

RT-11

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THE SOFTWARE DISPATCH

digital
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OPERATIONS GROUP

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RT-11 SOFTWARE DISPATCH
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The **RT-11 Software Dispatch** complements the **RT-11 V3B Software Dispatch Review**. It publishes new and revised Software Product Descriptions, programming notes, software problems and solutions and documentation corrections. Much of the material is developed from answers to customer Software Performance Reports (SPRs) significant to the general audience.

The material is formatted to establish a reference notebook for the customer's software interests. The following products are supported in the **RT-11 Software Dispatch**:

APL-11 V1	FORTTRAN/RT-11 Extensions V1B	MU BASIC/RT-11 V1
BASIC/RT-11 V1B, V2	FORTTRAN/RT-11 LSI Extensions V1	PDL/RT-11 V1
BASIC/RT-11 Extensions	FORTTRAN IV/RT-11 V1C, V2	PEAK-11 V2
CTS-300 V3, V4	GAMMA-11 F/B V2	PLOT-11/RT-11 V1
CTS-300 DICAM V1	INDUSTRIAL BASIC/RT-11 V1	REMOTE/RT-11 V1
CTS-300/DIS V1	LA-11 V3	RT-11 V3, V3B
DECnet/RT V1	LV11/RT-11 Plotting Package V2	RT-11/2780 V2
FOCAL/RT-11 V1B		SSP-11/RT-11 V1

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Eleanor F. Hunter, Editor
Roxanne Alexander, Associate Editor

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DEC	DECTape	OMNIBUS
PDP	DIBOL	OS/8
DECUS	EDUSYSTEM	PHA
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COMPUTER LABS	FOCAL	RSX
COMTEX	INDAC	TYPESET-8
DDT	LAB-8	TYPESET-11
	DECCOMM	

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USER LETTER
Jan Fair, SPR Administration

Customers (and others) have brought to our attention the need for additional information regarding SPR service, particularly as it involves SPR Administration. The following represents our attempt to fulfill this need. Your comments and suggestions are most welcome.

HOW TO MAKE THE BEST USE OF SPR FORM

What WE Can Do for YOU

1. Blank SPR forms are available upon request in the desired quantities through SPR Administration (P.O.Box F) and your local office/SPR Center.
2. Copies of the SPR acknowledgment and answer are sent to the appropriate DIGITAL Office/SPR Center for their information.
3. SPRs marked *SOFTWARE ERROR* or *INQUIRY* will have a response for supported Category A and B products. These SPRs should refer to suspected deficiencies in the software.
4. SPRs marked *FYI* or *SUGGESTION* are forwarded to the pertinent software group for information purposes, and are responded to at their discretion.
5. SPRs marked *DOCUMENTATION ERROR* should report those problems dealing with software manuals or newsletters, and will be forwarded to the pertinent software group.

What YOU Can Do For US

1. Customer Name and Address and Problem Statement should always be typed or printed clearly.
2. SPRs should not be used for problems concerning software policy, software distribution, or hardware. Your local office should be contacted in these cases.
3. It would be most helpful to all concerned, if problems with patches are reported as soon as possible.
4. For security SPRs, it is imperative that the *DO NOT PUBLISH* box be marked.
5. It would be helpful if tapes submitted with SPRs are labeled (track and density), and have a directory attached.
6. Should you ever receive an unacceptable SPR response, please contact us or the appropriate SPR Center so that the response may be readdressed.

DECnet-RT V1
 for RT-11 FB/XM V3
 DDCMP

Seq 1 0
 1 of 2

DDCMP LINE COUNTERS OVERFLOW TO ZERO (WMD)

As DECNET-RT now stands, NIP continues to count messages up to the number 32767 (decimal), whereupon the addition of one more message overflows the count to zero and sets the overflow bit and stops counting. If it is desired, the following patch will cause the NIP message counters to cease counting and hold at the number 32767 (decimal). The patch checks the count for an overflow, (ie, is it a negative number?), if so it decrements the counter to 32767 (decimal).

I) In the DDCMP.MAC file change the followings:

a) Insert a '.IDENT<tab> /00001B/' as shown:

```
.TITLE      DECNET/RT DDCMP 21-FEB-1978
.IDENT      /00001B/
.SRTTL     TUESDAY 18:28 P.M.
```

b) Change the INIT: routine to appear as follows:

```
65:      MOV      R0,R1      ;-----
        CALL     DRINIT     ;-----
        ;***** B.D. 4/7/78
;        CLR      DATRCV     ;-----
;        CLR      DATSNT     ;-----
        ;***** B.D. 4/7/78
        ADDR     PCVLST,R3  ;-----
```

c) Change the DDCOUT: routine to appear as follows:

```
DDCOUT:  .ENABL     LSR
15:      JSR      R5,SVREJ   ;-----
        ADDR     TXOUG
        ;
        ;
155:     BIT      CNTLS,(R0) ;-----
        RNE     20$         ;-----
        INC     DATSNT     ;-----
        ;***** B.D. 4/7/78
        .GLOBL   PATCH8
PATCH8: BPL      2$         ; IF NOT OVERFLOW THEN BRANCH
        DEC     DATSNT     ; IF OVERFLOW, THEN DECREMENT COUNTER
        ;***** B.D. 4/7/78
23:      JSR      R5,PUTIT   ;-----
        .WORD    TXACK-,
        ;
        ;
625:     RETURN
        .DSABL   LSB
```

DECnet-RT V1
 for RT-11 FB/XM V3
 DDCMP

Seq 1 0
 2 of 2

d) Change the NORDAT; routine to appear as follows:

```

NORDAT: CALL      CKACK      ;-----
          ;
          ;
          ;
          INCR      LSTRCV      ;-----
          INC       DATRCV      ;-----
          ;***** B.D. 4/7/78
          BPL       1$          ; IF NOT OVERFLOW THEN BRANCH
          DEC       DATRCV      ; IF OVERFLOW, DECREMENT COUNTER
          ;***** B.D. 4/7/78
1$:      MOV       RCVDDN,R5    ;-----
          MOV       (R5)+,RCVDDN ;-----
    
```

II) Edit a copy of NETGEN.BAT to assemble and build only the device drivers.

DECnet-RT V1
 for RT-11 FB/XM-V3
 DMC

Seq 1 0
 1 of 1

DMC LINE COUNTERS OVERFLOW TO ZERO (WMD)

As DECNET-RT now stands, NIP continues to count messages up to the number 32767 (decimal), whereupon the addition of one more message overflows the count to zero and sets the overflow bit and stops counting. If it is desired, the following patch will cause the NIP message counters to cease counting and hold at the number 32767 (decimal). The patch checks the counter for an overflow, (ie, is it negative?), and if so decrements the counter to 32767 (decimal).

