

# Software Performance Summary

**RT-11 V2B**

NOVEMBER 1975

DEC-11-XSPSA-D-D

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Sequence

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NOTE

Missing sequences are  
for obsoleted articles.

\*Article contains a Patch.  
†Article is a replacement.

## RT-11 Software Performance Summary

### 1.0 INTRODUCTION

The Software Performance Summary is a compendium of information which provides a customer with a maintenance notebook on current software documentation and the status of known software problems. The notebook is supplemented with articles in the monthly Digital Software News which should be filed in the appropriate sections of the Software Performance Summary.

### 2.0 GENERAL FORMAT OF THE ARTICLES

Each article is formatted so that the subject is easily recognized. Figure 1 shows an overall example of the format.

Digital Software News, June 1975

Title and SPR Number, if Appropriate

The text of the article may take several forms:

1. An article of a general nature; i.e., clarification of the use of a software feature.
2. Problem description. Here the problem and its effects will be described and followed by a solution or disposition. When no solution is available, known methods of avoiding the problem will be given when possible.

SOFTWARE PRODUCT (1)	VERSION (1A)	
COMPONENT (2)	VERSION (2A)	
SUBPROGRAM OR ADDITIONAL INFORMATION (2B)	SEQUENCE (3)	PAGE OF (3A)
NEW (4)	REPLACEMENT ARTICLE (5)	ORIGINAL DATE (5A)

Figure 1. Article format.

2.1 Filing

This introductory material should be filed at the beginning of the notebook.

A system has been devised to help you file each article in its proper place. The key is Figure 2 below.

SOFTWARE PRODUCT (1)		VERSION (1A)	
COMPONENT (2)		VERSION (2A)	
SUBPROGRAM OR ADDITIONAL INFORMATION (2B)		SEQUENCE (3)	PAGE OF (3A)
NEW (4)	REPLACEMENT ARTICLE (5)	ORIGINAL DATE (5A)	

Figure 2. Coding block.

Each month the Digital Software News should be taken apart and inserted into the pages in your notebook.

First, the articles are classified by software product (1). All articles should be filed under the appropriate major heading.

Secondly, the software product is broken down by its components (2). See section 2.3 for the list of software components.

Finally, the article is referenced by sequence number (3). As an article is added to each component, it is assigned the next higher sequence number.

Additional information in the coding block is presented to further clarify the article and is not specifically for filing:

- (1A) Version of the software product.
- (2A) Version number of the component.
- (2B) Other information helpful to the user.
- (3A) Page number and pages in the article.
- (4) An "X" in this block indicates a new article.

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(5) A number in this block indicates an article republished for revision or correction and specifies the number of the revision. For example, the second revision of an article which originally appeared in June 1974 is shown in Figure 3.

(5A) Original date of a revised article.

NEW	REPLACEMENT ARTICLE	ORIGINAL DATE
	2	June 1974

Figure 3. Coding block showing the second revision.

### 2.2 System Products and Components

RT-11	ASEMBL	VS02-10
	BATCH	V01-02
	CBUILD	V01-01
	CREF	V01-03
	DUMP	None
	EDIT	V02-10
	EXPAND	V02-02
	FILEX	V02-01
	LIBR	V03-01
	LINK	V04-02
	MACRO	VM02-10
	ODT	V01-01
	PATCH	V01-02
	PATCHO	V01-03
	PIP	V03-04
	SRCCOM	V01-02
	SYSLIB	V5

BASIC/RT-11	None	V01B-01
FOCAL/RT-11	None	V01
FORTTRAN/RT-11	None	V01B-08
GAMMA-11		
LA-11	SPARTA	

Modules	TTYR11
	QA
	OUTF
	FFT
	ADSAM
	GTDISP
	GENS
	VRDISP
	Other sources to generate SPARTA

LV-11 Plot Package  
 MU BASIC/RT-11  
 SSP-11/RT-11

## RT-11 Software Performance Summary

### 2.3 System Documentation

System Reference Manual	DEC-11-ORUGA-C-D
System Reference Card	DEC-11-ORRCA-C-D
Software Support Manual	DEC-11-ORPGA-B-D
Getting Started with RT-11	DEC-11-ORCPA-E-D
BASIC/RT-11 Language Reference Manual	DEC-11-LBACA-D-D, DN2
Getting Started with BASIC/RT-11	DEC-11-LBCLA-C-D
FOCAL-11 Manual	DEC-11-LFOCA-E-D, DN1
Getting Started with RT-11 FORTRAN	DEC-11-LFGOA-B-D
PDP-11 FORTRAN Language Reference Manual	DEC-11-LFLRA-B-D
RT-11 FORTRAN Compiler and OTS Manual	DEC-11-LRFPA-A-D, DN2
FORTRAN/RT-11 Extensions Manual	DEC-11-LRTEA-B-D
GAMMA-11 Reference Manual	DEC-11-MGFBA-A-D
GAMMA-11 Reference Card	DEC-11-MGCSA-A-D
Laboratory Applications User's Manual	DEC-11-ALRMA-B-D, DN1
SPARTA Reference Card	DEC-11-ALRCA-B-D
LV-11 Plotting Package BASIC/RT-11 Manual	DEC-11-LBACA-D-DN1
BASIC-11 Language Reference Manual	DEC-11-LIBBA-B-D
MU BASIC/RT-11 User's Manual	DEC-11-LIBRA-A-D
MU BASIC System Installation Guide	DEC-11-LIBMA-A-D
Scientific Subroutine Manual	DEC-11-ARSMA-A-D

### 3.0 SOFTWARE PERFORMANCE REPORTS

Each new installation is provided with Software Performance Report (SPR) forms. The SPR form enables users to suggest enhancements to or report problems with Digital Equipment Corporation software or documentation. When a problem is encountered, an SPR should be completed and mailed to the local SPR Center. (See inside back cover.)

Responses will be sent to the name and address appearing on the form. Additional SPR forms may be obtained by writing to the local SPR Center.

### 3.1 Software Performance Report Guidelines

Please fill out the SPR form completely. It is important that the machine configuration be included--the system device type, the amount of core in use, and all the peripherals on the machine. If your system has LPS, include all the options it contains (LPSKW, LPSAM-SG, SPSAD-NP, etc.). The name and version number of the operating system and the program in use, if any, is absolutely essential.

An adequate and clear description of the problem is very important and will certainly speed the processing of the SPR. Some ways to supplement the description is to include the Teletype printout, pictures of the display if involved, actual copy of user programs that show the problems, if one is involved. The printout would ideally start from the system bootstrap and include the least number of commands or instructions that cause the problem.

Before submitting a Software Performance Report, the user should review the Digital Software News to ensure that the problem has not already been published.

### 4.0 RT-11 SYSTEM PATCHES

Before including the patches found in the Software Performance Summary, please consult Getting Started with RT-11 V02B (DEC-11-ORCPA-E-D). Chapter 5 contains additional patches which should be installed in the system and articles describing restrictions and operational procedures.



Toggling the Cassette Boot (SPR 11D-1078)

Page 3-26 of Getting Started With RT-11 (DEC-11-ORCPA-E-D) contains an error. Location ØØ1Ø14 should read as follows:

ØØ1Ø14                      Ø127Ø2                      Set switches 12, 1Ø, 8, 7, 6 and 1 to the UP (1) position and all others to the DOWN (Ø) position.

