
11-SP-95 RSX SIG COLLECTION, FALL, '86 SAN FRANCISCO

**BOLDED PRODUCTS ARE NEW ANNOUNCEMENTS AVAILABLE ON THE TK-50.**

**CALL 617-480-3418 TO ORDER THESE PRODUCTS, MOST CREDIT CARDS ACCEPTED**

# DECUS PROGRAM LIBRARY

## DECUS Program Library Changes:

**DECUS NO:** VAX-146, **Title:** WATCHDOG is listed in the catalog as being available. This program is now "ON HOLD".

## NEW LIBRARY PROGRAMS AVAILABLE FOR THE PDP-11 COMPUTER FAMILY

**DECUS NO:** 11-736 **Title:** DV: Virtual-Device Handler for RT-11 **Version:** January 1987

**Submitted by:** R. Tapp, University of Victoria, Victoria, B.C., Canada V8W 2Y2 **Operating System:** RT-11 V4.00 or 5.01 **Source Language:** MACRO-11 **Memory Required:** 32KB **Software Required:** Includes a companion server program for a VAX/VMS version 4.4 host with both .PAS PASCAL version 3.4 and .OBJ files, but this must be customized for other host operating systems. **Keywords:** Data Communications, Device Handlers

**Abstract:** A patch for the RT-11 file DD.MAC creates the source file for a new device handler DV that can access virtual-devices on a host computer using a standard serial terminal line. These virtual-devices can be used either for file communication with the host system or as back-up storage for RT-11 files. Included are an RT-11 terminal emulator program for establishing communication with the host system, a stand-alone bootstrap loader program for DV, and a set of server programs for a VAX/VMS host that support virtual-devices compatible with the VMS EXCHANGE utility and emulate TU58, RK05, RL01, RX01 and RX02 devices.

**Notes:** Supplied patches require RT-11 version 4.00 or 5.01 source files. Other versions may not be compatible.

**Changes and Improvements:** Runs under RT-11 version 5.01 as well as version 4.00. Problem with RT-11 extended-memory code has been fixed.

**Media (Service Charge Code):** User's Manual (EA), One RX01 Diskette (KA) **Format:** RT-11, 600' Magnetic Tape (MA) **Format:** RT-11

**DECUS NO:** 11-866 **Title:** IMPNON **Version:** V1.0, January 1987

**Submitted by:** Michal Benda, S-41345 Goteberg, Sweden **Operating System:** RT-11 **Source Language:** FORTRAN 77 **Software Required:** FMMOTS **Keywords:** Tools - Applications Development

**Abstract:** If your FORTRAN Compiler does not have the IMPLICIT NONE extension, one way of checking that you have declared all variables is to imply a name rule for

variables you have not declared explicitly. For example, all undeclared variables are assigned a data type that you are not using implicitly, e.g. COMPLEX\*8, (IMPLICIT COMPLEX\*8 (A-Z)). Then, all undeclared variables will be of data type complex \*8. Open the listfile and search for complex\*8 variables. If you have not declared all variables, the listfile will contain complex\*8 declarations. Program IMPNON does this. Usage is RUN IMPNON "name of listfile".

Documentation not available.

**Media (Service Charge Code):** One RX01 Diskette (KA) **Format:** RT-11, 600' Magnetic Tape (MA) **Format:** RT-11

**DECUS NO:** 11-867 **Title:** "FONT" **Version:** V1.0, March 1987

**Submitted by:** Harold Z. Bencowitz, Beaumont, TX **Operating System:** RT-11 V5.03, TSX-PLUS V6.16 **Source Language:** C **Hardware Required:** VT200 Series Terminal **Keywords:** TSX, VT200 Routines

**Abstract:** "FONT" is a program written in Whitesmith's C to allow one to easily create or alter downloadable fonts/character sets for VT200 series terminals. It will only run on a VT2xx. It has only been tested on RT-11 V5.03 and TSX-PLUS V6.16 using a VT220. It can be used to edit a previous character set (stored as a disk file in a format which can be "typed" to download the font). The VT200 built-in Digital Equipment Corporation character sets (ascii, special graphics and multinational) are included as disk files to allow one to alter any or all of these characters to create new characters or character sets. One character at a time is edited while each pixel change is observed both at the normal size and double high/double wide. A calendar program "Calend" is included although it is in no way related to "FONT".

**Media (Service Charge Code):** One RX01 Diskette (KA) **Format:** RT-11, 600' Magnetic Tape (MA) **Format:** RT-11

## NEW LIBRARY PROGRAMS AVAILABLE FOR THE VAX/VMS FAMILY OF COMPUTERS

**DECUS NO:** VAX-234 **Title:** FED: A FORTRAN Editor **Version:** January 1987

**Submitted by:** Ronald L. Williams, Southwest Research Institute, San Antonio, TX **Operating System:** MicroVMS V4.4, VAX/VMS **Source Language:** TPU **Software Required:** FORTRAN **Hardware Required:** VT100 or VT200 Series Terminal **Keywords:** Editors

**Abstract:** FED is an editor written specifically to create and edit FORTRAN source code. It features user-de-

finable text segments, auto-continuation at column 72, a comment mode and several other features which make entering FORTRAN code easier. Additionally, FED allows the user to compile source code without leaving FED. The screen is split with the user's source code at the top and error messages at the bottom. FED was written using TPU and bears some relation to EVE, however, it is a complete re-write of EVE and therefore does not depend on EVE directly. FED is essentially a poor-man's LSE.

**Assoc. Documentation:** VAX TPU Reference Guide, User's Guide to EVE.

**Restrictions:** No foreign terminal support.

**Media (Service Charge Code):** User's Manual (EA), 600' Magnetic Tape (MA) **Format:** VAX/ANSI

**DECUS NO:** VAX-237 **Title:** Portable Optical Disk Subroutine Package **Version:** V1.0, February 1987

**Submitted by:** J. Dennis Scarbrough, Perceptics Corp., Knoxville, TN **Operating System:** VAX/VMS V4.5 **Source Language:** C **Memory Required:** Varies with application **Software Required:** C Compiler **Hardware Required:** Optical Disk and Controller, Optical Platters in WORMS-11 format. **Keywords:** Utilities - Disk - VMS

**Abstract:** Portable LaserWare is a group of C Language subroutines designed to allow read-only access to optical disks written in the WORMS-11 format. Examples of such systems are optical disk subsystems from Emulex, TECEX, Perceptics and C. Itoh. Two example programs (od\_dir and od\_type) using the routines are included. Although these routines were developed and tested under VMS, they were designed to make porting to other operating systems relatively simple. The essential requirements for porting being modification of two basic routines (od\_mnt and od\_read) and the availability of operations analogous to the VMS mount/foreign and QIO functions on the target system. Notes: Should be easy to port to other operating systems.