I. In the DMCDRV.MAC file change the followings:

```

a) Insert a '.IDENT<tab> /00001A/' as shown:
      .TITLE      DECNET/RT DMC11 23-FEB-1978
      .IDENT      /00001A/
      .SBTTL      10:09 A.M. THURSDAY

b) Change the RCVOUT: routine to appear as follows:
RCVOUT: .ENABL     LSB
        SAVRG     <R0,R1>      ;;;-----
        INC       MRCNT       ;;;-----
        ;***** B.D. 4/7/78
        .GLOBL    PATCHA
PATCHA: BPL      1$           ;;; IF NOT OVERFLOW THEN BRANCH
        DEC       MRCNT       ;;; IF OVERFLOW, DECREMENT COUNTER
        ;***** B.D. 4/7/78
1$:     .QPICK    D,RASQ,R3,R0 ;;;-----
        :
        :
        :
XMTOUT: SAVRG     <R0,R1>      ;;;-----
        INC       MSCNT       ;;;-----
        ;***** B.D. 4/7/78
        BPL      2$           ;;; IF NOT OVERFLOW THEN BRANCH
        DEC       MSCNT       ;;; IF OVERFLOW, DECREMENT COUNTER
        ;***** B.D. 4/7/78
2$:     .QPICK    D,XASQ,R3,R0 ;;;-----

```

II. Edit a copy of NETGEN.BAT to assemble and build only the device drivers.

DIFFERENCES IN RT AND RSX FORTRAN INTERFACE IMPLEMENTATIONS (WMD)

1. GNDNT[W] Subroutine (RSX chapter 6-23, RT chapter 10-21)
Two differences have been found in this module:
 - A. RSX is capable of retrieving five different data types in a GNDNT call:
 - 1 - CONNECT REQUEST
 - 2 - INTERRUPT
 - 3 - USER DISCONNECT
 - 4 - USER ABORT
 - 5 - NETWORK ABORTRT, on the other hand, supports four data types:
 - 1 - CONNECT REQUEST
 - 2 - INTERRUPT
 - 3 - USER DISCONNECT (RSX types 3 and 4)
 - 4 - NETWORK DISCONNECT
 - B. When the optional TYPMSK argument is specified, RT needs the high order byte to contain a user channel number (logical unit number in RSX) for data types 2 - 4, whereas RSX supports the convention that a zero in the high order byte retrieves the first item of the specified type regardless of the user channel number.
2. OPANF[W], OPRNF[W], and OPWNF[W] (RSX chapter 7, RT chapter 11)
In both the RSX and RT implementations, the last argument of the 'open file' routines, IRLOCK, returns the total number of blocks allocated for the open file. This argument is optional in RSX and mandatory in RT.

DECnet-RT V1
for RT-11 FB/XM V3
MODEM CONTROL

Seq 1 R
1 of 1

SUPPORT OF ASYNCHRONOUS HALF DUPLEX MODEMS (WMD)

It is strongly recommended that users not use any of the asynchronous type 202 modems on switched circuits. These asynchronous modems, and unlike the 103, 113, or 212 type, provide half-duplex operation only. This means they switch carrier with 'request to send', and therefore, line connection and disconnection is detected by monitoring the 'Data Set Ready' signal from the modem. Neither the DL nor the DZ, present the 'DSR' indicator to the hardware interface. DECNET-RT may present data to the modem prior to the modem asserting 'DSR' and errors will be introduced. This will remain a restriction in DECNET-RT V1.0.

RT-11 V3
CUMULATIVE INDEX
JULY 1978

This is a complete listing of all articles for current versions of RT-11 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.

IMPORTANT!

Retracted articles are indicated: RETRACTION.

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

M = Mandatory patch. These are critical patches which each customer is required to install.

O = Optional patch. These articles are applicable only if the reported problems have occurred at the customer site or if they are unique to his operation.

R = Restriction. These problems are not patchable in released software. Restrictions are reviewed and corrected when possible as part of the normal release cycle.

N = NOTE. This information may be helpful to the user.

<u>Component</u>	<u>Sequence</u>	<u>Mon/Yr</u>
APL-11 V1		
APL.SAV PROGRAM PATCHES		
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LOSS OF LOWER-CASE ON RE-ENTRY TO APL-11	02 M	Nov 77
APL WORKSPACE	03 R	Nov 77
"SYSTEM ERROR"S GENERATED BY NULL LINE ELEMENTS	04	Dec 77
INTERNAL MEMORY ALLOCATION PROBLEMS	05 M	Dec 77
ERROR FOR SCALAR RESULT OF DECODE OR INNER PRODUCT OPERATION	06 M	Feb 78
SYSTEM ERROR ON PARAMETER RETURN	07 M	May 78
CTS-300 V3		
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USE OF RSTAT WITH ISAM FILES	02 R	Aug 77
PATCH NUMBERS AND TITLES	03	Nov 77
DECFORM		
DECFORM ERRORS	01	Apr 77
REPLACEMENT PAGES	02	Apr 77
SEARCHMODE AND RENAM PROBLEM - NEW VERSION NUMBER	03	Jun 77
EXTRA CHARACTERS AT STATEMENT END	04	Jun 77
FOCOMP INCORRECTLY ALLOCATES AN EXTRA CHARACTER	05	Nov 77
REPLACEMENT PAGES	06	Aug 77
DECFORM RESTRICTIONS	07	Sep 77
CONDITIONAL GOTO AND CONDITIONAL SKIP	08	Oct 77
DECFORM PROBLEMS AND RESTRICTIONS	09 R	Nov 77
HANG ON EXIT	10	Jan 78
TWO PROBLEMS IN FOCOMP	11 M	Feb 78
EOF AFTER CHANGED RECORD	12 M	Mar 78
LOST RECORD ON DUPLICATE KEY	13 M	Apr 78
MESSAGE FOR SPEED READERS	14 M	Apr 78
EXCITING DECFORM VIA FIVE-PART QUESTION	15 M	May 78
DOCUMENTATION		
MULTIVOLUME FILES ON MAGTAPE	01 N	Feb 78
PAGE CORRECTION	02	Apr 78
DOCUMENT ERROR	03	Apr 78
DICOMP		
IMPROPER GLOBAL INFORMATION	01	Jul 77
COMMENT CAUSES ERROR	02	Aug 77