SOFTWARE PRODUCT RT-11		VERSION V02-01	
COMPONENT BOOTSTRAP		VERSION	
SUBPROGRAM OR ADDITIONAL INFORMATION Getting Started With RT-11 DEC-11-ORCPA-E-D		SEQUENCE 1	PAGE OF 1 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE October 1975	



Changing DUMP Default Output Device (RT-11 V02B-05) (SPR 11-4967)

PROBLEM:

The DUMP utility program uses LP as its default output device. Many systems do not have a line printer and would like to use another device as the default output device.

DISPOSITION:

The following patch will change the default device to TT. Other devices may be used by substituting the appropriate .RAD50 and .ASCII codes for the device name in place of the code for TT.

.R PATCH

PATCH V01-02

FILE NAME--

\*DUMP.SAV

\*2626/                    46600                    100040 <CR> (.RAD50 'TT')

\*2521\                    114                    124     <CR> (.ASCII 'T')

2522\                    120                    124     <CR> (.ASCII 'T')

\*E

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT DUMP		VERSION V02-01	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 1	PAGE OF 1 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE October 1975	



Line Truncation - CRT (SPR 11-4847 and SPR 11-4213)

PROBLEM:

The display buffer used by EDIT in displaying text on the VT11 scope is fixed in size (currently 768 characters). Occasionally, when displaying many long lines, the cursor will disappear.

DISPOSITION:

NOTE: The patch works only with the V02-10 EDITOR available with the V02B release of RT-11.

The problem is caused by the text buffer filling before the cursor position is reached. One solution is to reduce the number of lines displayed. (See Getting Started with RT-11 V02B, DEC-11-ORCPA-E-D, pages 5-9, for instructions on reducing the line count.) Another solution is to increase the text buffer size. The following procedure will increase the buffer size, but it is an involved operation.

1. Decide on the increase in buffer size that is desired. This actual example will increase the buffer by 600<sub>8</sub> characters (384<sub>10</sub>).
2. Make a copy of the file EDIT.SAV to which the patch will be applied. This leaves EDIT.SAV intact as a backup in case a mistake is made. In this example, the file is called EDIT.TMP. After the copy is created, the file size must be increased to accommodate the additional buffer size. The example adds 600 bytes to the buffer so an additional block of 1000 bytes is sufficient. The file size was originally 18 blocks, so an extension to 19 blocks is requested with the PIP /T switch.

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT EDIT		VERSION V02-10	
SUBPROGRAM OR ADDITIONAL INFORMATION Getting Started with RT-11 V02B DEC-11-ORCPA-E-D		SEQUENCE 1	PAGE 1 OF 3
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE October 1975	

Line Truncation - CRT

```
.R PIP
*EDIT.SAV/L
3-JUL-75
EDIT .SAV      18  11-APR-75
1101 FREE BLOCKS
*EDIT.TMP=EDIT.SAV/X
*EDIT.TMP [19] =/T
*EDIT.TMP/L
3-JUL-75
EDIT .TMP      19  3-JUL-75
1082 FREE BLOCKS
*↑C
```

- The increased file size must now be reflected in location 50 (program high limit) of EDIT.TMP so that PATCH will work. The contents of location 50 are examined with PATCH, the quantity 600 is added (the amount of additional buffer) and the file is closed.

```
.R PATCH
PATCH V01-02
FILE NAME--
*EDIT.TMP
*50/          21700      22500      <CR>
*E
```

- Now the file EDIT.TMP can be re-opened for the final patching procedure, which consists of two parts. In part A, the contents of various locations in the range 230 to 13756 are examined and increased (by adding 600, the added buffer size) to reflect the new high limit of the program.

In part B, the display buffer termination code is moved to the new end of the buffer. The address to insert the display code

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT EDIT		VERSION V02-10	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE I	PAGE 2 OF 3
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE October 1975	

Line Truncation - CRT

is determined by adding the buffer increment to the value 17266. In this example, 600 is added to 17266 to get the new buffer termination address, 20066. The contents of 20066-20110 is irrelevant.

```

.R PATCH

PATCH V01-02

FILE NAME--
*EDIT.TMP
*2366;0R
A *0,230/      21700      22500 <CR>
  *0,7010/     21700      22500 <CR>
  *0,13064/    22700      23500 <CR>
  *0,13550/    21662      22462 <CR>
  *0,13574/    21660      22460 <CR>
  *0,13716/    21654      22454 <CR>
  *0,13756/    21651      22451 <CR>
  *0,20066/    xxxxxx      173400 <LF>
  0,20070/     xxxxxx      0 <LF>
  0,20072/     xxxxxx      107630 <LF>
  0,20074/     xxxxxx      40015 <LF>
  0,20076/     xxxxxx      115 <LF>
B 0,20100/     xxxxxx      43200 <LF>
  0,20102/     xxxxxx      23200 <LF>
  0,20104/     xxxxxx      103020 <LF>
  0,20106/     xxxxxx      173400 <LF>
  0,20110/     xxxxx      0 <CR>
  *E
    
```

- The new editor is now ready for testing. It is suggested that the original EDIT.SAV be kept for backup and for use in small partitions where the extended editor may not fit.

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT EDIT		VERSION V02-10	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 1	PAGE 3 OF 3
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE October 1975	



.Assign Command Does Not Work

DESCRIPTION:

The .ASS :udev construction does not work in the V2B monitors.

SOLUTION:

These patches correct the problem.

S/J Monitor: .R PATCH *DKQ can not be writ protect*

PATCH V01-02

FILE NAME--

\*MONITR.SYS/M

\*17000;0R

\*0,26562/ 10400 460 <CR>

\*0,26724/ xxxxxx 1737 <LF>

0,26726/ xxxxxx 10400 <LF>

0,26730/ xxxxxx 715 <CR>

\*324\ 0 101 <CR>

\*E

.R PIP

\*A=MONITR.SYS/U

\*SY:/O

The new version will be SJ V02B-05A.

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT MONITOR		VERSION SJ V02B-05	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 1	PAGE OF 1 2
NEW <input type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/> 1	ORIGINAL DATE September 1975	

F/B Monitor: R PATCH

PATCH V01-02

FILE NAME--

\*MONITR.SYS/M

\*20000;0R

\*0,37572/ 10400 460 <CR>

\*0,37734/ xxxxxxx 1737 <LF>

0,37736/ xxxxxxx 10400 <LF>

0,37740/ xxxxxxx 715 <CR>

\*324\ 104 105 <CR>

\*E

.R PIP

\*A=MONITR.SYS/U

\*SY:/O

The new version will be FB V02B-05E.

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT MONITOR		VERSION FB V02B-05D	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 1	PAGE 2 OF 2
NEW <input type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/> 1	ORIGINAL DATE September 1975	

.CDFN Error

PROBLEM:

The .CDFN request is incorrectly documented in RT-11 System Reference Manual, DEC-11-ORUGA-C-D, p.9-26, E-2 as permitting up to 256 (decimal) channels to be defined. The correct maximum is 255 (decimal) channels (numbered 0-254 decimal, 0-376 octal). If an attempt is made to define 256 channels, no error is reported, but the channels are unusable.

SOLUTION:

The following PATCH will correct the S/J monitor to return error code 0 if an attempt is made to define more than 255 channels.

No patch is available for the F/B monitor which will be corrected in a future release.

.R PATCH

PATCH V01-02

FILE NAME--

\*MONITR.SYS/M

\*17000;0R

\*0,6510                    20215            120215            <CR>

\*0,17022/                101077            103077            <CR>

\*324\                    101                102                <CR>

\*E

.R PIP

\*A=MONITR.SYS/U

\*SY:/O

The new monitor version will be SJ V02B-05B.

