

**RT-11**

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## RT-11 SOFTWARE DISPATCH

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The RT-11 Software Dispatch complements the RT-11 Software Dispatch Review. New and revised Software Product Descriptions, programming notes, software problems and solutions, and documentation corrections are published here. Much of the material is developed from Software Performance Report (SPR) answers significant to the general audience and is printed here to supplement the maintenance notebook (established by the Software Dispatch).

### PRODUCTS SUPPORTED in the RT-11 SOFTWARE DISPATCH

BASIC-11/RT-11 V2  
CTS-300 V6/V7  
DECnet-RT V1.1  
FMS-11/RT-11 V1.1

FORTRAN IV/RT-11 V2.5  
GAMMA-11 F/B V3.1  
LSP-11 V1.1  
MSB11 V1.2

MSB/FORTRAN IV V1  
RT-11 V4  
RT-11 2780 3780  
Protocol Emulator V4  
SSP-11 V1.3

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**Ann Owens, Associate Editor**

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PRODUCT AVAILABILITY DATES - RT-11

OCTOBER 1982

The following are dates products have become available. Customers who are in warranty or have a Software Product Service contract during the month the product became available are eligible to receive the update. Customers who are eligible and have not received the update should contact their local Digital office.

Autopatch is distributed to Software Product Service Basic contract customers and to Self-Maintenance contract customers who have selected this option. Autopatch will be installed for DECsupport contract customers as part of their Preventive Maintenance.

<u>PRODUCT</u>	<u>VERSION</u>	<u>AVAILABLE</u>
CTS-300	7.0	MAR 82
DECNET-RT	2.0	MAR 82
DECTYPE-300	1.2	APR 82
GAMMA-11	3.2	AUG 82
LSP-11	1.2	NOV 81
MACDBG	1.0	MAR 82
MACSYS-RT	1.0	JUL 82
MU-BASIC	2.1	SEP 81
PROM/RT-11	2.0	AUG 82
SPETS-11	1.0	JUL 82
SSP-11	1.3	NOV 81
RT-11 AUTOPATCH	G	AUG 82
RGL FEP/RT-11	1.0	MAY 82
QUILL	1.0	MAR 82

# SPR USER LETTER

Submitted by Sheila Hatchell, 8/11 Administration

## How to Make the Best Use of the SPR Form

### What We Can Do for You:

- ~~1. Blank SPR forms are returned with each SPR acknowledgement and are available upon request in the desired quantities through the SPR Administration (P.O. Box F) and your local office/SPR Center.~~
2. Copies of the SPR acknowledgement and answer are sent to the appropriate DIGITAL Office/SPR Center for their information.
3. STATUS FOR SUBMITTED SPRs IS PROVIDED UPON REQUEST.
4. SPRs marked PROBLEM/ERROR will have a response for DIGITAL SUPPORTED products. These SPRs should refer to suspected deficiencies in the software.
5. SPRs marked SUGGESTION are forwarded to the pertinent software group for information purposes, and are responded to at their discretion.

### What You Can Do for Us:

1. Fill out the form completely either by typing or printing clearly. **PLEASE INCLUDE YOUR SOFTWARE SERVICE CUSTOMER NUMBER IN THE ADDRESS BOX.**
2. Limit only one problem per SPR form. Several problems on an SPR can lengthen the turnaround time.
3. **WHENEVER POSSIBLE, SUBMIT AN SPR WITH ATTACHMENTS, SUCH AS MACHINE READABLE DATA, DETAILED INSTRUCTIONS ON HOW TO REPRODUCE THE PROBLEM, PROGRAM AND/OR DATA FILES, LISTINGS, AND CONSOLE LOG.**
4. It would be helpful to all concerned if problems with patches are reported as soon as possible.
5. For security SPRs, it is imperative that the DO NOT PUBLISH box be marked.
6. It would be helpful if tapes submitted with SPRs are labeled (track and density), and have a directory attached.
7. Complete the questionnaire that is supplied with each SPR answer. Your feedback is essential in monitoring the quality of our responses.
8. SPRs should not be used for problems concerning software policy, software distribution, or hardware. The local office should be contacted in these cases.

**ERROR LOGGING SUPPORT FOR DY (MG)**

If error logging support is selected, and an attempted I/O operation to an RX02 using the RXV21 interface, REV "F", fails, the error logging code in the DY handler will hang in a loop waiting for the 'READY' bit to be asserted. This is because RXV21 interfaces prior to REV "F" follow the RX01/RXV11 command protocol. REV "F" properly implements the RX02/RXV21 command protocol which requires the handler to test for the 'TR' bit to be asserted after a command to provide error status is sent to the interface.

\*\*\* NOTE - THE FOLLOWING PATCH MUST NOT BE APPLIED UNLESS THE RXV21 \*\*\*  
 \*\*\* INTERFACE HAS BEEN BROUGHT TO REV LEVEL "F" OR LATER!! \*\*\*

1. The following is a required patch to the RT-11 device handler source file DY.MAC. You must apply it to the uncommented sources supplied with the Version 4 distribution kit and then rebuild your handler. You must apply this patch if you use the DY handler, whether or not you have performed a system generation.

NOTE: Since patching the distribution medium is not recommended, the patch must be installed whenever you copy the handler source from the distribution medium.

2. To install the patch, you must first create a patch file for input to the SLP utility. Using an editor, create a file called DY.002 on your system volume. Enter the text below into the file. The hyphen must be the first character in the file. The special symbol '<tab>' indicates the TAB character. All other blank space in the text should be entered in the file as single SPACE characters.

```
-23,23,/,;002/
ELDY<tab>== 4
-368,368
6$:<tab>BIT<tab>#CSTR,(R4)
-370,370
<tab>MOV<tab>R3,(R5)
61$:<tab>BIT<tab>#CSDONE,(R4)
<tab>BEQ<tab>61$
-481,481
DYRBUF:<tab>.BLKW<tab>DYNREG
<tab>.BLKW<tab>4
/
```

3. Apply the patch to the source file as follows:

```
.R SLP
*DY.MAC=DY.MAC,DY.002
*^C                                     (CTRL/C to exit)
```

RT-11 V4.0  
Device Handler Sources  
DY.MAC

Seq 6.11.2 M

2 of 2

4. Now issue the following commands. In these commands, the notation xxx represents the SYCND file type, either DIS for distributed, or MAC for system generated.

```
.MACRO SYCND.xxx+DY.MAC/OBJ
```

```
.LINK/EXECUTE:DY.SYS DY
```

NOTE: In addition if your monitor is XM the above MACRO command must include XM.MAC (for example, MACRO XM+SYCND+...). You must now either reboot or REMOVE and INSTALL your DY.MAC handler.

5. Preserve the patched handler source file. If there are any future corrections to DY.MAC, you will be required to apply them to the patched source file.

RT-11 V4.0  
Device Handler Sources  
LS.MAC

PROBLEMS WITH LS HANDLER (SPR 46048) (GLA)

- a. If device time-out is included, the LS handler's timer request causes a race condition with the monitor's .TWAIT processor.
- b. Under certain conditions, use of the LS handler generated with time-out support will cause an illegal SST or crash the system.
- 1. The following is a required patch to the RT-11 device handler source file LS.MAC. You must apply it to the uncommented sources supplied with the version 4 distribution kit with all previous patched applied, and then rebuild your handler. You must apply this patch whether or not you have performed a system generation to include time-out support.

NOTE: Patching the distribution medium is not recommended, the patch must be installed whenever you copy the handler source from the distribution medium.

- 2. To install the patch, you must first create a patch file for input to the SLP utility. Using an editor, create a file called LS.006 on your system volume. Enter the text below into the file. The hyphen must be the first character in the file. The special symbol '<tab>' indicates the TAB character. All other blank space in the text should be entered into the file as single SPACE characters.

```

-23,23
ELLS<tab>== 6
-156
<tab>.FORK<tab>LIFBLK
-168
<tab>.FORK<tab>LIFBLK
-191
<tab>CLR<tab>LIFBLK+2
-214,222
<tab>BMI<tab>10$
7$:<tab>JMP<tab>RET
10$:<tab>TST<tab>STALLF
<tab>BEQ<tab>7$
-304,304
<tab>.WORD<tab>177700!LS$CODE
-308
LIFBLK:<tab>.WORD<tab>0,0,0,0
/

```



RT-11 V4.0  
Device Handler Sources  
LS.MAC

3. Apply the patch to the source file as follows:

```
.R SLP
*LS.MAC=LS.MAC,LS.006
*^C (Control C to exit)
```

NOTE: You may ignore any audit trail overwrite warnings which may occur.

4. Now issue the following commands. In these commands, the notation xxx represents the SYCND file type, either DIS for distributed, or MAC for system generated. If your monitor is SJ or FB use:

```
.MACRO SYCND.xxx+LS.MAC/OBJ
ERRORS DETECTED: 0
.LINK/EXECUTE:LS.SYS LS
```

If your monitor is XM use:

```
.MACRO XM+SYCND.xxx+LS/OBJ:LSX.OBJ
ERRORS DETECTED: 0
.LINK/EXECUTE:LSX.SYS LSX
```

5. Preserve the patched handler source file. If there are any future corrections to LS.MAC, you will be required to apply them to the patched source file.

RT-11 V4.0  
System Utilities  
LINK.SAV V06.01I

Seq 7.9.11 M

1 of 1

### LINK REFERENCES ILLEGAL ADDRESS (DBB)

This patch fixes the following problem. While linking large overlaid programs, LINK sometimes aborts via:

?MON-F-Trap to 4 010342

1. The following is a required patch to the LINK.SAV utility program. It must be installed in all copies of the utility.

NOTE: Since patching the distribution medium is not recommended, the patch must be installed every time you copy the program from the distribution medium.

2. This patch is installed using SIPP, the Save Image Patching Program. First, ensure that a copy of the file LINK.SAV is on a mounted volume. Create the file, LINK.010 as follows. Replace 'DK:' in the patch below with the name of the device that contains the program file.

```
RUN SIPP
DK:LINK.SAV/A/C
0
5022
45061
^Z                               (up-arrow/Z)
23032
4512
^Z                               (up-arrow/Z)
43254
5302
^Z                               (up-arrow/Z)
43770
5302
207
^Y                               (up-arrow/Y)
5604
^C                               (CTRL/C to exit)
```

3. To apply the patch to LINK.SAV type:

```
@LINK.010
```

The resulting version of the utility will be LINK V06.01J

4. Save the new version of the utility on a backup volume.

**ERROR STATUS NOT SAVED/RESTORED BY VDT (MG)**

The EMT and user error bytes are not saved on entry to nor restored on exit from VDT. The following patch corrects this problem and adds a new register name, \$E. After a breakpoint, \$E/ will return the contents of the EMT and user error bytes at the time of the breakpoint.

1. The following is a required patch to the VDT.OBJ utility program. It must be installed in all copies of the utility.

NOTE: Since patching the distribution medium is not recommended, the patch must be installed every time you copy the program from the distribution medium.

2. To install the patch, first create a patch file for input to the PAT utility. Using an editor, create a file called VDT.001 on your system volume. Enter the text below into the file. The special symbol "<tab>" indicates the TAB character. All other blank spaces in the text should be entered in the file as single blank spaces. The symbol "<ret>" indicates the RETURN key.

```
<tab>.TITLE<tab>VDT
<tab>.IDENT<tab>/V04.00/
<blank>
<tab>.MCALL<tab>.RCTRL
<blank>
<tab>JSW<tab>= 44
<tab>EERB<tab>= 52
<blank>
<tab>O.ODT<tab>= 302
<blank>
<tab>.PSECT<tab>$ODT$
<blank>
<tab>. = .+O.ODT-144+32
O.JSWS:
<blank>
<tab>. = .+1044-<O.ODT-144+32>
<tab>JSR<tab>PC,PATB01
<blank>
<tab>. = .+1060-<1044+4>
PATBCN:
<blank>
<tab>. = .+4426-1060
<tab>CLC
<tab>JSR<tab>PC,PATA01
<blank>
<tab>. = .+4452-<4426+6>
<tab>SEC
<tab>JSR<tab>PC,PATA01
<tab>NOP
<blank>
<tab>. = .+5751-<4452+8.>
<blank>
<tab>.BYTE<tab>'A
<blank>
<tab>. = .+6054-<5751+1>
```

RT-11 V4.0  
Debugging Utilities  
VDT.OBJ

Seq 12.2.2 M

2 of 2

```
<blank>
O.EERB:<tab>.WORD<tab>0
<blank>
PATA01:<tab>BCS<tab>10$
<tab>MOV<tab>@#JSW,O.JSWS
<tab>MOV<tab>@#EERE,O.EERB
<tab>BR<tab>20$
<blank>
10$:<tab>MOV<tab>O.JSWS,@#JSW
<tab>.RCTRL
<tab>MOVB<tab>O.EERB,@#EERB
20$:<tab>RTS<tab>PC
<blank>
PATB01:<tab>CMPB<tab>R0,#'E
<tab>BEQ<tab>10$
<tab>BIC<tab>#177770,R0
<tab>RTS<tab>PC
<blank>
10$:<tab>MOV<tab>#O.EERB,R0
<tab>TST<tab>(SP)+
<tab>JMP<tab>PATBCN
<blank>
<tab>.END
```

3. Assemble the patch file by typing:

```
. MACRO/OBJ:VDT001 VDT.001
ERRORS DETECTED: 0
```

4. Now apply the patch using the PAT utility.

```
.R PAT
*VDT=VDT/C:30255,VDT001/C:26122
```

5. Save the patched version of the module on a backup volume.

RT-11 Software Dispatch, October 1982

BASIC-11/RT-11 V2.0  
for RT-11 V4.0  
INTERPRETER  
BSX1A.OBJ

Seq 35.1.26 M

1 of 2

REVISION TO PATCH "T" FOR SINGLE USER BASIC-11 (WPL)

PROBLEM:

Two lines were omitted from patch "T" module "PATT1.MAC" which was published in the September 1982 edition of the Software Dispatch with Sequence Number 35.1.24M. The omission of these lines results in improper execution of the "IF" statement if the right-hand-side operand is a floating point number.

The following is a revised copy of patch "T" which contains the necessary two lines (each marked with the comment "Line to be inserted."). Please either recreate the patch or edit your copy, being certain that the new patch is identical to the copy below.

Then follow steps 2 through 4 in the original article to apply the newly-modified patch to your BASIC-11 interpreter!

REVISED COPY OF "PATT1.MAC":

```
.TITLE BSX1A
.PSECT BASXCD, RO, I
.ENABL GBL
.GLOBL FAC2
```

```
LOC = .
. = LOC + 406
```

BASIC-11/RT-11 V2.0  
 for RT-11 V4.0  
 INTERPRETER  
 BSX1A.OBJ

Seq 35.1.26 M

2 of 2

```

;
;       JMP      PATT1
PATT1R::
;
;       .PSECT  PATT1
;
PATT1:: TST      2(SP)
        BNE     DOSUB
        TST     FAC1(R5)      ; Line to be inserted.
        BNE     DOSUB      ; Line to be inserted.
;
;       TST     4(SP)
        BEQ     LEQZ
        BGT     LGTZ
;
;       TST     FAC2(R5)
        BLT     DOSUB
        BR      CLNCLZ
;
LEQZ:   TST     FAC2(R5)
        BLT     SENCLZ
        BEQ     CLNSEZ
        BGT     CLNCLZ
;
LGTZ:   TST     FAC2(R5)
        BLE     SENCLZ
        BR      DOSUB
;
CLNCLZ: ADD     #6, SP
        CLN
        CLZ
        BR      PATT1E
;
CLNSEZ: ADD     #6, SP
        CLN
        SEZ
        BR      PATT1E
;
SENCLZ: ADD     #6, SP
        SEN
        CLZ
        BR      PATT1E
;
DOSUB:  JSR     PC, SUBSTK
;
PATT1E: JMP     PATT1R
;
        .END
    
```

BASIC-11/RT-11 V2.0  
for RT-11 V4.0  
INTERPRETER  
BSE0.OBJ

Seq 35.1.27 M

1 of 2

Using "CHAIN" With "COMMON" May Cause System Crash  
- Patch "V" For BASIC-11 (WPL)

PROBLEM:

Attempts to CHAIN from one BASIC program to another with variables declared in COMMON may result in a system crash if one or more of the COMMON variables is a null string. Application of the following patch resolves this problem.