<u>Component</u>	<u>Sequence</u>	<u>Mon/Yr</u>
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FILEX INFORMATION AND RESTRICTION	02 R	Mar 78
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ISMUTL		
INDEXING PROBLEM	01	Jul 77
WRONG RECORD COUNT	02	Jul 77
CTS-300 SYSTEM REFERENCE MANUAL	03	Oct 77
INCORRECT APPEND CALCULATION	04	Sep 77
ERR 16 IN REORG	05	Oct 77
THREE PROBLEMS IN ISMUTL	06 M	Jan 78
REPLACEMENT PAGES	07 N	Feb 78
WRONG FILE SPACE ALLOCATION	08 M	Apr 78
ERRONEOUS ERROR MESSAGE	09 M	Apr 78
ERROR 28	10 M	Apr 78
LEGAL CHARACTERS IN ISAM RECORDS	11 R	May 78
DUPLICATE KEYS IN THE INPUT FILE	12 M	Jun 78
MORE INPUT RECORDS THAN SPECIFIED	13 M	Jul 78
LPTSPL		
NO CONTINUE AFTER PROGRAM ABORT	01 M	May 78
SINGLE USER DIBOL		
SPURIOUS I/O ERRORS DURING ISAM STORE	01	Jun 77
CHANGE READS STATEMENT TO ACCEPT 8-BIT ASCII	02	Apr 77
LOCASE CONVERTS UNDERLINE TO RUBOUT	03	Jun 77
ISAM RECORDS CROSSING BLOCK BOUNDARIES	04	Aug 77
PROBLEM WITH 32KB OR LESS	05	Sep 77
REPLACEMENT PAGES	06	Oct 77
"NOT ENOUGH MEMORY" CONDITION	07 M	Jan 78
RECORDS BEING LOST	08 M	Feb 78
RUNNING V3 ON LSI	09 M	Apr 78
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NEGATIVE NUMBERS IN SORT/MERGE	02	Oct 77
SORTING CARETS	03 M	Jan 78
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FIRST RECORD OUT OF ORDER	05 M	Mar 78
ERR 16 IN TSD	06 M	Jul 78
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PROGRAM SIZE CALCULATIONS FOR TSD	03	May 77
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LOCASE CONVERTS UNDERLINE TO RUBOUT	07	Jun 77
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ISAM RECORDS CROSSING BLOCK BOUNDARIES	10	Aug 77
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DECFORM RESTRICTIONS	03	Nov 77
EXTRA CHARACTERS AT STATEMENT END	04	Nov 77
FOCOMP INCORRECTLY ALLOCATES AN EXTRA CHARACTER	05	Nov 77
CONDITIONAL GOTO AND CONDITIONAL SKIP	06	Nov 77
DECFORM PROBLEMS AND RESTRICTION	07	Nov 77
HANG ONE EXIT	08 M	Jan 78
TWO PROBLEMS IN FOCOMP	09 M	Feb 78
EOF AFTER CHANGED RECORD	10 M	Mar 78
NEGATIVE NUMBER ENDING IN ZERO	11 M	Mar 78
LOST RECORD ON DUPLICATE KEY	12 M	Apr 78
MESSAGE FOR SPEED READERS	13 M	Apr 78
EXITING DECFORM VIA FIVE-PART QUESTION	14 M	May 78
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COMMON CAUSES ERROR	02	Nov 77
DOCUMENTATION		
MULTIVOLUME FILES ON MAGTAPE	01 N	Feb 78
PAGE CORRECTION	02 N	Apr 78
DOCUMENT ERROR	03 N	Apr 78
FILEX		
RESTRICTION ON FILEX	01 R	Nov 77
FILEX INFORMATION AND RESTRICTION	02 R	Mar 78
OUT ERR WITH 128-CHARACTERS RECORDS	03 M	Jul 78
ISMUTL		
INDEXING PROBLEM	01	Nov 77
INCORRECT APPEND CALCULATION	02	Nov 77
ERR 16 IN REORG	03	Nov 77
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LOCASE CONVERTS UNDERLINE TO RUBOUT	01	Oct 77
ISAM RECORDS CROSSING BLOCK BOUNDARIES	02	Nov 77
PROBLEM IN 32K OR LESS	03	NOV 77
"NOT ENOUGH MEMORY" CONDITION	04	JAN 78
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TAGSORTS NOT ALLOWED ON ISAM FILES	01	Oct 77
CORRECTION TO VERSION "A" PATCH	02	Nov 77
SORTM		
NEGATIVE NUMBERS IN SORT/MERGE	01	Nov 77
SORTING CARETS	02 N	Jan 78
INCORRECT RECORD COUNT	03 M	Feb 78
FIRST RECORD OUT OF ORDER	04 M	Mar 78
ERR 16 IN TSD	05 M	Jul 78
TSD		
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<u>Component</u>	<u>Sequence</u>	<u>Mon/Yr</u>
PROBLEM WITH RENAM	03	Sep 77
LOCASE CONVERTS UNDERLINE TO RUBOUT	04	Oct 77
ISAM FILE SHARING PROBLEM	05	Nov 77
IMPOSSIBLE TRAP ON OVERLAYING	06	Nov 77
ISAM RECORDS CROSSING BLOCK BOUNDARIES	07	Nov 77
RECORDS BEING LOST	08 M	Feb 78
PERMANENTLY LOCKED GROUP	09 M	Mar 78
CLOSING ISAM FROM AN EXTERNAL SUBROUTINE	10 M	Apr 78
PROBLEM WITH ISAM INPUT	11 M	Apr 78

CTS-300 V4

DECFORM

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MESSAGE FOR SPEED READERS	06 M	Apr 78
EXITING DECFORM VIA FIVE-PART QUESTION	07 M	Jun 78
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DICOMP

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TRAP TO 10 UNDER FB	02 M	Feb 78
DON'T WASTE PAPER	03 M	Jul 78
ERR 16 IN TSD	04 M	Jul 78

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REPLACEMENT PAGES	01 N	Dec 77
DOCUMENTATION CHANGES TO CTS-300 SYSTEM USER'S GUIDE	02 N	Jun 78
DOCUMENTATION CHANGES TO DECFORM USER'S GUIDE	03 N	Jun 78

ISMUTL

THREE PROBLEMS IN ISMUTL	01 M	Dec 77
WRONG FILE SPACE ALLOCATION	02 M	Apr 78
ERRONEOUS ERROR MESSAGE	03 M	Apr 78
ERROR 28	04 M	Apr 78
LEGAL CHARACTERS IN ISAM RECORDS	05 R	May 78
DUPLICATE KEYS IN THE INPUT FILE	06 M	Jun 78
MORE INPUT RECORDS THAN SPECIFIED	07 M	Jul 78

LPTSPL

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SINGLE USER DIBOL

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MINUS ZERO	03 M	Jan 78
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WRONG ERROR MESSAGE	07 M	Feb 78
MINUS ZERO	08 M	Feb 78
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LPNUM CAUSES FILE NOT FOUND	16 M	Jun 78
BAD OPEN	17 M	Jul 78
MONITOR TRAP WITH DIVIDE	18 M	Jul 78
RECORD NUMBERS GREATER THAN 65,535	19 M	Jul 78
PROBLEM ACCEPTING FROM A FILE	20 M	Jul 78

SORTG

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<u>Component</u>	<u>Sequence</u>	<u>Mon/Yr</u>
SORTM		
SORTING CARETS	01 N	Dec 77
TAGSORTS WITH MULTIPLE KEYS	02 M	Jan 78
FIRST RECORD OUT OF ORDER	03 M	Mar 78
ERR 16 IN TSD	04 M	Jul 78
SORTP		
NO PROTECTION FROM MIXING DATA MODES	01 M	Jun 78
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RANDOM ACCESS PROBLEM	02 M	Jan 78
MINUS ZERO	03 M	Jan 78
DELETE CAUSES STACK OVERFLOW	04 M	Jan 78
FIELD EDITING	05 M	Jan 78
PROBLEM WITH ISAM INPUT	06 M	Jan 78
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PROGRAMS CREATED IN REGION 0	11 M	Feb 78
IMPLICIT JOB STARTUP PROBLEM	12 M	Feb 78
PENDING MESSAGES DESTROY SYMBOL TABLE	13 M	Feb 78
TERMINALS IGNORED	14 M	Feb 78
TROUBLE WITH TSD UNDER FB	15 M	Feb 78
MEMORY FAULT WITH SEND/RECV	16 M	Feb 78
PERMANENTLY LOCKED GROUP	17 M	Mar 78
SLOW TERMINAL I/O	18 M	Mar 78
PROBLEM WITH FORCED JOB AND TERMINAL NUMBER	19 M	Mar 78
INCORRECT CHECK FOR FREE SPACE	20 M	Mar 78
SYSGEN/TSDGEN PROBLEM	21 M	Mar 78
OPENING LP: GENERATES ERRORS	22 M	Mar 78
RECORDS BEING LOST	23 M	Apr 78
BAD I/O, FLAG NOT CLEARED	24 M	Apr 78
CLOSING ISAM FROM EXTERNAL SUBROUTINE	25 M	Apr 78
DISPLAY FROM DETACHED PROGRAM TO DETACHED TERMINAL	26 M	Apr 78
NO MAGTAPE IN V4	27 M	Apr 78
BASE LEVEL 2	28 M	Apr 78
R6 STACK OVERFLOW	29 M	May 78
TSD HANGS IF LP GOES OFF LINE	30 M	Jun 78
SLEEP PAST MIDNIGHT, NEVER WAKE UP	31 M	Jun 78
LOWER CASE CONVERTS TO UPPER CASE	32 M	Jun 78
THREE PROBLEMS IN XMTSD	33 M	Jun 78
XCALL VERSN BEGETS TRAP TO 4	34 M	Jun 78
SLAVE REFUSES TO WORK	35 M	Jun 78
MORE LP: NOHANG DIFFICULTIES	36 M	Jun 78
MORE TRAPS TO 4 AND 10	37 M	Jun 78
NO ALIGN OR DELETE WITH LPQUE	38 M	Jun 78
TRAP TO 10 CAUSED BY OPEN ISAM FILE	39 M	Jun 78
NO ROOM FOR BUFFER CAUSES TRAP TO 4/10	40 M	Jun 78
MAGTAPE READ DOES NOT WORK	41 M	Jul 78
MONITOR TRAP WITH DIVIDE	42 M	Jul 78
RECORD NUMBERS GREATER THAN 65,535	43 M	Jul 78
BAD BINARY FILE	44 M	Jul 78