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT MONITOR		VERSION SJ V02B-05A	
SUBPROGRAM OR ADDITIONAL INFORMATION RT-11 System Reference Manual DEC-11-ORUGA-C-D		SEQUENCE 2	PAGE OF 1 1
NEW <input type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/> 1	ORIGINAL DATE October 1975	



CTRL/C Hangs System

PROBLEM:

After a double CTRL/C abort of a program, the CLOSE command will hang the system if a channel was open on magtape or cassette.

SOLUTION for RT-11 MONITOR V02B-05:

The problem occurs when the MT or CT handler is .FETCHed by the aborted program. This patch prevents a system crash.

S/J Monitor: .R PATCH

PATCH V02-01

FILE NAME--

\*MONITR.SYS/M

\*17000;0R

\*0,11412            1020     240            <CR>

\*324\                102      103            <CR>

\*E

.R PIP

\*A=MONITR.SYS/U

\*SY:/O

The new version will be SJ V02B-05C.

F/B Monitor: .R PATCH

PATCH V01-02

FILE NAME--

\*MONITR.SYS/M

\*20000;0R

\*0,12376/           1020     240            <CR>

\*324\                105      106            <CR>

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT MONITOR		VERSION SJ V02B-05B FB V02B-05E	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 3	PAGE 1 OF 2
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE September 1975	

CTRL/C Hangs System

```
*E
.R PIP
*A=MONITR.SYS/U
*SY:/O
```

The new version will be FB V02B-05F.

In both cases, the bootstrap should be rewritten to update the version number:

```
.R PIP
*A=MONITR.SYS/U
*
```

NOTE: This patch prevents monitor failure in the situation described. An error message will result, and the channel open on MT or CT and all subsequent channels will not be closed. To prevent this, it is necessary to LOAD the MT or CT handler before running a program which may be aborted.

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT MONITOR		VERSION SJ V02B-05B FB V02B-05E	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 3	PAGE 2 OF 2
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE September 1975	

DATE Command Crashes System

PROBLEM:

If a date has not been entered and the clock passes midnight, a subsequent DATE command without an argument may cause the system to crash.

SOLUTION:

This patch applies only to the F/B monitor, since the S/J monitor does not do date rollover.

.R PATCH

PATCH V01-02

FILE NAME--

\*MONITR.SYS/M

\*20000;0R

\*0,36110/ 16002 167 <LF>

0,36112/ 262 1626 <CR>

\*0,37742/ xxxxxx 16002 <LF>

0,37744/ xxxxxx 262 <LF>

0,37746/ xxxxxx 32702 <LF>

0,37750/ xxxxxx 37 <LF>

0,37752/ xxxxxx 167 <LF>

0,37754/ xxxxxx 176136 <CR>

\*324\ 106 107

\*E

. R PIP

\*A=MONITR.SYS/U

\*SY:/O

The new monitor version will be FB V02B-05G.

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT MONITOR		VERSION FB V02B-05F	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 4	PAGE 1 OF 1
NEW <input type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/> 1	ORIGINAL DATE September 1975	



RT-11 SJ V02B-05 Adjusting Scroller Line Width

PROBLEM:

The S/J scroller for the VT-11 display generates a CR/LF when the line width exceeds a pre-set count. This count is set to 72 characters but may be patched to allow larger lines when using the 17-inch screen.

SOLUTION:

The following patch permits the scroll line width to be changed. The number of characters designed in octal must be inserted in place of the default value of 110 octal (72 decimal). In the patch which follows, xxx is the new value.

```
.R PATCH
PATCH V01-02
FILE NAME--
*MONITOR.SYS/M
*17000;0R
*0,32240\      110      xxx<CR>
*E
.R PIP
*A=MONITR.SYS/U
*SY:/O
```

The recommended maximum is 80 characters if all are to be visible. Be sure the jumper on the M7014YA module is correctly installed for 85 characters per line.

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT MONITOR		VERSION SJ V02B-05	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 5	PAGE 1 OF 1
NEW <input type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/> 1	ORIGINAL DATE September 1975	



Magtape and Cassette End-of-File Detection

PROBLEM:

Since magtape and cassette are sequential devices, the handlers for these devices do not know in advance the number of blocks in a particular file and thus cannot know if a particular read request is attempting to read past the end of the file. User programs can use the following procedures to determine if these handlers have encountered end of file in either software or hardware mode.

SOLUTION:

Software Mode: If end of file is encountered, both handlers will set the end of file bit (bit 13) in the channel status word. The NEXT read attempted on that channel will return with the carry bit set and with the EMT error byte (absolute location 52) set to indicate an attempt to read past end of file. To avoid having magtape cassette files appear one block longer than they really are, user software should check the end of file bit in the channel status word after a magtape or cassette read completes. If the bit is set, it indicates that the read just completed encountered end of file.

The following example shows how to do this:

```
.MCALL ..V2...REGDEF,.GTJB,.LOOKUP,.READW
.REGDEF
..V2..
CSWEOF=20000           ;END OF FILE BIT IN CHANNEL STATUS WORD
ERRWRD=52             ;EMT ERROR WORD
CHNL=1                ;I/O CHANNEL #
.
.
.GTJB #LIST,#JOBARG . ;GET JOB PARAMETERS
.
.LOOKUP #AREA,#CHNL,#FILNAM ;LOOKUP MAGTAPE OR CASSETTE FILE
.
.
```

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT MONITOR		VERSION V2B-05	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 6	PAGE 1 OF 3
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE October 1975	

Magtape and Cassette End-of-File Detection

```

.READW #AREA,#CHNL,#BUFF,#400,BLKNUM ;READ A BLOCK
BCS    EMERR          ;CHECK FOR ERROR
MOV    JOBARG+6,R1    ;GET POINTER TO I/O CHANNEL SPACE
                    ;(CHANNEL SPACE IS 5 WORDS PER CHANNEL
                    ;BEGINNING WITH CHANNEL 0).
BIT    #CSWEOF,CHNL*10.(R1) ;IS THE EOF BIT SET FOR THIS CHANNEL?
BNE    EOF            ;IF NE - YES - EOF ENCOUNTERED ON THIS READ
.
.
.
EOF:
.
.
FILNAM: .RAD50 'MTOFILNAMEXT' ;OR .RAD50 'CTOFILNAMEXT'
AREA:   .BLKW 10
LIST:   .BLKW 2
JOBARG: .BLKW 10            ;JOB PARAMETERS STORED HERE
    
```

Hardware Mode: In hardware mode, the cassette and magtape handlers do not report end of file as they do in software mode. The best way for user programs to determine if a magtape read encountered a tape mark, or a cassette read encountered a file gap is to check the device status registers after each hardware mode read is complete.