PATCHING PROCEDURE:

1. Create the following patch files (PATV1.MAC and PATV2.MAC):

PATV1.MAC

```
.TITLE BSE0
.ENABL GBL
.PSECT BASECD, RO, I
;
LOC = .
. = LOC + 5140
;
JMP PATV1
PATV1R::BCS LOC + 5174
NOP
;
.PSECT PATV1
PATV1:: BIT #.FTYP, (R1)
BNE 10$
MOV (R1)+, (R0)+
CMP #-1, (R1)
BEQ 10$
CLC
BR 20$
10$: SEC
20$: JMP PATV1R
;
.END
```

BASIC-11/RT-11 V2.0  
for RT-11 V4.0  
INTERPRETER  
BSE0.OBJ

Seq 35.1.27 M

2 of 2

PATV2.MAC

```
.TITLE BSPAT
.ENABL GBL
.PSECT BASPCH,RO,I
;
. = . + 6
.ASCII /V/
;
.END
```

2. Assemble the patch files as follows:

```
.MACRO PATV1
.MACRO PATV2
```

3. Apply the patches to the affected modules using the RT-11 PAT utility program as follows:

```
.R PAT
*BSE0=BSE0,PATV1

.R PAT
*BSPAT=BSPAT,PATV2
```

4. Relink your version of BASIC-11 using the indirect command file that you have already created. If you have not yet configured a BASIC-11 interpreter, please read the "BASIC-11/RT-11 Installation Guide and Release Notes" document. In any event, you will need to relink in order that the newly patched modules will become part of your BASIC-11 interpreter!



MU BASIC-11/RT-11 V2.1  
for RT-11 V4.0  
INTERPRETER  
BSFUNC.OBJ

Seq 38.1.6 M

1 of 2

Supersedes article dated Sept. 82

REVISION TO PATCH "F" FOR MULTI-USER BASIC-11 (WPL)

Under certain conditions, Patch "F" will not work in both the single-precision and double-precision configurations. Patch "F" was published in the September 1982 issue of the RT-11 Software Dispatch. Please recreate patch 'F' following the instructions below.

PROBLEM:

According to the 'MU BASIC-11/RT-11 User's Guide', paragraph 3.3.1.3, a non-privileged user should be able to run a privileged program (i.e. one whose filename contains a "9" in either the first or second character position) which contains privileged system functions. Currently, privileged programs containing "SYS(4)", "SYS(5)" or "SYS(8)" functions will produce the error message "PRIVILEGED SYSTEM FUNCTION AT LINE nnnnn" when executed by a non-privileged user. The following patch enables non-privileged users to run privileged programs containing all of the privileged "SYS" functions.

PROCEDURE:

1. Create the following patch files (PATF1.MAC and PATF2.MAC):

PATF1.MAC

```
.TITLE BSFUNC
.PSECT BSFDSP, RW, D
.ENABL GBL
;
LOC = .
;
. = LOC + 536
BIT #USWPS#,USW(R5)
;
. = LOC + 562
BIT #USWPS#,USW(R5)
;
. = LOC + 740
BIT #USWPS#,USW(R5)
;
.END
```

MU BASIC-11/RT-11 V2.1  
for RT-11 V4.0  
INTERPRETER  
BSFUNC.OBJ

Seq 38.1.6 M

2 of 2

Supersedes article dated Sept. 82

PATF2.MAC

```
.TITLE BSPAT
.ENABL GBL
.PSECT BASPCH, RO, I
;
. = . + 4
.ASCII /OF/
;
.END
```

2. Assemble the patch files as follows:

```
.MACRO PATF1
.MACRO PATF2
```

3. Apply the patches to the affected modules using the RT-11 PAT utility program as follows:

```
.R PAT
*BSFUNC=BSFUNC,PATF1

.R PAT
*BSPAT=BSPAT,PATF2
```

4. Relink your version of MU BASIC-11 using the indirect command file that you have already created. If you have not yet configured a MU BASIC-11 interpreter, please read the "MU BASIC-11/RT-11 Installation Guide". In any event, you will need to relink in order that the newly patched modules will become part of your MU BASIC-11 interpreter!

MU BASIC-11/RT-11 V2.1  
for RT-11 V4.0  
INTERPRETER  
MUBS2E.OBJ, MBS2ED.OBJ

Seq 38.1.7 M

1 of 2

Problems DEASSIGNing Previously ASSIGNED Terminal  
- PATCH "G" FOR MU BASIC-11 (WPL)

PROBLEM:

MU BASIC will not allow a user to deassign a terminal (ie. "DEASSIGN TTn:") once it has been assigned (ie. "ASSIGN TTn:") if the user has attempted to save a program on that terminal (ie. "SAVE TTn:"). MU BASIC issues the error message, "ISSUE CLOSE BEFORE DEASSIGN", even after the "CLOSE" command is given. Note that the above usage of the "SAVE" command is not valid! Hence, no user may login at the terminal assigned above, since it is considered "in use" by MU BASIC.

PATCHING PROCEDURE:

1. Create the following patch files (PATG1.MAC and PATG2.MAC):

PATG1.MAC

```
.TITLE MUBS2E
.ENABL GBL
.CSECT MUBS2E
.MCALL ERTEXT
;
LOC = .
. = LOC + 3030
;
JMP PATG1
PATG1R::
;
.PSECT PATG1
;
PATG1:: BEQ 10$
        DECB (R2)
        ERTEXT CAO,<CHANNEL ALREADY IN USE>
;
10$:   JMP PATG1R
        .END
```

MUBASIC-11/RT-11 V2.1  
for RT-11 V4.0  
INTERPRETER  
MUBS2E.OBJ, MBS2ED.OBJ

Seq 38.1.7 M  
2 of 2

PATG2.MAC

```
.TITLE BSPAT
.ENABL GBL
.PSECT BASPCH, RO, I
;
. = . + 4
.ASCII /ØG/
;
.END
```

2. Assemble the patch files as follows:

```
.MACRO/OBJ:PATG1 BSMAC+PATG1
.MACRO PATG2
```

3. Apply the patches to the affected modules using the RT-11 PAT utility program as follows:

(Note: Please notice that the second use of the PAT command below patches a module created in patch "E". )

```
.R PAT
*MUBS2E=MUBS2E,PATG1
```

```
.R PAT
*MBS2ED=MBS2ED,PATG1
```

```
.R PAT
*BSPAT=BSPAT,PATG2
```

4. Relink your version of MU BASIC-11 using the indirect command file that you have already created. If you have not yet configured a MU BASIC-11 interpreter, please read the "MU BASIC-11/RT-11 Installation Guide". In any event, you will need to relink in order that the newly patched modules will become part of your MU BASIC-11 interpreter!

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SUD VA06-00H		51.20.18	M
TSD VB06-00M			
XMTSD VC06-00Q	1 of 3		
(PATCH 40)			

ERRORS IN DATA FORMATTING WITH MASK

If a mask contains a leading sign there are circumstances in which the formatted output will not position the negative sign properly. This occurs under SUD, TSD, and XMTSD.

Patch 11 corrects this so that the leading sign is positioned properly, and changes the version numbers of SUD to VA06-00I, TSD to VB06-00N, and XMTSD to VC06-00R.

Using the editor, create the following files as shown. Name them as indicated in the comment line that is the first line of each file. Then, to install the patch, follow the procedure shown following the files.

CTS-300 V06  
for RT-11 V4.0  
SUD VA06-00H  
TSD VB06-00M  
XMTSD VC06-00Q  
(PATCH 40)  
;P040A.MAC

Seq 51.16.9 M  
51.18.14 M  
51.20.18 M

2 of 3

```
      .TITLE  DIRT
      .CSECT  $DIRT
P040:
      .=      .+6432
      BEQ     25$
      .=      P040+6516
25$:
      .=      P040+11215
      .ASCII /I/
      .END
```

;P040B.MAC

```
      .TITLE  DDIRT
      .CSECT  $DIRT
P040:
      .=      .+3430
      BEQ     25$
      .=      P040+3514
25$:
      .END
```

;P040C.MAC

```
      .TITLE  KDIRT
      .CSECT  $DIRT
P040:
      .=      .+3170
      BEQ     25$
      .=      P040+3254
25$:
      .END
```

;P040V1.MAC

```
      .TITLE  DTO
      .CSECT  DTO
      .=      .+4563
      .ASCII /N/
      .END
```

;P040V2.MAC

```
      .TITLE  $KDTO
      .PSECT  DATXX
      .=      .+42
      .BYTE  'R'
      .END
```

RT-11 Software Dispatch, October 1982

CTS-300 V06  
for RT-11 V4.0  
SUD VA06-00H  
TSD VB06-00M  
XMTSD VC06-00Q  
(PATCH 40)

Seq 51.16.9 M  
51.18.14 M  
51.20.18 M

3 of 3

.RENAME (SDIRT,DDIRT,KDIRT,DTO,KDTO).OBJ \*.OLD

Files renamed:

DK:SDIRT.OBJ to DK:SDIRT.OLD  
DK:DDIRT.OBJ to DK:DDIRT.OLD  
DK:KDIRT.OBJ to DK:KDIRT.OLD  
DK:DTO.OBJ to DK:DTO.OLD  
DK:KDTO.OBJ to DK:KDTO.OLD

.MACRO P040A,P040B,P040C,P040V1,P040V2

ERRORS DETECTED: 0  
ERRORS DETECTED: 0  
ERRORS DETECTED: 0  
ERRORS DETECTED: 0  
ERRORS DETECTED: 0

.R PAT

\*SDIRT.OBJ=SDIRT.OLD/C:105027,P040A/C:006030

.R PAT

\*DDIRT.OBJ=DDIRT.OLD/C:070743,P040B/C:005326

.R PAT

\*KDIRT.OBJ=KDIRT.OLD/C:011121,P040C/C:005737

.R PAT

\*DTO.OBJ=DTO.OLD/C:134235,P040V1/C:003255

.R PAT

\*KDTO.OBJ=KDTO.OLD/C:100417,P040V2/C:004727

.R CTSGEN ;FOR SINGLE-USER DIBOL

.R CTSGEN ;FOR NORMAL TSD

.R CTSGEN ;FOR EXTENDED MEMORY TSD

CTS-300 V07  
for RT-11 V4.0  
DIBOL RUN-TIME SYSTEMS  
SUD VA07-00A  
TSD VB07-00B  
XMTSD VC07-00B

Seq 52.3.3 M

1 of 4

**PATCH 11: TWO RUN-TIME SYSTEM ERRORS**

1. If a mask contains a leading sign there are circumstances in which the formatted output will not position the negative sign properly. This occurs under SUD, TSD, and XMTSD.

Patch 11 corrects this so that the leading sign is positioned properly.

2. TSD and XMTSD will fail without reporting any error if a program runs out of memory as a result of opening a channel.

Patch 11 corrects this so that in the above situation the message "?DIBOL-E9--T-Not enough memcry" is generated.

The version numbers change as follows: SUD to VA07-00B, TSD to VB07-00C, and XMTSD to VC07-00C.

Using the editor, create the following source files. Name them as indicated in the comment line that begins each file. Then, to install the patch, follow the procedure shown following the files.



CTS-300 V07  
 for RT-11 V4.0  
 DIBOL RUN-TIME SYSTEMS  
 SUD VA07-00A  
 TSD VB07-00B  
 XMTSD VC07-00B

Seq 52.3.3 M

2 of 4

#P011A.MAC

```

      .TITLE  DIRT
      .CSECT  $DIRT

P011:
      .=      .+6616
      BEQ     25$
      .=      P011+6702

25$:
      .=      P011+13475
      .ASCII  /B/
      .END

```

#P011B.MAC

```

      .TITLE  DDIRT
      .CSECT  $DIRT

P011:
      .=      .+3336
      BEQ     25$
      .=      P011+3422

25$:
      .END

```

#P011C.MAC

```

      .TITLE  KDIRT
      .CSECT  $DIRT

P011:
      .=      .+3104
      BEQ     25$
      .=      P011+3170

25$:
      .END

```

#P011D.MAC

```

      .TITLE  $ERROR
      .PSECT  $ERROR
      .GLOBL  SIZIT

P011:
      .=      .+1550
      JSR PC, P011A

P011A:
      .PSECT  $P011A
      MOV     (SP)+, -(R4)
      CMP     (SP)+, (SP)+
      JSR     PC, SIZIT
      MOV     (R4)+, -(SP)
      RTS     PC
      .END

```

CTS-300 V07  
 for RT-11 V4.0  
 DIBOL RUN-TIME SYSTEMS  
 SUD VA07-00A  
 TSD VB07-00B  
 XMTSD VC07-00B

Seq 52.3.3 M

3 of 4

## ;P011E.MAC

```

      .TITLE  $KEROR
      .PSECT  $ERROR
      .GLOBL  SIZIT
P011:
      .=      .+1444
      JSR     PC,P011A
      .=      P011+2476
      .BYTE   'C

      .PSECT  $P011A
P011A: MOV    (SP)+,-(R4)
      CMP    (SP)+,(SP)+
      JSR    PC,SIZIT
      MOV    (R4)+,-(SP)
      RTS    PC
      .END

```

## ;P011V1.MAC

```

      .TITLE  DTO
      .CSECT  DTO

      .=      .+6067
      .BYTE   'C
      .END

```

```
.RENAME (SDIRT,DDIRT,KDIRT).OBJ *.OLD
```

Files renamed:

```
DK:SDIRT.OBJ to DK:SDIRT.OLD
DK:DDIRT.OBJ to DK:DDIRT.OLD
DK:KDIRT.OBJ to DK:KDIRT.OLD
```

```
.RENAME (DERROR,KERROR,DTO).OBJ *.OLD
```

Files renamed:

```
DK:DERROR.OBJ to DK:DERROR.OLD
DK:KERROR.OBJ to DK:KERROR.OLD
DK:DTO.OBJ to DK:DTO.OLD
```

```
.MACRO P011A,P011B,P011C,P011D,P011E,P011V1
```

```
ERRORS DETECTED: 0
ERRORS DETECTED: 0
ERRORS DETECTED: 0
ERRORS DETECTED: 0
ERRORS DETECTED: 0
ERRORS DETECTED: 0
```

CTS-300 V07  
for RT-11 V4.0  
DIBOL RUN-TIME SYSTEMS  
SUD VA07-00A  
TSD VB07-00B  
XMTSD VC07-00B

Seq 52.3.3 M

4 of 4

.R PAT  
\*SDIRT.OBJ=SDIRT.OLD/C:124026,P011A/C:006030

.R PAT  
\*DDIRT.OBJ=DDIRT.OLD/C:122222,P011B/C:006046

.R PAT  
\*KDIRT.OBJ=KDIRT.OLD/C:131515,P011C/C:005503

.R PAT  
\*DERROR.OBJ=DERROR.OLD/C:176652,P011D/C:016000

.R PAT  
\*KERROR.OBJ=KERROR.OLD/C:066360,P011E/C:016034

.R PAT  
\*DTO.OBJ=DTO.OLD/C:036046,P011V1/C:002767

.R CTSGEN           ;FOR SINGLE-USER DIBOL

.R CTSGEN           ;FOR NORMAL TSD

.R CTSGEN           ;FOR EXTENDED MEMORY TSD

CTS-300 V07  
for RT-11 V4.0  
DIBOL RUN-TIME SYSTEMS  
TSD VB07-00C  
XMTSD VC07-00C

Seq 52.3.4 M

1 of 4

**PATCH 13: TWO PROBLEMS: ISAM STORE/WRITE AND LPQUE STATEMENT (LG)**

1. There are two problems that occur under the TSD and XMTSD run-time systems:

It is possible to incorrectly receive the error ?DIBOL-E28--T-Illegal Record Number when storing a record in an ISAM file or the error ?DIBOL-E53--T-Key not same when issuing a WRITE. In both cases this may happen when the PROC size is greater than 1.