DECnet-RT V1

DDCMP		
DDCMP LINE COUNTERS OVERFLOW TO ZERO	01 O	Jul 78
DMC		
DMC LINE COUNTERS OVERFLOW TO ZERO	01 O	Jul 78

<u>Component</u>	<u>Sequence</u>	<u>Mon/Yr</u>
FORTRAN INTERFACE		
DIFFERENCES IN RT AND RSX FORTRAN INTERFACE IMPLEMENTATIONS	01 N	Jul 78
MODEM CONTROL		
SUPPORT OF ASYNCHRONOUS HALF DUPLEX MODEMS	01 R	Jul 78
FOCAL/RT-11 V1B		
FOR COMMAND WITHOUT AN ARGUMENT	01 M	Oct 75
OPERATE COMMAND CAUSES ERROR	04 M	Aug 76
FCLK ROUTINE GIVES INCORRECT TIME	05 O	Aug 76
"LIBRARY ASK" COMMAND	06 O	Feb 77
"/Z" SWITCH	07 M	Aug 77
@START NOT WORKING WHEN DOWN-LINE LOADING	08 M	Mar 78
FORTRAN IV/RT-11 V1C		
CLARIFICATION: INTERFACING ASSEMBLY LANGUAGE ROUTINES TO FORTRAN	01	Feb 75
FLOATING MULTIPLY FAILS TO DETECT UNDERFLOW IN NHD VERSION OF OTS	42	May 76
COMPILING MULTIPLY PROGRAM UNITS FROM A SINGLE CASSETTE	43	May 76
STAND-ALONE FORTRAN STACK USAGE	44	May 76
WRITING ON READ-ONLY FILE	46	May 76
WRITING BEYOND END OF RANDOM ACCESS FILE	47	May 76
ASYNCHRONOUS I/O, EVENT DRIVER I/O, AND FORTRAN PROGRAMS	49	May 76
OBJECT TIME FORMATTING WITH H FORMAT SPECIFICATION, FORMATTED RECORD WRITING GREATER THAN 132 CHARACTERS IN LENGTH MAY FAIL	51	May 76
OBJECT TIME ENCODE/DECODE	52	Sep 76
CLARIFICATION OF I/O LIST ELEMENTS	53	Jun 76
MORE THAN 19 NULL ARGUMENTS CAUSE FATAL ERROR Y	54	Jul 76
CALL ASSIGN WITH FILE NAME TERMINATED WITH SPACE ABORTS	55	Jul 76
I-FORMAT CONVERSION ERROR	56	Jul 76
J=J-J GIVES INCORRECT RESULTS	57	Jul 76
LISTING FILES DIRECTED TO MAGTAPE	58	Jul 76
CALL CLOSE ON INACTIVE UNIT	59	Aug 76
ARITHMETIC STATEMENT FUNCTIONS WITH NO ARGUMENTS	60	Aug 76
COMPUTED GO TO	61	Aug 76
CLARIFICATION: COMPARING ASCII DATA ITEMS	62	Aug 76
IBEF NOT PROPERLY DECREMENTED	63	Aug 76
LPS DEVICE CONFLICT CAUSED BY CALL SETR AFTER CALL RTS	64	Aug 76
LOGICAL*1 VARIABLES AS DO-LOOP TERMINATORS	65	Sep 76
IADC AFTER RTS DOES NOT WORK	66	Sep 76
MISSING LEFT QUOTE IN CALL STATEMENT CAUSES COMPILER TO TRAP	67	Sep 76
CALL OR FUNCTION ARGUMENTS MAY CAUSE THE COMPILER TO TRAP	68	Sep 76
INCORRECT CODE GENERATION FOR ASSIGNMENT STATEMENTS INVOLVING BOTH INTEGER*2 AND INTEGER*4 SUBSCRIPTED ARRAYS	69	Nov 76
WRITING RECORDS GREATER THAN 132 BYTES LONG	70	Sep 76
USING FORTRAN COMPLETION ROUTINES WITH SYSLIB	71	Oct 76
EXTENDING COMMON BLOCK BACKWARDS MAY CAUSE TRAP TO 10	73	Oct 76
INCORRECT CODE GENERATION FOR CERTAIN FUNCTION CALLS IN SUBSCRIPT LISTS	74	Dec 76
CERTAIN "ENCODE/DECODE" STATEMENTS ARE FLAGGED AS SYNTAX ERRORS	75 M	Feb 77
STACK OVERFLOW CONDITION CAN RESULT IN SYSTEM FAILURE	76	Mar 77
END-OF-LINE COMMENTS	77	Apr 77
RUNNING FORTRAN PROGRAMS IN FOREGROUND MODE	78	May 77
FORMAT STATEMENT PROCESSING	79	May 77
SUBROUTINE NAMING CONFLICT	80	Nov 77
PLOT55 DESCRIPTION	81	Nov 77
ASSIGNMENT STATEMENTS WITH EQUIVALENCE VARIABLES AS THE TARGET	82 R	Dec 77
ILLEGAL MEMORY REFERENCE ERROR	83	Jan 78
DEVICE CONFLICT ERROR	84 R	Jan 78
FORTRAN CRASHES AFTER RUNNING PROGRAM WITH "SETR"	85 M	Feb 78

<u>Component</u>	<u>Sequence</u>	<u>Mon/Yr</u>
RUNNING PROGRAM WITH "SETR"	86 M	Mar 78
TWO PROBLEMS WITH THE RT-11/FORTRAN GRAPHIC EXTENSIONS	87 M	May 78
TWO PROBLEMS WITH THE RT-11/FORTRAN GRAPHIC EXTENSIONS	88 M	Apr 78