An example of this is as follows:

For magtape (TM11)

```

MTS=172520          ;TM11 STATUS REGISTER
MTC=MTC+2           ;TM11 COMMAND REGISTER
MTSEOF=40000        ;EOF BIT IN MTS
MTSEOT=2000         ;EOT BIT IN MTS
.
.
.
.READW #AREA,#CHNL,#BUFF,#400,BLKNUM ;READ A BLOCK FROM MT
BCS    EMERR          ;CHECK ERRORS
TST    @#MTC          ;ERROR BIT SET IN COMMAND REGISTER?
BPL    NOERR          ;IF PL - NO
BIT    #MTSEOF,@#MTS ;YES - WAS IT EOF (TAPE MARK)?
BNE    EOF            ;IF NE - YES - DO END OF FILE PROCESSING
.
.
.
    
```

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT MONITOR		VERSION V02B_05	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 6	PAGE 2 OF 3
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE October 1975	

Magtape and Cassette End-of-File Detection

```

EOF:                                     ;MT EOF Encountered
      .
      .
      .
    
```

For cassette

```

TACS=177500          ;TAIL CONTROL AND STATUS REGISTER
TAEOF=4000           ;EOF BIT IN TACS
TAEOT=20000         ;EOT BIT IN TACS
      .
      .
      .
READW #AREA,#CHNL,#BUFF,#400,BLKNUM ;READ FROM CT
BCS   ENTERR          ;TEST ERRORS
TST   @#TACS          ;ERROR BIT SET IN TACS?
BPL   NOERR           ;IF PL - NO
BIT   #TAEOF,@#TACS  ;YES - WAS IT END OF FILE?
BNE   EOF             ;IF NE - YES
      .
      .
      .
EOF:                                     ;CASSETTE END OF FILE ENCOUNTERED
      .
      .
      .
    
```

If desired, both the EOF and EOT bits could be checked:

```

BIT   #MTSEOF+MTSEOT,@#MTS ;MT EOF OR EOT?
    
```

OR

```

BIT   #TAEOF+TAEOT,@#TACS ;CT EOF OR EOT?
    
```

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT MONITOR		VERSION V2B-05	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 6	PAGE 3 OF 3
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE October 1975	



Incorrect Information in "Old" Contents of Patches

PROBLEM:

Some patches in Getting Started With RT-11 (V02B) (DEC-11-ORCPA-E-D) have "Old" contents that are incorrect and should be marked as irrelevant; i.e., they have variable contents.

SOLUTION:

<u>Page</u>	<u>Patch</u>	<u>Addresses</u>
5-21	BATCH	Ø,1646Ø-Ø,16470
5-22	.CSIGEN	Ø,1671Ø-Ø,16722
5-23	.FRUN	Ø,41632-Ø,4164Ø
5-24	.RELEASE	Ø,16724-Ø,1674Ø

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT MONITOR		VERSION V02B-05	
SUBPROGRAM OR ADDITIONAL INFORMATION .Getting Started With RT-11 Manual DEC-11-ORCPA-D-D		SEQUENCE 7	PAGE 1 OF 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE October 1975	



File May be Destroyed When Using PATCHO

PROBLEM:

When using PATCHO to patch an OBJ file, the file can be destroyed if an error occurs during the use of PATCHO.

SOLUTION:

Before using PATCHO on a file, copy the file to a new name and patch the new file. When PATCHO is successfully exited with a patched file, rename the file via PIP.

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT PATCHO		VERSION V01-03	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 1	PAGE 1 OF 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE September 1975	



Low Speed Reader Support

The following RT-11 program allows the user to PIP a file from the low speed paper tape reader to a file-structured device.

First, use the editor to create the source file LSRPIP.MAC. Then, assemble and link the program as follows:

```
.R MACRO
*LSRPIP=LSRPIP
*↑C
.R LINK
*LSRPIP=LSRPIP
*↑C
.
```

Then, follow the operating instructions given on the following pages.

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT SYSTEM INFORMATION		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE # 1	PAGE 1 OF 4
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE April 1974	

Low Speed Reader Support

```
;LSRPIP
;PROGRAM TO TRANSFER FILE FROM LOW SPEED PAPER
;TAPE READER TO RT-11 FILE NAMED IN COMMAND STRING.
```

;OPERATING INSTRUCTIONS

```
;CALL PROGRAM BY TYPING "R LSRPIP"
;RESPOND TO CSI "*" WITH NAME OF FILE TO
;BE CREATED, FOLLOWED BY AN "=" OR "<". LSRPIP
;WILL ASK YOU TO PREPARE THE TAPE, THEN STRIKE A
;KEY WHEN TAPE IS READY. TAPE WILL BE READ INTO
;THE FILE, AND AN "*" WILL APPEAR TO
;INDICATE READINESS FOR THE NEXT CYCLE.
;THE TAPE WILL PAUSE OCCASIONALLY DURING THE READ PROCESS, BUT THE
;OPERATION IS NOT COMPLETE UNTIL THE "*" FOR THE NEXT COMMAND IS
;PRINTED.
```

```
;THE KEYBOARD IS DISABLED DURING THE TAPE TRANSFER.
;TO ABORT AN UNDESIRE OPERATION, SET THE LOW SPEED READER CONTROL
;SWITCH TO "STOP", WHICH WILL TERMINATE THE READ AND RETURN WITH
;AN "*". A CTRL/C CAN THEN BE TYPED.
```

```
;ANY LEGAL OUTPUT FILE OR DEVICE MAY BE USED TO TRANSFER TO; AN
;ASCII TAPE MAY EVEN BE "LISTED" BY USING "TT;" AS THE OUTPUT FILE.
```

```
;SAMPLE USAGE:           ;R LSRPIP<CR>
;                           ;*TAPE1,BIN=<CR>
;                           ;PLACE TAPE IN READER, SET SWITCH TO START,
;                           ;THEN STRIKE ANY KEY TO BEGIN TRANSFER.
;                           ;*TAPE2,BIN=<CR>
;                           ;PLACE TAPE,.....(ETC)
```

```
;CREATE THE PROGRAM WITH EDIT, CALLING THE OUTPUT FILE LSRPIP.MAC
;ASSEMBLE IT WITH MACRO (*LSRPIP=LSRPIP), THEN LINK IT WITH LINK
;(*LSRPIP=LSRPIP). IT IS THEN READY TO GO.
```

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT SYSTEM INFORMATION		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE 2 OF 4
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE April 1974	

Low Speed Reader Support

```

R1=X1
.MCALL .TTYIN,.WRITW,.PRINT,.CSIGEN,.CLOSE, ..V1..
..V1..
START: BIC      #10000,44      ;USE TELETYPE IN GENERAL MODE FOR CSI
        .CSIGEN #DEVSPC,#DEFEXT,#0      ;USE CSI TO GET AND OPEN
                                           ;OUTPUT FILE
        BIS      #10000,44      ;SET TELETYPE TO SPECIAL MODE FOR PROMPT
        .PRINT  #MSG          ;PRINT SETUP MESSAGE
        .TTYIN  ;WAIT FOR HIS KEYBOARD STROKE
BUFCLR: CLR      BLOCK        ;NEW FILE-ZERO BLOCK NUMBER
        MOV      #BUFFER,R1    ;POINT R1 TO BUFFER
CLRLP:  CLR      (R1)+        ;CLEAR THE BUFFER
        CMP      R1,#BUFEND    ;DONE?
        BLO     CLRLP        ;LOOP IF NOT
        MOV      #BUFFER,R1    ;YES-RESET R1 TO POINT TO BUFFER
TTINLP: MOV      #1,177560     ;DISABLE TTY INT,SET READER RUN
WAIT:  TST      177560        ;BYTE IN YET?
        BMI     BYTEIN       ;BRANCH IF YES
        INC     COUNT        ;NO-BUMP TIMEOUT COUNTER
        BNE     WAIT         ;IF TIMEOUT NOT ZERO,LOOP
        .WRITW  0,#BUFFER,#400,BLOCK ;WE TIMED OUT-WRITE LAST BLOCK
        .CLOSE  0            ;CLOSE OUTPUT FILE
        MOV     #100,177560    ;RE-ENABLE KEYBOARD INTERRUPT
        BR     START         ;AND CYCLE

BYTEIN: CLR      COUNT        ;RESET TIMEOUT COUNTER
        MOV     177562,(R1)+   ;PUT BYTE IN BUFFER
        CMP     R1,#BUFEND    ;BUFFER FULL?
        BLO     TTINLP       ;GO GET NEXT BYTE IF NOT
        .WRITW  0,#BUFFER,#400,BLOCK ;YES-WRITE IT OUT
        INC     BLOCK        ;BUMP BLOCK NUMBER
        BR     BUFCLR        ;AND ZERO BUFFER
    
```

