RT-11

July 1982

AD-C740C-29

THE SOFTWARE DISPATCH

digital

RT-11 SOFTWARE DISPATCH

Published by
Corporate Administrative Systems Group, Software Services
Digital Equipment Corporation
P.O. Box F
Maynard, MA 01754

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

DISTRIBUTION

The RT-11 Software Dispatch is directed to one software contact for each software product. No mailing will be made to addresses without a software contact name. **Address change requests should be sent to the nearest DIGITAL field office. Include the new address and mailing label from the most recently received publication.**

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Ann Owens, Associate Editor

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PRODUCT AVAILABILITY DATES - RT 11

JULY 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.

PRODUCT	VERSION	AVAILABLE
CTS-300	7.0	MAR 82
DECNET-RT	2.0	MAR 82
DECTYPE-300	1.2	APR 82
LSP 11	1.2	NOV 81
MACDBG	1.0	MAR 82
MU-BASIC	2.1	SEP 81
SSP-11	1.3	NOV 81
RT 11 AUTOPATCH	E	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.

MU BASIC-11/RT-11 V2.1
for RT-11 V4.Ø
INTERPRETER
BSEØ.OBJ

UNWARRANTED ISSUANCE OF "TOO MANY CHANNELS" ERROR - PATCH A
FOR MULTI-USER BASIC-11 (WPL)

PROBLEM:

MU BASIC erroneously updated channel usage tables in such a way that after a given amount of channel usage, BASIC would consider that all possible channels are currently in use, though this may not be true. BASIC would then produce the error message "TOO MANY CHANNELS".

PROCEDURE:

1. Create the following two files (PATA1.MAC and PATA2.MAC):

PATA1.MAC

```
        .TITLE  BSEØ
        .PSECT  BASECD, RO, I, LCL, REL, CON
;
        LOC = .
        EDIT = LOC
        . = LOC + 55Ø6
;
        JMP     PATA1
;
        .PSECT  PATA1, RO, I, REL
        .ENABL  GBL
;
PATA1:: MOVB    #1,CNOC(R5)
        JMP     @#EDIT
;
        .END
```

PATA2.MAC

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

2. Assemble both patch files:

```
        .MACRO  PATA1
        .MACRO  PATA2
```

3. Run the RT-11 PAT utility program:

```
        .R PAT
        *BSEØ=BSEØ,PATA1

        .R PAT
        *BSPAT=BSPAT,PATA2
```

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 BASIC, read the "MU BASIC-11/RT-11 Installation Guide" manual. In any event, you will need to do this so that the newly patched module will become part of your MU BASIC interpreter!

MU BASIC-11/RT-11 V2.1
for RT-11 V4.Ø
INTERPRETER
BSERR.OBJ

Seq 38.1.2 M

1 of 2

"ERR" VALUE IMPROPERLY UPDATED WHEN USING "ON ERROR GOTO nnnnn" - PATCH B TO MULTI-USER BASIC-11 (WPL)

PROBLEM:

After setting up error-handling via the "ON ERROR GOTO nnnnn" statement, and upon execution of a statement resulting in an error condition, the value of the identifier "ERR" is improperly updated. Subsequent conditional testing of the value of "ERR" will produce unpredictable results. This problem only occurs when using version 2.1 of MU BASIC-11.

PROCEDURE:

1. Create the following two files (PATB1.MAC, PATB2.MAC):

PATB1.MAC

```
        .TITLE  BSERR
        .PSECT  BASERR, RO, I
        .GLOBL  ERR
;
        LOC = .
        . = . + 242
        MOVB    (RØ)+, ERR(R5)
;
        .END
```

PATB2.MAC

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

MU BASIC-11/RT-11 V2.1 for RT-11 V4.Ø
INTERPRETER
BSERR.OBJ

2. Assemble the two patch files:

```
.MACRO PATB1
.MACRO PATB2
```

3. Run the RT-11 PAT utility program:

```
.R PAT
*BSERR=BSERR,PATB1

.R PAT
*BSPAT=BSPAT,PATB2
```

4. Relink your version of MU BASIC-11 v2.1 using either the distibuted command files (MUBAS.COM and/or MUBASX.COM) or the indirect command file that you may have created. In either case, you must do this so that the newly patched module will become part of your MU BASIC interpreter!

MU BASIC-11/RT-11 V2.1 Seq 38.1.3 M
for RT-11 V4.Ø
INTERPRETER 1 of 2
BSRSQ.OBJ

"RESEQ" FOLLOWING "DEL nnnnn" RESULTS IN "Mon-F-Trap to 1Ø ØØØØØ2" - PATCH C TO MULTI-USER BASIC-11 (WPL)

PROBLEM:

MU BASIC version 2.1 does not handle the "RESEQ" command properly when it follows a "DEL nnnnn" command. This did work properly in MU BASIC version 2.Ø.

PROCEDURE:

1. Create the following two files (PATC1.MAC, PATC2.MAC):

PATC1.MAC

```
        .TITLE  RESEQ
        .PSECT  BASECD, RO, I
        .ENABL  GBL
        .GLOBL  RESØ12
;
        LOC = .
        RESØ12 = LOC + 232
        . = LOC + 116
;
        JMP     PATC1
PATC1R::
;
        .PSECT  PATC1, RO, I
PATC1:: BNE     1Ø$
        JMP     RESØ12
;
1Ø$:    OLO = 14
        CMP     (RØ), OLO(SP)
        JMP     PATC1R
;
        .END
```

PATC2.MAC

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

2. Assemble the two patch files:

```
        .MACRO PATC1
        .MACRO PATC2
```

3. Run the RT-11 PAT utility program:

```
        .R PAT
        *BSRSQ=BSRSQ,PATC1

        .R PAT
        *BSPAT=BSPAT,PATC2
```

4. Relink your version of MU BASIC-11 v2.1 using either the distibuted command files (MUBAS.COM and/or MUBASX.COM) or the indirect command file that you may have created. In either case, you must do this so that the newly patched module will become part of your MU BASIC interpreter!

FORTRAN IV V2.5
RT-11 V4.0
AUTOPATCH 1 of 1

INCORRECT OPTIONAL PATCH FILES ON RT-11 AUTOPATCH KITS

PROBLEM:

It has come to our attention that the two optional FORTRAN IV patches for OTI.OBJ, 450200.003 and 450203.003, included on the RT-11 autopatches since REV B are incorrect.

SOLUTION:

Do NOT apply either optional patch 450200.003 or 450203.003 included on RT-11 autopatches REV B through REV F. Instead, refer to the FORTRAN IV V2.5 optional patch article, 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 PRIVLEDGED FORTRAN JOBS, sequence number 45.2.3, published in the February 1981 issue of the RT-11 SOFTWARE DISPATCH, to patch OTI.OBJ.

The correct files will be included on the RT-11 AUTOPATCH REV G Kit.

FORTRAN IV V2.5
for RT-11 V4.0
OTS

Seq. 45.2.21 M

1 of 2

UIOBYT PREMATURELY DETERMINES END OF BLOCK (PAT 32)

PROBLEM:

The FORTRAN IV OTS optional module, UIOBYT, will incorrectly determine the end of a block of an unformatted, sequential file, resulting in half of each block not being referenced.

SOLUTION:

1. Type in the following MACRO file: PAT32.MAC

   PAT32.MAC:

```
                .TITLE  $UIO
                .IDENT  /004/
                .PSECT OTS$I
        S=.
        .=S+730
        OCHECK: NOP
                NOP
                .END
```

2. Assemble the patches using MACRO-11

```
.R MACRO
*PAT32=PAT32
*^C
```

3. Install the patches, using PAT, to the most recently patched UIOBYT.OBJ file:

   NOTE: Make a copy of UIOBYT.OBJ before you patch it just in case something goes wrong.

```
.R PAT
*UIOBYT=UIOBYT/C:162427,PAT32/C:007342
```

4. Rebuild the OTS using the procedure described in the FORTRAN IV Installation Guide. Be sure to install UIOBYT.

5. Test the patches by creating, compiling, and executing the following FORTRAN program.

```
        BYTE    B(1000),A(1000)
        INTEGER IDATA(1000),JDATA(1000)
        DO 15 I=1,1000
        B(I)=I
15      IDATA(I)=I
        WRITE(2)B
        REWIND 2
        WRITE(3)IDATA
        REWIND 3
        READ(3)JDATA
        READ(2)A
        WRITE(7,30) (JDATA(I),I=995,999)
30      FORMAT(5I)
        REWIND 7
        END
```

Before the patch is installed, the program, when linked with a FORTRAN IV library built with UIOBYT and executed, will generate the following output.

```
0       0       0       0       0
```

After the patch has been successfully installed, the test program will generate the following output.

```
995     996     997     998     999
```

CTS-3ØØ VØ6
for RT-11 V4.Ø
SUD VAØ6-ØØG
(PATCH 39)

A SUD PROGRAM DOING AN XCALL MAY RESULT IN A TRAP TO 4 OR 10

Under the Single Job Monitor, should a Single User Dibol program call a Dibol external subroutine a trap to 4 or 10 may result. This happens because part of the SUD run-time system is moved into the same area as the RT-11 hardware stack.

Patch 39 corrects this problem so that doing XCALL's in the Single Job Monitor will not trap to 4 or 10. Patch 39 will also change the version number of SUD to VA06-00H.

NOTE

The patch is made by fixing a module in the DIBOL library and then rebuilding the library. Therefore, this patch will only work on programs that are linked with the 'new' DIBOL library.

Using the editor, create the following two 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.

CTS-3ØØ VØ6
  for RT-11 V4.Ø
SUD VAØ6-ØØG
(PATCH 39)


```
;P039A.MAC
        .TITLE  $DIRTX
        .PSECT  $P031
P039:   .=.+6
        MOV     #TEMSTK,SP
        .=P039+116
        .BLKW   16.
TEMSTK: .WORD 0
        .END


;P039B.MAC
        .TITLE  DIRT
        .CSECT  $DIRT

        .=.+11215
        .ASCII  /H/
        .END


.REN (SDIRT,DIRTX,DIBOL).OBJ *.OLD
 Files renamed:
DK:SDIRT.OBJ    to DK:SDIRT.OLD
DK:DIRTX.OBJ    to DK:DIRTX.OLD
DK:DIBOL.OBJ    to DK:DIBOL.OLD

.MACRO P039A,P039B
ERRORS DETECTED:  0
ERRORS DETECTED:  0

.R PAT
*DIRTX.OBJ=DIRTX.OLD/C:121433,P039A/C:006452

.R PAT
*SDIRT.OBJ=SDIRT.OLD/C:103107,P039B/C:005612

.R LIBR
*DIBOL.OBJ/A=DIBOL.OLD,DIRTX/R
*^C

.R CTSGEN           ;FOR SINGLE-USER  DIBOL
```

PATCH 8: POSSIBLE BOTTOM OF SCREEN CORRUPTION USING DKED (PM)

There is a problem with the DIBOL keyboard editor, DKED, which can be demonstrated as follows.

In a screen of text that contains a "continued" line (i.e., a line over 78 characters long), move the cursor with the up-arrow key so that the continued line scrolls downward off the screen. If the cursor is then moved so that the continued line scrolls back onto the screen, the first 78 characters of the line are duplicated on the screen. Typing CTRL/W refreshes the screen and the text is displayed correctly.

Patch 8 corrects this problem, so that text is not duplicated in the above situation and changes the version number of DKED to V07-00A.

Using the editor, create the following two 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 module STRT0.DBL using SLP (Source Language Patch) program. Please note that the first record in the patch file P008.PAT is ";P008.PAT" and the last record is "/". You must terminate each line in that file with a carriage return, including the last line "/".

```
;P008.PAT
-257,257
        DIS1,   A12,'DKED V07-00A'
/

;P008.MAC
        .TITLE DSCROL
        .CSECT DSCROL
        .GLOBL TABLE$

P008:

        . = P008 + 62
        TSTB    TABLE$+16
        NOP
        . = P008 + 70
        BEQ     P008+176
        .END


.LIBRARY/EXTRACT
Library? EDLIB
File    ? DSCROL
Global? DSCROL
Global?

.RENAME (EDLIB,DSCROL).OBJ *.OLD
 Files renamed:
DK:EDLIB.OBJ   to DK:EDLIB.OLD
DK:DSCROL.OBJ  to DK:DSCROL.OLD

.RENAME STRTO.DBL *.OLD
 Files renamed:
DK:STRTO.DBL   to DK:STRTO.OLD

.MACRO P008
ERRORS DETECTED:  0

.R PAT
*DSCROL.OBJ=DSCROL.OLD/C:066671,P008/C:011160

.R LIBR
*EDLIB.OBJ/A=EDLIB.OLD,DSCROL/R
*^C

.R SLP
*STRTO.DBL=STRTO.OLD,P008.PAT
*^C

.R DICOMP
*STRTO=STRTO/O

    NO  ERRORS DETECTED
*^C
```

```
.R LINK
*DKED=DKED,EDLIB,DIBOL/C
*COMND/O:1/C
*COMN2/O:1/C
*CUTA,CUTB/O:1/C
*CUTC,TOPB/O:1/C
*CUTD/O:1/C
*CUTD0,BEOL/O:1/C
*DELLN/O:1/C
*DLCH4,D2CHA/O:1/C
*D3CHA/O:1/C
*DQUIT,DSCL1/O:1/C
*DROPN,SWORD/O:1/C
*FIND5/O:1/C
*FIND1/O:1/C
*HCOMN/O:1/C
*HELPC/O:1/C
*HELPD,DEXIT/O:1/C
*HELPE,CUTD2/O:1/C
*HWILD/O:1/C
*PAGE2/O:1/C
*PASTE/O:1/C
*REPLC/O:1/C
*RETRN/O:1/C
*SECTN,APNDA/O:1/C
*STRT0/O:1/C
*STRT1/O:1/C
*STRT2/O:1/C
*WPAGE/O:1/C
*XCASE,LINSP,RESEL,UNDEL/O:1/C
*CUTC1,CRSTR,UDLCH/O:1/C
*YANK,ZTARG/O:1
*^C
```

```
.R LINK
*DKED.TSD=DKED,EDLIB,TDIBOL/B:100000/C
*COMND/O:1/C
*COMN2/O:1/C
*CUTA,CUTB/O:1/C
*CUTC,TOPB/O:1/C
*CUTD/O:1/C
*CUTDO,BEOL/O:1/C
*DELLN/O:1/C
*DLCH4,D2CHA/O:1/C
*D3CHA/O:1/C
*DQUIT,DSCL1/O:1/C
*DROPN,SWORD/O:1/C
*FINDS/O:1/C
*FIND1/O:1/C
*HCOMN/O:1/C
*HELPC/O:1/C
*HELPD,DEXIT/O:1/C
*HELPE,CUTD2/O:1/C
*HWILD/O:1/C
*PAGE2/O:1/C
*PASTE/O:1/C
*REPLC/O:1/C
*RETRN/O:1/C
*SECTN,APNDA/O:1/C
*STRTO/O:1/C
*STRT1/O:1/C
*STRT2/O:1/C
*WPAGE/O:1/C
*XCASE,LINSP,RESEL,UNDEL/O:1/C
*CUTC1,CRSTR,UDLCH/O:1/C
*YANK,ZTARG/O:1
*^C

.R REDUCE
*DKED.TSD/N
*^C
```

CTS-3ØØ V7 Seq 52.1Ø.1 M
for RT-11 V4.Ø
MESSAGE UPDATE UTILITY 1 of 2
ERMSG.TXT

PATCH 9: INCORRECT ERROR MESSAGES FOR SORT IN ERMSG.TXT (LG)

The error messages for the SORT program in Segment 11 of ERMSG.TXT are incorrect on the distribution of CTS-300 Version 7. Follow the procedure below to install the correct messages into this segment.