Patch 13 corrects this so that an error 28 or error 53 is not incorrectly generated under these conditions.

2. If the "COPIES:dexp" option is used with the LPQUE statement where the variable representing the number of copies is defined as D3 or greater, a Trap to 4 will occur.

Patch 13 corrects this situation so that any legal size decimal field can be used without resulting in this error.

The version number of TSD changes to VB07-00D, and XMTSD changes to VC07-00D.

Using the editor, create the following source files. Name them as indicated in the comment line that begins each file. Then, to install the patch, follow the procedure shown following the files.

CTS-300 V07  
 for RT-11 V4.0  
 DIBOL RUN-TIME SYSTEMS  
 TSD VB07-00C  
 XMTSD VC07-00C

Seq 52.3.4 M

2 of 4

;P013A.MAC

```

        .TITLE  $DIO
        .PSECT  $DIO
P013:   .,=      .+10016
        JSR     PC,P013A

        .PSECT  $P013
P013A:  BITB   #2,2(R0)
        BEQ    1$
        INC    20(R0)
1$:     RTS    PC
        .END
    
```

;P013B.MAC

```

        .TITLE  $KDIO
        .PSECT  $DIO

P013:   .,=      .+7140
        JSR     PC,P013A

        .PSECT  $P013
P013A:  BITB   #2,2(R0)
        BEQ    1$
        INC    20(R0)
1$:     RTS    PC
        .END
    
```

;P013C.MAC

```

        .TITLE  DMESS
        .CSECT  MESSAG

P013:   .,=      .+774
        JMP     P013A

        .PSECT  $P013
P013A:  MOV     2(SP),R1
        MOV     #3,R2
        SUB     4(SP),R2
        BLE    3$
        JMP     P013+1010
3$:     SUB     R2,R1
        MOV     #3,4(SP)
        JMP     P013+1032
        .END
    
```

CTS-300 V07  
 for RT-11 V4.0  
 DIBOL RUN-TIME SYSTEMS  
 TSD VB07-00C  
 XMTSD VC07-00C

Seq 52.3.4 M

3 of 4

#P013D.MAC

```

        .TITLE  KDMESS
        .PSECT  KDMESS
P013:
        .=      .+1270
        JMP     P013A

        .PSECT  $P013
P013A:  MOV     2(SP),R1
        MOV     #3,R2
        SUB     4(SP),R2
        BLE     3$
        JMP     P013+1304
3$:     SUB     R2,R1
        MOV     #3,4(SP)
        JMP     P013+1324
        .END
    
```

#P013V1.MAC

```

        .TITLE  DTO
        .CSECT  DTO
P013:
        .=      .+6067
        .BYTE   'D
        .END
    
```

#P013V2.MAC

```

        .TITLE  $KERROR
        .PSECT  $ERROR
P013:
        .=      .+2476
        .BYTE   'D
        .END
    
```

.RENAME (DIO,KDIO,DMESS).OBJ \*.OLD  
 Files renamed:

```

DK:DIO.OBJ      to DK:DIO.OLD
DK:KDIO.OBJ     to DK:KDIO.OLD
DK:DMESS.OBJ   to DK:DMESS.OLD
    
```

.RENAME (KDMESS,DTO,KERROR).OBJ \*.OLD  
 Files renamed:

```

DK:KDMESS.OBJ  to DK:KDMESS.OLD
DK:DTO.OBJ     to DK:DTO.OLD
DK:KERROR.OBJ to DK:KERROR.OLD
    
```

CTS-300 V07  
for RT-11 V4.0  
DIBOL RUN-TIME SYSTEMS  
TSD VB007-00C  
XMTSD VC07-00C

Seq 52.3.4 M

4 of 4

```
.MACRO P013A,P013B,P013C,P013D,P013V1,P013V2  
ERRORS DETECTED: 0  
ERRORS DETECTED: 0  
ERRORS DETECTED: 0  
ERRORS DETECTED: 0  
ERRORS DETECTED: 0  
ERRORS DETECTED: 0
```

```
.R PAT  
*DIO.OBJ=DIO.OLD/C:027322,P013A/C:013557
```

```
.R PAT  
*KDIO.OBJ=KDIO.OLD/C:055330,P013B/C:014050
```

```
.R PAT  
*DMESS.OBJ=DMESS.OLD/C:141043,P013C/C:017412
```

```
.R PAT  
*KDMESS.OBJ=KDMESS.OLD/C:005270,P013D/C:017342
```

```
.R PAT  
*DTO.OBJ=DTO.OLD/C:036537,P013V1/C:002770
```

```
.R PAT  
*KERROR.OBJ=KERROR.OLD/C:077136,P013V2/C:006224
```

```
.R CTSGEN      ;FOR NORMAL TSD
```

```
.R CTSGEN      ;FOR EXTENDED MEMORY TSD
```

CTS-300 V07  
for RT-11 V04  
ISMUTL V07-00

Seq 52.7.1 M

1 of 2

PATCH 15: RUNNING ISMUTL IN AUTO-CREATE MODE (CJ)

Currently, when CREATEing a file with ISMUTL, the user is given a range from which to choose the number of blocks to allocate for the data file. The range is calculated at run time, and there is no default value. If the user desires to run ISMUTL in AUTO-CREATE mode, it is difficult for him to know the proper value to insert into the control file. This patch makes the default value the maximum of the calculated range. If ISMUTL is not being run in AUTO-CREATE mode, hitting the carriage return key in response to the data file allocation question generates the default value.

The version number of ISMUTL changes to V07-00A.

Using the editor, create the following files exactly as shown. Name them as indicated in the comment line that is the first line of each file. Then, to install the patch, follow the procedure shown following the files.

Corrections are made to the source modules using the SLP (Source Language Patch) program. Please note that the first record in each patch file is the comment and the last record is "/". You must terminate each line in those files with a carriage return, including the last line "/".

NOTES

The DISPLAY statement in patch file P015B.PAT appears as two lines in the patch (the second line being "MPLIES MAXIMUM); ')", but should be typed as one line. In other words, do not press the carriage return key after the words "(RETURN I"; type the line continuously.

In the statement "IF(NTMPOO.EQ.' ') ...." in the same file, a single space character should be typed inside the single quotes.

This patch is necessary for the DIBS application, which makes use of AUTO-CREATE. However, it must be installed by all users or subsequent patches to these modules will not be applied correctly by SLP.



```

;P015A.PAT
-170,170
      WRITES (11,'CTS300 ISAM UTILITY PROGRAM, V07-00A')
/

;P015B.PAT
-209,210
\
NMQ001, DISPLAY (11,ATMP02(1,25),AMINSZ(MNP,6),'-',ATMP01(CHRPN,21),'')(RETURN I
MPLIES MAXIMUM): '
-211
      IF(NTMP00.EQ.' ')NTMP00=ATMP01(CHRPN,21)          ;USE MAX BLOCKS
/

.RENAME (UTL2,CRET3).DBL *.OLD
Files renamed:
DK:UTL2.DBL   to DK:UTL2.OLD
DK:CRET3.DBL to DK:CRET3.OLD

.R SLP
*UTL2.DBL=UTL2.OLD,P015A.PAT
*CRET3.DBL=CRET3.OLD,P015B.PAT
*^C

.R DICOMP
*UTL2=UTL2/O

      NO ERRORS DETECTED
*CRET3=CRET3/O

      NO ERRORS DETECTED
*^C

.R LINK
*ISMUTL=UTL2,FCGFX,DIBOL/P:500./C
*RORG1/O:1/C
*RORG2/O:1/C
*RORG3/O:1/C
*RORG4/O:1/C
*STAT/O:1/C
*CRET1/O:1/C
*CRET2,NUMQ/O:1/C
*CRET3/O:1
*ISMUTL.TSD/B:100000=UTL2,FCGFX,TDIBOL/P:500./C
*RORG1/O:1/C
*RORG2/O:1/C
*RORG3/O:1/C
*RORG4/O:1/C
*STAT/O:1/C
*CRET1/O:1/C
*CRET2,NUMQ/O:1/C
*CRET3/O:1
*^C

.R REDUCE
*ISMUTL/N
*^C

```

CTS-300 V07  
for RT-11 V4.0  
TSD LINE PRINTER SPOOLER  
LPTSPL  
VB07-01

Seq 52.9.1 M

1 of 3

**PATCH 12: LINE PRINTER SPOOLER PROBLEMS WITH DELETE AND /FLUSH (PM)**

The following problems exist with the line printer spooler package:

1. When using the DELETE option either in the LPQUE statement or with the QUE program to delete a file after printing, the file is not deleted.

Patch 12 causes a file to be deleted when requested, as stated above.

2. If QUE/FLUSH is used to remove files in the queue, the spooler will loop so that additional messages cannot be received.

Patch 12 causes the spooler to receive the next message waiting after it has flushed the queue.

The version number of LPTSPL changes to VB07-01A.

Using the editor, create the following files as shown. Name them as indicated in the comment line that is the first line of each file. Then, to install the patch, follow the procedure shown following the file.

Corrections are made to the source modules using the SLP (Source Language Patch) program. Please note that the first record in each patch file is the comment and the last record is "/". You must terminate each line in those files with a carriage return, including the last line "/".

**NOTE**

The DISPLAY statement in patch file P012B.PAT appears as two lines in the patch (the second line being "-01A',13,10,10"), but should be typed as one line. In other words, do not press the carriage return key after the words "Spooler - VB07"; type the line continuously.

CTS-300 V07  
for RT-11 V4.0  
TSD LINE PRINTER SPOOLER  
LPTSPL  
VB07-01

Seq 52.9.1 M

2 of 3

```
 ;P012.PAT
-122,122
      IF (FIRST,EQ,0) GOTO OUT2
/

;P012A.PAT
-191,191
\
      IF(DEL,GE,1) XCALL DELET (IN,PRFILE)
/

;P012B.PAT
-132,132
\
      DISPLAY(TT,13,10,'Time-Shared DIBOL Line Printer Spooler - VB07
-01A',13,10,10)
/

.RENAME (LPSPL2,LPSPL8),DBL *.OLD
Files renamed:
DK:LPSPL2.DBL to DK:LPSPL2.OLD
DK:LPSPL8.DBL to DK:LPSPL8.OLD

.RENAME (LPSAT,LQSAT,LRSAT,LSSAT),DBL *.OLD
Files renamed:
DK:LPSAT.DBL to DK:LPSAT.OLD
DK:LQSAT.DBL to DK:LQSAT.OLD
DK:LRSAT.DBL to DK:LRSAT.OLD
DK:LSSAT.DBL to DK:LSSAT.OLD

.R SLP
*LPSPL8,DBL=LPSPL8.OLD,P012.PAT
*LPSAT,DBL=LPSAT.OLD,P012A.PAT
*LQSAT,DBL=LQSAT.OLD,P012A.PAT
*LRSAT,DBL=LRSAT.OLD,P012A.PAT
*LSSAT,DBL=LSSAT.OLD,P012A.PAT
*LPSPL2,DBL=LPSPL2.OLD,P012B.PAT
*^C
```

RT-11 Software Dispatch, October 1982

CTS-300 V07  
for RT-11 V4.0  
TSD LINE PRINTER SPOOLER  
LPTSPL  
VB07-01

Seq 52.9.1 M

3 of 3

.R DICOMP  
\*LPSPL8=LPSPL8/0

NO ERRORS DETECTED  
\*LPSAT=LPSAT/0

NO ERRORS DETECTED  
\*LQSAT=LQSAT/0

NO ERRORS DETECTED  
\*LRSAT=LRSAT/0

NO ERRORS DETECTED  
\*LSSAT=LSSAT/0

NO ERRORS DETECTED  
\*LPSPL2=LPSPL2/0

NO ERRORS DETECTED  
\*^C

.R LINK  
\*LPTSPL.TSD/B:100000=LPTSPL,TDIBOL/P:500.//  
\*LPSPL1,LPSPL7,QUF,QUFM/0:1  
\*LPSPL2/0:1  
\*LPSPL3/0:1  
\*LPSPL4/0:1  
\*LPSPL5/0:1  
\*LPSPL6/0:1  
\*LPSPL8/0:1  
\*LPSPL9/0:1  
\*//  
\*LPSAT.TSD/B:100000=LPSAT,TDIBOL/P:500.  
\*LQSAT.TSD/B:100000=LQSAT,TDIBOL/P:500.  
\*LRSAT.TSD/B:100000=LRSAT,TDIBOL/P:500.  
\*LSSAT.TSD/B:100000=LSSAT,TDIBOL/P:500.  
\*^C

.R REDUCE  
\*LPTSPL.TSD/N  
\*LPSAT.TSD/N  
\*LQSAT.TSD/N  
\*LRSAT.TSD/N  
\*LSSAT.TSD/N  
\*^C

CTS-300 V07  
for RT-11 V4.0  
LS.CTS

Seq 52.17.1 M

1 of 2

**PATCH 14: PROBLEMS WITH LS HANDLER**

- a. If device time-out is included, the LS handler's timer request causes a race condition with the monitor's .TWAIT processor.
  - b. Under certain conditions, use of the LS handler generated with time-out support will cause an illegal SST or crash the system.
1. The following is a required patch to the device handler source file LS.CTS. You must apply it to the uncommented sources supplied with the Version 7 distribution kit. You must apply this patch whether or not you have performed a system generation to include time-out support.

NOTE: Patching the distribution medium is not recommended, the patch must be installed whenever you copy the handler source from the distribution medium.

2. To install the patch, you must first create a patch file for input to the SLP utility. Using an editor, create a file named P014.PAT on your system volume. Enter the text below into the file. The hyphen must be the first character in the file. The special symbol '<tab>' indicates the TAB character. All other blank space in the text should be entered into the file as single SPACE characters.

```
-23,23  
ELLS<tab>== 6  
-156  
<tab>.FORK<tab>LIFBLK  
-168  
<tab>.FORK<tab>LIFBLK  
-191  
<tab>CLR<tab>LIFBLK+2  
-214,222  
<tab>BMI<tab>10$  
7$:<tab>JMP<tab>RET  
10$:<tab>TST<tab>STALLF
```

CTS-300 V07  
for RT-11 V4.0  
LS.CTS

Seq 52.17.1 M

2 of 2

```
<tab>BEQ<tab>7$  
-304,304  
<tab>.WORD<tab>177700!LS$CODE  
-308  
LIFBLK:<tab>.WORD<tab>0,0,0,0  
/
```

3. Rename LS.CTS to LS.OLD:

```
.RENAME LS.CTS LS.OLD
```

4. Apply the patch to the source file as follows:

```
.R SLP  
*LS.CTS=LS.OLD,P014.PAT  
*^C (Control C to exit)
```

NOTE: You may ignore any audit trail overwrite warnings which may occur.

5. You must now run CSYSGN for the patch to take effect.
6. Preserve the patched handler source file. If there are any future corrections to LS.CTS, you will be required to apply them to the patched source file.