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT		VERSION	
SYSTEM INFORMATION		N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE OF
NEW <input checked="" type="checkbox"/> REPLACEMENT ARTICLE <input type="checkbox"/>		3	4
		ORIGINAL DATE April 1974	

Low Speed Reader Support

```

BUFFER: ., +1000
BUFEND:
DEFEXT: 0
                                ;DEFAULT EXTENSION BLOCK FOR CSIGEN
COUNT: 0                                ;TIMEOUT COUNTER
BLOCK: 0                                ;FILE BLOCK NUMBER
MSG: .ASCII /PLACE TAPE IN READER,SET SWITCH TO START,/
     .BYTE 15,12
     .ASCIZ /THEN STRIKE ANY KEY TO BEGIN TRANSFER,/
     .EVEN
DEVSPC: .END START
    
```

SOFTWARE PRODUCT RT-11		VERSION V02B-05	
COMPONENT SYSTEM INFORMATION		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE # 4	PAGE OF 4
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE April 1974	

FOR Command Without an Argument

PROBLEM:

Execution of the FOR command without an argument (i.e., FOR I = 1,100) within a scheduled routine (via FQUE) may leave FOCAL in a state which will halt the processor if execution of the program is attempted in a second time (via GO).

DISPOSITION:

Until a patch is published for this problem, ensure that a semi-colon follows a FOR command without an argument.

SOFTWARE PRODUCT FOCAL/RT-11		VERSION V01	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 1	PAGE 1 OF 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE October 1975	



FQUE Function Does Not Free Up Storage

PROBLEM:

The FQUE function does not automatically free up its internal storage after completion of a request.

SOLUTION:

The following patch will alleviate this problem:

```
R PATCH0
*OPEN
ENTER INPUT FILE PUBLIC.OBJ
ENTER OUTPUT FILE PUBLIC.OBJ
*WORD 0=5760
*WORD 2=2
*WORD 4=1002
*WORD 6=5060
*WORD 10=6
*WORD 12=12535
*WORD 14=205
*EXIT
ENTER CHECKSUM: 32741
```

```
R PATCH0
*OPEN
ENTER INPUT FILE FOCAL2.OBJ
ENTER OUTPUT FILE FOCAL2.OBJ
*BYTE 174=276
*BYTE 175=211
*EXIT
ENTER CHECKSUM: 1530
```

SOFTWARE PRODUCT FOCAL/RT-11		VERSION V01	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 2	PAGE 1 OF 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE October 1975	



FQUE Function Disregards Priority

PROBLEM:

FQUE function disregards priority on requests with a delay of zero.

SOLUTION:

The following patch will correct this problem.

```
R PATCHO
*OPEN
ENTER INPUT FILE FOCAL2.OBJ
ENTER OUTPUT FILE FOCAL2.OBJ
*WORD 46Ø=24Ø
*EXIT
ENTER CHECKSUM: 2256
```

SOFTWARE PRODUCT FOCAL/RT-11		VERSION V01	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 3	PAGE 1 OF 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE October 1975	



Clarification: Interfacing Assembly Language Routines to FORTRAN  
(SPR 31-3461)

User-written assembly language routines which interface to the FORTRAN Object Time System must be aware of the location of the RT-11 USR (User Service Routines).

If a user routine requests a USR function (e.g., .LOOKUP, .ENTER), or if the USR is invoked by the FORTRAN Object Time System, the USR will be swapped into memory if it is nonresident. The FORTRAN object-time system is designed so that the USR may swap over it. User routines must be written to allow the USR to swap over them or must be located outside the region of memory into which the USR will swap.

User interrupt service routines and completion routines must be further restricted to be located where the USR will not swap, because of the asynchronous nature of these routines.

The USR (if in a swapping state) will always swap over the area of memory which starts at the program initial stack pointer address; the USR occupies 2K words. Interrupt and completion routines (and their data areas) must not be located in this area.

To remove these restrictions, the user must make the USR resident by either specifying the /U switch to the FORTRAN compiler or by issuing the RT-11 Version 2 console command SET USR NOSWAP before executing the program.

SOFTWARE PRODUCT FORTRAN/RT-11		VERSION V 01B-08	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 1	PAGE 1 OF 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE	



Clarification: Procedure for Applying Patches to the FORTRAN/RT-11 Object Time System

Step 1. Make a backup copy of any object module which will be modified. For installations using any extended arithmetic support, it is suggested that the patches be made to OTS.OBJ and the OBJ which is going to be used (EIS.OBJ, FIS.OBJ, EAE.OBJ, FPU.OBJ).

```
.R PIP
*OTS.OLD/X=OTS.OBJ
```

This should also be done for any of the other OBJs which will be modified.

Step 2. Apply the patches as given using PATCHO. PATCHO can only modify an OBJ; it cannot modify a library file.

Step 3. When all patches have been made, the library must be recreated as described in Getting Started with RT-11 FORTRAN (DEC-11-LFGOA-A-D).

For RT-11 V2 users, the library should be updated with the V2 modules as described in Getting Started with RT-11 (DEC-11-ORCPA-D-D).

For RT-11 V2B users, the library should be recreated as described in Getting Started with RT-11 FORTRAN (revised) (DEC-11-LFGOA-B-D).

SOFTWARE PRODUCT FORTRAN/RT-11		VERSION V 01B-08	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 2	PAGE 1 OF 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE	



COMMON/EQUIVALENCE Error Causes Extra Large COMMONS (SPR 11-5079)

PROBLEM:

An error in the COMMON/EQUIVALENCE processor in FORTRAN IV may cause too much storage to be allocated for some COMMON blocks.

SOLUTION:

The following patch corrects an error in the COMMON/EQUIVALENCE processor in the FORTRAN IV compiler. COMMON blocks containing INTEGER\*4 variables and arrays, certain of whose elements are equivalenced, have been erroneously allocated too much storage.

In the following patch, underlined responses are typed by the user; <CR> represents the carriage return key; <LF> represents the line feed key. Before the patch is made, the user should verify that the current version number of his FORTRAN compiler is V01B-08A. If this is not so, previous patches may have been omitted.

```

.R PATCH
PATCH Vxx-yy
FILE NAME--
*FORTRA.SAV/O
*2206;OR
*1 :0,2503\      101      102      <CR>
*4 :0,3364/      16703     5726     <LF>
4 :0,3366/      174452     13703     <LF>
4 :0,3370/      1403       2250     <LF>
4 :0,3372/      10301      1627     <LF>
4 :0,3374/      167        10301     <LF>
4 :0,3376/      177320     10302     <LF>
4 :0,3400/      5726       607      <CR>
*E
    
```

The resulting version of FORTRAN IV is V01B-08B.

SOFTWARE PRODUCT FORTRAN/RT-11		VERSION V01B-08A	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 3	PAGE 1 OF 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE October 1975	



CABS Typed as COMPLEX\*8 Rather Than REAL\*4

PROBLEM:

Usage of the CABS function may have caused unpredictable results or compiler errors due to the fact that the compiler typed it as COMPLEX\*8 rather than REAL\*4.