Please note that ERMSG.TXT must reside on DK:. Do not attempt to edit ERMSG.TXT itself as this will make the file unusable.

1. Create the following file named P009.COM:

```
R MSGUTL
2
P009.PAT
```

2. Create the following file named P009.PAT:

```
3
11
@E
1
11
--W-Syntax error
--W-Unrecognized directive or statement
--W-File name error
--F-RECORD statement missing
--W-Comma missing
--W-File name missing
--F-Control key match error
--W-Data type error
--W-Size definition error
--W-Too many sort keys
--F-Sort keys statement missing
--W-Too many merge files
--W-Execute/Chain error
--F-INPUT statement missing
--F-OUTPUT statement missing
--F-Command file or message contains errors
--F-No data item
--I-Message exceeds 40 characters
--F-RECLEN statement missing
--W-Device label error
--W-TAGSORT type invalid
--F-Merge files type mixed
--W-Work device list too long
--W-Invalid input record count
--W-Invalid space allocation
```

```
--F-Sort mode file name/type conflict
--F-DIBOL record description line count exceeded
--F-Packed decimal keys option unimplemented
--F-Not enough memory allocated
--F-Bad file specification
--F-Sort count error
--F-Wrong record size
@E
6
```

3. To install the patch type:

```
@P009
```

The correct error messages should now be contained in Segment 11 of ERMSG.TXT.

CTS-3ØØ V7
  for RT-11 V4.Ø
DIBOL SORT
SORT VØ7-ØØ

Seq 52.14.1 M

1 of 2

PATCH 7: ERROR RECEIVED WHEN PERFORMING A LEGAL SORT (LG)

If the DIBOL SORT program is used to sort a data file back into itself (i.e., the output file has the same name as the input file) under legal conditions, the error message "?SORTG-E26--F-Sort mode file name conflict" is generated incorrectly and the file is not sorted. (The CTS-300 SYSTEM MESSAGE MANUAL (AA-M250A-TC) states on page 2-31 the conditions under which this error may be generated.)

Patch 7 corrects this so that in the above situation the SORTG Error 26 is not generated, and the requested sort takes place. The version number of DIBOL SORT changes to V07-00A.

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

Corrections are made to the source module SORTG.DBL using the SLP (Source Language Patch) program. Please note that the first record in the patch file P007.PAT is ";P007.PAT" and the last record is "/". You must terminate each line in that file with a carriage return, including the last line "/".

CTS-3ØØ V7
  for RT-11 V4.Ø
DIBOL SORT
SORT VØ7-ØØ

Seq 52.14.1 M

2 of 2

```
;P007.PAT
-371,371
        DISPLAY(VCH,'SORT GENERATOR V07-00A')
-810,810
\
        IF(TAGFLG.AND.OVFLG)GO TO X14B          ;BUT TAGSORTS INTO SOURCE
/
```

```
.RENAME SORTG.DBL SORTG.OLD

.R SLP
*SORTG.DBL=SORTG.OLD,P007.PAT
*^C

.R DICOMP
*SORTG=SORTG/O

    NO  ERRORS DETECTED
*^C

.R LINK
*SORTG=SORTG,DIBOL
*SORTG.TSD=SORTG,TDIBOL/B:100000
*^C

.R REDUCE
*SORTG/N
*^C
```

CTS-3ØØ V7 for RT-11 V4.Ø
MACRO SORT
SORT.SAV VØ7-ØA

Seq 52.15.2 M
1 of 2
Supersedes article dated May 1982

PATCH 3: SINGLE USER SORT MAY LEAVE TEMPORARY FILES ON DISK (DS)

REPLACEMENT PATCH

Patch 3 to CTS-300 was originally published in the May 1982 issue of the RT-11 Software Dispatch in incomplete form. It appears below in its entirety.

When the CHAIN option is used with the single user version of the Version 7 Macro Sort, there may be temporary work files that are not deleted before chaining to the specified program.

Patch 3 ensures that the work files are deleted under the above situation. Patch 3 changes the version number of SORT.SAV from V07-0A to V07-0B.

Using the editor, create the following two 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.

CTS-3ØØ V7
   for RT-11 V4.Ø
MACRO SORT
SORT.SAV VØ7-ØA


```
#P003V1.MAC

        .TITLE SORTR
        .PSECT SORTR

        . = . + 21
        .BYTE 'B
        .END


#P003.MAC

        .TITLE $RTIO
        .PSECT $RTIO
        .MCALL .PURGE

P003:   . = . + 3226
        .PURGE R1

        .END



.RENAME (RTIO,SRT11R).OBJ *.OLD
 Files renamed:
DK:RTIO.OBJ    to DK:RTIO.OLD
DK:SRT11R.OBJ  to DK:SRT11R.OLD

.MACRO P003,P003V1
ERRORS DETECTED:  0
ERRORS DETECTED:  0

.R PAT
*RTIO.OBJ=RTIO.OLD/C:046436,P003/C:007567

.R PAT
*SRT11R.OBJ=SRT11R.OLD/C:157477,P003V1/C:005021

.R LINK
*SORT,SRT11/M:1400/B:1400=RTIO,SRT11O,SRT11R/P:500./C
*MSGLIB/C
*SRT11C/O:1/C
*SRT11A/O:1/C
*SRT11D/O:1/C
*SRT11M/O:1
*^C
```

RT-11/FEP V2.Ø
for RT-11 V4.Ø
REAL-11/MNC

UNDEFINED GLOBAL DRSW1Ø IN MNCLIB

PROBLEM DESCRIPTION

PROBLEM:

A MNCGEN is performed to create a library with support for MNCDO but without support for MNCDI. An attempt to link a program that calls DOUT and uses this library produces an undefined global error for DRSW10.

CAUSE:

If support for MNCDI is not selected, the conditional assembly of MNCGEN should remove global label DRSW10 and all references to it. In fact, the label is removed, but one reference to it remains in module MNC27.MAC.

SOLUTION:

This patch to MNC27.MAC causes the spurious reference to DRSW10 to be removed during the conditional assembly phase of MNCGEN, if support for MNCDI is not selected.

PATCHING PROCEDURE

SYSTEM REQUIREMENTS:

- For an RL01/2 MINC, the system disk has the files recommended for a Development System Disk in Table 2-1 of the FEP/RT Installation and User's Guide.
- For an RX02 MINC, the system disk has the files recommended for a Utilities Diskette in Table 2-3 of the FEP/RT Installation and User's Guide.
- The system disk is mounted in drive 0.

RT-11/FEP V2.Ø
for RT-11 V4.Ø
REAL-11/MNC

Seq 59.4.1 M

2 of 3

PREPARATION:

o FEP on RL01 and RL02 Hard Disks
  - Follow the instructions in Section 3.1.2 of the FEP/RT Installation and User's Guide to make a copy of the FEP Distribution Disk with all previously applied FEP patches. If this is your first FEP patch, you will be copying the original FEP Distribution Disk.
  - After mounting the development system disk in drive DL0 at the end of Step 3 of the copy procedure, make the copied disk bootable by typing:

```
.COPY/BOOT DL1:FEPRT.SYS DL1:
```

  - Apply the patch to the copy of the Distribution Disk you have just created. Save the disk from which you made this copy as a backup.

o FEP on RX02 Floppy Diskettes
  - The file to be patched, MNC27.MAC, is on the FEP Distribution Diskette labeled:

```
REAL-11  V2.0  BIN  RX2  2/2
```

  - Follow the instructions in Section 3.2.2 of the FEP/RT Installation and User's Guide to make a copy of this Distribution Diskette.
  - Apply the patch to the copy of the Distribution Diskette you have just created. Save the original in a safe place.

APPLYING THE PATCH:

1. Using a text editor, create the file 590401.COM on the system disk. For an RL01/2 MINC, replace 'dv' with 'DL', and for an RX02 MINC, replace 'dv' with 'DY'. Note that '^C' is two printing characters, uparrow and C, not <ctrl/C>, and that the last line in the file must be terminated with <return>.

```
!                590401.COM
ASSIGN dv0: DK:
ASSIGN dv1: SR:
!
RENAME/NOPROTECT SR:MNC27.MAC SR:MNC27.MAC
!
R SLP
SR:MNC27.MAC=SR:MNC27.MAC,DK:MNC27.001/A/T
^C
!
RENAME/PROTECT SR:MNC27.MAC SR:MNC27.MAC
DELETE/NOQUERY SR:MNC27.BAK
SQUEEZE/NOQUERY SR:
```

2. Create the file MNC27.001 on the system disk. The first character in the file must be the hyphen, and the last line, a single slash, must be terminated with <return>.

```
-2
; PATCH: 59.04.01     MODULE: MNC27.MAC     REVISION: 001
-12
        .IF NE  N$DI11
-71
        .ENDC
-89
        .IF  NE  N$DI11
-97
        .ENDC
/
```

3. To install the patch in MNC27.MAC on the copy of the FEP distribution disk, type the following command:

```
.@590401
```

4. If you are using a library created by MNCGEN, reinstall REAL-11 according to the instructions in the FEP/RT Installation and User's Guide. Rebuild the REAL-11 library by executing MNCGEN with the newly patched software.

   If you are using the distributed REAL-11 library MNCSNG.OBJ or MNCMUL.OBJ, it is not necessary to reinstall REAL-11 or to rebuild the library.

RT-11/FORTRAN ENHANCEMENT PACKAGE for MINC (FEP) V2.Ø Seq 59.5.1 M
INSTRUMENT BUS SUBROUTINES (IBS) V2.Ø

DATA SENT BY THE MAIN PROGRAM IS CORRUPTED BY THE SRQ ROUTINE (EG)

If the main program sends data while the SRQ subroutine is receiving data then, occasionally, both the MINC and the Talker set up by the SRQ routine talk at once. The result is corrupted data. The following patch corrects this.

This patch updates the Instrument Bus Subroutines component of the FEP Distribution kit.

To install this patch you need a bootstrapped RT-11 system in drive 0. The following utilitiy files must be on the system disk: PIP.SAV, DUP.SAV, DIR.SAV, SLP.SAV, MACRO.SAV, and LIBR.SAV. The system disk must have 10 free blocks for the patch and command files you will create for this patch.

1. First, make a copy of the FEP Distribution disk which has all previous Instrument Bus Subroutines patches applied. After this step, the copy will be referred to as the Distribution disk. The copying procedure is:

   A. For FEP on RL01 and RL02 hard disks.

      Copy the disk by following the instructions in section 3.1.2 of the FEP Installation Guide using the FEP Distribution disk as the input disk and a blank disk as the output disk.

      After copying the FEP Distribution disk, save the original in a safe place, and put the copy in drive 1. Make the copy bootable by typing

      ```
      COPY/BOOT DL1:FEPRT.SYS DL1:
      ```

      Now create and apply the patch.

   B. For FEP on RX02 floppy diskettes.

      Copy the Instrument Bus Subroutines diskette by following the instructions in section 3.2.2 of the FEP Installation Guide. The FEP diskette labelled INSTMT BUS SUB V2.0 BIN RX1 is the input disk and a blank diskette is the output disk.

      After copying the diskette, save the original in a safe place, and put the copy in drive 1.

      Now create and apply the patch.