**Restrictions:** VAX/VMS version 4.0 or later is required.

**Media (Service Charge Code):** 600' Magnetic Tape (MA) **Format:** VMS/BACKUP

**DECUS NO:** VAX-239 **Title:** SGDS: Stuttgart Gate Array Development System **Version:** December 1986

**Author:** Various, Univ. Stuttgart

**Submitted by:** Waler H. Burkhardt, Univ. Stuttgart, Instit. fur Informatik, D-7000 Stuttgart-1, West Germany **Operating System:** VAX/VMS V4.4 **Source Language:** PASCAL **Hardware Required:** Digital Equipment Corporation GIGI Terminal **Keywords:** Circuit Simulation

**Abstract:** SGDS is a working software system for the development of gate array circuits. It has been used directly for several successful designs using over 3K transistors with the AMI UA4 gate array chips.

There are two subsystems in PASCAL. One is for the graphic definition of the circuit on a Digital Equipment Corporation GIGI Terminal, the other for generating the CIF data base for the masks used in production.

**Media (Service Charge Code):** 600' Magnetic Tape (MA) **Format:** VMS/BACKUP

**DECUS NO:** VAX-240 **Title:** SRC: A Functional Programming System **Version:** October 1986

**Author:** T. Winkler, University Stuttgart

**Submitted by:** Walter H. Burkhardt, Univ. Stuttgart, Instit. fur Informatik, D-7000 Stuttgart-1, West Germany **Operating System:** VAX/VMS V3.7 or greater **Source Language:** PASCAL **Memory Required:** 1MB **Hardware Required:** VT100 Terminal or compatible **Keywords:** Programming Languages

**Abstract:** SRC (Stuttgart Recursive Calculus) implements the KRC language for the family of VAX computers. Main virtues are the capability of editing library files and an extensive error recovery mechanism.

Operation of this system is menne-directed and PASCAL is the implementation language for ease of modification, adaptation or extension. The write-up contains explained examples (in German).

**Notes:** The write-up and manual is in German on the magnetic media.

**Media (Service Charge Code):** 600' Magnetic Tape (MA) **Format:** VMS/BACKUP

**DECUS NO:** VAX-241 **Title:** "MAKE" **Version:** V1, February 1987

**Submitted by:** Dat H. Do, Oakley Sutton Management Corp., Newport Beach, CA **Operating System:** VAX/VMS **Source Language:** DCL **Keywords:** DCL, Utilities - VMS

**Abstract:** "MAKE" is a program that rebuilds the code for modified source files automatically with little effort from the programmers.

"MAKE" saves time in the compile, link and run steps of the program development cycle. Furthermore, "MAKE" automatically replaces any modified CDD records, (TDMS) form records, requests, libraries, define logicals, set default, run programs. It can execute any DCL command.

Another especially helpful feature applies to old programs written by someone else years ago. We don't have to know what modules and how they depend on each other. "MAKE" always remembers. Therefore, programmers can pass their codes to others easily.

We must create a file to tell "MAKE" about "What", "When" and "How" to rebuild our modules. We only

have to tell "MAKE" what to do once and it'll never forget!

Whenever we modify any source files, enter the word "MAKE". That's all we have to type to rebuild object modules and new program. "MAKE" will read all rules and decide what it must do and does it. Since it only acts on modified modules, it saves lots of computer time.

Release Notes are distributed with each order.

**Media (Service Charge Code):** 600' Magnetic Tape (MS)  
**Format:** VMS/BACKUP

**DECUS NO:** VAX-242 **Title:** Message Sending/Process Monitoring Utility **Version:** V3.3, January 1987

**Submitted by:** Messrs. B. LeBlanc & G. Addleton, Flinders Medical Centre, Bedford Park, South Australia 5042  
**Operating System:** VAX/VMS V4.4 & 4.5 **Source Language:** PASCAL **Memory Required:** Variable **Hardware Required:** VT200 series compatible terminal **Keywords:** System Management - VMS, Utilities - VMS

**Abstract:** The SEND utility is a sophisticated message sending/process monitoring program. It was written specifically as an operational/system management tool, although it has other uses.

For each process the user has privilege to monitor, the process monitoring feature continuously updates a screen display with details of Terminal Name, UIC, Username, Process Name, Image Name and Process State. The details to be displayed are selected via function keys whose values are 'memorized' when the image terminates, so that the next time the utility is invoked during the same login session, the display is initialized to show the items which were displayed when the image last exited. The sampling/refresh interval can be changed interactively.

The message sending feature allows one or more single line messages to be broadcast to one or more processes. The target group of processes can be selected by Terminal Name, Username, Process Name, UIC or Image Name. Standard VMS wildcard strings may be used to select the target group.

There are also functions which allow the user to stop a process being monitored and to initiate image rundown for a process (e.g. kill a program in an infinite loop without killing the process).

There is a CLI interface which allows single message lines to be broadcast to one or more users by entering a single command line from DCL.

Comprehensive online help is available (interfaced to DCL help library).

**Notes:** Version VMS V.4.4 or later is required because of link to sharable library entry which was new with V4.4. Some small subroutines are in the object library

EMCPASLIB. Sources for these subroutines can be provided if requested.

Complete sources not included.

**Media (Service Charge Code):** 600' Magnetic Tape (MA)  
**Format:** VMS/BACKUP

**DECUS NO:** VAX-243 **Title:** VAX - RMD **Version:** V1.0

**Submitted by:** Wayne Bruzek, N.J. Turnpike Authority, New Brunswick, NJ **Operating System:** VAX/VMS V4.5  
**Source Language:** VAX FORTRAN **Keywords:** Utilities - VMS

**Abstract:** VAX - RMD is a pacifier for the ex-RSX user who misses the

"real-thing". Though it doesn't look quite the same and doesn't have the various screens of the old RMD, it does provide quite a bit of useful information, such as:

- . Current Node Name.
- . Current time.
- . Percent of the Page File that is available.
- . Percent of the Swap File that is available.
- . Amount of free space on each disk drive specified.
- . PID, Username and Imagename of each active image.

The fields are updated continuously and the display can be somewhat tailored by way of a user created parameter file.

**Media (Service Charge Code):** 600' Magnetic Tape (MA)  
**Format:** VAX/ANSI

**DECUS NO:** VAX-244 **Title:** Golf Handicap/Information System **Version:** V1.1, March 1987

**Submitted by:** Fred Bassett, J. G. Boswell Company, Corcoran, CA **Operating System:** VAX/VMS V4.2 - V4.5  
**Source Language:** DCL, RDB/VMS, RDO, VAX COBOL **Software Required:** RDB/VMS, DATATRIEVE, TDMS, Common Data Dictionary **Keywords:** Games

**Abstract:** This is a golf handicap/information system. It contains it's own built-in menu and security system. It can be used by persons, clubs and organizations to collect information on golf courses either local and remote as to fees and services provided. A complete golfing history is maintained for all players defined to the system. The players golf score cards are entered into the system which will adjust them according to current USGA rules and calculate an on-going handicap for each player. Various reports and queries are provided.