GAMMA-11 F/B V2

DATA ANALYSIS PROGRAM	01 M	Feb 77
STUDY TRANSFER PROGRAM DISPLAYS TOO MANY INDEX LINES PER PAGE	02 M	Feb 77
BASIC AND FOCAL	03 M	Feb 77
BACKGROUND PROGRAM CAN HANG THE FOREGROUND TERMINAL	04 M	Feb 77
CNTL/C UNDER SINGLE JOB MONITOR	05 M	Feb 77
CROSSHAIRS FAIL TO APPEAR IN SLICE	06 M	Feb 77
UNDOCUMENTED PROGRAMS	07 N	Mar 77
FORTRAN SUPPORT INCORRECTLY CONVERTS DATA AND TIME OF INQUISITION	08 M	May 77
"RS" COMMAND IS INCORRECTLY	09 N	Jun 77

LABORATORY APPLICATIONS-11 V3

A NEW MODULE TO ENHANCE DATA FLOW WITHIN LA-11	01 N	Oct 76
HISTO.MAC ACQUIRING AND PROCESSING HISTOGRAM DATA	01 M	Sep 76
LABMAC.SML ERRONEOUS MACRO	01 M	Sep 77
PEAK.MAC WIDE PEAKS	01 M	MAR 76
PEAK PROBLEMS AND CORRECTIONS	02 M	Jul 76
ARITHMETIC CORRECTION FOR PEAK AREA	03 M	Dec 76
MISSING PATCH IN RELEASE NOTES	04 M	Oct 77
SPARTA LPS AND AR-11 VECTOR AND STATUS REGISTER	01 N	Dec 75
USING SPARTA AND FLOATING POINT BUFFERS	02 N	Feb 76
AR-11 TIMING PROBLEMS WITH ADSAM AND SPARTA	03 O	Feb 76
FFT SCALING CORRECTION	04 M	Feb 76
SCALE FACTOR CORRECTION FOR SPARTA COMMANDS FAC AND FCC	05 M	Mar 76
DATA DISPLAYS USING LA-11	06 N	Mar 76
DATA PREPARATION FOR SPARTA COMMANDS FAC AND FCC	07 N	Apr 76
SPARTA CORRECTIONS FOR POINT-PLOT DISPLAY	08 M	Apr 76
ADDING COMMANDS TO SPARTA	09 M	May 76
CORRECTION FOR THE DPV COMMAND WITH POINT PLOT DISPLAY	10 M	Jun 76
GENERAL SUBROUTINE MODULE FOR EAE	11 O	Jun 76
INCORRECT PHASE ANGLE CALCULATION	12 M	Oct 76
"MOU" AND "MIN" COMMANDS CAN BE READ OUT AND IN CORRECTLY	13 N	Jan 77
MULTIPLE SYNCH PULSES	14 M	Jan 77
AUTO AND CROSS CORRELATION	15 M	Jan 77
ALLOCATING MORE THAN 16K BUFFERS IN SPARTA	16 M	Feb 77
A/D SAMPLING: FAST MODE	17 M	Jul 77
A/D SAMPLING: FAST MODE EXIT	19 M	Mar 78
SWEEP.MAC SWEEP SAMPLING: FAST MODE	01 M	Aug 77
THRU HOW TO START DATA ACQUISITION WHEN CSTART EQUALS ZERO	01 N	Jun 76
MULTICHANNEL SINGLE RATE SCHMIT TRIGGER SWITCH BOUNCE	02 M	Dec 76
CONTINUOUS SAMPLING: CONDITIONAL ASSEMBLY ERRORS	03 M	Jul 77
CONTINUOUS SAMPLING: DMA WITH DUAL SAMPLE + HOLD	04 M	Jul 77
DOCUMENTATION CORRECTIONS	05 M	Nov 77

LV11/RT-11 PLOTTING PACKAGE V2

SUBROUTINE PLOT DOES NOT CORRECTLY REPRODUCE VT11 PICTURE	01 M	Apr 78
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<u>Component</u>	<u>Sequence</u>	<u>Mon/Yr</u>
MU BASIC/RT-11 V1		
BUILDING MU BASIC/RT-11 UNDER RT-11 V2C	01	Feb 76
REMOTE TERMINAL SUPPORT ON MODEMS	02	May 76
OVERLAY... LINE WORKS INCORRECTLY	03	May 76
USING IMMEDIATE MODE "GOSUBs"	04	Dec 76
CLOCK LOSES TIME ON RT-11 WHEN RUNNING MU BASIC	05	Jul 77
REM STATEMENTS	06	Feb 78
ADDITIONAL FILES ON RELEASE KIT (MUB*.*)	07 N	May 78
MU BASIC/RT-11 SYSTEM INSTALLATION GUIDE		
DEC-11-LIBMA-A-DN1		
REPLACEMENT PAGES	01	Jan 77
REPLACEMENT PAGES	02 N	Jan 78
REPLACEMENT PAGES	03 N	Jan 78
PDL/RT-11 V1B		
CLARIFICATION OF SEARCH FAILURE IN SUBROUTINE FIND	01 N	Jul 78
FIND SUBROUTINE	02 R	Jul 78
PATCHES TO PDL	03 M	Jul 78
SUBROUTINE QKGT	04 M	Jul 78
PDL SUBROUTINE 'RDAA'	05 M	Jul 78
PDL PEAK ALGORITHM WILL NOT RECOGNIZE VALID PEAKS	06 M	Jul 78
REMOTE/RT-11 V1		
SCHEDULER DOES NOT PROPERLY SET PROCESSOR PRIORITY	01 M	May 76
NOEDIT- 0 HALTS	02 M	May 76
NUSERS=1 STAYS IN A FILE MESSAGE LOOP	03 M	May 76
INCORRECT SWAP AREA ALLOCATION FOR FOUR OR MORE USERS	04 M	May 76
REBOOT FROM SATELLITE DURING EDIT HANGS HOST	05 M	Jun 76
HARD ERROR ON LOOKUP IS FATAL	06 M	Jun 76
SECONDARY MODE PROGRAM LOAD FEATURE NOT COMPLETELY FUNCTIONAL	07 M	Jun 76
ONE SECOND TIMER FOR LINE TIMEOUTS IS SET INCORRECTLY	08 M	Aug 76
LINE FEEDS MAY CAUSE SYSTEM ERRORS--ASSEMBLY ERROR WITH DIAL AND NODDC	09 M	Aug 76
PROPER GENERATION OF REMOTE IS DEPENDENT ON MODULE ORDER	10 M	Aug 76
ASCII CODES 173 AND 174 DO NOT PRINT	11 M	Aug 76
IMPROPER FILLER HANDLING FOR VT05	12 O	Aug 76
SYSTEM CRASHES IF RUN IN FOREGROUND WITHOUT /N	13 O	Aug 76
"UNSAVE" COMMAND CAUSES SYSTEM ERRORS	14 M	Dec 76
FLET WILL REMOVE MORE THAN ONE USER FROM THE WAIT QUEUE	15 M	Dec 76
STACK FOR USER THREE IMPROPERLY SET	16 O	Dec 76
SECONDARY MODE LOADS DO NOT OPERATE PROPERLY	17 M	Jan 77
@START COMMAND GIVEN ON TERMINAL WITHOUT SATELLITE CAUSES CRASH	18 O	Jan 77
"RTSIM" DOES NOT SUPPORT 50 Hz LINE CLOCK	19 O	Jan 77
CHANNEL ACTIVE ERROR	20 M	Mar 77
THREE WORDS LOST ON DOWNLINE LOAD	21 M	Mar 77
CSISPC NOT PROPERLY SIMULATED	22 M	May 77
EXCEEDING CHARACTERS PER LINE LIMIT	23 M	Oct 77
@RE IN THE SATELLITE DOES NOT WORK	25 R	Mar 78
"HANG" CONDITIONS	26 R	Apr 78
RT-11 V3		
DOCUMENTATION		
TYPOGRAPHICAL ERRORS	01 N	Mar 78
EDIT		
EDIT DOES NOT OPERATE CORRECTLY UNDER XM MONITOR	01 M	Mar 78
MACRO		
.NARG FAILS WHEN AUTOMATIC LABEL GENERATION IS USED	01 M	Apr 78
MISCELLANEOUS		
GETSTR AND PUTSTR ROUTINES FOR IN-LINE CODE	01 M	Jun 78
ERROR IN THE CONCAT ROUTINE	02 M	Jun 78