RT-11 V4.0  
CUMULATIVE INDEX  
OCTOBER 1982

This is a complete listing of all articles for RT-11 V4.0 and related products. In the case of subordinate software, missing sequence numbers may pertain to problems unique to interaction with previous versions of the same product or other major operating systems.

**IMPORTANT!**

Unassigned articles are indicated: UNASSIGNED.

Flags are currently being installed for all articles. The flags and definitions are as follows:

**M = Mandatory Patch.** These patches correct errors in the software product. All users are required to apply these patches to maintain consistent "user level" unless the accompanying article specifies otherwise.

**F = Optional Feature Patch.** These patches extend or configure functionality into the product. These functions will be treated as a supported part of the product for the duration of the current release and will be incorporated with any future release, unless otherwise stated.

**R = Restriction.** These articles discuss areas that will not be patched in the current release because they require major modification or because they are not consistent with the design of the product. Restrictions, except those described as permanent, are reviewed and modified when possible as part of the normal release cycle.

**N = NOTE.** These articles provide explanatory information that supplements the manual set and provide more detailed information about a program or package. They also provide procedural information to make it easier to use a program or package.

+ = Articles appeared in the RT-11 Software Dispatch Review, March 1980.

\*The "Autopatch Kit" column in the list which follows indicates the first RT-11 V4.0 Autopatch Kit in which the associated patch was included. Unless otherwise indicated, the patches also appear in subsequent Autopatch Kits as well. Note that Autopatch Kit "G" is the latest kit available from the SDC.

<u>Component</u>	<u>Autopatch Kit</u>	<u>Sequence</u>	<u>Mon/Yr</u>
RT-11 V4.0			
<b>MONITOR PATCHES</b>			
ISSUING .SETTOP #-2 AND .EXIT UNDER XM MONITOR MAY CORRUPT SYSTEM DISK	A	1.1.1 M	Jul 80
IMPLEMENTING INTERNAL HANDLER QUEUEING IN FB AND XM MONITORS	A	1.1.2 M	Jul 80
ADDING HIGH SPEED RING BUFFER SUPPORT	A	1.1.3 M	Jul 80
CORRUPTION OF CSI TEXT UNDER XM MONITOR	A	1.1.4 M	Jul 80
MISSING COLON IN BOOT XX CAUSES SYSTEM HALT	A	1.1.5 M	Jul 80
TYPING ^U WHILE IN A ^X SEQUENCE UNDER A SYSTEM JOB	A	1.1.6 M	Sep 80
ABNORMAL TERMINATION OF FG JOB WHICH IS USING CSI	A	1.1.7 M	Nov 80
MISCELLANEOUS MRRT-11 BUGS	A	1.1.8 M	Nov 80
MRRT-11 MINIMAL FILE SUPPORT PROBLEM	A	1.1.9 M	Nov 80
INCORRECT LIMIT CHECKS ON PRIVILEGED BACKGROUND JOBS USING VIRTUAL OVERLAYS	A	1.1.10 M	Nov 80
MULTI-TERMINAL MONITORS DON'T ALWAYS PROCESS CTRL/F PROPERLY	A	1.1.11 M	Nov 80
MONITOR CHANGES AND CORRECTIONS	A	1.1.12 M	Dec 80
MONITOR CORRECTIONS	B	1.1.13 M	Jan 81
MONITOR UPDATES	B	1.1.14 M	Feb 81
ABORT I/O IN PROGRESS HANDLER BIT	B	1.1.15 M	Apr 81
CORRECTIONS FOR DISTRIBUTED AND SYSTEM GENERATED MONITORS	C	1.1.16 M	Jun 81
PRINT COMMAND RESTRICTION		1.1.17 R	Jul 81
UPDATES TO MONITOR FILES	D	1.1.18 M	Oct 81
CORRECTIONS TO THE MONITOR	E	1.1.19 M	Jan 82
<b>MONITOR NOTES</b>			
COMPLETION ROUTINE OPERATION UNDER THE SJ MONITOR		1.2.1 N	Sep 82

<u>Component</u>	<u>Autopatch Kit</u>	<u>Sequence</u>	<u>Mon/Yr</u>
<u>DEVICE HANDLER SOURCES</u>			
<u>DEVICE HANDLER NOTES</u>			
RLO2s AT REV. LEVEL "F" FAIL DURING RT-11 SYSGEN		6.1.1 N	Oct 80
<u>DD.MAC</u>			
DD PRIMARY BOOTSTRAP PROBLEM	A	6.4.1 M	Jul 80
<u>DL.MAC</u>			
PATCH XM VERSION OF DL HANDLER .SPFUN GET SIZE ROUTINE	A	6.5.1 M	Dec 80
ERRORS ON RLO1 DISK DRIVES AFTER DISK PACKS ARE CHANGED	B	6.5.2 M	Jan 81
<u>DM.MAC</u>			
ERRORS IN DM OFFSET POSITIONING AND ERROR LOGGING	A	6.6.1 M	Jul 80
<u>DY.MAC</u>			
DELETED DATA MARK MAY BE LOST IF BUFFER STARTS ON PAR BOUNDARY	D	6.11.1 M	Aug 81
ERROR LOGGING SUPPORT FOR DY		6.11.2 M	Oct 82
<u>LP.MAC</u>			
LP SET NOHANG MAY CRASH SYSTEM	A	6.12.1 M	Sep 80
<u>LS.MAC</u>			
LS SET NOHANG MAY CRASH SYSTEM	A	6.13.1 M	Sep 80
PROBLEMS WITH LS HANDLER	B	6.13.2 M	Jan 81
USING AN LA120 TERMINAL AS A LINE PRINTER WITH THE LS HANDLER		6.13.3 N	Jul 81
SET LS NOHANG IS CURRENTLY INOPERATIVE	C	6.13.4 M	Jul 81
RACE CONDITION IN LS HANDLER	D	6.13.5 M	Aug 81
LS HANDLER SET "NOHANG" PROBLEM	E	6.13.6 M	Jan 82
PROBLEMS WITH LS HANDLER		6.13.7 M	Oct 82
<u>PD.MAC</u>			
CORRECTION TO PDT ERROR LOGGING SUPPORT	B	6.16.1 M	Apr 81
<u>MAG TAPE HANDLERS</u>			
BUFFER CLEARING ON SHORT READ IN XM MONITOR	A	6.20.1 M	Jul 80
LINKING AN XM, NON-FILESTRUCTURED TS HANDLER GENERATES			
AN UNDEFINED GLOBAL	A	6.20.2 M	Aug 80
INCORRECT READ ERROR RECOVERY IN MT HANDLER	A	6.20.3 M	Sep 80
TS-11 DOES NOT RECOVER FROM SOFT ERROR ON WRITE EOF	C	6.20.4 M	Jul 81
<u>SYSTEM UTILITIES</u>			
<u>PIP.SAV</u>			
ERRORS IN PIP	A	7.1.1 M	Sep 80
COPY/PREDELETE COMMAND		7.1.2 N	Sep 80
MATCHING FILE SPECIFICATIONS ERRORS	B	7.1.3 M	Feb 81
COPY/BINARY/WAIT AND LOG HEADER PROBLEMS	B	7.1.4 M	Apr 81
COPY/PREDELETE AND COPY/NOREPLACE WORK INCORRECTLY WITH /WAIT	C	7.1.5 M	Jun 81
ERROR WITH RENAME/NOREPLACE	C	7.1.6 M	Jul 81
/POSITION:N SWITCH FOR MAGTAPE INPUT WORKS INCORRECTLY	D	7.1.7 M	Oct 81
COPY/BINARY STOPS PROCESSING AFTER ENCOUNTERING AN OBJ LIBRARY FILE	E	7.1.8 M	Nov 81
COPYING FILES TO UNINITIALIZED DISKS		7.1.9 N	Nov 81
ALLOCATE AND DELETE WORK INCORRECTLY WITH COPY OPERATIONS	F	7.1.10 M	Feb 82
<u>DUP.SAV</u>			
MISSING COLON IN BOOT XX CAUSES SYSTEM HALT	A	7.2.1 M	Jul 80
SQUEEZE CREATES <UNUSED> ENTRIES OF LENGTH ZERO BEFORE			
.BAD FILES	A	7.2.2 M	Aug 80
PROBLEMS WITH COPY/DEVICE AND INITIALIZE	A	7.2.3 M	Dec 80
BOOTSTRAPPING AN UNPATCHED MONITOR FROM A PATCHED SYSTEM	B	7.2.4 N	Jan 81
.SPFUN RETURN BUFFER PROCESSED INCORRECTLY FOR RK06/7	B	7.2.5 M	Jan 81
USE OF INITIALIZE/RESTORE ON MEDIA SUPPORTING BAD			
BLOCK REPLACEMENT		7.2.6 N	May 81
PROBLEMS WITH INIT/BAD AND COPY/DEVICE	C	7.2.7 M	May 81
PROBLEMS WITH INITIALIZE COMMAND	C	7.2.8 M	Jun 81
ATTEMPT TO RESTORE UNCLOSED TENTATIVE FILES FAILS	C	7.2.9 M	Jul 81
/V WITH NO DEVICE SPECIFICATION GIVES WRONG ERROR MESSAGE	D	7.2.10 M	Sep 81
OUTPUT ERROR DURING COPY/DEVICE TO MAGTAPE CAUSES SYSTEM ERROR	E	7.2.11 M	Oct 81
USE OF COPY/DEV/FILE WITHOUT FILE SPECIFICATION	E	7.2.12 M	Nov 81
PROBLEMS WITH COPY/DEVICE USING /END	F	7.2.13 M	Apr 82



<u>Component</u>	<u>Autopatch Kit</u>	<u>Sequence</u>	<u>Mon/Yr</u>
<b>DIR.SAV</b>			
DIR/OUT COMMAND PRODUCES DEVICE NOT ACTIVE MESSAGE	A	7.3.1 M	Jul 80
DIR/VOL GIVES ?MON-F-TRAP TO 4	A	7.3.2 M	Dec 80
LOSS OF LAST PRINT CHARACTER IN DIRECTORY LISTING	D	7.3.3 M	Sep 81
<b>RESORC.SAV</b>			
RESORC MAY REPORT INCORRECT JOB NAMES ON A SHOW JOBS COMMAND	A	7.5.1 M	Aug 80
ADD CIS DETECTION CAPABILITY TO RESORC	B	7.5.2 M	May 81
PROBLEM WITH IDENTIFYING 11/23 PROCESSOR	D	7.5.3 M	Sep 81
<b>LINK.SAV</b>			
LINK BYTE RELOCATION AND DIRECTORY SIZE	A	7.9.1 M	Jul 80
LINK MAP PROCESSING ERROR	A	7.9.2 M	Aug 80
LINK MAP ERROR AND MULTIPLE DEFINITION LIBRARIES	A	7.9.3 M	Oct 80
RT-11 V4 LINKER RESTRICTION	B	7.9.4 R	Jan 81
LINK TRANSFER ADDRESS CALCULATION BUGS	B	7.9.5 M	Mar 81
LINK ADDITIONS AND CORRECTIONS	D	7.9.6 M	Aug 81
LINK UPGRADE	E	7.9.7 M	Nov 81
LINK ERROR IN LIBRARY MODULE TRANSFER ADDRESS PROCESSING	E	7.9.8 M	Jan 82
LINK LIBRARY MODULE PLACEMENT ERROR	E	7.9.9 M	Jan 82
LINK MULTIPLE ERROR FIXES	G	7.9.10 M	May 82
LINK REFERENCES ILLEGAL ADDRESS		7.9.11 M	Oct 82
<b>LIBR.SAV</b>			
A LIBR COMMAND WITH NO FILE-SPEC CAN CAUSE A SYSTEM CRASH	A	7.10.1 M	Jul 80
LIBR ERRORS	C	7.10.2 M	Jul 81
LIBR CORRUPTS FORM LIBRARY DIRECTORY	C	7.10.3 M	Jun 81
LIBR ERROR IN GENERATING ENTRY POINT TABLE	E	7.10.4 M	Jan 82
LIBR RESTRICTION		7.10.5 N	Jan 82
<b>FILEX.SAV</b>			
FILEX WILDCARD TRANSFERS CAUSE MONITOR TRAP	A	7.11.1 M	Aug 80
FILEX CREATES ZERO FILLED INTERCHANGE RECORDS	A	7.11.2 M	Sep 80
SIZE CALCULATION PROBLEM IN FILEX	D	7.11.3 M	Aug 81
RECORDS DROPPED BY FILEX	D	7.11.4 M	Sep 81
<b>SRCCOM.SAV</b>			
COMPARING TWO FILES MAY CAUSE TRAP TO 4	A	7.12.1 M	Aug 80
BLANK LINE COMPARISON FOR SLIDING MATCH	A	7.12.2 M	Dec 80
<b>BINCOM.SAV</b>			
BINCOM GENERATES ERRONEOUS ERROR MESSAGE	B	7.13.1 M	Apr 81
ERRONEOUS DOUBLE PRECISION CALCULATION IN BINCOM	C	7.13.2 M	Jun 81
BINCOM PLACES TAB CHARACTER AFTER OFFSET IN SIPP COMMAND FILE	E	7.13.3 M	Jan 82
<b>DUMP.SAV</b>			
BLOCK NUMBERS OUTPUT FROM DUMP	D	7.14.1 M	Aug 81
<b>SLP.SAV</b>			
TERMINATION OF PATCHING SESSION WITH SLP FATAL ERRORS	A	7.15.1 M	Nov 80
SLP GENERATES FATAL ERROR TRAP	B	7.15.2 M	Jan 81
SLP ERROR	B	7.15.3 M	Mar 81
<b>SIPP.SAV</b>			
CORRUPTION OF MULTI-BLOCK LOG FILES	A	7.16.1 M	Jul 80
<b>PAT.SAV</b>			
USE OF THE PAT UTILITY WITH RT-11 V3B PATCHES		7.17.1 N+	Mar 80
<b>HELP.SAV</b>			
PROBLEMS WITH HELP UTILITY	A	7.19.1 M	Nov 80
<b>EDIT.SAV</b>			
EDIT MISHANDLES OUTPUT FILE FULL ERROR	B	7.20.1 M	Nov 81
<b>SYSTEM SUBROUTINE LIBRARY (SYSLIB)</b>			
<u>SYSLIB.OBJ</u>			
PATCH TO ICSI	A	8.1.1 M	Oct 80
IASIGN REDEFINITIONS	A	8.1.2 M	Oct 80