**Notes:** Operating System VMS V4.2 or higher is required.

**Media (Service Charge Code):** 600' Magnetic Tape (MA)  
**Format:** VMS/BACKUP

**DECUS NO:** VAX-246 **Title:** Menu Utility **Version:** January 1987

**Submitted by:** Messrs. G. Addleton & B. LeBlanc, Level 2, Comp. Ctr., Flinders Med. Ctr., Bedford Park, South Australia 5042 **Operating System:** VAX/VMS V4.4, 4.5  
**Source Language:** PASCAL **Memory Required:** Variable **Software Required:** SMG\$ calls (in VMS) from VMS version 4.4 or later. **Keywords:** Menu Control

**Abstract:** The Menu Utility allows rapid & flexible construction of menus for a variety of uses. It has been designed to be fast in execution and flexible and friendly for users and developers.

Features are:

- . Flexible choice selection.
- . Comprehensive customizable help at two levels.
- . Simple menus.
- . Powerful choice usage.
- . Operations control.
- . Neat menus - traps any broadcast messages and displays them on line 24 of the terminal.
- . Menu will return by default to last menu from which a selection was made.
- . Optional logical controlling single screen help heading.
- . Optional logical determining behavior when an error is hit with sub-processes.
- . Optional symbol determining starting menu for initial presentation to user.
- . Terminal independent screen work using SMG screen routines.
- . Very fast execution.
- . Flexibility in choice presentation.

**Notes:** Operating System VMS V4.4 or later is required. New SMG\$ calls which come with VMS 4.4 are used. Source for the program is provided, but some subroutines called are provided only in the object library. Sources to these may be provided upon request.

Complete sources not included.

**Media (Service Charge Code):** 600' Magnetic Tape (MA)  
**Format:** VMS/BACKUP

#### NEW LIBRARY PROGRAMS AVAILABLE FOR THE RAINBOW SERIES OF COMPUTERS

**DECUS NO:** RB-125 **Title:** ATTRIB **Version:** V1.0, March 1987

**Submitted by:** Digital Equipment Corporation **Operating System:** MS/DOS V2.11 **Source Language:** PASCAL (Turbo) **Memory Required:** 34KB **Keywords:** File Management

**Abstract:** ATTRIB displays, sets and resets MS/DOS file attributes of individual files or groups of files. Using ATTRIB, you can display the names of hidden and system

files, protect files against alteration and deletion, make files invisible to ordinary directory searches and force files to be backed up or not backed up by incremental backup utilities.

Release Notes are distributed with each order.

**Notes:** Operating system MS/DOS V2 or greater required.

**Media (Service Charge Code):** User's Manual (EA), One RX50 Diskette (JA) **Format:** MS/DOS

#### NEW LIBRARY PROGRAMS AVAILABLE FOR CP/M

**DECUS NO:** CPM-271 **Title:** BASTUTOR **Version:** May, 1985

**Submitted by:** Scott Miller, Sterling, CT **Operating System:** CP/M **Source Language:** MBASIC **Keywords:** Tools - Applications Development

**Abstract:** This program helps users learn to use MBASIC on the Rainbow computer. It describes all MBASIC statements and functions, and gives examples of their use on the menu system, based on the Rainbow reference manual.

**Notes:** Operating system CP/M needed for BASIC command.

Documentation not available.

**Media (Service Charge Code):** One RX50 Diskette (JA)

#### REVISIONS TO LIBRARY PROGRAMS

**DECUS NO:** VAX-140 **Title:** TODIR: A Program to Allow the User to Move from One Directory to Another **Version:** September 1986

**Submitted by:** Dat Hoang Do, Oakley Sutton Management Corp., Newport Beach, CA **Operating System:** VAX/VMS V4.4, 4.5 **Source Language:** PASCAL **Keywords:** Utilities - VMS

**Abstract:** This program allows one to move quickly from one directory to another. It does everything that the DCL command SET DEFAULT does and more. When given a username, TODIR reads the SYSUAF file and puts you into that user's home directory as specified in the UAF. It works with system and user-defined directory logicals. Also, it won't let go to a directory that does not exist. Furthermore, it always SAVES THE LAST DIRECTORY SPECIFICATION to help you quickly access files there or go back there. It's simple and flexible syntax makes it very convenient to use.

**Examples:**

Tasks to be done

TODIR commands

To set default to a UAF user's directory\$ To David

With logicals,

\$ Set Default Acctg: DiskBlocks.Data \$ To DDData (provided the logical DDData is defined by \$ DEFINE DDATA ACCTG: [DISK-BLOCKS.DATA])

And with subdirectory specifications, \$ To SubDir1.Sub2 \$ Set Default .SubDir1.Sub2

To set default to the parent directory\$ To Sysmgr of a dir such as directory [Sysmgr].

There are many other nice features.

Release Notes distributed with each order.

Changes and Improvements: Faster and fixed one bug.

**Media (Service Charge Code):** User's Manual (EA), 600' Magnetic Tape (MA) **Format:** VMS/BACKUP, or order VAX-LIB-4

**DECUS NO:** VAX-166 **Title:** DIG: Data Inputter Generator **Version:** V2.0, March 1987

**Submitted by:** Tom Cyczko, Agriculture Canada, Winnipeg, Manitoba, Canada R3T2M9 **Operating System:** VAX/VMS V4.3 **Source Language:** FORTRAN 77 **Software Required:** VAX/VMS System Services **Keywords:** FORTRAN, Tools - Applications Development

**Abstract:** DIG (Data Inputter Generator) is a suite of FORTRAN programs designed to create a FORTRAN program which formats a VT100+ compatible terminal. It does this by allowing the user to define screens composed of one to twenty-three windows. The windows are arranged in a tree and are made up of text and nodes. The nodes are cells into which data can be entered or switches to allow execution of routines. The data can be checked as to whether it exists (/does not exist) in an array and (/or) if the data falls within (/outside) a certain range. The data is then transferred to a specified address within an array. The array address is dependent on the "record" of the screen. A future version will allow storage of data as fixed-length, direct-access records. An easy-to-use help-screen generating facility is available.

All programs which compose DIG and which DIG generates are as close to ANSI FORTRAN-77 as possible. All machine-dependent variations are well documented. A future version will contain switches to allow code generation for different type machines.

DIG in its present form could be used as an alternative to simple FMS or TDMS form-generation. It is also useful for program proto-typing. DIG is a FORTRAN meta-language, so FORTRAN programmers may find its use preferable to a 4GL in speed of execution and flexibility (though not in user friendliness in the development stage).

**Changes and Improvements:** Major re-write and enhancements, electronic manual, file storage as well as array storage.

**Media (Service Charge Code):** 600' Magnetic Tape (MA) **Format:** VMS/BACKUP, or order VAX-LIB-5

**DECUS NO:** VAX-208 **Title:** IMAGE **Version:** V04-05A, February 1987

**Submitted by:** C. J. Chapman, Philips Defence Systems, Crawley, Sussex, England RH10 2PZ **Operating System:** MicroVMS, VAX/VMS **Source Language:** DCL, FORTRAN 77, MACRO-32 **Memory Required:** Virtual 14336 bytes **Hardware Required:** VT220, VT241, VT100, LA120 **Keywords:** System Management - VMS, Utilities - VMS

**Abstract:** The IMAGE utility is a system management tool that enables the Systems Manager to obtain information on user processes or system wide processes. IMAGE is very useful for taking a snapshot look at your system to establish what images are executing. IMAGE runs on both hardcopy (LA120) and video terminals (VT220, VT241) and returns the following data:

- . User\_\_name, process\_\_id, uic, process state and type.
- . Base priority, current priority, CPU minutes/seconds.
- . Disc i/o, page faults, user image executing.
- . Balance set, node, date, time.