SOLUTION:

In the following patch, underlined responses are typed by the user; <CR> represents the carriage return key. Before this patch is made, the user should verify that the current version number of the FORTRAN compiler is V01B-08B. If this is not so, previous patches may have been omitted.

```

.R PATCH
PATCH Vxx-77
FILE NAME--
*FORTRA.SAV/O
*2206;OR
*1:0,2503\      102      103      <CR>
*12:0,5142/     4        2       <CR>
*E
    
```

The resulting version of FORTRAN IV is V01B-08C.

SOFTWARE PRODUCT FORTRAN/RT-11		VERSION V01B-08B	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 4	PAGE 1 OF 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE October 1975	



DIMENSION Restriction (SPR 11-5118)

PROBLEM:

Attempts to dimension arrays larger than 16K words in size will cause unpredictable compiler action.

ANALYSIS:

This is a coding error in the FORTRAN IV compiler.

SOLUTION:

Apply the following patch to FORTRAN IV V01B-08C:

```
.R PATCH
PATCH Vxx-yy
FILE NAME--
*FORTRA.SAV/O
*2206;0R
*3:0,1500/      103403      103004      <LF>
3:0,1502/      1004          61600      <LF>
3:0,1504/      5726          103405      <LF>
3:0,1506/      207           240         <LF>
3:0,1510/      61600         5704        <LF>
3:0,1512/      103402        1763        <CR>
*4:0,3566/      103403        103004      <LF>
4:0,3570/      1004          61600      <LF>
4:0,3572/      5726          103405      <LF>
4:0,3574/      207           240         <LF>
4:0,3576/      61600         5704        <LF>
4:0,3600/      103402        1746        <CR>
*1:0,2503\     103           104         <CR>
*E
```

The resulting version of FORTRAN IV is V01B-08D.

SOFTWARE PRODUCT FORTRAN/RT-11		VERSION V01B-08C	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 5	PAGE 1 OF 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE October 1975	



END Statement Label Restriction (SPR 11-E4840)

PROBLEM:

The usage of a label on the END statement of a program unit which contains warning-class errors will cause unpredictable compiler action. This applies to both the V01-11 and V01B-08 versions of RT-11 FORTRAN IV.

DISPOSITION:

This is a coding error in the FORTRAN IV compiler. It will be fixed in a future release of FORTRAN.

The END statement may not be labelled.

The effect of placing a label on the END statement may be achieved by placing the same label on a statement inserted before the END statement (such as STOP, RETURN, or CONTINUE, as appropriate).

SOFTWARE PRODUCT FORTRAN/RT-11		VERSION V01-11, V01B-08	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 6	PAGE 1 OF 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE October 1975	



Compiler Does Not Detect Illegal Unary Operators (SPR 11-5404)

PROBLEM:

Compiler does not detect illegal unary operators such as \*, /, \*\*, .AND., .OR..

ANALYSIS:

This is a coding error in the FORTRAN compiler.

SOLUTION:

Apply the following patch to FORTRAN IV V01B-08. FORTRAN IV V01-11 has been superseded by V01B-08, which is currently available from the program library.

This patch corrects a problem in the compiler expression scanner unary OPS and applies only to V01B-08 of FORTRAN IV, not to the previous version V01-11.

In the following, underlined responses are typed by the user. <CR> represents the carriage return key; <LF> represents the line feed key; before the patch is made, the user should verify that the current version of the compiler is V01B-08D. If this is not the case, previous patches may have been omitted.

.R PATCH <CR>

PATCH Vxx-yy

FILE NAME--

\*FORTRA.SAV/O<CR>

\*1162/ 2200 2216<CR>

SOFTWARE PRODUCT FORTRAN IV/RT-11		VERSION V01B-08D	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 7*	PAGE 1 OF 3
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE November 1975	

Compiler Does Not Detect Illegal Unary Operators

```

*E<CR>
-----
,R PATCH<CR>
-----

PATCH VXX-YY

FILE NAME--
*FORTRA,SAV/O<CR>
-----
*2206;1R<CR>
-----
*10:1,1454/      4757      137<LF>
-----
10:1,1456/      20        6604<CR>
-----
*10:1,4376/      41115     12746<LF>
-----
10:1,4400/      51105     3666<LF>
-----
10:1,4402/      51440     4737<LF>
-----
10:1,4404/      55111     2710<LF>
-----
10:1,4406/      6505      1002<LF>
-----
10:1,4410/      43412     137<LF>
-----
10:1,4412/      52105     3714<LF>
-----

```

SOFTWARE PRODUCT FORTRAN IV/RT-11		VERSION V01B-08D	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 7*	PAGE 2 OF 3
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE November 1975	

Compiler Does Not Detect Illegal Unary Operators

```

10:1,4414/      55114      13276Ø      <LF>
10:1,4416/      4472        1ØØ        <LF>
10:1,442Ø/      465Ø3       6552       <LF>
10:1,4422/      452Ø        1ØØ1       <LF>
10:1,4424/      3Ø522       1Ø44Ø3     <LF>
10:1,4426/      21454       137        <LF>
10:1,443Ø/      475Ø3       375Ø       <CR>
*1:1,25Ø3\     1Ø4         1Ø5        <CR>
*E

```

The resulting version of FORTRAN IV is V01B-08E.

SOFTWARE PRODUCT FORTRAN IV/RT-11		VERSION V01B-08D	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 7*	PAGE 3 OF 3
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE November 1975	



Compiler Fails to Detect Missing Delimiters (SPR 11-5462)

PROBLEM:

Compiler fails to detect missing delimiters in the following cases:

```

(<expression>) <constant>
(<expression>) (<expression>)
<Array-id><subscript list><constant>
<array-id><subscript list> (<expression>)
<function-id><parameter-list><constant>
<function-id><parameter-list> (<expression>)
    
```

ANALYSIS:

This is a coding error in the FORTRAN compiler. The first two given examples are patchable. The others are not. All will be patched in V01C-01.

SOLUTION:

This patch corrects a problem in the compiler expression scanner missing delimiters. It applies only to V01B of FORTRAN IV, not to the previous version, V01-11.

In the following, underlined responses are typed by the user. <CR> represents the carriage return key; <LF> represents the line feed key. Before the patch is made, the user should verify that the current version of the compiler is V01B-08E. If this is not the case, previous patches may have been omitted.

.R PATCH<CR>

PATCH Vxx-yy

FILE NAME--

\*FORTRA.SAV/O<CR>

\*1162/ 2216 2231<CR>

\*E<CR>

SOFTWARE PRODUCT FORTRAN IV/RT-11		VERSION V01B-08E	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 8*	PAGE 1 OF 3
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE November 1975	

Compiler Fails to Detect Missing Delimiters

```

.R PATCH<CR>
-----

PATCH VXX-YY

FILE NAME--
*FORTRA/O<CR>
-----
*2206/1R
-----
*10:1,1756/      4767      137<LF>
-----
10:1,1760      177274    6640<CR>
-----
*10:6640/      51516     4737<LF>
-----
10:1,4434/      4524     3464<LF>
-----
10:1,4436/      25473     4737<LF>
-----
10:1,4440/      25453     2710<LF>
-----
10:1,4442/      51511     1001<LF>
-----
10:1,4444/      53040     124411<LF>
-----
10:1,4446/      46101     22700<LF>
-----

```

SOFTWARE PRODUCT FORTRAN IV/RT-11		VERSION V01B-08E	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 8*	PAGE 2 OF 3
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE November 1975	

Compiler Fails to Detect Missing Delimiters

```

10:1,4450/      42525      3<LF>
-----
10:1,4452/      40440      1774<LF>
-----
10:1,4454/      41440      137<LF>
-----
10:1,4456/      47117      3750<CR>
-----

*1:1,2503\      105        105<CR>
-----
*E
-
    
```

The resulting version of FORTRAN IV is V01B-08F.