2. Create the patch file for input to the SLP utility. Use an editor to create a file called IBSEND.001 on your system disk. Enter the text below into the file. The hyphen must be the first character in the file and there must be a carriage return after the / on the last line of the file.

```
-1
;Patch: 590501    Module: IBSEND.MAC    Revision: 1
-3,3
        .IDENT  /V2.1/
-22,22

1$:     COMSTK  #SETCF,#FORON,#EXATON
        CALL    IB$BLK
        CALL    IB$CLL
-23
        CALL    IB$UNT
        ERRCHK
/
```

3. Create a file called 590501.COM on your system disk. Enter the text below into the file. The symbol ^C is an uparrow followed by a C, not a control C. The last line of text must end with a carriage return.

```
! 590501.COM
RENAME/NOPROTECT IBSEND.MAC IBSEND.OLD
RENAME/NOPROTECT IBLIB.OBJ IBLIB.OBJ
R SLP
IBSEND.MAC/A=IBSEND.OLD,SY:IBSEND.001
^C
MACRO/ENA:GBL (IBLOC+IB).ASM/PA:1+IBSEND/OBJ:DK:
LIBRARY IBLIB IBSEND/REPLACE
DELETE/NOQUERY IBSEND.OLD,IBSEND.OBJ
RENAME/PROTECT IBSEND.MAC,IBLIB.OBJ *.*
SQUEEZE/NOQUERY DK:
```

4. Apply the patch by typing the following commands in response to RT-11's . prompt. In place of dv, use DL for RL01 or RL02 hard disk systems and DY for RX02 floppy diskette systems.

```
ASSIGN dv1:  DK:
@SY:590501.COM
```

When the command file stops, whether it has completed successfully or not, type the following command to return the default logical device to your system disk. In place of dv, use DL for RL01 or RL02 hard disk systems and DY for RX02 floppy diskette systems.

```
ASSIGN dv0:  DK:
```

The command file should produce one warning error message "?LIBR-W-Illegal insert of IB$ERR" from the librarian. This is normal, it informs you that both the long and short error message modules are in the library.

If any other error messages are produced, or not all the commands in the file were executed, then the patch process failed. Start again with step 1, copying the Distribution disk. You do not have to retype the patch and command files, but you should check them carefully to be sure they do not contain any errors.

If the command file completed with no extra errors then the Distribution disk is now up to date. Save this disk in a safe place.

Any future patches will be applied this disk.

5. Install and verify the patched Instrument Bus Subroutines on your development system disk, as described in chapter 4.3 of the FEP/RT Installation and User's Guide, Installing the Instrument Bus Subroutines (IBS).

6. Save the patched disk in a safe place. Any future patches will be applied this disk.

   If you want to put IBLIB in SYSLIB, see the System Software Installation chapter of the Instrument Bus Subroutines Programmer's Reference Manual.

   The library is now ready to use. Programs that use the Instrument Bus Subroutines must be linked with the new library to be brought up to date.

RT-11/FORTRAN ENHANCEMENT PACKAGE for MINC (FEP) V2.Ø
INSTRUMENT BUS SUBROUTINES (IBS) V2.Ø

IBSRQ SKIPS INSTRUMENT ADDRESS IF SRQ ROUTINE DEFAULTED (EG)

When IBSRQ is called with the SRQ routine defaulted, the first instrument Address is skipped. If the addresses are defaulted, the "Invalid parameter" error is generated. This patch corrects the problem.

This patch updates the Instrument Bus Subroutines component of the FEP Distribution kit.

To install this patch you need a bootstrapped RT-11 system in drive 0. The following utilitiy files must be on the system disk: PIP.SAV, DUP.SAV, DIR.SAV, SLP.SAV, MACRO.SAV, and LIBR.SAV. The system disk must have 10 free blocks for the patch and command files you will create for this patch.

1. First, make a copy of the FEP Distribution disk which has all previous Instrument Bus Subroutines patches applied. After this step, the copy will be referred to as the Distribution disk. The copying procedure is:

   A. For FEP on RL01 and RL02 hard disks.

      Copy the disk by following the instructions in section 3.1.2 of the FEP Installation Guide using the FEP Distribution disk as the input disk and a blank disk as the output disk.

      After copying the FEP Distribution disk, save the original in a safe place, and put the copy in drive 1. Make the copy bootable by typing

      ```
      COPY/BOOT DL1:FEPRT.SYS DL1:
      ```

      Now create and apply the patch.

   B. For FEP on RX02 floppy diskettes.

      Copy the Instrument Bus Subroutines diskette by following the instructions in section 3.2.2 of the FEP Installation Guide. The FEP diskette labelled INSTMT BUS SUB V2.0 BIN RX1 is the input disk and a blank diskette is the output disk.

      After copying the diskette, save the original in a safe place, and put the copy in drive 1.

      Now create and apply the patch.

2. Create the patch file for input to the SLP utility. Use an editor to create a file called IBSRQ.001 on your system disk. Enter the text below into the file. The hyphen must be the first character in the file and there must be a carriage return after the / on the last line of the file.

```
-1
;Patch: 590502     Module: IBSRQ.MAC     Revision: 1
-3,3
        .IDENT  /V2.1/
-52,52
        BR      3$
/
```

3. Create a file called 590502.COM on your system disk. Enter the text below into the file. The symbol ^C is an uparrow followed by a C, not a control C. The last line of text must end with a carriage return.

```
! 590502.COM
RENAME/NOPROTECT IBSRQ.MAC IBSRQ.OLD
RENAME/NOPROTECT IBLIB.OBJ IBLIB.OBJ
R SLP
IBSRQ.MAC/A=IBSRQ.OLD,SY:IBSRQ.001
^C
MACRO/ENA:GBL (IBLOC+IB).ASM/PA:1+IBSRQ/OBJ:DK:
LIBRARY IBLIB IBSRQ/REPLACE
DELETE/NOQUERY IBSRQ.OLD,IBSRQ.OBJ
RENAME/PROTECT IBSRQ.MAC,IBLIB.OBJ *.*
SQUEEZE/NOQUERY DK:
```

4. Apply the patch by typing the following commands in response to RT-11's . prompt. In place of dv, use DL for RL01 or RL02 hard disk systems and DY for RX02 floppy diskette systems.

```
ASSIGN dv1:  DK:
@SY:590502.COM
```

When the command file stops, whether it has completed successfully or not, type the following command to return the default logical device to your system disk. In place of dv, use DL for RL01 or RL02 hard disk systems and DY for RX02 floppy diskette systems.

```
ASSIGN dv0:  DK:
```

The command file should produce one warning error message "?LIBR-W-Illegal insert of IB$ERR" from the librarian. This is normal, it informs you that both the long and short error message modules are in the library.

If any other error messages are produced, or not all the commands in the file were executed, then the patch process failed. Start again with step 1, copying the Distribution disk. You do not have to retype the patch and command files, but you should check them carefully to be sure they do not contain any errors.

If the command file completed with no extra errors then the Distribution disk is now up to date. Save this disk in a safe place. Any future patches will be applied this disk.

5. Install and verify the patched Instrument Bus Subroutines on your development system disk, as described in chapter 4.3 of the FEP/RT Installation and User's Guide, Installing the Instrument Bus Subroutines (IBS).

6. Save the patched disk in a safe place. Any future patches will be applied this disk.

   If you want to put IBLIB in SYSLIB, see the System Software Installation chapter of the Instrument Bus Subroutines Programmer's Reference Manual.

   The library is now ready to use. Programs that use the Instrument Bus Subroutines must be linked with the new library to be brought up to date.

RT-11/FORTRAN ENHANCEMENT PACKAGE for MINC (FEP) V2.Ø
INSTRUMENT BUS SUBROUTINES (IBS) V2.Ø

SRQ ROUTINE AND TIMEOUT VALUE NOT CLEARED ON EXIT (EG)

This patch solves two problems

1. If there is an active SRQ routine when the FORTRAN program exits normally, it is not disabled. The next SRQ calls the exited program, usually crashing the system.

2. If IBS has been genned for timeout support, the timeout value is not reset when the program exits. As a result, all following programs get the old timeout value, until another call to IBTIMO is made.

This patch updates the Instrument Bus Subroutines component of the FEP Distribution kit.

To install this patch you need a bootstrapped RT-11 system in drive 0. The following utilitiy files must be on the system disk: PIP.SAV, DUP.SAV, DIR.SAV, SLP.SAV, MACRO.SAV, and LIBR.SAV. The system disk must have 10 free blocks for the patch and command files you will create for this patch.

1. First, make a copy of the FEP Distribution disk which has all previous Instrument Bus Subroutines patches applied. After this step, the copy will be referred to as the Distribution disk. The copying procedure is:

   A. For FEP on RL01 and RL02 hard disks.

      Copy the disk by following the instructions in section 3.1.2 of the FEP Installation Guide using the FEP Distribution disk as the input disk and a blank disk as the output disk.

      After copying the FEP Distribution disk, save the original in a safe place, and put the copy in drive 1. Make the copy bootable by typing

      COPY/BOOT DL1:FEPRT.SYS DL1:

      Now create and apply the patch.

   B. For FEP on RX02 floppy diskettes.

      Copy the Instrument Bus Subroutines diskette by following the instructions in section 3.2.2 of the FEP Installation Guide. The FEP diskette labelled INSTMT BUS SUB V2.0 BIN RX1 is the input disk and a blank diskette is the output disk.

      After copying the diskette, save the original in a safe place, and put the copy in drive 1.

      Now create and apply the patch.

2. Create two patch files for input to the SLP utility.

Use an editor to create a file called IBBASE.001 on your system disk. Enter the text below into the file. The hyphen must be the first character in the file and there must be a carriage return after the / on the last line of the file.

```
-1
;Patch: 590503    Module: IBBASE.MAC    Revision:1
-3,3
        .IDENT  /V2.1/
        .MCALL  .EXIT
-276

SRQPAR:         .WORD   5
        .WORD   -1
        .WORD   -1
        .WORD   -1
        .WORD   -1
        .WORD   ZIP
TMOPAR:         .WORD   1
        .WORD   ZIP
ZIP:    .WORD   0
IB$XIT::TST     SRQFLG
        BNE     DEACT
        MOV     #IB$DT1,R3
        TST     IDELAY(R3)
        BEQ     TMO
DEACT:  MOV     #SRQPAR,R5
        JSR     PC,IBSRQ

TMO:    MOV     #-1,ERTABL+15.
        MOV     #TMOPAR,R5
        JSR     PC,IBTIMO
        .EXIT
/
```

Use an editor to create a file called IBINIT.001 on your system disk. Enter the text below into the file. The hyphen must be the first character in the file and there must be a carriage return after the / on the last line of the file.

```
-1
;Patch 590503    Module: IBINIT.MAC    Revision: 1
-3,3
        .IDENT  /V2.1/
-4
        .GLOBL  IB$XIT,USEREX
-127,131
-132
        IBPUSH  <R1,R3,R5>
        MOV     #USXPRM,R5
        JSR     PC,USEREX
        IBPOP   <R5,R3,R1>
        CLR     IB$1ST
        RETURN
DRERR:  MOV     #200, ERRTYP(R3)
ERRGET:         .HERR
        ERRCHK  POP
-133


USXPRM:         .WORD   1
        .WORD   IB$XIT
/
```

3. Create a file called 590503.COM on your system disk. Enter the text below into the file. The symbol ^C is an uparrow followed by a C, not a control C. The last line of text must end with a carriage return.

```
! 590503.COM
RENAME/NOPROTECT IBBASE.MAC,IBINIT.MAC *.OLD
RENAME/NOPROTECT IBLIB.OBJ IBLIB.OBJ
R SLP
IBBASE.MAC/A=IBBASE.OLD,SY:IBBASE.001
IBINIT.MAC/A=IBINIT.OLD,SY:IBINIT.001
^C
MACRO/ENA:GBL (IBLOC+IB).ASM/PA:1+IBBASE/OBJ:DK:
MACRO/ENA:GBL (IBLOC+IB).ASM/PA:1+IBINIT/OBJ:DK:
LIBRARY IBLIB IBBASE/REPLACE,IBINIT/REPLACE
DELETE/NOQUERY IBBASE.OLD,IBBASE.OBJ,IBINIT.OLD,IBINIT.OBJ
RENAME/PROTECT IBBASE.MAC,IBINIT.MAC,IBLIB.OBJ *.*
SQUEEZE/NOQUERY DK:
```

4. Apply the patch by typing the following commands in response to RT-11's . prompt. In place of dv, use DL for RL01 or RL02 hard disk systems and DY for RX02 floppy diskette systems.

```
ASSIGN dv1:  DK:
@SY:590503.COM
```

When the command file stops, whether it has completed successfully or not, type the following command to return the default logical device to your system disk. In place of dv, use DL for RL01 or RL02 hard disk systems and DY for RX02 floppy diskette systems.

ASSIGN dv0: DK:

The command file should produce one warning error message "?LIBR-W-Illegal insert of IB$ERR" from the librarian. This is normal, it informs you that both the long and short error message modules are in the library.

If any other error messages are produced, or not all the commands in the file were executed, then the patch process failed. Start again with step 1, copying the Distribution disk. You do not have to retype the patch and command files, but you should check them carefully to be sure they do not contain any errors.

If the command file completed with no extra errors then the Distribution disk is now up to date. Save this disk in a safe place. Any future patches will be applied this disk.

5. Install and verify the patched Instrument Bus Subroutines on your development system disk, as described in chapter 4.3 of the FEP/RT Installation and User's Guide, Installing the Instrument Bus Subroutines (IBS).

6. Save the patched disk in a safe place. Any future patches will be applied this disk.

   If you want to put IBLIB in SYSLIB, see the System Software Installation chapter of the Instrument Bus Subroutines Programmer's Reference Manual.

   The library is now ready to use. Programs that use the Instrument Bus Subroutines must be linked with the new library to be brought up to date.

RT-11/FORTRAN ENHANCEMENT PACKAGE for MINC (FEP) V2.Ø
INSTRUMENT BUS SUBROUTINES (IBS) V2.Ø

Seq 59.5.4 M

SYSTEM CRASHES IF THE IB DRIVER IS NOT LOADED (EG)

If IB is not loaded when an IB call is made from a FORTRAN program, the "IB.SYS is not loaded" error message is printed, then the system crashes to console ODT. It has to be restarted with ";P" or by rebooting. The following patch corrects this problem.

This patch updates the Instrument Bus Subroutines component of the FEP Distribution kit.

To install this patch you need a bootstrapped RT-11 system in drive 0. The following utilitiy files must be on the system disk: PIP.SAV, DUP.SAV, DIR.SAV, SLP.SAV, MACRO.SAV, and LIBR.SAV. The system disk must have 10 free blocks for the patch and command files you will create for this patch.