Additional functions include:

- . System image monitoring.
- . User image monitoring using batch and detached processes with data replay capability.

Release Notes are included with this utility together with the necessary files to relink. Future releases will follow.

**Notes:** Operating system VMS V4.0 or later required.

**Changes and Improvements:** Included in documentation. Sources not included.

**Media (Service Charge Code):** 600' Magnetic Tape (MA) **Format:** VMS/BACKUP, or order VAX-LIB-6

**DECUS NO:** PRO-133 **Title:** Astronomical Ephemerides **Version:** V3.3, January 1987

**Submitted by:** Jean Francois Paillard, Societe Astronomique de France, Levis-Saint-Nom, France F78320 **Operating System:** P/OS V2 **Source Language:** FORTRAN 77, MACRO-11 **Memory Required:** 1200 disk blocks **Hardware Required:** Optional LA50 printer **Keywords:** Scientific Applications

**Abstract:** This program uses new original theories constructed at Bureau des Longitudes, Paris. It is fitted to the new 1984 fundamental system, with standard epoch J2000.0, reference catalog FK5 and time scale Terrestrial Dynamical Time.

The ephemerides of the Sun and planets are calculated from analytical theory VSOP82 (Variations Seculaires des Orbites Planetaires) by P. Bretagnon and the motion of the Moon is computed from theory ELP-2000, J & M Chapront. Error on coordinates due to truncatures are less than plus/minus 0"5 for planets and plus/minus 0"1 for the Sun.

The new version, using assembler for planetary sub-programs, with an efficient subroutine for simultaneous computation of sinus/cosinus, is much faster (45s instead of 1m45s for main computation) and more compact. It is enhanced with accurate coordinates and graphs of the Galilean Satellites of Jupiter (Sampson' theory, improved by Lieske, constants by J.-E. Arlot), plus approximates coordinates and graphs for 8 Satellites of Saturn. It is easy to run this version from PRO/Tool Kit, using XASTRO.CMD.

A wide choice of planetary coordinates, rectangular and spherical is available together with upper transit, rising and setting times, plus data for physical observation. Listing of bright selected stars and screen maps of the sky, centered on chosen azimuths, are completed by graphic charts on an LA50 printer.

Some sources and documentation, including a useful library ASTRO.OLB, are included on the diskettes.

**Notes:** Some sources are included; the remainder are available from the author.

**Changes and Improvements:** Much faster, more compact, more data and graphs.

Complete sources not included.

**Media (Service Charge Code):** Two RX50 Diskettes (JB) **Format:** FILES-11

**DECUS NO:** RB-118 **Title:** SETAUX.ARC **Version:** V2.0, October 1986

**Submitted by:** David N. Mitchell, Information Systems and Networks, Inc., Durham, NC **Operating System:** MS/DOS V2.11 **Source Language:** MACRO ASSEMBLER **Memory Required:** 4KB **Hardware Required:** Communications Port **Keywords:** Data Communications

**Abstract:** This program was written to facilitate the needs of an environment where there is more than one setting (i.e. transmit and receive baud rates, parity, stop bits and data bits) of the communications (auxilliary) port required. This will generally mean that there is more than one device connected to the port through whatever means desired, either manually or software selectable.

Version 2.0 now supports two new functions. Entering "SETAUX R" will reset the port to NVM settings and clear any garbage which may be interfering with communications. Entering "SETAUX D" will display the current settings of the port on CRT.

This program supports what I believe to be the most common settings of each of the above mentioned parameters. It will generally be used in batch files and where pressing the SET-UP key or running SET-PORT is not possible. The documentation is built into the program and may be accessed by entering the program name with no parameters. The program features error checking which will determine if enough parameters have been supplied and if the parameters supplied constitute a legal setting.

**Notes:** IOCTL function used - provided in V2.05 and higher versions.

**Changes and Improvements:** Provisions for port reset and current setting display.

**Media (Service Charge Code):** One RX50 Diskette (JA) **Format:** MS/DOS

**DECUS NO:** 11-828 **Title:** CGL to ReGIS **Version:** V1.1, March 1987

**Submitted by:** Kazuo Okumura, Murata Machinery, Ltd., Aichi, Japan 484 **Operating System:** RSX-11M V4.1E, VAX/VMS V3.6 **Source Language:** FORTRAN 77 **Hardware Required:** VT240 Terminal is required. **Keywords:** Conversions, ReGIS, Utilities - RSX-11

**Abstract:** This Converter generates ReGIS calls.

In the FORTRAN program, you can use CGL subroutines by calling CGL. The subroutine CGL then converts CGL data to ReGIS codes. (CGL is Core Graphic Library.)

You can use the window, viewport, text and other functions of CGL easily on the terminal which executes only ReGIS codes. You don't have to think about ReGIS codes.

In task building you must add -CGLLIB, @CGLROT or @CGLOVR in the xxx.ODL file. CGLLIB is a root name of convert subroutines. CGLROT and CGLOVR are ODL file names.

Documentation and sample program are on magnetic media.

**Notes:** This library was compiled on VAX 11/730, VMS V3.6, PDP-11 compatible mode, FORTRAN 77, V5.0.

**Changes and Improvements:** Drawing speed is about 10% faster than V1.0.

**Restrictions:** ARC drawing is not complete.

**Media (Service Charge Code):** Two RX50 Diskettes (JB) **Format:** FILES-11

**DECUS NO:** 11-856 **Title:** DUCM/DYC **Version:** V2b, December 1986

**Submitted by:** Chester Wilson, Charleville, Australia 4470 **Operating System:** RT-11 V5.2, TSX-PLUS V6.01

**Source Language:** MACRO-11 **Hardware Required:** MSCP controller for disk; for DY handler, RX03 controller (either SIGMA or DILOG). **Keywords:** Device Handlers

**Abstract:** This is a distribution of large disk handlers for DU (MSCP) disks. Full source and documentation is included. These have been tested and work fine on Fujitsu Eagles running TSX-PLUS Version 6.01.

A mapped RX03 floppy disk handler is included as well, if you want it. It requires a SIGMA or DILOG RX03 controller. If run as a program, it allows you to format disks, requiring no privileges under TSX-PLUS.

There are four files on this disk: the abstract (ABSTRA.CT), the file (READ.ME) and two logical disk files DUCM.DSK and DYC.DSK. These contain the distributions for the large MSCP handlers and for the mapped DY handler respectively.

Please read DUCM.DOC to find out what to do. It consists of three manuals, a basic one and the full ones for DUCM and WA. You do not have to read the full ones to be able to use these handlers.