SOFTWARE PRODUCT FORTRAN IV/RT-11		VERSION V01B-08E	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 8*	PAGE 3 OF 3
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE November 1975	



Sequence of Common Expressions Results in Bad Code (SPR 11-5063)

PROBLEM:

A sequence of common expressions below will cause bad code to be generated for the third expression.

```
CALL A(-W)
CALL A(-W/3.)
CALL A(-W/3.)
```

ANALYSIS:

This problem is due to a coding error in the compiler optimizer.

SOLUTION:

The problem may be avoided by applying the following patch to RT-11 FORTRAN V01B-08. This version is currently available from the software library with RT-11 V2B.

This patch corrects the problem in the compiler optimizer of leaving a value on the stack when it should be moved off; it applies only to V01B of FORTRAN IV, not to V01-11.

In the following, underlined responses are typed by the user. <CR> represents the carriage return key; <LF> represents the line feed key. Before the patch is made, the user should verify that the current version of the compiler is V01B-08F. If this is not the case, previous patches may have been omitted.

SOFTWARE PRODUCT FORTRAN IV/RT-11		VERSION V01B-08F	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 9*	PAGE 1 OF 2
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE November 1975	

Sequence of Common Expressions Results in Bad Code

.R PATCH<CR>

PATCH Vxx-yy

FILE NAME--

\*FORTRA.SAV/0<CR>

<u>*50/</u>	7520	<u>7542</u>	<u>&lt;CR&gt;</u>
<u>*2136/</u>	7520	<u>7542</u>	<u>&lt;CR&gt;</u>
<u>*1226/</u>	2546	<u>2557</u>	<u>&lt;CR&gt;</u>

\*E

.R PATCH<CR>

PATCH Vxx-yy

FILE NAME--

\*FORTRA.SAV/0<CR>

\*2206;1R<CR>

<u>*16:1,3242/</u>	16703	<u>4737</u>	<u>&lt;LF&gt;</u>
16:1,3244/	175024	<u>7520</u>	<u>&lt;CR&gt;</u>
<u>*16:7520/</u>	20122	<u>5737</u>	<u>&lt;LF&gt;</u>
16:1,5314/	40523	<u>2476</u>	<u>&lt;LF&gt;</u>
16:1,5316/	42526	<u>100403</u>	<u>&lt;LF&gt;</u>
16:1,5320/	5015	<u>62716</u>	<u>&lt;LF&gt;</u>
16:1,5322/	47511	<u>40</u>	<u>&lt;LF&gt;</u>
16:1,5324/	51514	<u>207</u>	<u>&lt;LF&gt;</u>
16:1,5326/	35061	<u>13703</u>	<u>&lt;LF&gt;</u>
16:1,5330/	41411	<u>2500</u>	<u>&lt;LF&gt;</u>
16:1,5332/	50115	<u>207</u>	<u>&lt;CR&gt;</u>
<u>*1:1,2503\</u>	106	<u>107</u>	<u>&lt;CR&gt;</u>

\*E

The resulting version of FORTRAN IV is Version V01B-08G.

SOFTWARE PRODUCT FORTRAN/RT-11		VERSION V01B-08F	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 9*	PAGE 2 OF 2
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE November 1975	

FIND Statement Can Cause a Trap through 4 (SPR 11-5456)

PROBLEM:

Expressions as record designators in FIND statements cause compiler to trap through 4.

ANALYSIS:

There is a coding error in the compiler lexical parser.

SOLUTION:

The following patch allows expressions to be the record indicator in the FIND Statement. It applies only to V01B of FORTRAN IV, not to Version V01-11.

In the following, underlined responses are typed by the user.  
 <CR> represents the carriage return key; <LF> represents the line feed key. Before the patch is made, the user should verify that the current version of the compiler is V01B-08G. If this is not the case, previous patches may have been omitted.

```
.R PATCH <CR>
PATCH Vxx-yy
FILE NAME--
*FORTRA.SAV/O<CR>
*1170/ 2360 2372<CR>
*E
```

SOFTWARE PRODUCT FORTRAN/RT-11		VERSION V01B-08G	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 10*	PAGE 1 OF 2
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE November 1975	

FIND Statement Can Cause a Trap through 4

```

.R PATCH<CR>

PATCH Vxx-yy

FILE NAME--
*FORTRA.SAV/0<CR>
*2206;1R<CR>
*11:1,2632/      4767      4737      <LF>
11:1,2634      177750     7144      <CR>
*11:7144/       51122     4737      <LF>
11:1,4740      47105     3672     <LF>
11:1,4742/     20124     10200     <LF>
11:1,4744/     42504     1402     <LF>
11:1,4746/     44514     4737     <LF>
11:1,4750/     44515     3510     <LF>
11:1,4752/     42524     4737     <LF>
11:1,4754/     6522     3642     <LF>
11:1,4756/     4412      26       <LF>
11:1,4760/     47515     207      <CR>
*1:1,2503\     107       110      <CR>
    
```

The resulting version of FORTRAN IV is V01B-08H.

SOFTWARE PRODUCT FORTRAN/RT-11		VERSION V01B-08G	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 10*	PAGE 2 OF 2
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE November 1975	

Compiler Generates Incorrect Optimized Code (SPR 11-4658)

PROBLEM:

A subexpression consisting of only a subscripted array reference with constant subscripts causes the compiler to generate incorrect optimized code.

ANALYSIS:

This is a coding error in the compiler.

SOLUTION:

This problem will be corrected in the next release of FORTRAN IV (V01C-01) but may be avoided currently by applying the following patch. This patch only applies to RT-11 FORTRAN IV V01B-08, not to the previous version (V01-11). Version V01B-08 is currently available from the software library.

This problem corrects a problem in the compiler optimizer dealing with constant subscripts in common subexpressions.

.R PATCH<CR>

PATCH Vxx-yy

FILE NAME--

\*FORTRA.SAV/O<CR>

\*50 7542 7612<CR>

\*1226/ 2557 2603<CR>

\*2136/ 7542 7612<CR>

\*E

SOFTWARE PRODUCT FORTRAN IV/RT-11		VERSION V-1B-08H	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 11*	PAGE 1 OF 5
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE November 1975	

Compiler Generates Incorrect Optimized Code

```

,R PATCH<CR>
-----

PATCH VXX=YY

FILE NAME--
*FORTRA/O<CR>
-----
*2206;1R
-----
*16:1,774/      22422      12400<LF>
-----
16:1,776/      1011        21462<LF>
-----
16:1,1000/     21412        2<LF>
-----
16:1,1002/     1007         4737<LF>
-----
16:1,1004/     24444        7564<CR>
-----
*16:17542/     51011        14000<LF>
-----
16:1,5336/     26065        14404<LF>
-----
16:1,5340/     51500        20004<LF>
-----
16:1,5342/     4520         1402<LF>
-----
16:1,5344/     35411        24044<LF>
-----
16:1,5346/     42523        1002<LF>
-----
16:1,5350/     20105        5726<LF>
-----

```

SOFTWARE PRODUCT FORTRAN IV/RT-11		VERSION VOLB-08H	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 11*	PAGE 2 OF 5
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE November 1975	