1. First, make a copy of the FEP Distribution disk which has all previous Instrument Bus Subroutines patches applied. After this step, the copy will be referred to as the Distribution disk. The copying procedure is:

   A. For FEP on RL01 and RL02 hard disks.

      Copy the disk by following the instructions in section 3.1.2 of the FEP Installation Guide using the FEP Distribution disk as the input disk and a blank disk as the output disk.

      After copying the FEP Distribution disk, save the original in a safe place, and put the copy in drive 1. Make the copy bootable by typing

      ```
      COPY/BOOT DL1:FEPRT.SYS DL1:
      ```

      Now create and apply the patch.

   B. For FEP on RX02 floppy diskettes.

      Copy the Instrument Bus Subroutines diskette by following the instructions in section 3.2.2 of the FEP Installation Guide. The FEP diskette labelled INSTMT BUS SUB V2.0 BIN RX1 is the input disk and a blank diskette is the output disk.

      After copying the diskette, save the original in a safe place, and put the copy in drive 1.

      Now create and apply the patch.

2. Create the patch file for input to the SLP utility. Use an editor to create a file called IBERR.001 on your system disk. Enter the text below into the file. The hyphen must be the first character in the file and there must be a carriage return after the / on the last line of the file.

```
-1
;Patch: 590504    Module: IBERR.MAC    Revision: 1
-3,3
        .IDENT  /V2.1/
-32,32
-33

        TST     (SP)+
        BR      DIE
-46,46
3$:     CLR     ERRTYP(R3)
        TSTB    (R2)
-63
DIE:
/
```

3. Create a file called 590504.COM on your system disk. Enter the text below into the file. The symbol ^C is an uparrow followed by a C, not a control C. The symbol <CR> stands for a blank line. The last line of text must end with a carriage return.

```
! 590504.COM
RENAME/NOPROTECT IBERR.MAC IBERR.OLD
RENAME/NOPROTECT IBLIB.OBJ IBLIB.OBJ
R SLP
IBERR.MAC/A=IBERR.OLD,SY:IBERR.001
^C
MACRO/ENA:GBL (IBLOC+IB).ASM/PA:1+IBERR/OBJ:DK:
LIBRARY/EXTRACT IBLIB IBERSH
IB$SRT
<CR>
LIBRARY/DELETE IBLIB
IBERR
IBERSH
<CR>
LIBRARY/INSERT IBLIB IBERR,IBERSH
DELETE/NOQUERY IBERR.OLD,IBERR.OBJ
RENAME/PROTECT IBERR.MAC,IBLIB.OBJ *.*
SQUEEZE/NOQUERY DK:
```

4. Apply the patch by typing the following commands in response to RT-11's . prompt. In place of dv, use DL for RL01 or RL02 hard disk systems and DY for RX02 floppy diskette systems.

   ```
   ASSIGN dv1: DK:
   @SY:590504.COM
   ```

   When the command file stops, whether it has completed successfully or not, type the following command to return the default logical device to your system disk. In place of dv, use DL for RL01 or RL02 hard disk systems and DY for RX02 floppy diskette systems.

   ```
   ASSIGN dv0: DK:
   ```

   The command file should produce one warning error message "?LIBR-W-Illegal insert of IB$ERR" from the librarian. This is normal, it informs you that both the long and short error message modules are in the library.

   If any other error messages are produced, or not all the commands in the file were executed, then the patch process failed. Start again with step 1, copying the Distribution disk. You do not have to retype the patch and command files, but you should check them carefully to be sure they do not contain any errors.

   If the command file completed with no extra errors then the Distribution disk is now up to date. Save this disk in a safe place. Any future patches will be applied this disk.

5. Install and verify the patched Instrument Bus Subroutines on your development system disk, as described in chapter 4.3 of the FEP/RT Installation and User's Guide, Installing the Instrument Bus Subroutines (IBS).

6. Save the patched disk in a safe place. Any future patches will be applied this disk.

   If you want to put IBLIB in SYSLIB, see the System Software Installation chapter of the Instrument Bus Subroutines Programmer's Reference Manual.

   The library is now ready to use. Programs that use the Instrument Bus Subroutines must be linked with the new library to be brought up to date.

RT-11/FORTRAN ENHANCEMENT PACKAGE for MINC (FEP) V2.Ø Seq 59.5.5 M
INSTRUMENT BUS SUBROUTINES (IBS) V2.Ø

CAN'T SPECIFY TALKER WHEN LISTENERS DEFAULTED, AND INCORRECT RECEIVE (EG)

This patch corrects two problems.

1. For all IBS calls that allow a talker and a list of listeners, specifying the talker but defaulting the listeners produces the "Invalid parameter" error message.

2. Calls to IBRECV, IBARCV, IBXFER, IBAXFR, and IBFREE send the talker and listener addresses in the wrong order, according to the IEEE 488-1978 Specification. As a result some instruments do not respond to these calls.

This patch updates the Instrument Bus Subroutines component of the FEP Distribution kit.

To install this patch you need a bootstrapped RT-11 system in drive 0. The following utilitiy files must be on the system disk: PIP.SAV, DUP.SAV, DIR.SAV, SLP.SAV, MACRO.SAV, and LIBR.SAV. The system disk must have 10 free blocks for the patch and command files you will create for this patch.

1. First, make a copy of the FEP Distribution disk which has all previous Instrument Bus Subroutines patches applied. After this step, the copy will be referred to as the Distribution disk. The copying procedure is:

   A. For FEP on RL01 and RL02 hard disks.

      Copy the disk by following the instructions in section 3.1.2 of the FEP Installation Guide using the FEP Distribution disk as the input disk and a blank disk as the output disk.

      After copying the FEP Distribution disk, save the original in a safe place, and put the copy in drive 1. Make the copy bootable by typing

      COPY/BOOT DL1:FEPRT.SYS DL1:

      Now create and apply the patch.

   B. For FEP on RX02 floppy diskettes.

      Copy the Instrument Bus Subroutines diskette by following the instructions in section 3.2.2 of the FEP Installation Guide. The FEP diskette labelled INSTMT BUS SUB V2.0 BIN RX1 is the input disk and a blank diskette is the output disk.

      After copying the diskette, save the original in a safe place, and put the copy in drive 1.

      Now create and apply the patch.

2. Create three patch files for input to the SLP utility.

   Use an editor to create a file called IBRECV.001 on your system disk. Enter the text below into the file. The hyphen must be the first character in the file and there must be a carriage return after the / on the last line of the file.

```
-1
;Patch: 590505    Module: IBRECV.MAC    Revision: 1
-3,3
        .IDENT  /V2.1/
-23
        BIS     #10,R1
-24
        BIC     #10,R1
-39,39
4$:     MOV     #-1,BUSTLK(R3)
-46,46
        IBPOP   R5
/
```

Use an editor to create a file called IBXFER.001 on your system disk. Enter the text below into the file. The hyphen must be the first character in the file and there must be a carriage return after the / on the last line of the file.

```
-1
;Patch: 590505    Module: IBXFER.MAC    Revision: 1
-3,3
        .IDENT  /V2.1/
-15,15
        MOV     #-77777,R1
-22
        BIS     #10,R1
-23
        BIC     #10,R1
-30,30
3$:
-39,39
        IBPOP   R5
/
```

Use an editor to create a file called IBTLK.001 on your system disk. Enter the text below into the file. The hyphen must be the first character in the file and there must be a carriage return after the / on the last line of the file.

```
-1
;Patch: 590505    Module: IBTLK.MAC    Revision: 1
-3,3
        .IDENT  /V2.1/
-19,23
3$:     INC     TLEN(R3)
-28
        CMP     (R5),#-1
        BEQ     END
-40
        CMP     (R5),#-1
        BEQ     END
-45,46
        BIT     #10,R1
        JNE     1$
/
```

3. Create a file called 590505.COM on your system disk. Enter the text below into the file. The symbol ^C is an uparrow followed by a C, not a control C. The last line of text must end with a carriage return.

```
! 590505.COM
RENAME/NOPROTECT IBRECV.MAC,IBXFER.MAC,IBTLK.MAC *.OLD
RENAME/NOPROTECT IBLIB.OBJ IBLIB.OBJ
R SLP
IBRECV.MAC/A=IBRECV.OLD,SY:IBRECV.001
IBXFER.MAC/A=IBXFER.OLD,SY:IBXFER.001
IBTLK.MAC/A=IBTLK.OLD,SY:IBTLK.001
^C
MACRO/ENA:GBL (IBLOC+IB).ASM/PA:1+IBRECV/OBJ:DK:
MACRO/ENA:GBL (IBLOC+IB).ASM/PA:1+IBXFER/OBJ:DK:
MACRO/ENA:GBL (IBLOC+IB).ASM/PA:1+IBTLK/OBJ:DK:
LIBRARY IBLIB IBRECV/REPLACE,IBXFER/REPLACE,IBTLK/REPLACE
DELETE/NOQUERY *.OLD,IBRECV.OBJ,IBXFER.OBJ,IBTLK.OBJ
RENAME/PROTECT IBRECV.MAC,IBXFER.MAC,IBTLK.MAC,IBLIB.OBJ *.*
SQUEEZE/NOQUERY DK:
```

4. Apply the patch by typing the following commands in response to RT-11's . prompt. In place of dv, use DL for RL01 or RL02 hard disk systems and DY for RX02 floppy diskette systems.

```
ASSIGN dv1: DK:
@SY:590505.COM
```

When the command file stops, whether it has completed successfully or not, type the following command to return the default logical device to your system disk. In place of dv, use DL for RL01 or RL02 hard disk systems and DY for RX02 floppy diskette systems.

```
ASSIGN dv0: DK:
```

The command file should produce one warning error message "?LIBR-W-Illegal insert of IB$ERR" from the librarian. This is normal, it informs you that both the long and short error message modules are in the library.

If any other error messages are produced, or not all the commands in the file were executed, then the patch process failed. Start again with step 1, copying the Distribution disk. You do not have to retype the patch and command files, but you should check them carefully to be sure they do not contain any errors.

If the command file completed with no extra errors then the Distribution disk is now up to date. Save this disk in a safe place. Any future patches will be applied this disk.

5. Install and verify the patched Instrument Bus Subroutines on your development system disk, as described in chapter 4.3 of the FEP/RT Installation and User's Guide, Installing the Instrument Bus Subroutines (IBS).

6. Save the patched disk in a safe place. Any future patches will be applied this disk.

If you want to put IBLIB in SYSLIB, see the System Software

Installation chapter of the Instrument Bus Subroutines Programmer's Reference Manual.

The library is now ready to use. Programs that use the Instrument Bus Subroutines must be linked with the new library to be brought up to date.

RT-11/FORTRAN ENHANCEMENT PACKAGE for MINC (FEP) V2.Ø
INSTRUMENT BUS SUBROUTINES (IBS) V2.Ø

Seq 59.5.6 M

CANNOT USE SECONDARY ADDRESSES IN RANGE 96. to 126. (EG)

The secondary instrument addresses can only be specified in the MINC BASIC compatible range 200 to 230 (decimal). The normal range of 96 to 126 (decimal) produces an error message. The following patch corrects this.

This patch updates the Instrument Bus Subroutines component of the FEP Distribution kit.

To install this patch you need a bootstrapped RT-11 system in drive 0. The following utilitiy files must be on the system disk: PIP.SAV, DUP.SAV, DIR.SAV, SLP.SAV, MACRO.SAV, and LIBR.SAV. The system disk must have 10 free blocks for the patch and command files you will create for this patch.

1. First, make a copy of the FEP Distribution disk which has all previous Instrument Bus Subroutines patches applied. After this step, the copy will be referred to as the Distribution disk. The copying procedure is:

   A. For FEP on RL01 and RL02 hard disks.

      Copy the disk by following the instructions in section 3.1.2 of the FEP Installation Guide using the FEP Distribution disk as the input disk and a blank disk as the output disk.

      After copying the FEP Distribution disk, save the original in a safe place, and put the copy in drive 1. Make the copy bootable by typing

      COPY/BOOT DL1:FEPRT.SYS DL1:

      Now create and apply the patch.

   B. For FEP on RX02 floppy diskettes.

      Copy the Instrument Bus Subroutines diskette by following the instructions in section 3.2.2 of the FEP Installation Guide. The FEP diskette labelled INSTMT BUS SUB V2.0 BIN RX1 is the input disk and a blank diskette is the output disk.

      After copying the diskette, save the original in a safe place, and put the copy in drive 1.

      Now create and apply the patch.

2. Create the patch file for input to the SLP utility. Use an editor to create a file called IBLEGL.001 on your system disk. Enter the text below into the file. The hyphen must be the first character in the file and there must be a carriage return after the / on the last line of the file.

```
-1
;Patch: 590506     Module: IBLEGL.MAC     Revision: 1
-3,3
        .IDENT  /V2.1/
-14,14
        BLOS    1$
-20,20
1$:     BIS     #200,2(SP)
/
```

3. Create a file called 590506.COM on your system disk. Enter the text below into the file. The symbol ^C is an uparrow followed by a C, not a control C. The last line of text must end with a carriage return.

```
! 590506.COM
RENAME/NOPROTECT IBLEGL.MAC IBLEGL.OLD
RENAME/NOPROTECT IBLIB.OBJ IBLIB.OBJ
R SLP
IBLEGL.MAC/A=IBLEGL.OLD,SY:IBLEGL.001
^C
MACRO/ENA:GBL (IBLOC+IB).ASM/PA:1+IBLEGL/OBJ:DK:
LIBRARY IBLIB IBLEGL/REPLACE
DELETE/NOQUERY IBLEGL.OLD,IBLEGL.OBJ
RENAME/PROTECT IBLEGL.MAC,IBLIB.OBJ *.*
SQUEEZE/NOQUERY DK:
```

4. Apply the patch by typing the following commands in response to RT-11's . prompt. In place of dv, use DL for RL01 or RL02 hard disk systems and DY for RX02 floppy diskette systems.

```
ASSIGN dv1:  DK:
@SY:590506.COM
```

When the command file stops, whether it has completed successfully or not, type the following command to return the default logical device to your system disk. In place of dv, use DL for RL01 or RL02 hard disk systems and DY for RX02 floppy diskette systems.

```
ASSIGN dv0:  DK:
```

The command file should produce one warning error message "?LIBR-W-Illegal insert of IB$ERR" from the librarian. This is normal, it informs you that both the long and short error message modules are in the library.