DUCM.DIS and DYC.DIS give a sort of overview of the contents of each of the logical disks (on DUCM.DSK and DYC.DSK respectively). They are the command files used to create this distribution.

This version has fixed an occasional data corruption problem which occurred rarely on heavily loaded and heavily swapping systems. (This problem occurred with the version of DUCM in the 1986 Australian SIG Tape.) Enhancements have been made to previous versions, especially in terms of setting up a handler for a particular system from another system.

**PROBLEM:** TSX can do all sorts of odd things (like crash jobs with "Kernel Mode Trap in TSX", or lose a queue element) if you use the SET CACHE command while there are active jobs. This appears to be a TSX bug. Reserve this instruction for times when the system is quiet!

**Changes and Improvements:** Bug fix, considerable enhancements for setting up.

**Restrictions:** Extensions for large MSCP disks require TSX-PLUS & a Q-bus system.

**Media (Service Charge Code):** One RX02 Diskette (LA)  
**Format:** RT-11, 600' Magnetic Tape (MC) **Format:** RT-11

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You can submit material to either the editor, Bill Walker, or the assistant editor, Carmen Wiseman. We can accept submissions in a wide variety of formats:

- o Items can be sent to the assistant editor on VMS format RX50s or IBM PC format 5 1/4" floppies.
- o The editor can handle just about any reasonable media, but prefers RT-11 format diskettes.
- o Hard copy, like cash, is always acceptable. If it is camera-ready it will save us a lot of typing, but we don't insist on it. You can also use the "Hardware Submission Form," which you will find in the "Questionnaire" section of the combined newsletters.
- o Those of you that have access to DCS can send things to WALKER or WISEMAN. DCS is usually checked on a daily basis.
- o You can reach the editor on CompuServe as "Bill Walker 71066,24" or via EasyLink mailbox 62752448. You can reach the assistant editor via EasyLink mailbox 62960090 (be sure to say ATTN: or TO: Carmen Wiseman somewhere in the message).

In any event, if you have anything to submit, send it! If it is a mess, but we can read it, we will get it in the newsletter somehow. Finally, if you have any question about submitting material, call one of us. The telephone numbers are listed below.

Contributions can be sent to:

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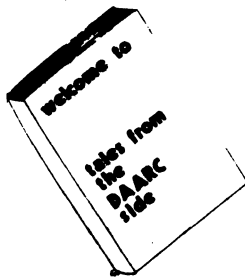
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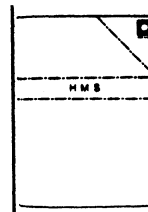
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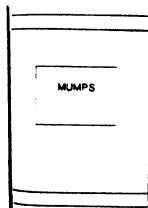
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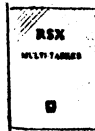
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(ihnp4 decvax!akgud!dedwest!ucbvax)  
!sdesvax!mplvax!cdl

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allegra!fluke!joe

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ihnp4!nsc!voder!jeff

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(decvax ihnp4)!research!norman

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505 King Avenue  
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5651 Case Avenue  
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3140 South Federal Street  
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Strait Turnpike  
Middlebury, CT 06762-1299

**MICROVAX WORKING GROUP**

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San Jose, CA 95148  
(408) 238-0861

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KMS Fusion Incorporated  
3941 Research Park Drive  
Ann Arbor, MI 48106

**REAL TIME/PROCESS CONTROL WORKING GP**

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McDonnell Douglas  
5301 Dolsa Avenue  
Huntington Beach, CA 92646

**INTERNALS WORKING GROUP**

Carl E. Friedberg  
In House Systems  
165 William Street  
New York, NY 10038

Ask the WOMBAT WIZARD  
Submission Form

To submit a problem to the WIZARD, please fill out the form below and send it to:

WW Editor, Philip A. Naecker  
Consulting Software Engineer  
3011 North Mount Curve Avenue  
Altadena, CA 91001  
USA

Name: \_\_\_\_\_ DECUS Membership No. \_\_\_\_\_

Affiliation: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Statement of Problem: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Please following the following guidelines when submitting support material:

1. If you are trying to demonstrate a method or a concept, please simplify the procedures, records, and other information to the shortest form possible.
2. Annotate your attachments. Simple comments or hand-written notes ("Everything worked until I added this statement.") go a long way toward identifying the problem.
3. Keep an exact copy of what you send. And number the pages on both copies. But send everything that is related to your question, even remotely.
4. If you would like a direct response or would like your materials returned, please don't forget to include a stamped, self-addressed envelope large enough to hold the materials you send.

DATATRIEVE/4GL SIG  
Product Improvement Request Submission Form

Submittor:  
Address:

DECUS Membership Number:  
Firm:

Phone:

Product or Products:

---

How to write a PIR

A PIR should be directed at a specific product or group of products. Be sure to give the full name of the product(s) and version numbers if applicable. Describe the functionality you would like to see in as complete terms as possible. Don't assume that the PIR editors or software developers know how it is done in some other software product - state specifically how you want the software to function. Provide justification of your request and give an example of its use. If you can, suggest a possible implementation of your request.

---

Abstract: (Please limit to one or two short sentences.)

---

Description and Examples: (Use additional pages as necessary.)

[Put my name and address on reverse side, thus:]

PIR Editor, Philip A. Naecker  
Consulting Software Engineer  
3011 North Mount Curve Avenue  
Altadena, CA 91001  
USA



H M S S I G

HARDWARE SUBMISSION FORM -- A SIG INFORMATION INTERCHANGE

Message \_\_\_\_\_  
\_\_\_\_\_  
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Contact Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone \_\_\_\_\_

Type of equipment \_\_\_\_\_

SUBMIT ANY TYPE OF HARDWARE PROBLEMS AND/OR FIXES.

SEND TO:

William K. Walker  
Monsanto Research Corp.  
P.O. Box 32 A-152  
Miamisburg, OH 45342

OR  
==

Carmen D. Wiseman  
Digital Review  
Prudential Tower, Suite 1390  
800 Boylston Street  
Boston, MA 02199

IAS WHIMS

**WHAT:** (Describe your WHIM) (Please print or type)

**WHY:** (Describe the reason for the WHIM)

**HOW:** (Make any suggestions for a possible implementation)

**Name:** \_\_\_\_\_

**Company:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone:** \_\_\_\_\_

Please mail to:

Kathleen M. Anderson  
EATON Information Management  
Systems Division  
2017 Cunningham Drive  
Suite 208  
Hampton, Virginia 23666

Phone: (804) 326-1941

IAS SIG MEMBERSHIP SURVEY

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

Current Hardware: (Include number and type of processors, mass storage devices, communication devices, etc.)

IAS Release: (Indicate release of IAS under which these systems are running)

Software: (Indicate software running on these systems, i.e., DECNET, Decus C, etc.)

Application: (Indicate the type of application running on the system.)

Contacts: Would you be willing to be placed on a list of contacts? If so, what areas?

Features: Do you have any features which you would like IAS to include?

Any further comments?