<u>Component</u>	<u>Sequence</u>	<u>Mon/Yr</u>
MONITOR		
INCORRECT IDENTIFIER IN .TWAIT REQUEST CAUSES PROBLEMS .CHAIN, .EXIT FROM VIRTUAL JOB; USR MOVING INTO PAR1 AREA	01 M	Mar 78
PATCH TO INTERRUPT EXIT ROUTINE	02 M	Apr 78
IMPROPER HANDLING OF THE KW11-P CLOCK	03 M	Apr 78
SPECIFYING 50-CYCLE CLOCK SUPPORT DURING SYSGEN OPERATIONS	04 M	May 78
EDITORS AND V3B MONITORS	05 M	Jun 78
TYPING NON-ASCII FILES TO CONSOLE AFTER ISSUING A GTON HANGS THE SYSTEM	06 M	Jun 78
LINK/FRUN FAILS WHEN PROGRAM IS OVERLAYED AND USES LIBRARIES	07 M	Jun 78
	08 M	Jul 78
SOURCES		
UNRESOLVED DIFFERENCES IN DEMOX1.MAC	01 M	Jul 78
UTILITIES		
DUP DEFAULT FILE SIZE AND NULL FILE TYPES ARE INCORRECT	01 M	Mar 78
DIR MAY INCORRECTLY LIST DIRECTORIES OF MAGTAPES	02 M	Mar 78
/L OPTION TO PIP MAY CUASE SYSTEM CRASH	03 M	Mar 78
LINK OUTPUT INVALID IF OBJ HAS AN EMPTY GSD RECORD	04 M	Mar 78
PAT GIVES FATAL ERROR IF OBJ HAS AN EMPTY RECORD	05 M	Apr 78
UNASSIGNED	06	XXX XX
EDIT VT11 DISPLAY FUNCTIONS WILL NOT OPERATE UNDER XM MONITOR	07 M/R	Apr 78
TRANSFERS IN INTERCHANGE FORMAT WHEN NO SYSTEM DATE IS GIVEN	08 M	Jun 78
DUP SCAN RATE FOR FLOPPY	09 M	Jun 78
DUP /I AND /W SWITCHES DO NOT WORK PROPERLY	10 M	Jun 78
LINK/FRUN FAILS WHEN PROGRAM IS OVERLAYED AND USES LIBRARIES	11 M	Jul 78
DUP DOES NOT DIFFERENTIATE BETWEEN DELETED .BAD FILES AND PERMANENT ONES	12 M	Jul 78
ERRORS IN FILEX INTERCHANGE FORMAT	13 M	Jul 78
RT-11/2780 V2		
CORRECTIONS TO 2780 PACKAGE	01	Sep 77
RUNNING 2780 ON RT-11 V3	02	Nov 77
PATCHING THE 2780 IN RT-11 V3	03 M	Jun 78

RT-11 V3B
CUMULATIVE INDEX
JULY 1978

This is a complete listing of all articles for current versions of RT-11 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.

IMPORTANT!

Retracted articles are indicated: RETRACTION.

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

M = Mandatory patch. These are critical patches which each customer is required to install.

O = Optional patch. These articles are applicable only if the reported problems have occurred at the customer site or if they are unique to his operation.

R = Restriction. These problems are not patchable in released software. Restrictions are reviewed and corrected when possible as part of the normal release cycle.

N = NOTE. This information may be helpful to the user.

<u>Component</u>	<u>Sequence</u>	<u>Mon/Yr</u>
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APL-11 V1

APL.SAV PROGRAM PATCHES

ERRONEOUS "DEFINITION ERROR" DURING FUNCTION EDITING	01 M	Nov 77
LOSS OF LOWER-CASE ON RE-ENTRY TO APL-11	02 M	Nov 77
APL WORKSPACE	03 R	Nov 77
"SYSTEM ERROR" S GENERATED BY NULL LINE ELEMENTS	04	Dec 77
INTERNAL MEMORY ALLOCATION PROBLEMS	05 M	Dec 77
ERROR FOR SCALAR RESULT OF DECODE OR INNER PRODUCT OPERATION	06 M	Feb 78
SYSTEM ERROR ON PARAMETER RETURN	07 M	May 78

BASIC-11/RT-11 V2

RESEQUENCE PRODUCES AN INCORRECT PROGRAM UNDER CERTAIN CONDITIONS	01 M	Jun 78
PRINT USING	02 M	Jun 78
MAX SIZE OF LINE ENTERED TO BASIC-11	03 M	Jun 78
REM STATEMENT CONTAINING LEFT PARENTHESIS CAUSES SUBSEQUENT SPACES AND PERIODS TO BE REMOVED	04 R	Jun 78
RUN (NH) COMMAND MAY GIVE AN ERROR MESSAGE	05 M	Jul 78
TERMINAL MAY HANG	06 M	Jul 78
DATA FILES	07 M	Jul 78
SAVE DEV: AND REPLACE DEV:	08 M	Jul 78

BASIC/RT-11 EXTENSIONS V1

"IPK" SUBROUTINE	01 M	Aug 77
SAMPLING A/D CHANNEL NO. 15	02 R	Aug 77
SAMPLING AR11	03 M	Sep 77
"CLR D" AND "PUT D" ROUTINES	04 M	Nov 77
"SET R" AND "WAIT" COMBINATION MAY FAIL	05	Apr 78

FOCAL/RT-11 V1B

FOR COMMAND WITHOUT AN ARGUMENT	01 M	Oct 75
OPERATE COMMAND CAUSES ERROR	04 M	Aug 76
FCLK ROUTINE GIVES INCORRECT TIME	05 O	Aug 76
"LIBRARY ASK" COMMAND	06 O	Feb 77
"/Z" SWITCH	07 M	Aug 77
@START NOT WORKING WHEN DOWN-LINE LOADING	08 M	Mar 78

ComponentSequenceMon/Yr

FORTRAN IV/RT-11 V2

COMPILER

KNOWN FORTRAN IV V2 BUGS	01 N	Feb 78
USE OF THE FIND STATEMENT	02 M	Feb 78
RAISING COMPLEX NUMBERS	03 M	Feb 78
EXTRA CHARACTERS MAY RESULT IN COMPILER TRAPPING	04 M	Feb 78
SIMRT	05 M	Feb 78
SIMRT CONTINUED	06 M	Feb 78
TRANSMITTING ASCII DATA	07 R	Mar 78
IN-LINE CODE	08 N	Mar 78
DOSPOSE= 'KEEP' OPTIN	09 R	Apr 78
CRASH DUMPS	10 N	Apr 78
SYNTAX ERRORS IN SOURCE PROGRAM MAY CAUSE COMPILER TO ABORT	11 M	May 78
ERRORS OCCUR WITH NO DO LOOP	12 M	Jun 78