If any other error messages are produced, or not all the commands in the file were executed, then the patch process failed. Start again with step 1, copying the Distribution disk. You do not have to retype the patch and command files, but you should check them carefully to be sure they do not contain any errors.

If the command file completed with no extra errors then the

Distribution disk is now up to date. Save this disk in a safe place. Any future patches will be applied this disk.

5. Install and verify the patched Instrument Bus Subroutines on your development system disk, as described in chapter 4.3 of the FEP/RT Installation and User's Guide, Installing the Instrument Bus Subroutines (IBS).

6. Save the patched disk in a safe place. Any future patches will be applied this disk.

   If you want to put IBLIB in SYSLIB, see the System Software Installation chapter of the Instrument Bus Subroutines Programmer's Reference Manual.

   The library is now ready to use. Programs that use the Instrument Bus Subroutines must be linked with the new library to be brought up to date.

Software Product Description

PRODUCT NAME: DECnet Products **SPD 10.59.2**

DESCRIPTION:

DECnet is the collective name for the set of software products that extend various DIGITAL operating systems by enabling the user to interconnect these systems with each other to form computer networks. DECnet products are of two phased implementations: Phase II and Phase III. DECnet Phase II products allowed point-to-point physical and logical connections. Currently the only Phase II DECnet product is DECnet-20 Version 2.1. DECnet Phase III products extend the physical connectivity with multi-point and the logical connectivity through routing. Phase II and III products can be intermixed in the network. The DECnet Phase III products currently include DECnet-11M Version 3.0, DECnet-11S Version 3.0, DECnet-11M-PLUS Version 1.0, DECnet-VAX, Version 2.0, DECnet-IAS Version 3.0, DECnet/E Version 2.0, and DECnet-RT Version 2.0.

In order to satisfy widely varying applications, DECnet allows the user to build networks from a range of systems and communications components. DECnet allows users to interconnect systems using serial asynchronous, serial synchronous, and parallel facilities. When configuring DECnet systems, both ends of any given link must use the same type of communications discipline (e.g. synchronous, asynchronous, or parallel) running at the same line speed.

DIGITAL Network Architecture

DECnet is implemented from a set of layered network protocols, each of which is designed to fulfill specific functions within the network. Collectively, these protocols are known as the DIGITAL Network Architecture (DNA). DIGITAL does not regard them as proprietary and allows others to implement and use the protocols, providing an acknowledgment of the source is made in any public documentation. The major protocols and their functions are:

DIGITAL Data Communications Message Protocol (DDCMP), Version 4.1 — Handles the physical link traffic control and physical link error recovery within DECnet. DDCMP operates over both full- and half-duplex facilities, using serial synchronous or asynchronous facilities in a point-to-point or multi-point mode.

DDCMP Has the following important characteristics:

- Operates over a wide variety of hardware devices
- Makes efficient use of full-duplex channel capacity
- Allows transmission of all data types (including binary) with no additional overhead
- Allows standard (character-oriented) communications hardware to be used
- Uses CRC-16 for error detection, with recovery by retransmission
- Enables effective earth/satellite links (or other links) with long signal propagation delays
- Supports up to eight tributary stations (drops) on a multi-point line

Maintenance Operation Protocol (MOP), Version 2.1 — Handles message acknowledgement, time-out and retransmission functions within the DDCMP maintenance mode envelope. In addition, MOP performs the following functions:

- Down-line loading the memory of a computer system
- Up-line dumping memory contents, usually upon a system failure
- Loopback testing of the data link and/or its hardware components
- Restarting a remote and possibly unattended computer system

Not all features of MOP (e.g., down-line load) have been implemented in all Phase III products.

Transport Protocol, Version 1.3 — Provides full-duplex message (packet) routing between any two nodes. The physical and topological characteristics of the network are transparent to the user level interfaces, which only see a logical path between nodes. Other important characteristics of the transport layer include:

- Ability to connect nodes dynamically within the network once transport initialization occurs over a previously established physical link
- Regulation of packet admission into the network and management of resources at each node for congestion control
- Bounding of the time a packet spends in the network

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Network Services Protocol (NSP), Version 3.2 — Handles network service functions within DECnet. This includes sending messages between two nodes and routing messages within any given node. NSP makes it possible for two programs on different machines to establish a logical communications channel (logical link) between the programs, and to exchange data using this logical link. These programs need not be aware of either the nature of the physical link (full- or half-duplex, parallel or serial) or the nature of the protocols supporting the physical link. NSP has the following important characteristics:

- Dynamic creation of logical links between programs
- Exchange of data between programs on a solicited basis
- Exchange of data between programs on a non-solicited (e.g. interrupt) basis

Data Access Protocol (DAP), Version 5.6 — Enables programs on one node of the network to use the I/O services available on other network nodes. Some DECnet products provide facilities for translating an operating system's unique I/O calls into the DAP standard, and vice versa. Thus DAP enables data requests to be processed in a meaningful way by many (possibly heterogeneous) operating systems. DAP's facilities include:

- Remote file access, including open, read, write, close, and delete for sequential and random access files and command files

It should be noted that each DAP function requires support at both ends of the link. At the local node, where the user program initiates a data request, the DAP support must package the request for transmission through the network. At the remote node (where the device or file resides), the DAP support must cause the appropriate actions to be performed. Not all systems support both local and remote portions of each DAP operation.

Network Management, Version 2.0 — Defines the functions used by operator and programs to plan, control, and maintain the operation of DECnet networks. The Network Information and Control Exchange (NICE) protocol is used to provide this capability throughout the network. Network Management facilities include:

- Consistent operator-level interface across operating systems
- Definition of network parameters that determine a specific node's role within a given network topology
- Control of operational functions like starting up and shutting down a node and the physical lines connected to it
- Monitoring the day-to-day performance of a network by gathering and analyzing logging data
- Down-line loading of satellite nodes
- Node and line level diagnostic loopback testing used for problem isolation in the network

Session Control, Version 1.0 — Provides system-dependent, process-to-process communications functions; Session Control is the point at which DECnet is integrated with an Operating System. Its functions include

- Mapping of node names to node addresses
- Identifying end users
- Activating or creating processes
- Validating incoming connect requests

DECnet Functions

DIGITAL Network Architecture, implemented across a wide range of operating systems and hardware configurations, enables users to build a variety of networks. While such networks have common attributes, individual systems in the network have certain system-specific attributes. The common attributes are:

- *Task-to-Task Communication* - Programs or tasks on one system can create logical links and exchange data with programs or tasks on other systems.
- *Inter-system File Transfer* - This facility allows an entire data file to be moved between systems, at either program or operator request. The common file type supported across systems that provide this function is sequential ASCII.
- *Network Command Terminal* - Local users can log onto like (homogeneous) systems in the network as though their terminal were directly connected to the remote system. This is an unsupported feature under DECnet-RT.

Additionally, many DECnet systems support other features that are useful in a network environment. These include:

- *Batch/Command File Submission* - Local users can submit batch or command files to remote systems for execution.
- *Batch/Command File Execution* - Local users can cause a batch or command file that resides at a remote node to be executed there.
- *Remote File Access* - Users or programs can remotely access sequential files on a record-by-record basis.
- *Down-line System Loading* - Initial memory images for DECnet-11S systems in the network can be stored on the local system, and loaded on request into adjacent systems in the network. Remote systems require the presence of a network bootstrap loader, implemented in read-only memory.
- *Down-line Task Loading* - Programs to be executed on DECnet-11S systems in the network can be stored on the local system, and loaded on request into other systems, under the joint control of the operating systems at both ends of the logical link. This and the preceding feature simplify the operation of network systems that do not have mass storage devices.

Table I provides the information for determining if the preceding functions are available on a particular DECnet system. Note that the above descriptions define the minimum capabilities provided by a given function. Additional capabilities, beyond those described as the minimum for a function, may be available between two of the same or different DECnet systems.

Configuring DECnet Networks

DECnet provides a basic level of interconnection between specific products. However, each DECnet system has its own set of communications devices. Individual product SPDs must be consulted to determine which communication devices are supported and the maximum limits for each DECnet node.

Phase III networks support a maximum of 255 nodes and a network diameter not greater than 10 hops. A hop is defined as the path between two physically connected adjacent nodes. The diameter restrictions therefore, mean the network software will not route messages to a destination node that would require the traversal of more than ten physical lines connecting adjacent nodes.

To achieve adequate performance, DIGITAL suggests that significant network analysis be completed prior to any network implementation. The size limitation of individual networks will vary depending on specific products and configuration.

TRAINING CREDITS:

No training credits are included with a DECnet software license. Training courses on DECnet software are scheduled at regular intervals in DIGITAL's Training Centers. Arrangements should be made directly with DIGITAL's Educational Services Department.

SOFTWARE PRODUCT SUPPORT:

DECnet products are DIGITAL supported software products. A Network Profile and DECnet Customer Support Plan covering all intended network nodes and their support may be required.

The customer may purchase DECnet products license options that do not include support services. The category of support applicable to such software is Customer Supported. When a network contains DECnet product options, which were purchased without warranty service and/or are not currently covered by a Software Product Service contract, DIGITAL will respond only to those problems that occur or can be demonstrated by the customer to occur among nodes that are under warranty service or under a current Software Product Service contract.

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.

Connectivity of the DIGITAL installed DECnet node to all adjacent DECnet Phase III, DIGITAL supported nodes within the customer's network will be demonstrated by the use of Network Installation Procedures. The updating/upgrading of adjacent nodes within the network to allow connectivity is the responsibility of the customer.

CUSTOMER RESPONSIBILITIES:

Before installation of the software, the customer must

- Obtain, install, and demonstrate as operational any modems and other equipment and facilities necessary to interface to DIGITAL's communication equipment
- Make available for a reasonable period of time, as mutually agreed by DIGITAL and the customer, all hardware, communication facilities, and terminals that are to be used during installation

Delays caused by any failure to meet these responsibilities will be charged at the prevailing rate for time and materials.

PREREQUISITE SUPPORT:

A Network Profile and DECnet Customer Support Plan covering all intended network nodes and their support may be required.

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.

Options with no support services are only available after the purchase of one supported license.

A single-use, license-only option is a license to copy the software previously obtained under license.

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.

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

The prerequisite for Self-Maintenance Service being the purchase of the equivalent level operating system's Software Product Service, and the Autopatch option for that operating system. Customers should contact their local DIGITAL office for additional information on the availability of these services.

DECnet GLOSSARY

Adjacent Node: An adjacent node is a node removed from the local node by a single physical line.

Ancillary Control Processor: A program that acts as an interface between user software and an I/O driver.

Asynchronous Transmission: Transmission in which time intervals between transmitted characters can be of unequal length. Transmission is controlled by start and stop elements at the beginning and end of each character. Also call Start-Stop transmission.

Baud: A unit of signaling speed equal to the number of discrete conditions or signal events per second. In asynchronous transmission, the unit of signaling speed corresponding to one unit interval per second; that is, if the duration of the unit interval is 20 milliseconds, the signaling speed is 50 baud. Baud is the same as "bits per second" only if each signal event represents exactly one bit.

Block: (DDCMP) Data transmitted as a unit, over which a coding procedure is usually applied for synchronization or error control purposes.

bps (bits per second): The commonly used measure for data transfer rate. (Other notations are bit(s), b.p.s., bit/sec, etc.)

Byte: Assumed to be 8 bits throughout unless stated otherwise. (Commonly a character.)

Component: This is an element in the network that can be controlled and monitored. Components include lines and nodes.

Control Station: The station on a network that supervises the network control procedures such as polling, selecting, and recovery. It is also responsible for establishing order on the line in the event of contention, or any other abnormal situation arising between any stations on the network. Compare *Tributary Station.*

Data Type — ASCII or Image: ASCII data is subject to formatting conversion by the DECnet software, depending on the data's record attributes. Image data is a stream of bits to which the software applies no interpretation.

Dial-up Line: A communications circuit that is established by a switched circuit connection.

Down-line Load: The process by which one node in a computer network transfers an entire system image or a program (task) image to another node and causes it to be executed.

Event: An event is defined as a network or system-specific occurrence for which the logging component maintains a record.

Flow Control: The protocol mechanism that ensures the sending station does not overrun the receiving station with more data than it can accept.

Front-End Processor: A communications computer associated with a host computer. It can perform line control, message handling, code conversion, error control and applications functions such as control and operation of special-purpose terminals.

Full-Duplex: The line can transmit data in both directions simultaneously. A full-duplex line allows a node to send and receive data at the same time.

Fully Connected Network: A network in which each node is directly connected with every other node.

Half-Duplex: The line can transmit data in either direction, but only in one direction at any given time. In other words, the line cannot be used to send and receive data simultaneously.

Host Node: This is a node that provides services for another node. For example, the host node supplies program image files for a down-line load.

Interactive Communication: A protocol that allows one system to interact with a connected system at the transaction level rather than at the file level.

Interface: 1) A shared boundary defined by common physical interconnection characteristics and meanings of interchanger signals. 2) A device or equipment making possible interoperation between two systems, e.g., a hardware component or a common storage register. 3) A shared logical boundary between two software components.

Leased-Line: A line reserved for the exclusive use of a leasing customer without interexchange switching arrangements. Also called a private line.

Line: This is the network management component that provides a distinct physical data path.

Link: 1) Any specific relationship between two nodes in a network. 2) A communications path between two nodes. 3) A data link. See also *Line.*

Local Node: A frame of reference; the node at which the user is physically located. Compare *Remote Node.*

Logical Link: A logical link is a carrier of a single stream of full-duplex traffic between two user-level processes.