<u>Component</u>	<u>Autopatch Kit</u>	<u>Sequence</u>	<u>Mon/Yr</u>
ILUN RESTRICTION		8.1.3 R	Feb 81
VIRTUAL OVERLAY HANDLER CORRECTION	E	8.1.4 M	Feb 82
<u>SYSTEM MACRO LIBRARY</u>			
.SPFUN PROGRAMMED REQUEST	A	9.1.1 M	Dec 80
ABORT I/O PROGRESS SUPPORT FOR SYSMAC	B	9.1.2 M	Apr 81
.CMKT PROGRAMMED REQUEST	C	9.1.3 M	Jun 81
INCORRECT EXPANSION OF .DRSET MACRO	F	9.1.4 M	Apr 82
<u>SYSTEM GENERATION PACKAGE</u>			
SYSGEN CREATES ONE MORE DEVICE SLOT THAN REQUESTED	A	10.3.1 M	Dec 80
ASSEMBLY ERROR AFTER SYSGEN	B	10.3.2 M	Mar 81
TERMINAL OUTPUT CORRUPTION ON DZ11 OR DZV11 LINES	F	10.3.3 M	Apr 82
<u>DOCUMENTATION</u>			
<u>RT-11 SYSTEM RELEASE NOTES</u>			
RT-11 V4.0 DOCUMENTATION CORRECTIONS AND ADDITIONS		11.2.1 N	Jul 80
DOCUMENTATION CORRECTIONS		11.2.2 N	Aug 80
CHANGES TO DUP /I OPTION		11.2.3 N	Apr 81
INCORRECT DUP CUSTOMIZATION PATCHES		11.2.4 N	Sep 81
<u>RT-11 INSTALLATION AND SYSTEM GENERATION GUIDE</u>			
RT-11 V4.0 DOCUMENTATION CORRECTIONS AND ADDITIONS		11.3.1 N	Jul 80
CORRECTION TO AN OPTIONAL PATCH TO LINK		11.3.2 N	Aug 80
DOCUMENTATION ERROR: REFERENCE TO RLO2 OMITTED FROM SYSGEN DIALOGUE		11.3.3 N	Oct 80
INCORRECT LINK MAPS FOR DISTRIBUTED MONITORS		11.3.4 N	Dec 80
INCORRECT PATCH FOR CHANGING QUEUE WORK FILE SIZE		11.3.5 N	Dec 80
CHANGING DEFAULT NUMBER OF DIRECTORY SEGMENTS		11.3.6 N	Apr 81
<u>INTRODUCTION TO RT-11</u>			
RT-11 V4.0 DOCUMENTATION CORRECTIONS AND ADDITIONS		11.4.1 N	Jul 80
<u>RT-11 SYSTEM USER'S GUIDE</u>			
RT-11 DOCUMENTATION CORRECTIONS AND ADDITIONS		11.5.1 N	Jul 80
CORRECTIONS TO SLP CHAPTER: RT-11 SYSTEM USER'S GUIDE		11.5.2 N	Oct 80
DIFFERENCES BETWEEN DEVICE COPYING COMMANDS		11.5.3 N	Dec 80
<u>RT-11 SYSTEM MESSAGE MANUAL</u>			
RT-11 V4.0 DOCUMENTATION CORRECTIONS AND ADDITIONS		11.6.1 N	Jul 80
CORRECTIONS TO SLP MESSAGES IN "RT-11 SYSTEM MESSAGE MANUAL"		11.6.2 N	Nov 80
NEW SLP ERROR MESSAGE		11.6.3 N	Feb 81
PIP ERROR MESSAGES MISSING		11.6.4 N	Oct 81
<u>RT-11 POCKET GUIDE</u>			
RT-11 V4.0 DOCUMENTATION CORRECTIONS AND ADDITIONS		11.7.1 N	Jul 80
<u>RT-11 PROGRAMMER'S REFERENCE MANUAL</u>			
DOCUMENTATION CORRECTIONS		11.8.1 N	Sep 80
INCORRECT PROGRAMMED REQUEST EXAMPLES		11.8.2 N	Mar 81
UNDOCUMENTED .SERR ERROR CODE		11.8.3 N	Dec 81
<u>RT-11 SOFTWARE SUPPORT MANUAL</u>			
RT-11 V4.0 DOCUMENTATION CORRECTIONS AND ADDITIONS		11.9.1 N	Jul 80
SOFTWARE SUPPORT MANUAL CORRECTION		11.9.2 N	Jun 81
ERROR IN DESCRIPTION OF .DRSET MACRO		11.9.3 N	Sep 81
<u>DEBUGGING UTILITIES</u>			
<u>VDT.OBJ</u>			
NOTES ON USING ODT OR VDT IN AN XM ENVIRONMENT		12.2.1 N	Jan 81
ERROR STATUS NOT SAVED/RESTORED BY VDT		12.2.2 M	Oct 82
<u>ERROR CONTROL PACKAGE</u>			
<u>ERROUT.MAC</u>			
ERROR LOGGING SUPPORT OF USER-WRITTEN HANDLERS	G	14.6.1 M	May 82
<u>BATCH PACKAGE</u>			
<u>BATCH.SAV</u>			
PATCH BATCH TO USE MONITOR SUFFIX	A	15.1.1 M	Oct 80
BATCH \$CREATE IGNORES BLANK LINES		15.1.2 M	Aug 82

<u>Component</u>	<u>Autopatch Kit</u>	<u>Sequence</u>	<u>Mon/Yr</u>
<u>SPOOLING PACKAGE</u>			
<u>QUEUE.REL</u>			
SUPERFLUOUS LINEFEED FROM QUEUE	B	16.1.1 M	Mar 81
NARROW BANNER PAGES FROM QUEUE	C	16.1.2 F	May 81
/R FOLLOWING /S IF NO OUPUT QUEUED MAY CAUSE FATAL ERROR IN QUEUE	D	16.1.3 M	Aug 81
ATTEMPTING TO COMMUNICATE WITH 'QUEUE' FROM A VIRTUAL JOB		16.1.4 N	Apr 82
QUEUE MAY INDICATE INCORRECT NUMBER OF COPIES ON BANNER PAGES		16.1.5 M	Sep 82
<u>QUEMAN.SAV</u>			
PROBLEMS WITH QUEMAN	B	16.2.1 M	Jan 81
<u>KEYPAD EDITOR</u>			
<u>KED</u>			
MAKE TERMINAL SETUP OPTIONAL IF MTATCH FAILS	A	17.1.1 F	Aug 80
PROVIDE A .CHAIN INTERFACE FOR KED	A	17.1.2 F	Aug 80
PROVIDE REASONABLE ACTIONS AND ERROR MESSAGES WHEN DEALING WITH DEGENERATE FILES	A	17.1.3 M	Oct 80
SEARCH FAILS IF TARGET IF FIRST OR LAST STRING IN THE FILE	A	17.1.4 M	Nov 80
KNOWN ERRORS AND RESTRICTIONS		17.1.5 R	Dec 80
"SET SEARCH EXACT JUNK" COMMAND CRASHES KED	C	17.1.6 M	Jul 81
REPEATED USE OF THE "APPEND" FUNCTION CRASHES KED	C	17.1.7 M	Dec 81
DISABLE REVERSE VIDEO DISPLAY BY KED	E	17.1.8 F	Jul 81
FILE SAMPLE.KED OMITTED FROM DISTRIBUTION		17.1.9 N	Aug 81
KED DOCUMENTATION CORRECTION		17.1.10 N	Nov 81
<u>K52</u>			
MAKE TERMINAL SETUP OPTIONAL IF MTATCH FAILS	A	17.2.1 F	Aug 80
PROVIDE A .CHAIN INTERFACE FOR K52	A	17.2.2 F	Aug 80
PROVIDE REASONABLE ACTIONS AND ERROR MESSAGES WHEN DEALING WITH DEGENERATE FILES	A	17.2.3 M	Oct 80
SEARCH FAILS IF TARGET IS FIRST OR LAST STRING IN THE FILE	A	17.2.4 M	Nov 80
KNOWN ERRORS AND RESTRICTIONS		17.2.5 R	Dec 80
"SET SEARCH EXACT JUNK" COMMAND CRASHES K52	C	17.2.6 M	Jul 81
REPEATED USE OF THE "APPEND" FUNCTION CRASHES K52	E	17.2.7 M	Dec 81
NO EQUIVALENT PATCH FOR K52 FOR SEQ 17.1.8		17.2.8 N	Aug 81
FILE SAMPLE.KED OMITTED FROM DISTRIBUTION		17.2.9 N	Aug 81
KED DOCUMENTATION CORRECTION		17.2.10 N	Dec 81
<u>AUTOMATED PATCHING FACILITY PACKAGE</u>			
<u>PACKAGE NOTES</u>			
AUTOPATCH SERVICE FOR RT-11		19.1.1 N	Jun 81
FMS-11/RT-11 V1.1			
ANNOUNCING FMS-11/RT-11 V1.1		33.1 N	Aug 80
<u>FRED V1.1</u>			
ZERO IMPURE AREA SIZE PROBLEM		33.3.1 M	Sep 81
BASIC-11/RT-11 V2.0			
<u>INTERPRETER</u>			
REPLICATION OF PATCHES		35.1.1 N+	Mar 80
PRINT USING - PATCH A	A	35.1.2 M+	Mar 80
RESEQ - PATCH B	A	35.1.3 M+	Mar 80
EDITING A DIM #n STATEMENT - PATCH C	A	35.1.4 M+	Mar 80
DOUBLE PRECISION HANG - PATCH D	A	35.1.5 M+	Mar 80
SAVE dev: AND REPLACE dev: - PATCH E	A	35.1.6 M+	Mar 80
SINGLE PRECISION HANG AND NUMERIC CONVERSION PROBLEM - PATCH F	A	35.1.7 M+	Mar 80
SAVE .XXX & UNSAVE .XXX - PATCH G	A	35.1.8 M+	Mar 80
NEW - PATCH H	A	35.1.9 M+	Mar 80
RESEQ - PATCH I	A	35.1.10 M+	Mar 80
LISTNH / OLD - PATCH J	A	35.1.11 M+	Mar 80
SYS(1) - PATCH K	A	35.1.12 M+	Mar 80
CALL - PATCH L	A	35.1.13 M+	Mar 80
DOUBLE PRECISION INTEGER VARIABLES - PATCH M	A	35.1.14 M+	Mar 80
FILESIZE 0 - PATCH N	A	35.1.15 M+	Mar 80

<u>Component</u>	<u>Autopatch Kit</u>	<u>Sequence</u>	<u>Mon/Yr</u>
INTEGERS IN DOUBLE PRECISION BASIC-11		35.1.16 N+	Mar 80
REM STATEMENTS ON MULTI-STATEMENT LINES - PATCH O	A	35.1.17 M+	Mar 80
INT FUNCTION - PATCH P FOR SINGLE USER BASIC-11	A	35.1.18 M	Nov 80
RETRACTED		35.1.19 M	May 81
PRINT USING - PATCH R FOR SINGLE USER BASIC-11	B	35.1.20 M	Jan 81
OMITTING TRIG FUNCTIONS FROM BASIC-11	B	35.1.21 N	Jan 81
STRING CONCATENATION - PATCH S FOR SINGLE USER BASIC-11	B	35.1.22 M	Mar 81
PROBLEM WITH BASIC-11 PATCH Q		35.1.23 N	May 81
INTEGER COMPARISON - PATCH T FOR SINGLE USER BASIC-11		35.1.24 M	Sep 82
PASSING STRING ARGUMENTS TO ALRs - PATCH U FOR SINGLE USER BASIC-11		35.1.25 M	Sep 82
REVISION TO PATCH "T" FOR SINGLE USER BASIC-11		35.1.26 M	Oct 82
USING "CHAIN" WITH "COMMON" MAY CAUSE SYSTEM CRASH - PATCH "V" FOR BASIC-11		35.1.27 M	Oct 82
UTILITIES			
CONVERSION PROGRAM		35.2.1 M+	Mar 80
BASIC-11/RT-11 V2 CONVERSION PROGRAM PATCH 1		35.2.2 M+	Mar 80
DOCUMENTATION			
OVERLAYING WHILE IN A SUBROUTINE		35.3.1 R+	Mar 80
OPERATION OF CTRLC, RCTRLC AND SYS(6) FUNCTIONS AND THE CTRL/C COMMAND		35.3.2 N+	Mar 80
OPERATION OF OLD, RUN, CHAIN, AND OVERLAY WHEN THE SPECIFIED FILE IS NOT FOUND		35.3.3 N+	Mar 80
CREATING AND ACCESSING VIRTUAL ARRAY FILES		35.3.4 N+	Mar 80
STORAGE OF THE NULL CHARACTER IN STRING VARIABLES AND VIRTUAL STRING ARRAYS		35.3.5 N+	Mar 80
USE OF COMPILE COMMAND		35.3.6 N+	Mar 80
STRING MANIPULATION IN ASSEMBLY LANGUAGE ROUTINES		35.3.7 N+	Mar 80
MAXIMUM ARRAY SUBSCRIPT SIZE		35.3.8 N+	Mar 80
NEW MANUAL AVAILABLE FOR BASIC-11/RT-11		35.3.9 N	May 81
MICROPOWER/PASCAL V1.0			
ANNOUNCING MICROPOWER/PASCAL V1.0		37.1.1 N	Apr 82
BUILDING AN APPLICATION THAT USES THE FILE SYSTEM		37.1.2 M	May 82
MICROPOWER/PASCAL V1.1			
MISCELLANEOUS NOTES			
ANNOUNCING MicroPower/Pascal V1.1		37.1.1.1 N	Sep 82
MIB			
MIB MAY GIVE A HARDWARE READ ERROR DURING KERNAL INSTALLATION		37.3.3.1 N	Aug 82
PAXM/PAXU/KERNAL			
SERA REQUEST FOR DISCONNECT MAY FAIL IN A MAPPED SYSTEM		37.4.1.1 N	Aug 82
ILLEGAL ADDRESS ARGUMENT CAN CAUSE UNPREDICTABLE RESULTS		37.4.1.2 N	Aug 82
DISPATCH TO UNMAPPED STACK OVERFLOW EXCEPTION IS INCORRECT		37.4.1.3 N	Aug 82
STOPPED PROCESSES ARE PLACED IN THE INACTIVE QUEUE		37.4.1.4 N	Aug 82
PROCESS ON INACTIVE QUEUE DOES NOT HAVE POINTER TO EXCEPTION FRAME		37.4.1.5 N	Aug 82
DISCONNECT FROM INTERRUPT REQUEST MAY CORRUPT KERNEL FREE POOL		37.4.1.6 N	Sep 82
MULTIPLE EXCEPTIONS IN A PROCESS CAN CAUSE UNPREDICTABLE RESULTS		37.4.1.7 N	Sep 82
PASCAL COMPILER			
CONFORMANT ARRAYS AND SINGLE CHARACTER LITERALS		37.5.1.1 N	Aug 82
FORMAL PARAMETER LISTS WITH DEFAULT VALUES		37.5.1.2 N	Aug 82
ATTRIBUTE [CONTEXT(MMU)] DOES NOT WORK		37.5.1.3 N	Aug 82
ACCESSING UP-LEVEL LOCAL VARIABLES FROM [TERMINATE] PROCEDURES		37.5.1.4 N	Aug 82
CALLING THE ROUND (OR TRUNC, UROUND, UTRUNC) FUNCTION WITH NON-STATIC VARIABLES		37.5.1.5 N	Aug 82
OTS			
KEF-11 FLOATING POINT STATUS WORD IS INCORRECTLY INITIALIZED		37.6.1.1 N	Aug 82
THE NATURAL LOG FUNCTION RETURNS INCORRECT RESULTS		37.6.1.2 N	Aug 82