IAS SIG MEMBERSHIP SURVEY

fold

---

Frank R. Borger  
Michael Reese Medical Center  
Dept of Radiation Therapy  
Lake Shore Drive at 31st Street  
Chicago Il 60616

---

Languages & Tools SIG  
MASTERS APPLICATION

Name: \_\_\_\_\_ Title \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Phone: (     ) \_\_\_\_\_

Network Address: \_\_\_\_\_

The Languages & Tools SIG has established the designation "LANGUAGES AND TOOLS MASTER", to be applied to selected, qualified people willing to share their expertise in various subjects with others. Masters are people who are knowledgeable enough in one or more languages and tools to be comfortable answering questions about them. The qualifications of an L&T Master are: expertise in a specific area, a willingness to have his/her name published as a Master, and a willingness to volunteer services in different ways. Each product may have several Masters, and there is an overall Masters Coordinator who sits on the L&T Steering Committee.

Masters are asked to serve other users (and, under some circumstances, DEC), as a resource on products within their competence. In addition to being listed in the L&T Masters Directory (published in the newsletter) as available for occasional telephone consultation, Masters may act as 'Doctors' at Symposium Clinics, present Symposium sessions on the products of interest to them, field test products, interact with DEC product managers when appropriate, or act as a reference for a product for Digital salespeople. Especially on mature products, the SIG is anxious for knowledgeable users to offer product tutorial sessions at Symposia, and Masters can be of great help here. At Symposia, Masters will wear an identifying button bearing the legend "Ask Me About....." and the name of the language or tool in which he/she specializes.

If you'd like to serve as an L&T Master, please check the products on which you are able to answer questions:

- |                                  |                                           |                               |                              |                               |                                |                                       |
|----------------------------------|-------------------------------------------|-------------------------------|------------------------------|-------------------------------|--------------------------------|---------------------------------------|
| <input type="checkbox"/> Fortran | <input type="checkbox"/> Ada <sup>1</sup> | <input type="checkbox"/> Scan | <input type="checkbox"/> C   | <input type="checkbox"/> APL  | <input type="checkbox"/> Bliss | <input type="checkbox"/> VAX Notes    |
| <input type="checkbox"/> Pascal  | <input type="checkbox"/> LSE              | <input type="checkbox"/> DTM  | <input type="checkbox"/> PCA | <input type="checkbox"/> MMS  | <input type="checkbox"/> CMS   | <input type="checkbox"/> Runoff & DSR |
| <input type="checkbox"/> Debug   | <input type="checkbox"/> TPU              | <input type="checkbox"/> EVE  | <input type="checkbox"/> EDT | <input type="checkbox"/> TECO | <input type="checkbox"/> PL/1  |                                       |

Briefly describe your experience with those you checked. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

How long have you held your present position? \_\_\_\_\_

Are you able to attend at least one symposium each year? \_\_\_\_\_

Users are encouraged to seek assistance with products by calling appropriate Masters listed in the Directory. As a Master, your name and telephone number will be published in the Masters Directory, and users will call on you for limited help from time to time. Please check, below, any additional activities you might do:

- Field-test new versions of your product at your work site.
- Provide feedback on the product when needed by its DEC product manager.
- Act as a reference for the product at the request of Digital Sales or Marketing people.

Mail to: Dena Shelton, L&T SIG Masters Coordinator, Cullinet Software, Inc., 2860 Zanker Road, Suite 206, San Jose, CA 95134.

<sup>1</sup>Ada is a trademark of the DoD



# DATAGRAM

DATAGRAMs are short messages, comments, requests, or answers that are published in NETwords. Please fill in the sections below and send the DATAGRAM to:

**Vickie Hess**  
**NETWords Editor**  
**2510 Limestone Ln.**  
**Garland, Tx. 75040**

**Title:** \_\_\_\_\_

**Message:** \_\_\_\_\_

\_\_\_\_\_  
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\_\_\_\_\_

**Your Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**If this is a reply to a previous DATAGRAM, what #? \_\_\_\_\_**

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Place  
Stamp  
Here**

**Vickie Hess  
NETWords Editor  
2510 Limestone Ln.  
Garland, Tx. 75040**

---

**Fold Here**

# OFFICE AUTOMATION SIG SYSTEM IMPROVEMENT REQUEST SUBMISSION FORM

Name \_\_\_\_\_ Address \_\_\_\_\_

Firm \_\_\_\_\_

Telephone \_\_\_\_\_

**INSTRUCTIONS:** System Improvement Requests (SIR) can be either hardware or software; please check the category addressed by this SIR. Under ABSTRACT, give a brief definition of the capability you would like. In the DESCRIPTION section, give a detailed description and examples of what you want. Be specific; don't assume that we know how other products function. Justify the usefulness of the capability and give an example of its use.

**HARDWARE IMPROVEMENT**

**SOFTWARE IMPROVEMENT**

DECmate \_\_\_\_\_

ALL-IN-1 \_\_\_\_\_

WPS \_\_\_\_\_

PRO-Series \_\_\_\_\_

CP/M (DECmate) \_\_\_\_\_

P/OS \_\_\_\_\_

Rainbow \_\_\_\_\_

CP/M (Rainbow) \_\_\_\_\_

MS-DOS \_\_\_\_\_

Other \_\_\_\_\_

Other \_\_\_\_\_

**ABSTRACT** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**DESCRIPTION** \_\_\_\_\_

\_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**E. Catherine Ditamore  
ARA Services  
Corp MIS  
The ARA Tower  
1101 Market Street  
Philadelphia, Pa. 19107**

# DECmate Wish List Ballot

Use this ballot to show which items on the DECmate Wish List are most important to you. Put the number of the most important item on the list in space 1, the next most in space 2, etc.

|          |           |           |           |           |
|----------|-----------|-----------|-----------|-----------|
| 1. _____ | 10. _____ | 19. _____ | 28. _____ | 37. _____ |
| 2. _____ | 11. _____ | 20. _____ | 29. _____ | 38. _____ |
| 3. _____ | 12. _____ | 21. _____ | 30. _____ | 39. _____ |
| 4. _____ | 13. _____ | 22. _____ | 31. _____ | 40. _____ |
| 5. _____ | 14. _____ | 23. _____ | 32. _____ | 41. _____ |
| 6. _____ | 15. _____ | 24. _____ | 33. _____ | 42. _____ |
| 7. _____ | 16. _____ | 25. _____ | 34. _____ | 43. _____ |
| 8. _____ | 17. _____ | 26. _____ | 35. _____ | 44. _____ |
| 9. _____ | 18. _____ | 27. _____ | 36. _____ | 45. _____ |

Please add the following to the wish list:

---

---

---

---

Comments:

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Work Phone: \_\_\_\_\_

Home Phone: \_\_\_\_\_

Return Ballot to:

**Cheryl Johnson  
DECUS DECmate Working Group  
Grinnell College  
P.O. Box 805  
Grinnell, IA 50112-0810**



# Professional Wish List Ballot

Use this ballot to show which items on the Professional Wish List are most important to you. Put the number of the most important item on the list in space 1, the next most in space 2, etc.