LABORATORY APPLICATIONS-11 V3

A NEW MODULE TO ENHANCE DATA FLOW WITHIN LA-11	01 N	Oct 76
HISTO.MAC		
ACQUIRING AND PROCESSING HISTOGRAM DATA	01 M	Sep 76
LABMAC.SML		
ERRONEOUS MACRO	01 M	Sep 77
PEAK.MAC		
WIDE PEAKS	01 M	MAR 76
PEAK PROBLEMS AND CORRECTIONS	02 M	Jul 76
ARITHMETIC CORRECTION FOR PEAK AREA	03 M	Dec 76
MISSING PATCH IN RELEASE NOTES	04 M	Oct 77
SPARTA		
LPS AND AR-11 VECTOR AND STATUS REGISTER	01 N	Dec 75
USING SPARTA AND FLOATING POINT BUFFERS	02 N	Feb 76
AR-11 TIMING PROBLEMS WITH ADSAM AND SPARTA	03 O	Feb 76
FFT SCALING CORRECTION	04 M	Feb 76
SCALE FACTOR CORRECTION FOR SPARTA COMMANDS FAC AND FCC	05 M	Mar 76
DATA DISPLAYS USING LA-11	06 N	Mar 76
DATA PREPARATION FOR SPARTA COMMANDS FAC AND FCC	07 N	Apr 76
SPARTA CORRECTIONS FOR POINT-PLOT DISPLAY	08 M	Apr 76
ADDING COMMANDS TO SPARTA	09 M	May 76
CORRECTION FOR THE DPV COMMAND WITH POINT PLOT DISPLAY	10 M	Jun 76
GENERAL SUBROUTINE MODULE FOR EAE	11 O	Jun 76
INCORRECT PHASE ANGLE CALCULATION	12 M	Oct 76
"MOU" AND "MIN" COMMANDS CAN BE READ OUT AND IN CORRECTLY	13 N	Jan 77
MULTIPLE SYNCH PULSES	14 M	Jan 77
AUTO AND CROSS CORRELATION	15 M	Jan 77
ALLOCATING MORE THAN 16K BUFFERS IN SPARTA	16 M	Feb 77
A/D SAMPLING: FAST MODE	17 M	Jul 77
A/D SAMPLING: FAST MODE EXIT	19 M	Mar 78
SWEEP.MAC		
SWEEP SAMPLING: FAST MODE	01 M	Aug 77
THRU		
HOW TO START DATA ACQUISITION WHEN CSTART EQUALS ZERO	01 N	Jun 76
MULTICHANNEL SINGLE RATE SCHMIT TRIGGER SWITCH BOUNCE	02 M	Dec 76
CONTINUOUS SAMPLING: CONDITIONAL ASSEMBLY ERRORS	03 M	Jul 77
CONTINUOUS SAMPLING: DMA WITH DUAL SAMPLE + HOLD	04 M	Jul 77
DOCUMENTATION CORRECTIONS	05 M	Nov 77

PDL/RT-11 V1B

CLARIFICATION OF SEARCH FAILURE IN SUBROUTINE FIND	01 N	Jul 78
FIND SUBROUTINE	02 R	Jul 78
PATCHES TO PDL	03 M	Jul 78
SUBROUTINE QKGT	04 M	Jul 78
PDL SUBROUTINE 'RDAA'	05 M	Jul 78
PDL PEAK ALGORITHM WILL NOT RECOGNIZE VALID PEAKS	06 M	Jul 78

<u>Component</u>	<u>Sequence</u>	<u>Mon/Yr</u>
REMOTE/RT-11 V1		
SCHEDULER DOES NOT PROPERLY SET PROCESSOR PRIORITY	01 M	May 76
NOEDIT- 0 HALTS	02 M	May 76
NUSERS=1 STAYS IN A FILE MESSAGE LOOP	03 M	May 76
INCORRECT SWAP AREA ALLOCATION FOR FOUR OR MORE USERS	04 M	May 76
REBOOT FROM SATELLITE DURING EDIT HANGS HOST	05 M	Jun 76
HARD ERROR ON LOOKUP IS FATAL	06 M	Jun 76
SECONDARY MODE PROGRAM LOAD FEATURE NOT COMPLETELY FUNCTIONAL	07 M	Jun 76
ONE SECOND TIMER FOR LINE TIMEOUTS IS SET INCORRECTLY	08 M	Aug 76
LINE FEEDS MAY CAUSE SYSTEM ERRORS--ASSEMBLY ERROR WITH DIAL AND NODDC	09 M	Aug 76
PROPER GENERATION OF REMOTE IS DEPENDENT ON MODULE ORDER	10 M	Aug 76
ASCII CODES 173 AND 174 DO NOT PRINT	11 M	Aug 76
IMPROPER FILLER HANDLING FOR VT05	12 O	Aug 76
SYSTEM CRASHES IF RUN IN FOREGROUND WITHOUT /N	13 O	Aug 76
"UNSAVE" COMMAND CAUSES SYSTEM ERRORS	14 M	Dec 76
FLET WILL REMOVE MORE THAN ONE USER FROM THE WAIT QUEUE	15 M	Dec 76
STACK FOR USER THREE IMPROPERLY SET	16 O	Dec 76
SECONDARY MODE LOADS DO NOT OPERATE PROPERLY	17 M	Jan 77
@START COMMAND GIVEN ON TERMINAL WITHOUT SATELLITE CAUSES CRASH	18 O	Jan 77
"RTSIM" DOES NOT SUPPORT 50 Hz LINE CLOCK	19 O	Jan 77
CHANNEL ACTIVE ERROR	20 M	Mar 77
THREE WORDS LOST ON DOWNLINE LOAD	21 M	Mar 77
CSISPC NOT PROPERLY SIMULATED	22 M	May 77
EXCEEDING CHARACTERS PER LINE LIMIT	23 M	Oct 77
@RE IN THE SATELLITE DOES NOT WORK	25 R	Mar 78
"HANG" CONDITIONS	26 R	Apr 78
RT-11 V3B		
MISCELLANEOUS		
ERRORS IN THE SYSGEN CONDITIONAL FILE	01 M	Jul 78
SOURCES		
UNRESOLVED DIFFERENCES IN DEMOX1.MAC	01 M	Jul 78
UTILITIES		
ERRORS IN FILEX INTERCHANGE FORMAT	01 M	Jul 78
RT-11/2780 V2		
CORRECTIONS TO 2780 PACKAGE	01	Sep 77
RUNNING 2780 ON RT-11 V3	02	Nov 77
PATCHING THE 2780 IN RT-11 V3	03 M	Jun 78

RT-11 Software Dispatch, July 1978

PDL/RT-11 V1B
for RT-11 V3/V3B

Seq 1 N
1 of 1

CLARIFICATION OF SEARCH FAILURE IN SUBROUTINE FIND (SPR 11-11316 DG)

When describing the FIND subroutine, the PDL Programmers Guide does not differentiate between a search failure condition causing a returned minus subscript or a failure causing a returned subscript that is too large.

Actually, only a minus subscript indicates a search failure. The second case occurs when the search string is found in a portion of the virtual file which the user has not written into. In this case, it is up to the user program to determine the validity of the subscript.