Message: (NSP) The unit of communication as seen by the user; it can be segmented into several packets to traverse the network, or in some circumstances several messages can be carried in one packet.

Multi-point Connection: A network configuration in which more than two computers are attached to the same line. Use of this type of line normally requires some kind of polling mechanism, addressing each terminal with a unique ID. Also called multi-drop. Compare *Point-to-Point Connection.*

Network: A configuration of two or more computers linked to share information and resources. A computer having the capacity to participate in a network is called a node.

Node: A node is a network management component consisting of a DIGITAL system that supports DECnet software.

Noise: Undesirable disturbances in a communications system. Noise can generate errors in transmission.

Non-Routing (End) Node: A non-routing node can send packets to other nodes in the network but packets cannot be forwarded or routed through it. It can be adjacent to one other node only; therefore it is always an end node in a Phase III configuration.

Null Modem: A device which interfaces between a local peripheral that normally requires a modem, and the computer near it that expects to drive a modem to interface to that device; an imitation modem in both directions.

Operating System: An integrated collection of service routines for supervising the sequencing and processing of programs by a computer. An operating system provides access to the features of a central processor, and also organizes and optimizes a central processor and peripheral equipment for a certain range of applications.

Packet: (Transport Protocol) A group of bits including data and control elements which is switched and transmitted as a composite whole. The data and control elements and possibly error control information are arranged in a specified format.

Phase II Node: A Phase II node runs a Phase II implementation of DECnet and therefore does not support routing. It can send packets only to adjacent nodes and it cannot forward packets it receives onto other nodes in the network. It can be adjacent to one or more full routing nodes and/or to other Phase II nodes. Logically, it is an end node within a Phase III configuration.

Phase III Node: A Phase III node runs a Phase III implementation of DECnet and supports routing as either a full routing or non-routing (end) node. See also *Routing Node* and *Non-Routing Node.*

Point-to-Point: A network configuration in which a connection is established between two and only two computers. Compare *Multi-point Connection.*

Polling: The process of inviting another station or node to transmit data. See also *Control Station, Tributary Station.*

Protocol: A basic procedure or set of rules that govern and control the flow of messages between computers; also, a set of conventions between communicating processes on the format and content of messages to be exchanged. Digital Network Architecture (DNA) uses three basic protocols in a layered structure as the framework for DECnet.

Remote Node: A frame of reference; any node other than the one at which the user is located in the network. Compare *Local Node.*

Routing node: A full routing node can forward packets to other nodes in the network and can be adjacent to all other types of nodes.

Serial Transmission: A method of transmission in which each bit of information is sent sequentially on a single channel rather than simultaneously as in parallel transmission.

Solicited Messages: Normal data messages which network tasks explicitly send and receive.

Switched Line: A communications link for which the physical path can vary with each usage, e.g., the dial-up telephone network.

Synchronous Transmission: Transmission in which the data characters and bits are transmitted at a fixed rate with the transmitter and receiver synchronized. This eliminates the need for start-stop elements, thus providing greater efficiency. Compare *Asynchronous Transmission.*

Topology: The physical or logical placement of nodes in a computer network.

Tributary Station: A station, other than the control station, on a centralized multi-point data communications system, that can communicate only with the control station when polled or selected by the control station.

Unattended Operation: The automatic features of a node's operation that permit the transmission and reception of messages on an unattended basis.

Word: In computing, an ordered set of characters that is the normal unit in which information can be stored, transmitted, or operated upon within a computer.

TABLE I

	DECnet-11M Version 3.0	DECnet-11S Version 3.0	DECnet-11M-PLUS Version 1.0	DECnet-VAX Version 2.0
Task-to-Task	YES	YES	YES	YES
Network Command Terminal[3]	YES	YES	YES	YES
File Transfer	YES	NO	YES	YES
Command/Batch File Submission	YES[1]	NO	YES[1]	YES[4]
Command/Batch File Execution	YES	NO	YES	YES
Remote File Access	YES	YES[2]	YES	YES
Down-Line System Loading	YES	NO	YES	YES
Down-Line Task Loading	YES	NO	YES	YES

	DECnet/E Version 2.0	DECnet-1AS Version 3.0	DECnet-RT Version 2.0	DECnet-20 Version 2.1
Task-to-Task	YES	YES	YES	YES
Network Command Terminal[1]	YES	YES	YES[5]	NO
File Transfer	YES	YES	YES	YES
Command/Batch File Submission	YES	YES	YES[6]	YES[7]
Command/Batch File Execution	YES	YES	YES[6]	YES
Remote File Access	YES	YES	YES	NO
Down-Line System Loading	NO	YES	NO	NO
Down-Line Task Loading	NO	YES	NO	NO

[1]Cannot submit command/batch files to DECnet/E, DECnet-VAX, or DECnet-RT systems. Can request DECnet/E or DECnet-VAX to execute files already at the DECnet node.

[2]Offers local users network access to remote file systems. Does not allow users on remote systems to access local files.

[3]Terminals on these systems can log onto other like (homogenous) systems in the network. DECnet-11S does not support connection from remote command terminals.

[4]Command file must reside on remote node

[5]Unsupported function to RSX-11M, RSX-11M-PLUS, and VAX/VMS

[6]Requestor-only function

[7]Server-only function

Software Product Description

PRODUCT NAME: RT-11, Version 4.0
Single-User Operating System

SPD 12.1.19

DESCRIPTION:

RT-11 is a disk-based, single-user, real-time operating system designed for interactive program development and on-line applications on PDP-11 and LSI based systems. RT-11 supports both single (SJ) and foreground/background (FB) modes of processing. In addition to a variety of system and program development utilities, RT-11 supports a number of high-level language processors, including BASIC and FORTRAN IV.

The emphasis in RT-11 is on efficient use of system resources, minimizing system requirements in the CPU and on the mass storage device, while maximizing system throughput. RT-11's ease of use is due in part to the simplicity of its design.

The RT-11 Operating System offers the following configurations:

SJ Monitor — Enables one program at a time to execute in memory. SJ requires only 6 KB of memory and minimal overhead. Should the user's requirements change, a properly written program that runs under the SJ monitor can be executed under the FB or XM monitor as a background program without modifications.

FB Monitor — Operates a foreground program and a background program. The real-time function is accomplished in the foreground, which generally has priority on system resources. Functions that do not have critical response time requirements, such as program development, are accomplished in the background that operates whenever the foreground program cannot run. Within their priorities, both foreground and background are fully functional RT-11 programs with access to system capabilities. Although they operate independently, foreground and background can communicate through disk files and/or the message transmission facility.

Extended Memory (XM) Monitor — Version of the FB monitor for supporting systems with more than 64K bytes of memory. System generation must be performed for XM support. This feature is accessible through those optional, high-level language processors that can automatically produce programs that address areas of memory other than the lowest 64K bytes. The MACRO-11 programmer can also take advantage of this feature for storing data and instructions above the lowest 64K bytes of memory. A linker option allows FORTRAN IV and MACRO-11 programmers to load overlays in extended memory for fast access.

Features

Ease of Use — Designed for the single, interactive user. The English-language keyboard commands are easy to use and understand. The EXECUTE command, for example, allows transition from source to executing code with one command. Indirect command files allow command sequences to be stored and invoked repeatedly by the user.

Contiguous File Structure — Contiguous file structure for random-access devices incurs minimum file access overhead.

Configuration Independence — Provides device-independent I/O programming, for example, at run time the user can either send output directly to a printer or write it to a disk for later printing.

Flexible Real Time I/O — Satisfies a wide variety of input/output requirements by providing the following three modes of I/O operation:

- Synchronous I/O, where user program processing is suspended until the completion of the I/O event.
- Asynchronous I/O, where an I/O event is started and user program processing continues until a user-defined point is reached. Processing is then suspended until the I/O event is completed.
- Event driven I/O, where an I/O event is started and user program processing continues until the I/O event completes. Processing is then interrupted to service the completed I/O event.

Low System Overhead — SJ monitor requires not more than 6K bytes of memory to provide system control and I/O for the system device and the operator's terminal. FB operating adds not more than 5K bytes to this requirement. Options selected through system generation can increase memory requirements.

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RT-11's modular structure enables some monitor components to be swapped in as needed, However, if the program's memory requirements allow it, the complete monitor stays resident in memory to increase system responsiveness.

Ease of Expansion — Supports a wide range of PDP-11 peripherals. Beyond that, the modularity of the I/O system allows users with unique devices to interface them easily, merely by writing a device handler and storing it as a file on the system device.

When a new peripheral handler is added to an RT-11 system, properly coded programs can immediately use the device without requiring additional coding or reassembly.

Industry Compatible Magnetic Tape — Supports 9-track industry-compatible magtape with a subset of ANSI-compatible labels and fixed-length unformatted blocks.

Indirect Command Files — Set of system commands can be stored in an indirect command file that can be executed through a single keyboard command. In addition, an indirect command file can be called automatically on system start-up.

BATCH — Complete job control subsystem that provides batch-mode processing of user jobs in both the SJ and FB environments. BATCH processes job streams in the background partition, allowing real-time jobs or other user jobs to run in the foreground. RT-11 BATCH can be used in either SJ monitor configurations of 32K or more bytes of memory, or in any FB or XM configuration.

SYSLIB — Provides access to system services directly from a FORTRAN program. (FORTRAN IV is available under separate license.) Routines are provided to perform direct file I/O, asynchronous FORTRAN subroutines, FORTRAN interrupt routines, and multiterminal support.

HELP — Allows a user to access information about keyboard commands. This information can be modified to meet the user's need.

Multiterminal Support — Optionally supports up to sixteen terminals in addition to the console terminal. These terminals can be addressed by specially written programs (or by optional software) and can be interfaced by up to eight DL11s, two DZ11s, up to eight DLV11s, one or two DLV11-Js, or up to four DZV11s (a total of 16 lines). A terminal on a local DL (DLV) interface must be connected to the hardware console interface (vectors 60, 64) at bootstrap time. There can be only one "command console terminal" per system at any time. The command console is the terminal that is connected to the hardware console interface, but it can be reassigned to any other local terminal by means of a simple keyboard command. The foreground job can communicate with a private console terminal, other than the command console always used by the background job. Multiterminal support is available with the RT-11 SJ, FB, or XM monitors. Multiterminal support allows dial-up remote users to be connected via Bell 103-type modems. RT-11 does not support leased lines. A system generation must be performed for RT-11 multiterminal support.

RT-11 is shipped in pre-generated, ready-to-use form. DIGITAL installation does not include system generation. Users who require special features, or a highly optimized system tailored for a particular aplication, must perform system generation. A minimum of a dual RX01 (or larger) disk and 32K bytes of memory are required in order to generate a custom RT-11 system. However, it is highly recommended that a user have at least 56K bytes of memory and an RK05 (or larger) disk to perform system generation. Diskette system generation also requires a hard copy terminal or a line printer and must be done via the procedure described in the *RT-11 System Generation Guide.* System generation is not supported on TU58 DECtape II.

RT-11 system programs include

EDIT — Text editor creates and modifies ASCII text files. Both character- and line-oriented commands are included with provisions for command interaction, editing macros, and file manipulation.

KED and K52 — Keypad editors designed for use on VT55, VT100, VT101, VT102, and VT105 video terminals. KED and K52 use the additional function keypad keys on those terminals to allow a user to position a visible cursor anywhere in a text file and to make changes and insertions easily.

MACRO-11 — Provides macro assembly language programming under RT-11. It has the facilities for using macro libraries, Cross Reference (CREF) listing, conditional assembly directives, and pseudo operators. MACRO-11 offers the convenience of global symbols for linking object modules and extensive error diagnostics.

LINKER (LINK) — Converts relocatable object modules produced by the assembler or optional compilers into a run-time format. Services performed by LINK include converting relative addresses to absolute addresses, resolving external references among object modules, and initializing all parameters required by the monitor to run a program.

Overlays do not require any special instructions or function calls. The user designates an overlay structure at linker command time and the linker automatically produces a runnable memory image with the desired overlays. Ease of use of the overlay structure is of primary importance, but the power of the overlay system has not been compromised. The system allows multiple overlays in up to seven memory regions, subject only to the memory size. Under the XM monitor, the linker allows overlays to be loaded into extended memory at run-time and executed directly from that memory.

PERIPHERAL INTERCHANGE PROGRAM (PIP) — Allows transfer of files (ASCII or binary) between any RT-11 supported devices. PIP also allows the user to rename, protect, and delete files.

RESOURCE (RESORC) — Examines the currently running RT-11 system and displays information about the status of the monitor and the system configuration.

LIBRARIAN (LIBR) — Creates and maintains libraries of commonly used object module subroutines and assembly language macro definitions. The linker uses object libraries (as specified by the user) to resolve undefined external symbols.

DEVICE UTILITY PROGRAM (DUP) —Performs general utility functions in support of mass storage devices. Among DUP functions are initializing devices, scanning for bad blocks, and consolidating free space on a disk.

DIRECTORY (DIR) — Used to list the file directory for file-structured devices. DIR allows directory listing sorted by file name, file type, date, size, or position.

UTILITIES —

- DUMP allows the contents of a file to be printed in various formats.
- SRCCOM is an ASCII file comparison program that helps locate the changes made in source files.
- BINCOM is a binary file comparison program that helps locate the changes made in binary files.
- FILEX allows transfer of RT-11 files to and from some other operating system environments.
- FORMAT allows the user to format RK05, RK06, and RK07 disks, and RX02 diskettes. FORMAT also provides disk verification by writing patterns and reading them on each block of the volume.

SYSTEM JOBS — FB and XM monitors can optionally support up to six extra jobs, called system jobs. These system jobs are programs supplied by DIGITAL and run in parallel with user-written foreground and background jobs. System job support is available only through system generation. DIGITAL does not support user-written system jobs.

Two RT-11 utilities (Error Logger and Queue Package) can run as system jobs (in addition to the background and foreground jobs) if system job support is enabled through the system generation process. The system job feature is available to the FB and XM monitors only. Both utilities also run as simple foreground jobs.