|          |           |           |           |           |
|----------|-----------|-----------|-----------|-----------|
| 1. _____ | 10. _____ | 19. _____ | 28. _____ | 37. _____ |
| 2. _____ | 11. _____ | 20. _____ | 29. _____ | 38. _____ |
| 3. _____ | 12. _____ | 21. _____ | 30. _____ | 39. _____ |
| 4. _____ | 13. _____ | 22. _____ | 31. _____ | 40. _____ |
| 5. _____ | 14. _____ | 23. _____ | 32. _____ | 41. _____ |
| 6. _____ | 15. _____ | 24. _____ | 33. _____ | 42. _____ |
| 7. _____ | 16. _____ | 25. _____ | 34. _____ | 43. _____ |
| 8. _____ | 17. _____ | 26. _____ | 35. _____ | 44. _____ |
| 9. _____ | 18. _____ | 27. _____ | 36. _____ | 45. _____ |

Please add the following to the wish list:

---

---

---

---

Comments:

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Work Phone: \_\_\_\_\_

Home Phone: \_\_\_\_\_

Return Ballot to:

**Thomas Hintz  
DECUS Professional Working Group  
University of Florida  
IFAS Computer Network  
1022 McCarty Hall  
Gainesville, FL 32611**

# Rainbow Wish List Ballot

Use this ballot to show which items on the Rainbow Wish List are most important to you. Put the number of the most important item on the list in space 1, the next most in space 2, etc.

|          |           |           |           |           |
|----------|-----------|-----------|-----------|-----------|
| 1. _____ | 10. _____ | 19. _____ | 28. _____ | 37. _____ |
| 2. _____ | 11. _____ | 20. _____ | 29. _____ | 38. _____ |
| 3. _____ | 12. _____ | 21. _____ | 30. _____ | 39. _____ |
| 4. _____ | 13. _____ | 22. _____ | 31. _____ | 40. _____ |
| 5. _____ | 14. _____ | 23. _____ | 32. _____ | 41. _____ |
| 6. _____ | 15. _____ | 24. _____ | 33. _____ | 42. _____ |
| 7. _____ | 16. _____ | 25. _____ | 34. _____ | 43. _____ |
| 8. _____ | 17. _____ | 26. _____ | 35. _____ | 44. _____ |
| 9. _____ | 18. _____ | 27. _____ | 36. _____ | 45. _____ |

Please add the following to the wish list:

---

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Comments:

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

---

Work Phone: \_\_\_\_\_

Home Phone: \_\_\_\_\_

Return Ballot to:

Lynn Jarrett  
DECUS PC Sig Rainbow Working Group Chairman  
Union Tribune Publishing  
P.O. Box 191  
San Diego, CA 92108

# PRO/SIGHT GRAPHICS CONTEST

SPRING 1987 DECUS

## << ENTRY FORM >>

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone ( \_\_\_\_\_ ) \_\_\_\_\_

Image/Script Title \_\_\_\_\_

Category Number \_\_\_\_\_ File Name \_\_\_\_\_

\*\*\*\*\*

**NOTE:** If diskette(s) are to be returned to the author, please send entries with self-addressed AND stamped envelope. Provide sufficient postage and packing material. The PC SIG will not be responsible for damage to diskette or entries not returned because of insufficient postage. Returned diskette will contain some .GID files from the contest if requested, so ORIGINAL IMAGE MAY BE DELETED to provide space.

If multiple entries are submitted, xerox and fill out an entry form for each submission. Multiple entries may be sent on a single diskette.

**PC POSTSCRIPT**

PC Postscripts are short requests, comments and responses to be published in the *Postscript Section* of the PC SIG Newsletter. Please respond to the following:

Y/N This is a reply to a previous Postscript.   Issue No.  No.

**Title:** \_\_\_\_\_

**Message:** \_\_\_\_\_  
\_\_\_\_\_  
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**Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_  
\_\_\_\_\_

**Phone:** (\_\_\_\_\_) \_\_\_\_\_

**Signature:** \_\_\_\_\_ **Date** \_\_\_\_\_

**DECUS PERSONAL COMPUTER SIG QUESTIONNAIRE**

**General:**

I would like information on \_\_\_\_\_

I would like to see an article  
in the newsletter on \_\_\_\_\_

I would like to see a symposium  
session on \_\_\_\_\_

I am willing to write an article(s) on: \_\_\_\_\_

I am willing to be contacted by PC SIG members by telephone to give  
assistance/advice on: \_\_\_\_\_

Phone number to call: Area Code (\_\_\_\_) # \_\_\_\_\_ Times \_\_\_\_\_

I attend DECUS Symposiums : \_\_\_\_\_ always \_\_\_\_\_ Sometimes \_\_\_\_\_ never  
I expect to attend these symposiums \_\_\_\_\_ Fall 85 \_\_\_\_\_ Spring 86 \_\_\_\_\_ Fall 86

I use/own: \_\_\_Rainbow(s) \_\_\_PRO(s) \_\_\_DECmate(s) \_\_\_Robin \_\_\_Other\_\_\_\_\_

I use the machine(s) checked above: \_\_\_at work \_\_\_at home \_\_\_both

If a work, total number of DEC PC's at your site: \_\_\_\_\_

I also use: \_\_\_VAX \_\_\_IBM or other mainframe \_\_\_IBM/other PC

Type of use: \_\_\_business \_\_\_educational \_\_\_government \_\_\_other\_\_\_\_\_

Primary Operating System: \_\_\_MS-DOS \_\_\_CP/M \_\_\_both equally  
\_\_\_P/OS \_\_\_UNIX \_\_\_other\_\_\_\_\_

I belong to a local DEC PC Group: \_\_\_\_\_yes \_\_\_\_\_no

There is a user group in my geographic area: \_\_\_\_\_yes \_\_\_\_\_no

I would like information on starting a user group: \_\_\_\_\_yes

I use a modem: \_\_\_often \_\_\_reluctantly \_\_\_never  
\_\_\_for work \_\_\_for pleasure \_\_\_both

Here is information on he DEC PC User Group I belong to or know of:

Name of Group \_\_\_\_\_

Name of Contact Person \_\_\_\_\_

Address \_\_\_\_\_

Telephone (\_\_\_\_) \_\_\_\_\_

Supports \_\_\_Rainbow \_\_\_PRO \_\_\_DECmate \_\_\_Robin \_\_\_LUG \_\_\_Gold Key

Here is a DEC oriented bulletin board not on your list, or new information on a  
listed board:

Name of Board \_\_\_\_\_

Full name of Sysop \_\_\_\_\_

Address if known \_\_\_\_\_

City and State \_\_\_\_\_

Telephone Number \_\_\_\_\_

Other Info: \_\_\_\_\_

Supports \_\_\_Rainbow \_\_\_PRO \_\_\_DECmate \_\_\_Robin

The subjects of greatest ineres to me are:

|                       |                                  |
|-----------------------|----------------------------------|
| ___word processing    | ___project management            |
| ___spreadsheets       | ___specialized vertical software |
| ___database           | ___(type)_____                   |
| ___graphics           | ___Other:_____                   |
| ___communications     | ___Rainbow                       |
| ___programming        | ___PRO                           |
| ___software reviews   | ___DECmate                       |
| ___technical articles | ___Robin                         |