<u>Component</u>	<u>Autopatch Kit</u>	<u>Sequence</u>	<u>Mon/Yr</u>
<b>XL (SERIAL LINE) DRIVER</b>			
ERROR IN "DISCONNECT TRANSMIT RING BUFFER" FUNCTION		37.8.1.1 N	Aug 82
BLOCK MODE READ REQUEST RETURNS INCORRECT DATA		37.8.1.2 N	Aug 82
<b>DOCUMENTATION</b>			
RENAMING LIBXXX.OBJ TO SYSLIB IS NO LONGER RECOMMENDED		37.10.1.1 N	Sep 82
RENAMING COMM.SML OR COMU.SML TO SYSMAC.SML IS NO LONGER RECOMMENDED		37.10.1.2 N	Sep 82
PROCESSOR JUMPERS FOR POWER-UP MODES SHOWN ON PAGE 1-4 OF THE MicroPower/Pascal INSTALLATION GUIDE ARE INCORRECT		37.10.1.3 N	Sep 82
MicroPower/Pascal V1.0 SYSTEM USER'S GUIDE DOES NOT GIVE FULL INFORMATION ON THE LINDF\$ MACRO FIELDS		37.10.1.4 N	Sep 82
DLV-11 PREFIX MODULE EXAMPLE SHOWS INCORRECT CSR		37.10.1.5 N	Sep 82
<b>MU BASIC-11/RT V2.1</b>			
<b>INTERPRETER</b>			
MU BASIC V2.1 MAINTENANCE RELEASE AVAILABLE			Mar 82
UNWARRANTED ISSUANCE OF "TOO MANY CHANNELS" ERROR - PATCH A FOR MULTI-USER BASIC-11		38.1.1 M	Jul 82
"ERR" VALUE IMPROPERLY UPDATED WHEN USING "ON ERROR GOTO nnnnn" - PATCH B TO MULTI-USER BASIC-11		38.1.2 M	Jul 82
"RESEQ" FOLLOWING "DEL nnnnn" RESULTS IN "Mon-F-Trap to 10 000002" - PATCH C TO MULTI-USER BASIC-11		38.1.3 M	Jul 82
PROGRAMS RETRIEVED USING "OLD filename" OR "RUN filename" ARE SOMETIMES CORRUPTED - PATCH "D" FOR MU BASIC-11		38.1.4 M	Sep 82
IMPROPER FILE EXTENSION CREATED FOR COMPILED FILES WHEN MU BASIC-11 IS CONFIGURED FOR DOUBLE-PRECISION - PATCH "E" FOR MU BASIC-11		38.1.5 M	Sep 82
REVISION TO PATCH "F" FOR MULTI-USER BASIC-11		38.1.6 M	Oct 82
PROBLEMS DEASSIGNING PREVIOUSLY ASSIGNED TERMINAL - PATCH "G" FOR MU BASIC-11		38.1.7 M	Oct 82
<b>FORTRAN IV/RT-11 V2.5</b>			
<b>COMPILER</b>			
ANNOUNCING PDP-11 FORTRAN IV/RT-11 V2.5		45.1.1 N	Sep 80
THE COMPILER INCORRECTLY PARSES SOME EXPRESSIONS IN I/O LISTS	A	45.1.2 M	Nov 80
THE COMPILER INCORRECTLY CONVERTS INTEGER TO BYTE IN LOGICAL EXPRESSIONS	A	45.1.3 M	Nov 80
THE COMPILER GENERATES INCORRECT CODE FOR EQUIVALENCED ARRAYS (PAT 12)	D	45.1.4 M	Sep 81
THE COMPILER INCORRECTLY INTERPRETS COMMENTS WITH TABS (PAT 17)	E	45.1.5 M	Nov 81
MISSING END IN MAIN PROGRAM CAN CAUSE COMPILER CRASH (PAT 18)	E	45.1.6 M	Nov 81
THE COMPILER INCORRECTLY OPTIMIZES ARRAY ELEMENTS PASSED AS ARGUMENTS (PAT 20)	E	45.1.7 M	Dec 81
THE COMPILER INCORRECTLY PARSES PARENTHESES IN QUOTED STRINGS (PAT 21)	E	45.1.8 M	Jan 82
THE COMPILER CRASHES WHILE ACCESSING AN ODD ADDRESS IN PAT 12 (PAT 22)	E	45.1.9 M	Jan 82
CORRECTION FOR CONTINUATION LINES PRECEDED BY COMMENTS (PAT 27)	F	45.1.10 M	Apr 82
BOUNDS CHECKING OF INTERNAL BUFFER IN OPTIMIZER (PAT 29)	G	45.1.11 M	Jun 82
COMPILER HANGS WHEN ERRORS OCCUR IN STATEMENT FUNCTIONS (PAT 31)	G	45.1.12 M	Jun 82
INCORRECT BYTE TO INTEGER CONVERSION		45.1.13 M	Aug 82
COMPILER GENERATES FATAL ERROR IN REGISTER ALLOCATOR		45.1.14 M	Aug 82
<b>OTS</b>			
THE OTS DOES NOT SET DEFAULT CARRIAGE CONTROL FOR SERIAL LINE PRINTER	B	45.2.1 M	Jan 81
THE LUN IS NOT SAVED WHEN AN ERROR OCCURS WHILE OPENING A FILE PATCH TO ALLOW THE PLACEMENT OF THE FORTRAN OTS WORK AREA BETWEEN THE PROGRAM'S HIGH LIMIT AND THE BASE OF THE FIRST VIRTUAL OVERLAY FOR PRIVILEGED FORTRAN JOBS	B	45.2.2 M	Jul 81
BOUNDARY CONDITION ON FORMATTED I/O CORRUPTS I/O (PAT 6)	B	45.2.3 F	Feb 81
DEFAULT CARRIAGE CONTROL FOR IMPLIED SEQUENTIAL ACCESS FILES (PAT 7)	C	45.2.4 M	Mar 81
STANDALONE FORTRAN YIELDS RUN-TIME ERROR 64 (PAT 8)	C	45.2.5 M	Jul 81
DISPOSE = 'KEEP' NOT RECOGNIZED WITH READONLY OPEN PARAMETER (PAT 9)	B	45.2.6 M	Apr 81
THE DATE ROUTINE DOES NOT PERMIT BYTE ALIGNED PARAMETERS (PAT10)	C	45.2.7 M	Jul 81
IMPLICIT READ FAILURE MAY HALT PROCESSOR (PAT 11)	C	45.2.8 M	Jul 81
	C	45.2.9 M	Jul 81

<u>Component</u>	<u>Autopatch Kit</u>	<u>Sequence</u>	<u>Mon/Yr</u>
FPU DOUBLE PRECISION SINE/COSINE MODULE ERRORS (PAT 13)	D	45.2.10 M	Sep 81
EMBEDDED BLANKS OVERRIDE THE ICNT PARAMETER IN THE ASSIGN ROUTINE	D	45.2.11 M	Oct 81
THE DEFAULT CARRIAGE CONTROL FOR THE ASSIGN ROUTINE IS INCORRECT	D	45.2.12 M	Oct 81
CORRECTION FOR UNIT CLOSING (PAT 16)	E	45.2.13 M	Nov 81
LIST DIRECTED INPUT CONVERSION ERROR (PAT 19)	E	45.2.14 M	Dec 81
BOUNDARY CONDITION ON FORMATTED I/O CORRUPTS I/O IN PAT 6 (PAT 23)	F	45.2.15 M	Feb 82
BOUNDARY CONDITION ON FORMATTED I/O BACKSPACE CORRUPTS I/O	F	45.2.16 M	Feb 82
CORRECTION OF ASSIGN FILENAME HANDLING WHEN ICNT EQUALS ZERO	F	45.2.17 M	Feb 82
CONVERSION ERROR WHILE READING COMPLEX NUMBER FROM FILE (PAT 26)	F	45.2.18 M	Apr 82
CORRECTION TO ALLOW CLOSING OF UNIT RECORD DEVICES (PAT 28)	G	45.2.19 M	Jun 82
PREMATURE CLEARING OF ERR= BRANCH WHEN EOF IS ENCOUNTERED (PAT 30)	G	45.2.20 M	Jun 82
UIOBYT PREMATURELY DETERMINES END OF BLOCK (PAT 32)	G	45.2.21 M	Jul 82

#### GAMMA V3.1

FGAMMA-FRAMES 3 TO 10 OF GSA STUDY SOMETIMES CORRUPT		49.2.1 M	Jul 81
SYSTEM MAY HANG WHEN DISK SQUEEZED		49.2.2 M	Oct 81
STATIC STUDIES ON LARGE DEVICES		49.2.3 M	Jan 82
STATIC STUDY ACQUISITION ON LARGE DEVICES		49.4.1 M	Jan 82
ISOMETRIC DISPLAY IMAGES USE INCORRECT INTENSITY LEVELS		49.5.1 M	Oct 81
SLICE - LAST POINT IS NOT PLOTTED		49.5.2 M	Nov 81
SLICE - <CR>, <LF> NOT ISSUED AFTER PRINTING SLICE DATA		49.5.3 M	Jan 82
DYNAMIC CURVE RECALCULATION IN REGIONS OF INTEREST		49.5.4 M	Aug 82
TRANSFER STUDY IN SELECTIVE STEP MODE		49.8.1 F	Mar 82
GAMMA-11 DOCUMENTATION CORRECTIONS AND ADDITIONS		49.10.1 N	Mar 82
PATCHING THE RT-11 MONITOR FOR GAMMA-11		49.11.1 M	Nov 81
ERROR IN THE BASIC SUPPORT ROUTINE GPMR		49.12.1 M	Aug 82
ERRORS IN THE BASIC SUPPORT ROUTINES GPLR AND GPF		49.12.2 M	Aug 82
ERROR IN FORTRAN SUPPORT SUBROUTINE GPMR		49.13.1 M	Mar 82
ERRORS IN THE FORTRAN SUPPORT ROUTINES GPLR AND GPF		49.13.2 M	Mar 82

#### CTS-300 V6.0

DBUILD			
CORRECTION FOR THREE DECFORM PROBLEMS		51.2.1 M	Oct 81
DECFORM			
PROBLEM WITH DECFORM AND THE VT100		51.4.1 M	Nov 80
CORRECTION FOR THREE DECFORM PROBLEMS		51.4.2 M	Oct 81
DECFORM WITH VT100 TERMINAL CAUSES BAD CHARACTER ON TYPE-AHEAD		51.4.3 M	Nov 81
DIBOL			
TWO CORRECTIONS TO XCALL PAK/UNPAK		51.5.1 M	Aug 81
DICOMP			
FOUR DICOMP ERRORS FIXED		51.6.1 M	Oct 81
DKED			
TWO PROBLEMS WITH DKED		51.7 M	Aug 80
DKED SELECT/CUT AND KEYPAD ERRORS		51.7.2 M	Sep 80
DKED INCORRECTLY HANDLES CONTINUED LINES		51.7.3 M	Oct 81
POSSIBLE BOTTOM OF SCREEN CORRUPTION USING DKED		51.7.4 M	May 82
ISMUTL			
CORRECTIONS FOR ISAM UTILITY ERRORS		51.8.1 M	Nov 81
ISMUTL GIVES INCORRECT ERROR MESSAGES IF INSUFFICIENT MEMORY AVAILABLE		51.8.2 M	Apr 82
LPTSPL			
TSD SPOOLER GETS CONFUSED		51.9.1 M	Nov 80

<u>Component</u>	<u>Autopatch Kit</u>	<u>Sequence</u>	<u>Mon/Yr</u>
SORTM			
SORT SENDS MESSAGES INDISCRIMINATELY		51.14.1 M	Jan 81
SUD			
CORRECTIONS TO DIBOL RUN TIME SYSTEMS		51.16.1 M	Jan 81
PROBLEMS WITH XCALL RENAM AND ERROR 6		51.16.2 M	Feb 81
NO ERROR 22 RETURNED		51.16.3 M	Nov 81
DIBOL STACK OVERFLOW ON OPEN		51.16.4 M	Nov 81
PROBLEMS WITH STACK OVERFLOW AND INCREMENT		51.16.5 M	Dec 81
SUD MESSAGES OVER 100 CHARACTERS IN LENGTH ARE NOT RECEIVED CORRECTLY		51.16.6 M	Feb 82
ISAM FILE RECORD COUNT REVERTS TO 0		51.16.7 M	Apr 82
A SUD PROGRAM DOING AN XCALL MAY RESULT IN A TRAP TO 4 OR 10		51.16.8 M	Jul 82
ERRORS IN DATA FORMATTING WITH MASK		51.16.9 M	Oct 82
TDIBOL			
PROBLEM WITH XCALL PAK		51.17 M	Aug 80
PROBLEM UNPACKING DATA		51.17.2 M	Sep 80
TWO CORRECTIONS TO XCALL PAK/UNPAK		51.17.3 M	Aug 81
TSD			
CORRECTIONS TO DIBOL RUN TIME SYSTEMS		51.18.1 M	Jan 81
PROBLEMS WITH XCALL RENAM AND ERROR 6		51.18.2 M	Feb 81
INCORRECT TERMINAL WIDTHS AND CIS PROBLEM		51.18.3 M	Aug 81
CORRECTION TO TSD/XMTSD		51.18.4 M	Sep 81
CORRECTION FOR ISAM PROBLEM		51.18.5 M	Oct 81
"SEND" STARTS MULTIPLE JOBS		51.18.6 M	Oct 81
NO ERROR 22 RETURNED		51.18.7 M	Nov 81
DIBOL STACK OVERFLOW ON OPEN		51.18.8 M	Nov 81
PROBLEMS WITH STACK OVERFLOW AND INCREMENT		51.18.9 M	Dec 81
CORRECTION FOR SIDE EFFECTS FROM PATCH 27		51.18.10 M	Feb 82
LINE PRINTER IS SOMETIMES INCORRECTLY CONSIDERED IN USE		51.18.11 M	Feb 82
ISAM FILE RECORD COUNT REVERTS TO 0		51.18.12 M	Apr 82
TSD AND XMTSD HANG AFTER ATTEMPT TO ILLEGALLY START UP JOB		51.18.13 M	May 82
ERRORS IN DATA FORMATTING WITH MASK		51.18.14 M	Oct 82
XMTSD			
CONFLICT BETWEEN XMTSD AND RT-11 OVER CHANNEL 16		51.20 M	Aug 80
CORRECTIONS TO DIBOL RUN TIME SYSTEMS		51.20.2 M	Jan 81
PROBLEMS WITH XCALL RENAM AND ERROR 6		51.20.3 M	Feb 81
PATCH FOR XMTSD WITH CIS		51.20.4 M	Apr 81
INCORRECT TERMINAL WIDTHS AND CIS PROBLEM		51.20.5 M	Aug 81
XMTSD HANGS WHEN LP IS OFF-LINE		51.20.6 M	Sep 81
CORRECTION TO TSD/XMTSD		51.20.7 M	Sep 81
CORRECTION FOR ISAM PROBLEM		51.20.8 M	Oct 81
"SEND" STARTS MULTIPLE JOBS		51.20.9 M	Oct 81
NO ERROR 22 RETURNED		51.20.10 M	Nov 81
DIBOL STACK OVERFLOW ON OPEN		51.20.11 M	Nov 81
PROBLEMS WITH STACK OVERFLOW AND INCREMENT		51.20.12 M	Dec 81
CORRECTION FOR SIDE EFFECTS FROM PATCH 27		51.20.13 M	Feb 82
LINE PRINTER IS SOMETIMES INCORRECTLY CONSIDERED IN USE		51.20.14 M	Feb 82
ISAM FILE RECORD COUNT REVERTS TO 0		51.20.15 M	Apr 82
XMTSD GIVES INCORRECT ERROR WHEN NO ROOM FOR I/O BUFFER		51.20.16 M	Apr 82
TSD AND XMTSD HANG AFTER ATTEMPT TO ILLEGALLY START UP JOB		51.20.17 M	May 82
ERRORS IN DATA FORMATTING WITH MASK		51.20.18 M	Oct 82
DOCUMENTATION			
CTS-300 VERSION 6 IS RELEASED		51.21 N	Aug 80
TWO RT-11 PATCHES MODIFIED FOR CTS-300 USE		51.21.2 N	Oct 80
RT-11 PATCH TO LS.MAC MODIFIED FOR CTS-300 USE		51.21.3 N	Feb 81
ADDITIONS TO CTS-300 DOCUMENTATION ON PRINT UTILITY		51.21.4 N	Mar 81
LIST OF SEQUENCE NUMBERS FOR CTS-300 V6		51.21.5 N	Mar 81
SOME NOTES ON RT-11 PATCH SEQ 6.13.3 M TO LS.MAC FOR CTS-300 USERS		51.21.6 M	Jul 81
SOME NOTES ON RT-11 PATCH SEQ 6.13.4 M TO LS.MAC FOR CTS-300 USERS		51.21.7 N	Aug 81
SOME NOTES ON RT-11 PATCH SEQ 6.13.5 M TO LS.MAC FOR CTS-300 USERS		51.21.8 N	Aug 81
AVOIDING POSSIBLE PROBLEM WITH ISAM FILES		51.21.9 N	Dec 81
SOME NOTES ON RT-11 PATCH SEQ 6.13.6 M TO LS.MAC FOR CTS-300 USERS		51.21.10 N	Feb 82
RESTRICTION FOR CTS-300		51.21.11 R	Apr 82