The Error Logger keeps statistics on successful and unsuccessful transfers for random access devices. System generation must be performed for error logging support.

The Queue Package sends files to any valid RT-11 device; it is particularly useful for queuing files for subsequent printing. If run as a simple foreground job, the Queue Package does not require system generation.

DEBUGGING AND PATCHING — Provides the following utilities to aid users in finding, diagnosing, and correcting programming errors.

- ODT — On-line Debugging Technique utility aids in interactive program debugging.
- VDT — Virtual Debugging Technique utility aids in the interactive debugging of extended memory programs and multiterminal applications.
- PATCH — Performs minor modifications to memory image files that are output by the RT-11, Version 3B or earlier linkers. PATCH cannot be used to modify files linked with the RT-11, Version 4.0 linker.
- SIPP — Save Image Patch Program can be used to patch files that were linked with the RT-11, Version 4.0 linker (and also some files linked with the Versions 03 and 03B linkers).
- PAT — Object module patch program performs minor modifications to files in object format.
- SLP — Source file patch program provides an easy way to make changes to source files.

Autopatch, the automated patching facility, provides a means of applying patches by using machine-readable command files, thus avoiding the effort and potential errors associated with entering patches manually. The RT-11 software distribution kit includes one autopatch kit, containing previously published patches.

Subsequent autopatch kits are available on a periodic basis as an optional, separate service.

Optional RT² Run-Time System

RT² is a license to use a subset of RT-11 software. RT² software provides a single job (SJ) or foreground/background (FB) execute-only environment for applications developed on a RT-11 system. It is the user's responsibility to transport the RT² software and the user-developed software from the RT-11 system to the target RT² system.

RT² includes the following modules:

- RT11BL SYS baseline SJ monitor
- RT11SJ SYS RT-11 SJ monitor
- RT11FB SYS RT-11 FB monitor
- DD SYS TU58 handler
- DY SYS RX02 handler
- DL SYS RL01/RL02 handler
- RK SYS RK05 handler
- DX SYS RX01 handler
- TT SYS RX01 handler
- LP SYS terminal handler
- LS SYS serial line printer handler
- DUP SAV Device Utility Program
- KED SAV Keypad Editor for VT1XX family
- K52 SAV Keypad Editor for VT5X family
- PIP SAV Peripheral Interchange Program
- DIR SAV Directory Listing Program

BASIC-11 requires a separate license to run on RT².

Applications developed under FORTRAN IV/RT-11 can be used under RT² along with the FORTRAN IV OTS. The FORTRAN IV Compiler cannot be used on RT².

MINIMUM HARDWARE REQUIRED:

A minimum RT-11 system must include the following:

- Processor: PDP-11 or LSI-11 processor (see Table I for specific CPUs supported)
- Memory: At least 24K bytes of memory for SJ; or at least 32K bytes of memory for FB; more than 64K bytes for XM. At least 32K bytes of memory are required to perform a system generation.
- Console terminal: LA12, LA34, LA38, LA100, LA120, VT55, VT100, VT101, VT102, or VT105
- Clock: Line frequency clock for FB operation
- EIS, KT11 Memory Management Unit, and line frequency clock for XM
- System device: Every RT-11 system must have a random-access mass storage device (or TU58 cartridge tape*) for the system device (see Table I for specific devices).
- System backup device: Every RT-11 system must have a system backup device other than the system device (see Table I).

  Same as software distribution device, or any supported removable disk cartridge or disk pack device.

- Software distribution device: Either the system device or the system backup device must also be a distribution medium.

  9-track (800 BPI) magnetic tape (for system device that is either RK05, RK06, RK07, RL01, RL02, or RP03)

  RK05, RL01, or RL02 cartridge disk

  RX01 or RX02 diskette

  TU58 DECtape II cartridge tape

Table I
RT-11 Minimum Hardware Requirements

Processor	Minimum Memory	System Device Medium	Backup Device Medium
PDP-11 Unibus 11/04, 11/05, 11/10, 11/20, 11/24, 11/34, 11/35, 11/40, 11/44, 11/45 11/50, 11/55 11/60	24K bytes (32K bytes required for RK06 or RK07 system device)	RK05 RK06* RK07* RL01 RL02 RP03 RX01 RX02	Magnetic Tape RK05 RL01 RL02 RX01 RX02 TU58
PDP-11/03 (LSI-11)	24K bytes	RK05 RL01 RL02 RX01 RX02 TU58	RK05 RL01 RL02 RX01 RX02 TU58
PDP-11/23 PDP-11/23-PLUS	64K bytes	RL01 RL02 RX02 TU58	RL01 RL02 RX02 TU58

*RT-11 is not distributed on RK06 or RK07 disk cartridges.

NOTE: An RT-11 Version 4.0 system is required for developing applications software and operating on an RT² system.

OPTIONAL HARDWARE:

NOTE: In some cases, not all hardware features of the following options are supported. Hardware or software restrictions can limit the number of devices that a given system can support.

- Additional memory to a supported total of:

Monitor	Physical Memory
BL, SJ, FB	56 KB or 60 KB w/MSV11-DD
XM	248 KB requires KT (V) 11 MMU

- KK11-A cache memory for PDP-11/34
- KW11-P or KWV11-A programmable real-time clock
- KEF-11 or FPF11 Floating Point Processor

I/O Peripherals

- One CR11 card reader
- One LAV11, LPV11, LP11, LP25, LP26, or LS11 line printer
- One PC11 paper tape reader/punch
- One VT11A/VS60 Graphics Display processor

Magnetic Tape Devices

- Up to eight TU16/TE16 and/or TU45 magnetic tape drives (32K bytes required)
- Up to eight TU10/TE10 and/or TS03 magnetic tape drives (32K bytes required)
- Up to four TS11 (1600 BPI) magnetic tape drives (32K bytes required)
- Up to two TU58 DECtape II dual cartridge tape systems (total of four units) interfaced via DL11, DLV11, or MXV11

Disk Devices

- One RK11 or RKV11 disk cartridge controller with up to eight RK05J or RK05F disk drives (RK05F counts as two drives)
- One RK611 or RK711 disk cartridge controller with up to eight RK06 and/or RK07 disk drives (32K bytes required)
- One RL11 or RLV11 disk cartridge controller with up to four RL01 and/or RL02 disk drives
- Up to two RX11 or RXV11 floppy disk systems with dual RX01 diskette drives (total of four units)
- Up to two RX211 or RXV21 floppy disk systems with dual RX02 diskette drives (total of four units)

Terminals

- The maximum input data rate for a single terminal is 300 baud. The aggregate total input data rate for a system is 4800 baud.
- The output baud rate can be set to any speed. RT-11 sends output as fast as possible, depending on the capacity of the CPU and the nature of its load.
- LA12, LA34, LA38, LA100, LA120, VT55, VT100, VT101, VT102, VT105, and VT131 terminals.
- One hard-copy device connected to a DL(V) interface for use as a serial line printer.

*Terminal Interfaces**

- Up to eight lines
  DL11-A, B, C, D, E, W
  DLV11-E, F
  DLV11-J (counts as four lines)
  MXV11-AA, AC
- Up to sixteen lines (up to eight lines on LSI-11, PDP-11/03)
  DZ11-A, B, C, D, E, F
  DZV11
- No more than 17 lines total, including console

*Communications Interfaces**

- DL11 or DLV11-E single-line interfaces
- Up to two DZ11 asynchronous 8-line multiplexer (32K bytes required)
- DZ11-E asynchronous 16-line multiplexer (32K bytes required)
- Up to four DZV11 asynchronous 4-line multiplexer (32K bytes required)

* NOTE: RT-11 provides remote terminal support only for dial-up lines; RT-11 does not support leased lines.

PREREQUISITE SOFTWARE:

None

OPTIONAL SOFTWARE:

BASIC-11/RT-11
DECnet-RT
FMS-11/RT-11
FORTRAN IV/RT-11
MRRT-11
MU BASIC-11/RT-11
RT-11 2780/3780 Protocol Emulator

TRAINING CREDITS:

ONE (1) - Training Credit applies only to options that include support services. Consult the latest Educational Services Catalog at your local DIGITAL office for the available courses, course requirements, and guidelines.

SUPPORT CATEGORY:

DIGITAL SUPPORTED

RT-11 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.

System generation is not included with DIGITAL installation.

SOFTWARE PRODUCT SUPPORT:

RT-11 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.

Options with no support services are only available after the purchase of one supported license.

A single-use, license-only option is a license to copy the software previously obtained under license.

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 (D, E, G, H, Q, R, X, Y, Z) represents the distribution media for the product and must be specified at the end of the order number, e.g., QJ013-AD = binaries on 9-track 800 BPI Magtape (NRZI).

D = 9-track 800 BPI Magtape (NRZI)
E = RK05 Disk Cartridge
G = TU58 DECtape II Cartridge*
H = RL02 Disk Cartridge
Q = RL01 Disk Cartridge
R = Microfiche
X = RX02 Double Density Diskette
Y = RX01 Floppy Diskette
Z = No hardware dependency

* The TU58 is to be used in a stand-alone, lightly loaded environment. If used as a file device in a heavily loaded environment, it can degrade system performance.

QJ013 -A— Single-use license, binaries, documentation, support services (media: D, E, G, H, Q, X, Y)

QJ013 -D— Single-use license-only option, no binaries, no documentation, no support services (media: Z)

Sources/Listings Options

NOTE: Source kits provided by DIGITAL do not necessarily contain all the source files used by DIGITAL to build the binary kits.

QJ013 -E— Sources (media: D, E, H, Q)

QJ013 -F— Listings (media: R)

Special License Option

When RT² is the only portion or component of RT-11 to be run on a given CPU, the Purchaser can obtain a license for RT² only. If any other component of RT-11 is to be used, the Purchaser must obtain the RT-11 license.

QJV13 -D— Quantity 10, single-use, license-only option for RT², no binaries, no documentation, no support services (media: Z)

QJV13 -H— Right to copy for single use, no binaries, no documentation, no support services (media: Z)

Update/Unsupported Options

Users of RT-11 whose specified Support Category warranty has expired may order under license the following software option as an update to an earlier ion. The option may also be purchased for use on a second or subsequent CPU, in conjunction with a binary, single-use, license-only option. Options are distributed in binary form on the appropriate medium and include no installation or other services unless specifically stated.

QJ013 -H— Binaries, documentation (media: D, E, G, H, Q, X, Y)

QJ013 -H— Right to copy for single-use, no binaries, no documentation (media: Z)

Sources/Listings Update Options

The following options are available to licensed users as updates to sources/listings options. The update is distributed in source form on the appropriate medium and includes no installation or other services unless specifically stated.

QJ013 -N— Sources update; requires RT-11, Version 4.0 binary distribution for source assembly (media: D, E, H, Q)

QJ013 -N— Listings update (media: R)

Miscellaneous Options

QJ013 -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

Autopatch for Self-Maintenance Service is an optional service.

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

Software Product Description

PRODUCT NAME: RGL/FEP, Version 1.0 **SPD 14.62.0**

ReGIS Graphic Library/FORTRAN Enhancement Package for RT-11 and RSX-11M

DESCRIPTION:

RGL/FEP is a FORTRAN callable graphics library for RT-11 Single Job (SJ) and Foreground/Background (FB) Monitors, and RSX-11M Operating Systems supporting the VT125. RGL/FEP is a subset of and upward compatible with the VAX ReGIS Graphics Library product. RGL/FEP features picture drawing and data plotting facilities.

Picture Drawing Facilities

- Primitives for drawing arcs, circles, regular polygons and figures defined by sets of coordinates
- Shade and character fill to a horizontal line
- User-defined world coordinates
- Alternate Greek character font
- Ability to save and recall the ReGIS (Remote Graphics Set) commands generated during the creation of an image
- Cursor control permits the user to locate points on the screen and return their coordinates to the program
- Hardcopy support via the LA34-VA
- Color support provides four shades of gray on the VT125. If an auxiliary color monitor is slaved from a VT125, the four shades of gray appear as red, blue, green, and black.

Data Plotting Facilities

- Graph "paper" — User defines the type of paper on which to plot as either linear or logarithmic (base 10)
- Graph — Subroutines to plot data arrays and points or add data to an existing plot
- Cursor support — Digitizes information within a graph "paper". The cursor is moved by arrow keys on the keyboard.
- Axis Labeling — Labels the axis with either numeric values or characters
- Data Scaling — Minimum and maximum axis values can be explicitly chosen or left to the system autoscale routine

MINIMUM HARDWARE REQUIRED:

One of the following:

- Any valid RSX-11M system configuration with
  At least 128 KB of memory
  At least 850 contiguous free blocks of disk space available to build and contain the object library
  Hardware capable of reading at least one type of distribution media upon which the product is offered
  One VT125 terminal
- Any valid RT-11 system configuration with
  At least 56KB of memory
  Dual RX02 or larger disk mass storage to support the SJ or FB monitors. RX02 systems require 800 contiguous free blocks to install and verify the software
  RX01 systems require 1150 contiguous free blocks for installation and verification
  One VT125 terminal

OPTIONAL HARDWARE:

One LA34-VA graphics printer

PREREQUISITE SOFTWARE:

One of the following:

- RT-11, Version 4.0 with FORTRAN IV/RT-11, Version 2.5
- RSX-11M, Version 4.0 with PDP-11 FORTRAN-77/RSX, Version 4.0

OPTIONAL SOFTWARE:

None

TRAINING CREDITS:

None

SUPPORT CATEGORY:

DIGITAL SUPPORTED

RGL/FEP is a DIGITAL Supported Software Product.

SOFTWARE INSTALLATION:

CUSTOMER INSTALLED

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

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SOFTWARE PRODUCT SUPPORT:

RGL/FEP 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.

Options with no support services are only available after the purchase of one supported license.

A single-use, license-only option is a license to copy the software previously obtained under license.