DEC Gossip and News       Other: \_\_\_\_\_

If I had it to do over again, I:

would buy another DEC Rainbow/PRO/DECmate (circle one)

might buy another Rainbow/PRO/DECmate if it was a bargain (circle one)

would not buy another Rainbow/PRO/DECmate (circle one)

Will you continue to subscribe at the new price of \$35/year?      yes  no

Feel free to enclose another page(s) with comments:

Do you feel that leaving the prices out of the newsletter

is appropriate

is very annoying

makes the articles less useful

Do you feel that Decus should revise its (anti)commercialism policy?

yes

no

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City/ST/ZIP \_\_\_\_\_

Work Phone (\_\_\_\_) \_\_\_\_\_

Home Phone (\_\_\_\_) \_\_\_\_\_

Return to:

Barbara Maaskant

Computing Resources

The University of Texas Health

Science Center at San Antonio

7703 Floyd Curl Drive

San Antonio, Texas 78284

fold here, flap under-----

stamp

Barbara Maaskant  
Computing Resources  
The University of Texas Health  
Science Center at San Antonio  
7703 Floyd Curl Drive  
San Antonio, Texas 78284

**Information Resource Sign Up Sheet**  
**Personal Computing Special Interest Group - PC SIG**

Are you willing to be an information resource for other PC SIG members? Placing your name on the *Contact List* means you are willing to answer questions within the span of a brief telephone conversation. A Contact is not expected to be a consultant. *Please Register below.* Your name and phone number (including restrictions) will be posted in the PC SIG Newsletter.

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_

Phone: (\_\_\_\_) \_\_\_\_\_

Areas of Expertise: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Suggestions for Additional Services the SIG can Provide:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Barbara A. Maaskant  
UTHSCSA Computing Resources  
7703 Floyd Curl Drive  
San Antonio, Texas 78216**



**PERSONAL COMPUTING SPECIAL INTEREST GROUP  
VOLUNTEER FORM**

Name \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_  
Telephone \_\_\_\_\_

What special talents do you have? \_\_\_\_\_

---

When do you attend symposia?

- |                                          |                                                 |
|------------------------------------------|-------------------------------------------------|
| <input type="checkbox"/> Always          | <input type="checkbox"/> Occasional Attendance  |
| <input type="checkbox"/> East Coast Only | <input type="checkbox"/> Other (please specify) |
| <input type="checkbox"/> West Coast Only | _____                                           |
|                                          | _____                                           |

Please check if you are interested in helping with any of the following activities:

**Symposia Related Activities:**

- |                                                     |                                                        |
|-----------------------------------------------------|--------------------------------------------------------|
| <input type="checkbox"/> Session Chairs _____       | <input type="checkbox"/> Articles for Update.Daily     |
| <input type="checkbox"/> Campground Volunteer _____ | <input type="checkbox"/> Write letters of appreciation |
| <input type="checkbox"/> Suite Volunteer _____      | <input type="checkbox"/> Equipment Setup               |
| <input type="checkbox"/> DECUS Store _____          |                                                        |
| <input type="checkbox"/> Software Clinic _____      |                                                        |
| <input type="checkbox"/> Panels _____               | (indicate topics) _____                                |
| <input type="checkbox"/> Technical Sessions _____   | (indicate topics) _____                                |

**Ongoing SIG Activities:**

- |                                                                     |                               |
|---------------------------------------------------------------------|-------------------------------|
| <input type="checkbox"/> Working Groups _____                       | (indicate which groups) _____ |
| <input type="checkbox"/> Newsletter _____                           |                               |
| <input type="checkbox"/> Public Domain Software Project _____       |                               |
| <input type="checkbox"/> Write Software for Special SIG Needs _____ |                               |

**Other SIG Activities:** (please specify) \_\_\_\_\_

---

Do you wish to see the PCSIG undertake any activities which it is not currently doing?  
Please specify.

---

Would you be willing to coordinate the activity you have listed above?  Yes  No

Thank you

## INPUT/OUTPUT Submission Form

A SIG Information Interchange

Please reprint in the next issue of the Pageswapper

If this is a reply to a previous I/O, which number? \_\_\_\_\_

Caption: \_\_\_\_\_

Message: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Contact:

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Mail this form to: Larry Kilgallen, PAGESWAPPER Editor  
Box 81, MIT Station, Cambridge, MA 02139-0901, USA

To register for on-line submission, dial (in the United States):  
(617) 262-6830 and log in with the username PAGESWAPPER.

PAGESWAPPER # June 1987 # Volume 8 Number 11  
INPUT/OUTPUT Submission Form

Tear out or photocopy reverse to submit an I/O item

Larry Kilgallen, PAGESWAPPER Editor  
Box 81, MIT Station  
Cambridge, MA 02139-0901  
USA

## System Improvement Request Submission Form

Page 1 of \_\_\_\_\_

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Submittor:

Firm:

Address:

Phone:

---

**How to write an SIR:**

Describe the capability you would like to see available on VAX systems. Be as specific as possible. Please don't assume we know how it's done on the XYZ system. Justify why the capability would be useful and give an example of its use. If you wish, suggest a possible implementation of your request.

---

**Abstract (Please limit to four lines):**

---

**Description and examples (use additional pages if required)**

PAGESWAPPER \* June 1987 \* Volume 8 Number 11  
System Improvement Request Submission Form

Tear out or photocopy reverse to submit an SIR

Mark D. Oakley  
Battelle Columbus Division  
Room 11#6#008  
505 King Avenue  
Columbus, Ohio 43201#2369  
USA

## VAX/VMS V5.0 Tailoring Survey Form

- 1) Is it important that you be able to remove the machine-specific files not used for your system (approx. 500 block savings) from your system disk?
- 2) Is it important that you be able to remove the bus-specific files not required for your system (approx. 400 block savings) from your system disk?
- 3) Is it important that you are able to remove the cluster support (approx. 1000 block savings) from your system disk?
- 4) To what degree should tailoring protect the user from himself? (For example, if you're tailoring an RA60 system disk booted on a MicroVAX II, VMS could check that you don't delete the Qbus drivers. However, there's no way to tell if this RA60 is also used in your lab on a VAX 11/780 and therefore the MASSBUS drivers shouldn't be deleted.) Is it necessary for tailoring to do any checking?
- 5) Do you have any other suggestions for tailoring?

Mail completed form to: VMS Product Management, Digital Equipment Corporation, ZK0142/C07, 110 Spit Brook Road, Nashua, NH 03062-2698

PAGESWAPPER \* May 1987 - Volume 8 Number 10  
VAX/VMS V5.0 Tailoring Survey Form

Tear out or photocopy reverse to respond to the survey.

----- fold here -----

stamp

VMS Product Management  
Digital Equipment Corporation  
ZK0142/C07  
110 Spit Brook Road  
Nashua, NH 03062-2698

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