<u>Component</u>	<u>Autopatch Kit</u>	<u>Sequence</u>	<u>Mon/Yr</u>
<b>LS.MAC</b>			
SPECIAL CTS-300 PATCH FOR LS.MAC		51.23.1 M	Feb 81
CORRECTION TO CTS-300 PATCH 11 (SEQ 51.23.1 M) TO LS.MAC		51.23.2 M	Jun 81
<b>SYSTBL.CND</b>			
RT-11 PATCH TO SYSTBL.CND MODIFIED FOR CTS-300 USE		51.25.1 M	Mar 81
RT-11 PATCH SEQ 10.3.2 M TO SYSTBL.CND MODIFIED FOR CTS-300 USE		51.25.2 M	Apr 81
RT-11 PATCH SEQ 10.3.3 M TO SYSTBL.CND MODIFIED FOR CTS-300 USE		51.25.3 M	May 82
<b>CTS-300 V7.0</b>			
<b>DOCUMENTATION</b>			
CTS-300 VERSION 7 IS RELEASED		52.1.1 N	Apr 82
XMTSD RUN-TIME SYSTEM SIZE		52.1.2 N	Jun 82
CHANGING THE DEFAULT TIME SLICE VALUE FOR XMTSD		52.1.3 N	Jun 82
RELINK DIBOL PROBLEMS FOR CTS-300 V7		52.1.4 N	Jun 82
PATCH LEVEL FOR KED/K52 CLARIFIED		52.1.5 N	Aug 82
<b>DIBOL RUN-TIME SYSTEMS</b>			
PATCH 5: VARIOUS TSD AND XMTSD PROBLEMS		52.3.1 M	Jun 82
PATCH 6: ISAM FILE RECORD COUNT REVERTS TO 0		52.3.2 M	Jun 82
PATCH 11: TWO RUN-TIME SYSTEM ERRORS		52.3.3 M	Oct 82
PATCH 13: TWO PROBLEMS: ISAM STORE/WRITE AND LPQUE STATEMENT		52.3.4 M	Oct 82
<b>DIBOL/TDIBOL</b>			
PATCH 2: POSSIBLE INCORRECT RESULTS FROM THE INSTR ROUTINE		52.4.1 M	Apr 82
<b>DKED</b>			
PATCH 8: POSSIBLE BOTTOM OF SCREEN CORRUPTION USING DKED		52.6.1 M	Jul 82
<b>ISMUTL</b>			
PATCH 15: RUNNING ISMUTL IN AUTO-CREATE MODE		52.7.1 M	Oct 82
<b>TSD LINE PRINTER SPOOLER</b>			
PATCH 12: LINE PRINTER SPOOLER PROBLEMS WITH DELETE AND /FLUSH		52.9.1 M	Oct 82
<b>ERMSG.TXT</b>			
PATCH 9: INCORRECT ERROR MESSAGES FOR SORT IN ERMSG.TXT		52.10.1 M	Jul 82
<b>DIBOL SORT</b>			
PATCH 7: ERROR RECEIVED WHEN PERFORMING A LEGAL SORT		52.14.1 M	Jul 82
<b>MACRO SORT</b>			
PATCH 1: TWO SORT PROBLEMS EMERGE UNDER CERTAIN CONFIGURATIONS		52.15.1 M	Jun 82
PATCH 3: SINGLE USER SORT MAY LEAVE TEMPORARY FILES ON DISK		52.15.2 M	Jul 82
PATCH 10: TWO MACRO SORT PROBLEMS		52.15.3 M	Aug 82
<b>SYSTBL.CTS</b>			
PATCH 4: TERMINAL OUTPUT CORRUPTION ON DZ11 OR DZV11 LINES		52.16.1 M	Jun 82
<b>LS.CTS</b>			
PATCH 14: PROBLEMS WITH LS HANDLER		52.17.1 M	Oct 82
<b>CTS-300 DICAM (3271) V3.1</b>			
INCORRECT ACK SENT IN CONVERSATIONAL MODE		55.1.1 M	Jul 81
LOOP WHEN CLOSE IS ISSUED WITH OUTSTANDING I/O REQUESTS		55.1.2 M	Jul 81
<b>CTS-300 RDCP (2780/3780) V2.0</b>			
ABNORMAL TERMINATION AND LISTING PROBLEMS		56.1.1 M	Dec 80
SUBSCRIPT ERROR IN RDCP EDITOR		56.1.2 M	Dec 80
MEMORY CORRUPTION PROBLEM		56.1.3 M	Dec 80



<u>Component</u>	<u>Autopatch Kit</u>	<u>Sequence</u>	<u>Mon/Yr</u>
DECType-300 V1.1			
REPEATED USE OF THE PASTE FUNCTION WILL CAUSE AN ERROR 28		57.1.1 M	Jun 82
RGL/FEP			
INVALID LABELS FOR DATA RANGE OF 0.1 TO 1.0		58.1.1 M	Aug 82
ERROR CALLING LOCATE, LFIXED OR LFREE TWICE IN SUCCESSION		58.1.2 M	Aug 82
RT-11/FORTRAN ENHANCEMENT PACKAGE for MINC (FEP)			
INVALID LABELS FOR DATA RANGE OF 0.1 TO 1.0		59.1.1 M	Aug 82
ERROR CALLING LOCATE, LFIXED FOR LFREE TWICE IN SUCCESSION		59.1.2 M	Aug 82
REAL-11/MNC			
UNDEFINED GLOBAL DRSW10 IN MNCLIB		59.4.1 M	Jul 82
DATA SENT BY THE MAIN PROGRAM IS CORRUPTED BY THE SRQ ROUTINE			
IBSRQ SKIPS INSTRUMENT ADDRESS IF SRQ ROUTINE DEFAULTED		59.5.1 M	Jul 82
SRQ ROUTINE AND TIMEOUT VALUE NOT CLEARED ON EXIT		59.5.2 M	Jul 82
SYSTEM CRASHES IF THE IB DRIVER IS NOT LOADED		59.5.3 M	Jul 82
CAN'T SPECIFY TALKER WHEN LISTENERS DEFAULTED, AND INCORRECT RECEIVE		59.5.4 M	Jul 82
CANNOT USE SECONDARY ADDRESSES IN RANGE 96. to 126.		59.5.5 M	Jul 82
		59.5.6 M	Jul 82

# Software Product Description

**PRODUCT NAME: MicroPower/Pascal, Version 1.1**  
**Microcomputer Software Development Toolset**

**SPD 19.12.1**

## **DESCRIPTION:**

MicroPower/Pascal is a software package for development of microcomputer applications. It includes all components needed to create concurrent, real-time application programs on a PDP-11 host system and to execute and debug the application on PDP-11 (Q-BUS) microcomputer target systems.

The application software developed through the use of MicroPower/Pascal is selectively combined with a library of executive service modules, thus eliminating the need for a general-purpose operating system. Pascal application programs execute stand-alone and do not run under any DIGITAL operating system.

An extended version of Pascal is provided as the implementation language suitable for most user applications; however, MACRO-11 can also be used as the implementation language.

## **Features**

- Pascal\* language with extensions that support concurrent real-time programming
- Modular run-time system with language interfaces for both MicroPower/Pascal and MACRO-11
- RT-11 compatible file system
- Symbolic debugger to aid debugging of application programs running on the target system
- Flexible set of utility programs to build and load the application software into target systems
- Host system support to produce ROM/RAM execution environments
- A set of device handlers for widely used I/O device interfaces

Transporting an application to the target system can be done by

- Down-line loading via a serial line interface
- Programming PROM chips and transferring them to the target system (PROM programming hardware and software are not included with this product)

As defined by the *ISO Specification for Computer Programming Language Pascal, Draft Proposal 7185, Level 0.*

- Manually transferring a bootable application via a TU58 DECTape II cartridge or an RX02 diskette

## **Components**

- MicroPower/Pascal compiler — Supports a superset of the Pascal language plus real-time extensions. The compiler generates optimized machine code suitable for ROM/RAM execution environments. An extensive library of Object Time System (OTS) routines provides the compiler with run-time support for Pascal functions and arithmetic routines, including floating-point support, utility, I/O and math routines.
- Run-time system — Composed of kernel and system processes included in the kit in the form of object libraries, which support the following target system features: process synchronization, communication and scheduling, exception handling, interrupt handling, timer services, device I/O, and file I/O. Also included are the OTS routines noted above.
- PASDBG — Aids debugging of application programs on the target system, and allows references to Pascal source-code names, as well as system data structures.
- MACRO-11 source libraries — The MACRO-11 interface to the run-time system is included in the form of a macro library. Also contained in these libraries are macros, useful in developing MACRO-11 programs.
- Microfiche listing of run-time system sources (kernel, drivers, OTS, etc.)
- Subset of RT-11 (O/S) — MicroPower/Pascal is a packaged software system that includes a subset of the RT-11 Operating System for use on the host development system. The following RT-11 components are included:

Extended memory (XM) monitor, SYSMAC, HELP, EDIT, KED and K52, MACRO-11, LINKER (LINK), peripheral interchange programs (PIP), Resource (RESORC), Librarian (LIBR), Device Utility Program (DUP), Directory (DIR), and Queue Packages, DUMP, SRCCOM, BINCOM, FILEX, and FORMAT.

Patching: SIPP and SLP

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software

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The following RT-11 Device Handlers:

DDX.SYS	DEctape II handler
DLX.SYS	RL11/RL01/RL02 handler
DMX.SYS	RK611/RK06/RK07 handler
DXX.SYS	RX11/RX01 single-density diskette handler
DYX.SYS	RX211/RX02 handler
LPX.SYS	Parallel line-printer handler
LSX.SYS	Serial line-printer handler
NLX.SYS	Null handler

RT-11 Documentation Subset

### MicroPower Utilities

- **MERGE** — Combines user-developed object modules into a single object module, resolving inter-module references
- **RELOC** — Relocates merged object modules to specific virtual memory addresses
- **MIB** — Creates memory image files for execution on the target system. These files can be booted, down-line loaded, used by the Pascal Debugger with a symbol file, or used for PROM blasting.
- **DLLOAD** — Loads application programs from a host system into target systems via a serial line interface
- **COPYB** — Writes a bootstrap for loading application images from a TU58 DEctape II cartridge or RX02 diskette
  - Automatic installation procedure
- **CONFIG** — Configuration module

### MINIMUM HARDWARE REQUIRED:

#### Host System

The following PDP-11 or LSI-11 systems:

- 11/24, 11/34, 11/35, 11/40, 11/44, 11/45, 11/50, 11/55, 11/60, 11/23, or 11/23-PLUS
- EIS, KT-11 memory management unit and line frequency clock
- 128KB memory
- Two random access, mass-storage device drives (RK06, RK07, RL01, RL02, or RX02), at least one of which must be either RL02 or RX02

NOTE: MicroPower/Pascal is distributed only on RL02 or RX02 media

- Two serial-line interfaces of the DL11 or DLV11 family (with cables) for the console terminal and the host/target communication line
- Console terminal: VT52, VT100, LA34, LA36, LA120

#### Target Run-time System

MicroPower/Pascal supports application execution on component and packaged microcomputer systems using SBC-11/21, LSI-11, LSI-11/2, and LSI-11/23 processors. Also supported are SB-11, PDP-11/03, PDP-11/23 and PDP-11/23-PLUS. The following memory and peripheral hardware is required:

- **Memory** — Any combination of RAM and ROM (PROM or EPROM) with a minimum of 4KB RAM and a maximum of 4MB
- **Serial line interface** when using PASDBG
- If the SBC 11/21 is being used as the target processor, the KXT11-A2 ROM chips are required during debugging.

### OPTIONAL HARDWARE:

#### Host System

LP11, LS11, LA120 DECprinter, or any DECwriter UC/LC model

#### Target Run-time System

MRV11-C PROM Module  
 MSV11-D, -L, -P RAM modules  
 MXV11-A Multifunction module (includes PROM, RAM, two serial lines, 50/60Hz clock)  
 DLV11, DLV11-F, -E, -J Serial line units  
 DRV11, DRV11-J Parallel line units  
 DPV11 Synchronous serial line unit  
 TU58 DEctape II cartridge tape unit  
 RXV21 Dual-density floppy disk system  
 KEF11, FPF11 Floating point options (for LSI-11/23 micro-computers)  
 KEV11 EIS/FIS arithmetic option (for LSI-11 or LSI-11/2 microcomputers)

### PREREQUISITE SOFTWARE:

None

### OPTIONAL SOFTWARE:

None

### TRAINING CREDITS:

None

### SUPPORT CATEGORY:

DIGITAL SUPPORTED

MicroPower/Pascal is a DIGITAL Supported Software Product.

### SOFTWARE INSTALLATION:

CUSTOMER INSTALLED

MicroPower/Pascal is a software product engineered to be installed by the customer and includes other Software Product Support services listed below.

The distribution media includes a master distribution disk set and a user working disk set. The user working disk set is tailored to lead the new user step-by-step through an interactive installation and application build procedure, while informing the user of the meaning and reason for each step.

### SOFTWARE PRODUCT SUPPORT:

MicroPower/Pascal includes standard warranty services as defined in the Software Support Categories Addendum of this SPD, except that no Newsletter or on-site remedial service will be provided.

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The customer is entitled to telephone support by the Customer Services Support Center (CSSC), as well as software and documentation updates made generally available on a regular basis for a period of one year (12 months) following installation of the product, or starting 30 days after delivery, whichever occurs first. Delivery will be F.O.B. DIGITAL's plants. Telephone support shall consist of answering customer's questions with regard to the operation of MicroPower/Pascal, as well as aiding the customer in diagnosing MicroPower/Pascal software application development problems. The Customer Services Support Centers are located in Atlanta, Georgia for the U.S. and Canada, and in Munich, Germany for Europe. Users in other locations should consult the local DIGITAL office for the location of the CSSC in their area.

#### **GROWTH CONSIDERATIONS:**

An update is the primary method by which DIGITAL provides corrected versions of a software product to users of that product. A MicroPower/Pascal version update is functionally the same product as MicroPower/Pascal, Version 1.0, but includes corrections to the product and can include enhancements. An enhancement is a capability not previously provided by this product, or is an improvement in efficiency.

A version update represents a complete distribution media replacement for the previous release of MicroPower/Pascal. When a version update is adopted for use, all user-developed source modules that comprise an application must be recompiled/reassembled and rebuilt (MERGE/RELOC/MIB) using only MicroPower/Pascal system software for that version update. Individual components of the MicroPower/Pascal system software from the latest version update cannot be used in conjunction with components from a previous version.

The minimum memory requirements for executing future MicroPower/Pascal version updates may be greater than the MicroPower/Pascal, Version 1.0 minimum hardware requirements.

#### **ORDERING INFORMATION:**

All binary licensed software, including any subsequent updates, is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of the DIGITAL copyright notice and any DIGITAL proprietary notices on the software) only for use on such CPU.

All source licensed software is furnished only under the terms and conditions of a separate Software Program Sources License Agreement between Purchaser and DIGITAL.

The following key (H, X, Z) represents the distribution media for the product and must be specified at the end of the order number, e.g., QJ029-XH = binaries on RL02 Disk Cartridge.