The following key (D, E, H, M, Q, X, Y, Z) represents the distribution media for the product and must be specified at the end of the ordering number, e.g., QJ122-AD = binaries on 9-track 800 BPI Magtape (NRZI).

D = 9-track 800 BPI Magtape (NRZI)
E = RK05 Disk Cartridge
H = RL02 Disk Cartridge
M = 9-track 1600 BPI Magtape (PE)
Q = RL01 Disk Cartridge
X = RX02 Double Density Diskette
Y = RX01 Floppy Diskette
Z = No hardware dependency

NOTE: RX01 and Magtape are for distribution only and cannot be used as system devices.

For RT-11

QJ122 -A— Single-use license, binaries, documentation, support services (media: D, E, H, Q, X, Y)

QJ122 -D— Single-use license-only option, no binaries, no documentation, no support services (media: Z)

For RSX-11M

QJ123 -A— Single-use license, binaries, documentation, support services (media: D, E, H, M, Q)

QJ123 -D— Single-use license-only option, no binaries, no documentation, no support services (media: Z)

For RT-11 and RSX-11M

QJ126 -D— Quantity of 25, single-use license-only option, no binaries, no documentation, no support services (media: Z)

QJ127 -D— Quantity of 50, single-use license-only option, no binaries, no documentation, no support services (media: Z)

Update/Unsupported Options

Users of RGL/FEP whose specified Support Category warranty has expired may order under license the following software options as an update to an earlier version. These options may also be purchased for use on a second or subsequent CPU, in conjunction with a binary, single-use, license-only option. Options are distributed in binary form on the appropriate medium and include no installation or other services unless specifically stated.

For RT-11

QJ122 -H— Binaries, documentation (media: D, E, H, Q, X, Y)

QJ122 -H— Right to copy for single-use, no binaries, no documentation (media: Z)

For RSX-11M

QJ123 -H— Binaries, documentation (media: D, E, H, M, Q)

QJ123 -H— Right to copy for single-use, no binaries, no documentation (media: Z)

Terminal/Software Options

RGL/FEP is also available as part of a hardware/software package. Options available include:

RT-11 Package

VT125 -H— VT125 video terminal, 120 volts, and RGL/FEP software, single-use license, binaries, documentation, support services (media: D, E, H, Q, X, Y)

VT125 -H— VT125 video terminal, 120 volts, RGL/FEP single-use license-only option, no binaries, no documentation, no support services (media: Z)

VT125 -J— VT125 video terminal, 240 volts, and RGL/FEP software, single-use license, binaries, documentation, support services (media: D, E, H, Q, X, Y)

VT125 -J— VT125 video terminal, 240 volts, RGL/FEP single-use license-only option, no binaries, no documentation, no support services (media: Z)

RSX-11M Package

VT125 -L— VT125 video terminal, 120 volts, and RGL/FEP software, single-use license, binaries, documentation, support services (media: D, E, H, M, Q)

VT125 -L— VT125 video terminal, 120 volts, RGL/FEP single-use license-only option, no binaries, no documentation, no support services (media: Z)

VT125 -M— VT125 video terminal, 240 volts, and RGL/FEP software, single-use license, binaries, documentation, support services (media: D, E, H, M, Q)

VT125 -M— VT125 video terminal, 240 volts, RGL/FEP single-use license-only option, no binaries, no documentation, no support services (media: Z)

Upgrade from VT100 or VT105

RT-11 Packages

VT1XX -H— Terminal upgrade and RGL/FEP software, single-use license, binaries, documentation, support services (media: D, E, H, Q, Y, X)

VT1X5 -H— Terminal upgrade and RGL/FEP software, single-use license, binaries, documentation, support services (media: D, E, H, Q, Y, X)

RSX-11M Packages

VT1XX -L— Terminal upgrade and RGL/FEP software, single-use license, binaries documentation, support services (media: D, E, H, M, Q)

VT1X5 -L— Terminal upgrade and RGL/FEP software, single-use license, binaries, documentation, support services (media: D, E, H, M, Q)

Miscellaneous Options

For RT-11

QJ122 -G— Documentation-only kit (media: Z)

For RSX-11M

QJ123 -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

The prerequisite being the purchase of the equivalent level RT-11 or RSX-11M Software Product Service. Customers should contact their local DIGITAL office for additional information on the availability of these services.

RT-11 V4.0
CUMULATIVE INDEX
JULY 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 "D" is the latest kit available from the SDC.

Component	Autopatch Kit	Sequence	Mon/Yr
RT-11 V4.0			
MONITOR PATCHES			
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

Component	Autopatch Kit	Sequence	Mon/Yr
DEVICE HANDLER SOURCES			
DEVICE HANDLER NOTES			
RL02s AT REV. LEVEL "F" FAIL DURING RT-11 SYSGEN		6.1.1 N	Oct 80
DD.MAC			
DD PRIMARY BOOTSTRAP PROBLEM	A	6.4.1 M	Jul 80
DL.MAC			
PATCH XM VERSION OF DL HANDLER .SPFUN GET SIZE ROUTINE	A	6.5.1 M	Dec 80
ERRORS ON RL01 DISK DRIVES AFTER DISK PACKS ARE CHANGED	B	6.5.2 M	Jan 81
DM.MAC			
ERRORS IN DM OFFSET POSITIONING AND ERROR LOGGING	A	6.6.1 M	Jul 80
DY.MAC			
DELETED DATA MARK MAY BE LOST IF BUFFER STARTS ON PAR BOUNDARY	D	6.11.1 M	Aug 81
LP.MAC			
LP SET NOHANG MAY CRASH SYSTEM	A	6.12.1 M	Sep 80
LS.MAC			
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
PD.MAC			
CORRECTION TO PDT ERROR LOGGING SUPPORT	B	6.16.1 M	Apr 81
MAG TAPE HANDLERS			
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
SYSTEM UTILITIES			
PIP.SAV			
ERRORS IN PIP	A	7.1.1 M	Sep 80
COPY/PREDELETE COMMAND		7.1.2 N	Sep 80
MATCHING FILE SPEECIFICATIONS 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
DUP.SAV			
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

Component	Autopatch Kit	Sequence	Mon/Yr
DIR.SAV			
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
RESORC.SAV			
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
LINK.SAV			
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		7.9.10 M	May 82
LIBR.SAV			
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
FILEX.SAV			
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
SRCCOM.SAV			
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
BINCOM.SAV			
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
DUMP.SAV			
BLOCK NUMBERS OUTPUT FROM DUMP	D	7.14.1 M	Aug 81
SLP.SAV			
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
SIPP.SAV			
CORRUPTION OF MULTI-BLOCK LOG FILES	A	7.16.1 M	Jul 80
PAT.SAV			
USE OF THE PAT UTILITY WITH RT-11 V3B PATCHES		7.17.1 N+	Mar 80
HELP.SAV			
PROBLEMS WITH HELP UTILITY	A	7.19.1 M	Nov 80
EDIT.SAV			
EDIT MISHANDLES OUTPUT FILE FULL ERROR	B	7.20.1 M	Nov 81
SYSTEM SUBROUTINE LIBRARY (SYSLIB)			
SYSLIB.OBJ			
PATCH TO ICSI	A	8.1.1 M	Oct 80
IASIGN REDEFINITIONS	A	8.1.2 M	Oct 80
ILUN RESTRICTION		8.1.3 R	Feb 81
VIRTUAL OVERLAY HANDLER CORRECTION	E	8.1.4 M	Feb 82

Component	Autopatch Kit	Sequence	Mon/Yr
SYSTEM MACRO LIBRARY			
.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
SYSTEM GENERATION PACKAGE			
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
DOCUMENTATION			
RT-11 SYSTEM RELEASE NOTES			
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
RT-11 INSTALLATION AND SYSTEM GENERATION GUIDE			
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 RL02 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
INTRODUCTION TO RT-11			
RT-11 V4.0 DOCUMENTATION CORRECTIONS AND ADDITIONS		11.4.1 N	Jul 80
RT-11 SYSTEM USER'S GUIDE			
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
RT-11 SYSTEM MESSAGE MANUAL			
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
RT-11 POCKET GUIDE			
RT-11 V4.0 DOCUMENTATION CORRECTIONS AND ADDITIONS		11.7.1 N	Jul 80
RT-11 PROGRAMMER'S REFERENCE MANUAL			
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
RT-11 SOFTWARE SUPPORT MANUAL			
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
DEBUGGING UTILITIES			
VDT.OBJ			
NOTES ON USING ODT OR VDT IN AN XM ENVIRONMENT		12.2.1 N	Jan 81
ERROR CONTROL PACKAGE			
ERROUT.MAC			
ERROR LOGGING SUPPORT OF USER-WRITTEN HANDLERS		14.6.1 M	May 82
BATCH PACKAGE			
BATCH.SAV			
PATCH BATCH TO USE MONITOR SUFFIX	A	15.1.1 M	Oct 80

Component	Autopatch Kit	Sequence	Mon/Yr
SPOOLING PACKAGE			
QUEUE.REL			
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 OUPTUT 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
QUEMAN.SAV			
PROBLEMS WITH QUEMAN	B	16.2.1 M	Jan 81
KEYPAD EDITOR			
KED			
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
K52			
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
AUTOMATED PATCHING FACILITY PACKAGE			
PACKAGE NOTES			
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
FRED V1.1			
ZERO IMPURE AREA SIZE PROBLEM		33.3.1 M	Sep 81
BASIC-11/RT-11 V2.0			
INTERPRETER			
REPUBLICATION 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
INTEGERS IN DOUBLE PRECISION BASIC-11		35.1.16 N+	Mar 80

Component	Autopatch Kit	Sequence	Mon/Yr
REM STATEMENTS ON MULTI-STATEMENT LINES - PATCH 0	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
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
MU BASIC-11/RT V2.1			
INTERPRETER			
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
FORTRAN IV/RT-11 V2.5			
COMPILER			
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 PRECEEDED BY COMMENTS (PAT 27)	F	45.1.10 M	Apr 82
BOUNDS CHECKING OF INTERNAL BUFFER IN OPTIMIZER (PAT 29)		45.1.11 M	Jun 82
COMPILER HANGS WHEN ERRORS OCCUR IN STATEMENT FUNCTIONS (PAT 31)		45.1.12 M	Jun 82

Component	Autopatch Kit	Sequence	Mon/Yr
OTS			
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	B	45.2.2 M	Jul 81
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	45.2.3 F	Feb 81
BOUNDARY CONDITION ON FORMATTED I/O CORRUPTS I/O (PAT 6)	B	45.2.4 M	Mar 81
DEFAULT CARRIAGE CONTROL FOR IMPLIED SEQUENTIAL ACCESS FILES (PAT 7)	C	45.2.5 M	Jul 81
STANDALONE FORTRAN YIELDS RUN-TIME ERROR 64 (PAT 8)	B	45.2.6 M	Apr 81
DISPOSE = 'KEEP' NOT RECOGNIZED WITH READONLY OPEN PARAMETER (PAT 9)	C	45.2.7 M	Jul 81
THE DATE ROUTINE DOES NOT PERMIT BYTE ALIGNED PARAMETERS (PAT10)	C	45.2.8 M	Jul 81
IMPLICIT READ FAILURE MAY HALT PROCESSOR (PAT 11)	C	45.2.9 M	Jul 81
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)		45.2.19 M	Jun 82
PREMATURE CLEARING OF ERR= BRANCH WHEN EOF IS ENCOUNTERED (PAT 30)		45.2.20 M	Jun 82
UIOBYT PREMATURELY DETERMINES END OF BLOCK (PAT 32)		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
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	Dec 81
ERRORS IN THE BASIC SUPPORT ROUTINES GPLR AND GPF		49.12.2 M	Mar 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

Component	Autopatch Kit	Sequence	Mon/Yr
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
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
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
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

Component	Autopatch Kit	Sequence	Mon/Yr
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
LS.MAC			
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
SYSTBL.CND			
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
CTS-300 V7.0			
DOCUMENTATION			
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
DIBOL RUN-TIME SYSTEMS			
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
DIBOL/TDIBOL			
PATCH 2: POSSIBLE INCORRECT RESULTS FROM THE INSTR ROUTINE		52.4.1 M	Apr 82
DKED			
PATCH 8: POSSIBLE BOTTOM OF SCREEN CORRUPTION USING DKED		52.6.1 M	Jul 82
ERMSG.TXT			
PATCH 9: INCORRECT ERROR MESSAGES FOR SORT IN ERMSG.TXT		52.10.1 M	Jul 82
DIBOL SORT			
PATCH 7: ERROR RECEIVED WHEN PERFORMING A LEGAL SORT		52.14.1 M	Jul 82
MACRO SORT			
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
SYSTBL.CTS			
PATCH 4: TERMINAL OUTPUT CORRUPTION ON DZ11 OR DZV11 LINES		52.16.1 M	Jun 82
CTS-300 DICAM (3271) V3.1			
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
CTS-300 RDCP (2780/3780) V2.0			
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

Component	Autopatch Kit	Sequence	Mon/Yr
DECtype-300 V1.1			
REPEATED USE OF THE PASTE FUNCTION WILL CAUSE AN ERROR 28		57.1.1 M	Jun 82
RT-11/FORTRAN ENHANCEMENT PACKAGE for MINC (FEP) V2.0			
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		59.5.1 M	Jul 82
IBSRQ SKIPS INSTRUMENT ADDRESS IF SRQ ROUTINE DEFAULTED		59.5.2 M	Jul 82
SRQ ROUTINE AND TIMEOUT VALUE NOT CLEARED ON EXIT		59.5.3 M	Jul 82
SYSTEM CRASHES IF THE IB DRIVER IS NOT LOADED		59.5.4 M	Jul 82
CAN'T SPECIFY TALKER WHEN LISTENERS DEFAULTED, AND INCORRECT RECEIVE		59.5.5 M	Jul 82
CANNOT USE SECONDARY ADDRESSES IN RANGE 96. to 126.		59.5.6 M	Jul 82

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