Compiler Generates Incorrect Optimized Code

```

16:1,5352/      43111      5026<LF>
-----
16:1,5354/      53440      207<LF>
-----
16:1,5356/      23505      1010<LF>
-----
16:1,5360/      42522      24444<LF>
-----
16:1,5362/      40440      11202<LF>
-----
16:1,5364/      20124      20002<LF>
-----
16:1,5366/      47520      1405<LF>
-----
16:1,5370/      47111      24042<LF>
-----
16:1,5372/      6524       1002<LF>
-----
16:1,5374/      4412       24042<LF>
-----
16:1,5376/      42502      1401<LF>
-----
16:1,5400       4521       5726<LF>
-----
16:1,5402/      47511      207<CR>
-----
*20:1,1666/     12700      12746<LF>
-----
20:1,1670/      5000       5046<LF>
-----
20:1,1672/      26365      10300<LF>
-----
20:1,1674/      4          10504<LF>
-----
20:1,1676/      4          22024<LF>
-----

```

SOFTWARE PRODUCT FORTRAN IV/RT-11		VERSION V01B-08H	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 11*	PAGE 3 OF 5
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE November 1975	

Compiler Generates Incorrect Optimized Code

```

20:1,1700/      1006  <LF>
                -----
20:1,1702/      26365  22024<LF>
                -----
20:1,1704/      2        21014<LF>
                -----
20:1,1706/      2        1003<LF>
                -----
20:1,1710/      1002   4737<LF>
                -----
20:1,1712/      21315  7542<LF>
                -----
20:1,1714/      1461   240<LF>
                -----
20:1,1716/      5700   5726<CR>
                -----
*21:1,1654/     12700  12746<LF>
-----
21:1,1656/      5000   5046<LF>
                -----
21:1,1660/      26365  10300<LF>
                -----
21:1,1662/      4       10504<LF>
                -----
21:1,1664/      4       22024<LF>
                -----
21:1,1666/      1006   <LF>
                -----
21:1,1670/      26365  22024<LF>
                -----
21:1,1672/      2       21014<LF>
                -----
21:1,1674/      2       1003<LF>
                -----
21:1,1676/      1002   4737<LF>
                -----
21:1,1700/      21315  7542<LF>
                -----

```

SOFTWARE PRODUCT FORTRAN IV/RT-11		VERSION V01B-08H	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 11*	PAGE 4 OF 5
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE November 1975	

Compiler Generates Incorrect Optimized Code

```

21:1,1702/      1461      240<LF>
                -----
21:1,1704/      5700      5726<CR>
                -----
*22:1,1572/     12700     12746<LF>
                -----
22:1,1574/      5000      5046<LF>
                -----
22:1,1576/     26365     10300<LF>
                -----
22:1,1600/      4          10504<LF>
                -----
22:1,1602/      4          22024<LF>
                -----
22:1,1604/     1006      <LF>
                -----
22:1,1606/     26365     22024<LF>
                -----
22:1,1610/      2          21014<LF>
                -----
22:1,1612/      2          1003<LF>
                -----
22:1,1614/     1002      4737<LF>
                -----
22:1,1616/     21315     7542<LF>
                -----
22:1,1620/     1461      240<LF>
                -----
22:1,1622/     5700      5726<CR>
                -----
*1:1,2503\      110       111<CR>
                -----
*E
-
    
```

The resulting version of FORTRAN IV is V01B-08I.

SOFTWARE PRODUCT FORTRAN IV/RT-11		VERSION V01B-08H	
COMPONENT N/A		VERSION N/A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 11*	PAGE 5 OF 5
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE November 1975	



STOP Statement Closes Files (SPR 11D-1062)

PROBLEM:

In other BASIC-11 systems, the STOP statement does not close files and can be used as a debugging tool in all cases. In BASIC/CAPS-11, STOP closes all files because of the difficulties that are caused when a cassette file is left open. The BASIC/CAPS-11 User's Manual should describe this limitation.

DISPOSITION:

This will be included in the next revision of that manual.

MANUAL NAME BASIC-11 Language Manual		SEQUENCE 1
DEC ORDER NO. DEC-11-LIBBA-B-D		PAGE 1 OF 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE September 1975



Missing ≠ Sign (SPR 11D-1062)

PROBLEM:

There are errors in the Relational Operators Table on page 1-13.

SOLUTION:

Correct First Column:

=	
<	
≤	
>	
≥	
≠	

MANUAL NAME BASIC-11 Language Manual	SEQUENCE 2
DEC ORDER NO. DEC-11-LIBBA-B-D	PAGE 1 OF 1
NEW <input type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox" value="1"/>
ORIGINAL DATE September 1975	



ASSIGN Subroutine Does Not Function as Stated

PROBLEM:

The ASSIGN subroutine does not function as described on pages B-1 through B-3 of RT-11 FORTRAN Compiler and Object Time System User's Manual. Page B-2 states "If the device is not specified, then the device remains unchanged from the default assignments or the monitor ASSIGN command.

DISPOSITION:

This is a documentation error. The sentence should read, "If the device is not specified, then the device remains unchanged from the default assignments."

MANUAL NAME RT-11 FORTRAN COMPILER AND OBJECT TIME SYSTEM USER'S MANUAL	SEQUENCE NO. 1
DEC ORDER NO. DEC-11-LRFPA-A-D	PAGE 1 OF 1



Appendix D Corrections (SPR 11-1155)

Page D-4, line 99 should read:

2\$: BIT #4000,@R5 ;TEST FOR END OF SEGMENT

Page D-5, line 154 should read:

BUFF: .BLKW 1000 ;BUFFER AREA

MANUAL NAME RT-11 SOFTWARE SUPPORT MANUAL, pp. D-4 and D-5		SEQUENCE 1
DEC ORDER NO. DEC-11-ORPGA-B-D		PAGE 1 OF 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE October 1975



RT-11 Clarification

As documented in the System Reference Manual (Sec. 2.8.1), there are two HALTS in the RT-11 monitors. Users should carefully read this section; knowledge of these HALTS and their meaning will help diagnose problems.

The Single-Job monitor HALTs when a monitor I/O to the system device fails. The most common reason is a write locked device.

The F/B monitor HALTs when a trap through 4 or 10 occurs from monitor level code (RMON or handlers). The most common causes of this are:

1. Coding errors in user-written device drivers.
2. Calling a device which is not supported on the configuration. The handler traps when the device registers are referenced. One way to avoid this is to delete the handlers for those devices which are not on the configuration from the system disk. If the handler is not on the disk, the monitor will report an error for attempted references.
3. Hardware problems causing bus timeout traps through location 4. This is VERY rare and should be investigated only as a last resort.

The system halts are easily recognized by the fact that they occur in high core, above the contents of location 54.

MANUAL NAME System Reference Manual	SEQUENCE 1
DEC ORDER NO. DEC-11-ORUGA-B-D, DEC-11-ORUGA-C-D	PAGE 1 OF 1
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	ORIGINAL DATE September 1975



Incorrect MSTAT Values

Section A.2.6 of the RT-11 System Reference Manual (DEC-11-ORUGA-C-D) contains an error. The values given for MSTAT are incorrect. Revise the table so that it reads:

<u>Location</u>	<u>TMI1 Value</u>	<u>TJU16 Value</u>
MTHSIZ	4300	4700
MTPNAM	52140	51510
MSTAT	10011	10020

The patch is also incorrect and should be revised as follows:

.R PATCH

PATCH Version Number

FILE NAME--

\*MONITR.SYS/M

\*MTHSIZ/4300           4700 <CR>

\*MTPNAM/52140       51510 <CR>

\*MSTAT/10011       10020 <CR>

\*E

MANUAL NAME RT-11 System Reference Manual		SEQUENCE 3
DEC ORDER NO. DEC-11-ORUGA-C-D		PAGE   1 OF 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE October 1975



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