H = RL02 Disk Cartridge  
X = RX02 Double Density Diskette  
Z = No hardware dependency

QJ029 -X— MicroPower/Pascal host development software, single-use license, binaries, run-time system sources listings on microfiche, documentation, support services. This option includes a single-use license (QJ042-DZ) for use of MicroPower/Pascal run-time software on one target system, no binaries, no sources, no documentation, no support services (media: H, X)

#### **Special License Options**

When the target run-time software is the only portion or component of MicroPower/Pascal to be run on a given processor, the purchaser can obtain a license for the MicroPower/Pascal run-time software only. If any other component of MicroPower/Pascal is to be used, the purchaser must obtain the MicroPower/Pascal license.

The following unit volume options are available for additional target processors:

QJ042 -D— Quantity 1: Single-use license-only option for MicroPower/Pascal run-time software, no binaries, no sources, no documentation, no support services (media: Z)

QJ043 -D— Quantity 10: Single-use license-only option for MicroPower/Pascal run-time software, no binaries, no sources, no documentation, no support services (media: Z)

QJ044 -D— Quantity 25: Single-use license-only option for MicroPower/Pascal run-time software, no binaries, no sources, no documentation, no support services (media: Z)

QJ045 -D— Quantity 50: Single-use license-only option for MicroPower/Pascal run-time software, no binaries, no sources, no documentation, no support services (media: Z)

QJ046 -D— Quantity 100: Single-use license-only option for MicroPower/Pascal run-time software, no binaries, no sources, no documentation, no support services (media: Z)

QJ047 -D— Quantity 200: Single-use license-only option for MicroPower/Pascal run-time software, no binaries, no sources, no documentation, no support services (media: Z)

QJ048 -D— Quantity 500: Single-use license-only option for MicroPower/Pascal run-time software, no binaries, no sources, no documentation, no support services (media: Z)

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*Upgrade Options*

Customers who are currently licensed users of RT-11, Version 4.0 may obtain MicroPower/Pascal by purchasing a license to an upgrade kit for use on the same CPU as their previous license.

QJ032 -X— MicroPower/Pascal host development software, single-use license, binaries, sources listings on microfiche, documentation, support services. This option includes a single-use license (QJ042-DZ) for use of MicroPower/Pascal runtime software on one target system, no binaries, no sources, no documentation, no support services (media: H, X)

*Miscellaneous Options*

QJ029 -G— Documentation-only kit (media: Z)

**ADDITIONAL SERVICES:**

Basic Service is available to licensed customers as a post-warranty Software Product Service for this software product.

Customers should contact their local DIGITAL office for additional information on the availability of this service.

# Software Product Description

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PRODUCT NAME: **GAMMA-11 F/B, Version 3.2**

SPD 15.60.10

## DESCRIPTION:

GAMMA-11 F/B is a hardware/software system designed for nuclear medicine. GAMMA-11 F/B can acquire, store, display, and manipulate images from the gamma camera in order to supply quantitative, meaningful clinical information.

In the foreground/background configuration, gamma camera data acquisition can take place independently of another process. This configuration includes two terminals. One terminal is designated the foreground acquisition terminal for the gamma camera and controls the setup and initiation of data collection. The other terminal, designated the background terminal, can be used simultaneously with the foreground terminal for data analysis by GAMMA-11 F/B programs, for program development in BASIC or FORTRAN, or for running any other programs that do not need immediate access to the disks for successful completion.

Only one terminal is included in the single-job configuration. This configuration has all the capabilities of the foreground/background system, except that data acquisition and processing can not be carried out simultaneously.

### **Data Acquisition**

GAMMA-11 F/B programs allow data acquired to be stored in seven different size matrices for static studies and five different size matrices for dynamic studies. A user can thus choose the proper size and resolution for the job at hand. List mode acquisition (i.e., unstructured data) is available. Static studies can be collected and terminated by a preset time, preset count, or matrix element overflow. Static studies can be linked to provide easy collection of and access to sequential static views. Dynamic studies are collected at a specified frame rate. List mode studies can be acquired with an effective frame rate of 100 frames per second.

An external synchronizing time marker can be included when acquiring either dynamic or list mode studies. When acquired with the time marker, these modes are

called Gate Synchronized Acquisition (GSA) and Physiological List Mode (PLM), respectively and are used primarily for cardiac studies.

GSA data is stored in 32 x 32, 64 x 64, or 128 x 128 matrices. The maximum number of images per study is determined by the amount of memory. During GSA acquisition (background) images are displayed 'live' on the video display.

The heart cycle time (or time between external synchronized events) is continuously monitored and displayed. During GSA acquisition (foreground) there is no live display of images; however, heart cycle time is monitored and displayed.

For GSA data acquisition, the operator can either choose fixed time intervals for each image or allow the program to divide the heart cycle time (averaged over 30 seconds) by the number of images chosen. A heart cycle time window can be selected, so that if a given cycle time falls outside of this window, then the following cycle is rejected.

Acquisition in 128 x 128 word matrix and 256 x 256 byte matrix requires the NCV11 interface. 256 x 256 byte acquisition requires a minimum of 64KW of memory and is foreground only. For display of 256 x 256 images, two additional M7068 bit maps are required (four total).

Physiological List Mode studies are acquired with one millisecond time intervals.

Data is reframed by creating a number of images based on the interval between successive external time markers.

With dual isotope collection, two separate images (one for each isotope) can be collected simultaneously. This capability does not apply to GSA or PLM.

NOTE: This gamma camera must also have the dual isotope option.

Once collection parameters and procedures are established, they can be set up as protocols or predefined studies. Up to 20 predefined studies can be used to speed setup, to minimize error, and to standardize collection procedures.

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**Patient Study Index**

Once collected, patient studies are identified by a system-generated index file. Each study is identified by patient name, number, organ, study type, and acquisition date. Studies are selected for analysis by index number; the user need not be concerned with the physical location of disk data.

**Patient Monitor**

Patient Monitor (background) displays live camera data prior to acquisition. It allows for patient positioning and validation of external trigger input for GSA or PLM. Foreground patient monitors have a pseudodisplay. The display is made up of 4-5 ASCII characters.

**Data Analysis and Display**

Data is displayed on the VSV01 color video monitor. The VSV01 color display includes a hardware character generator permitting display of patient identification and image counting statistics along with the image. All photographs taken from the display are thus positively identified.

**Display Features**

- Color or monochrome display
- 64 colors; 16 colors displayed simultaneously
- Up to 31 color spectra defined
- Intensity or isometric display
- 4- or 8-image display (16 with optional VSV01 bit maps)
- Normal or magnified display
- Lower and upper thresholding with or without contrast enhancement
- Dual/full size image display (split screen or overlaid)
- Negative image display
- Display 256 x 256 byte data (with optional VSV01 bit maps)

**Data Manipulation Features**

- Skip frames (forward or backward)
- Sequential frame add
- Image rotation (90-degree steps)
- Image translation (horizontal and vertical)
- Nonuniformity correction
- Frame algebra — add, subtract, multiply, divide or merge frames; add, subtract, or multiply frames by a constant
- 9-point smoothing
- 9 save areas for temporary storage of images or ROI curves
- Up to 55 optional save areas for temporary storage of images
- Slice profiles (vertical or horizontal)
- Isocontour generation
- Interpolation of images (optional VSV01 bit maps required for 256 x 256 byte interpolation)
- Select quarter of image

**Region of Interest Features**

- Regular (keyboard controlled)

- Irregular (joystick controlled)
- Circumference or fill mode definition (irregular)
- Pertinent count rate information for each region displayed with image
- Up to 12 regions displayed
- Simultaneous display of curves and images with ROIs outlined
- Select regions by thresholding (irregular)
- Select regions in magnified mode (irregular)
- Time/activity curves displayed normally, averaged, or overlaid
- Ability to expand selected portions of ROI curves

**Dynamic Playback**

- Sequences of preprocessed images can be displayed in cine mode.
- Two to four playback buffers can be combined into one and displayed synchronously.
- Speed and direction of playback can be controlled via the joystick or keyboard.

**Predefined Analysis Features**

- Multiple commands can be entered on a single line
- Predefined analysis procedures (macros) can be created, edited, saved, and executed from the system disk
- Predefined analysis can be linked with predefined study acquisition to semiautomate the system.
- Macros can call FORTRAN or BASIC programs; special calls allow macro reentry.

**Miscellaneous Features**

- Dual isotope display and processing
- Additional disk space not required for reconstructed images in list mode analysis
- Comment editor

**Utility Programs**

Study Deletion — Requires user verification to prevent accidental deletion of important data.

Study Transfer — Transfers patient studies between any two RT-11 file-structured devices (disks, magnetic tape, floppy disks, etc.).

**MINIMUM HARDWARE REQUIRED:**

Any UNIBUS PDP-11 (except PDP 11/70, 11/44) with line frequency clock that meets the following main memory requirements:

- 32K bytes for single-job operation with RK05 as system disk
- 64K bytes for single job operation with RL01, RL02, or RK07 as system disks
- 96K bytes for foreground/background operation with RL01, RL02, RK05, or RK07 disks

Mass Storage (one of the following):

- One RK05, RL01, or RL02 disk with a second disk or RT-11 supported magnetic tape unit
- One RK07 disk and an RT-11 supported magnetic tape unit (except TS-11)
- Two RK05, RL01, or RL02 disks

**Terminals**

- Any console terminal supported by the RT-11 software. (Two terminals are required for foreground/background operation. The foreground terminal must operate at 1200 baud or greater.) Foreground terminal requires a DL11 and must be VT52 or VT100.

**Display**

- VSV01 Video Display

**Interface (one of the following):**

- NC11 gamma camera interface with KW11-P (AR11 needed for foreground/background operation and/or GSA or PLM), or
- NCV11 gamma camera interface (includes KWV11; AR11 not needed)

**OPTIONAL HARDWARE:**

- Any RT-11 supported mass storage device for off-line data storage except TA11 cassette and TU58
- A system total of 256K bytes main memory

**PREREQUISITE SOFTWARE:**

None

**OPTIONAL SOFTWARE:**

FORTTRAN IV/RT-11

**TRAINING CREDITS:**

TWO (2) — Training credits apply only to options that include support services. Consult the latest Educational Services Catalog at your local office for the available courses, course requirements, and guidelines.

**SUPPORT CATEGORY:**

DIGITAL SUPPORTED

GAMMA-11 F/B is a DIGITAL Supported Software Product.

**SOFTWARE INSTALLATION:**

DIGITAL INSTALLED

DIGITAL installation is required for Software Product Support. There is no charge for installation if performed at the time of system installation. DIGITAL installed software products, except for operating systems, are subject to an add-on installation fee when purchased subsequent to system installation.

**SOFTWARE PRODUCT SUPPORT:**

GAMMA-11 F/B includes standard warranty services as defined in the Software Support Categories Addendum of this SPD.

**ORDERING INFORMATION:**

All binary licensed software, including any subsequent updates, is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale,

which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of the DIGITAL copyright notice and any DIGITAL proprietary notices on the software) only for use on such CPU.

All source licensed software is furnished only under the terms and conditions of a separate Software Program Sources License Agreement between Purchaser and DIGITAL.

Sources and/or listings options are only available after the purchase of at least one supported license and after a source license agreement is in effect.

The following key (A, D) represents the form of power source for the product and must be specified at the end of the number, i.e., GMA34-MA = system using 115 volt/60 Hertz power.

A = 115 volt/60 Hertz  
D = 230 volt/50 Hertz

The following key (D, E, H, Q, X, Z) represents the distribution media for the product and must be specified at the end of the order number, e.g., QJ721-ED = sources on 9-track 800 BPI Magtape (NRZI).

D = 9-track 800 BPI Magtape (NRZI)  
E = RK05 Disk Cartridge  
H = RL02 Disk Cartridge  
Q = RL01 Disk Cartridge  
X = RX02 Floppy Diskette  
Z = No hardware dependency

GMA34 -M— GAMMA-11 single job system includes hardware, single-use license for GAMMA-11, binaries on RX02 disk, documentation, support services (power: A, D)

GMS34 -M— GAMMA-11 foreground/background job system includes hardware, single-use license for GAMMA-11, binaries on RL02 disk, documentation, support services (power: A, D)

**Sources/Listings Options**

QJ721 -E— Sources license, GAMMA-11 sources, no support services (media: D, E, H, Q, X)

**Update Options**

Users of GAMMA-11 F/B whose specified Support Category warranty has expired may order under license the following software update at the prevailing rate for such update. The update is distributed in binary form on the appropriate medium and includes no installation or other services unless specifically stated.



QJ721 -H— Binaries, documentation (media: D, E, H, Q, X)

QJ721 -H-- Right to copy for single-use, no binaries, no documentation (media: Z)

*Miscellaneous Options*

QJ721 -G— Documentation-only kit (media: Z)

**ADDITIONAL SERVICES:**

The following post-warranty Software Product Services for this software product are available to licensed customers:

- Self-Maintenance Service
- Basic Service
- DECsupport Service

Customers should contact their local DIGITAL office for additional information on the availability of these services.



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Founded in 1961, DECUS is one of the largest and most active associations of its type in the world. Its objectives are to advance the effective utilization of computers, computer peripheral equipment, and software manufactured and marketed by Digital Equipment Corporation, by promoting the interchange of information concerning their uses; advance the art of computation through mutual education and exchange of ideas of information; establish standards and provide channels to facilitate the exchange of computer programs among DECUS members; provide feedback to the computer industry on equipment and software needs; and to reduce the duplication of development efforts.

DECUS membership is free--upon application--to owners of DIGITAL computers and to their computer-interested employees. Membership carries important benefits and opportunities; among them are access to the program library; membership in local, regional, and national organizations; invitations to symposia dedicated to optimal use of DIGITAL equipment; opportunity to present papers and workshops on your own new ideas; and, finally, access to special interest groups dedicated to particular uses, languages, operating systems, and hardware configurations.

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payroll programs among the library's offerings. In addition, of course, there is a wide range of text editing, display graphics, and enhanced utility programs available.

Local, regional, and national DECUS organizations give members the opportunity to meet other DIGITAL customers and employees in an informal setting. From the monthly local meeting to the semiannual national symposium, the members can discuss their ideas, can learn what others are doing, and can give DIGITAL feedback necessary in improvement and future development of important products. Often, the national meetings in the various countries also provide the stage for major new product announcements by the company, and a showplace for interesting developments in both hardware and software technology. At any meeting a member might describe ideas and programs he has implemented, or fine tuning that has been achieved for a particular application. Members give papers, participate in panel discussions, lead workshops, or conduct demonstrations for the benefit of other members.

DECUS also publishes newsletters focusing on special interest, technical books that contain the compilation of symposia presentations; and a society newsletter.

Many members derive a particular benefit from joining DECUS Special Interest Groups. Special Interest Groups often meet as subsets of regional and national meetings, or they may meet on their own, to discuss their special interest. Here, all RSTS/E users, or everyone interested in COBOL, for example, can have a chance to get together and discuss topics of mutual importance. At present there are more than 20 Special Interest Groups (SIGs) in the U.S. alone. Many of the SIGs print newsletters and disseminate valuable technical information to members. The SIGs really are the front-line of mutual help and problem solving.

DIGITAL provides DECUS with administrative personnel and office space around the world, but the organization is run by its members, who act as speakers for conferences, planners for meetings, editorial and production talent for newsletters and minutes, and the inventors of the ideas and new programs necessary to keep the library up to date. Belonging to DECUS is a valuable adjunct to owning DIGITAL equipment on both the program exchange and the information exchange fronts.

continued

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## SOFTWARE PROBLEMS OR ENHANCEMENTS

Questions, problems, and enhancements to DIGITAL software should be reported on a Software Performance Report (SPR) form and mailed to the SPR Center at one of the following Digital Offices: (*SPR forms are available from the SPR Center*).

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