PDL/RT-11 V1B

for RT-11 V3/V3B

This article is being printed here for sequencing purposes only.

Seq 2 R
1 of 1

FIND SUBROUTINE (SPR 11-11317 DG)

1. The PDL FIND subroutine destroys the in-core buffer of the virtual file being searched.
2. The PDL FIND subroutine does not search the in-core buffer, so recent changes to the virtual file are not detected.

The FIND subroutine contains a couple of major coding errors. The errors can not be patched. The errors are being considered for future release of PDL/RT-11. Until then, users should observe these restrictions:

1. Only one virtual should be open on the system.
2. Insure that the disk contains the latest additions by reading a non-resident element of the virtual file just prior to calling FIND.

digital

Software Product Description

PRODUCT NAME: DECnet Phase II Products, Version 1

SPD 10.78.1

DESCRIPTION:

DECnet Phase II 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. The DECnet Phase II products include DECnet-11M Version 2, DECnet-11S Version 2, DECnet-11D Version 2, DECnet-IAS Version 2, DECnet/E Version 1, DECnet-RT Version 1 and DECnet-VAX, Version 1. The DECnet user can configure a variety of networks, to satisfy a variety of applications, by choosing the appropriate CPU's, line interface (and speeds), and operating system software.

In order to satisfy these 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 includes a set of network protocols, each of which is designed to fulfill specific functions within the network. Collectively, these protocols are known as the DIGITAL Network Architecture, or DNA. The major protocols, and their functions, are:

DIGITAL Data Communications Message Protocol (DDCMP) — DDCMP 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 serial asynchronous facilities in a point-to-point mode. DDCMP has the following important characteristics:

- operates over a wide variety of hardware types
- makes efficient use of full-duplex channel capacity
- allows transmission of all data types (including binary) with low overhead
- allows standard (character-oriented) communications hardware to be used
- uses CRC-16 for error detection, with recovery by retransmission
- effective on earth/satellite links (or other links) with long signal propagation delays

A full specification for DDCMP Version 4.0 is available on request. DIGITAL does not regard DDCMP as a

proprietary protocol, and allows others to implement and use the protocol, providing an acknowledgment of the source is made in any public documentation.

Network Services Protocol (NSP) — NSP handles network management 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 (or 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/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 tasks
- exchange of data between tasks on a solicited basis
- exchange of data between tasks on a non-solicited (e.g., interrupt) basis
- nodes can be dynamically connected within the network once NSP initialization occurs over a previously established physical link

A full specification for the Network Services Protocol Version 3.0 is available on request. NSP is not a proprietary protocol.

Data Access Protocol (DAP) — The Data Access Protocol enables programs on one node of the network to use the I/O services available on other network nodes. Each operating system in DECnet provides facilities for translating its own 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.

A full specification for the Data Access Protocol Ver-

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sion 4.1 is available on request. DAP is not a proprietary protocol.

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 a common attribute, individual systems in the network may have certain system-specific attributes. The common attribute is:

- Task-to-task communication: Programs or tasks on one system can create logical links and exchange data with programs or tasks on other systems in a real-time fashion.

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

- 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 functionality is sequential ASCII.
- Batch/Command File Submission: Local users can submit batch or command files to remote systems for execution.
- Batch/Command File Execution: Remote users can cause a batch or command file which resides at a remote node to be submitted for execution at the local node.
- Remote File Access: Tasks or programs can access sequential files on a record-by-record basis from files located on remote nodes.
- 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 other systems in the network. Remote systems usually 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 physical link. This and the preceding feature simplify the operation of network systems which 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, above 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 level of functions. The user can recognize specific constraints when configuring a network of heterogeneous DECnet systems. Table II lists the communication interfaces supported by each DECnet Phase II product for particular class of line

characteristics (e.g., 9.6 kilobits/second, synchronous). Each column lists the connections that are permissible for those line characteristics in cross-product network configurations. Individual product SPD's must be consulted to determine whether any particular configuration violates the maximum number of communications interfaces and line speeds for an individual product.

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.

SUPPORT CATEGORY:

Category A Software Support, as described in the Software Support Categories Addendum to this SPD, will be provided with DECnet Phase II product options that include support services.

The installation of DECnet software under Category A Support Services in any host system will convert that system to a node with the potential of being connected to a DECnet network. Category A installation does not include demonstration of network connection.

The Customer may purchase DECnet Phase II product license options that do not include support services. The category of support applicable to such software is Category C. While a DECnet product option that does not include support services is connected to a DECnet network, the category of support applicable to all DECnet products in that network is Category C.

INSTALLATION SERVICE:

The installation of the Software under Category A Software Support shall consist of:

1. Verifying that the software kit contains all software modules and manuals offered.
2. Generating the DECnet software.
3. Demonstrating the use of the majority of operator commands and system utilities.
4. Running a sample DIGITAL-supplied program.
5. Introducing the Customer to the sources of software information and services.

Before installation of the Software, the Customer must:

1. Install or have installed all hardware, including terminals, to be used on the system.
2. Make available to DIGITAL personnel all hardware, including terminals, to be used during installation for a reasonable period of time each day, as mutually agreed upon by DIGITAL and the Customer, until installation is complete.

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

PREREQUISITE SUPPORT:

A Network Profile and DECnet Support Plan covering all intended network nodes and their support must be

prepared jointly by the Customer and DIGITAL.

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 Agreement between Purchaser and DIGITAL.

When multiple systems are connected in a single network, each individual system must be licensed separately with regard to both operating system and DECnet software.

ADDITIONAL SERVICES:

Software Consulting Services are offered on a time and materials basis to meet specific customer needs. Two levels of consulting services are available:

Level I Services

QJ680 -S— DECnet Level I Services (media: Z)

Level I services provide for the integration of DECnet nodes that carry Category A support into an interconnected network, with verification of network integrity and demonstration of DECnet functions. Level I services use DIGITAL sample procedures only.

Before installation of the Network, the Customer must:

1. Obtain, install, and demonstrate operational to DIGITAL's satisfaction any modems and other equipment and facilities necessary to interface DIGITAL's communications line interfaces and terminals.
2. Make available to DIGITAL's personnel all hardware, including communications facilities and terminals, to be used during installation for a reasonable period of time each day, as mutually agreed upon by DIGITAL and the Customer.

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

Level II Services

QS912 -S— Daily Software Consulting Services (media: Z)

QS926 -S— Weekly Software Consulting Services (media: Z)

QS922 -S— 6-Month Resident Software Consulting Services (media: Z)

QS924 -S— 12-Month Resident Software Consulting Services (media: Z)

Level II services provide for additional support as mutually agreed upon by DIGITAL and the Customer in the DECnet Customer Support Plan.

Table I

	DECnet-11M Version 2.0	DECnet-11S Version 2.0	DECnet-11D Version 2.0	DECnet-IAS Version 2.0	DECnet/E Version 1.0	DECnet-RT Version 1.0	DECnet-VAX Version 1.0
Task-to-Task	YES	YES	YES	YES	YES	YES	YES
Intersystem File Transfer	YES	NO	YES	YES	YES	YES	YES
Command/Batch File Submission	YES ¹	NO	YES ¹	YES ¹	YES	YES	YES ¹
Command/Batch File Execution	YES	NO	YES	YES	YES	NO	YES
Remote File Access	YES	YES ²	YES	YES	NO	YES	YES
Down-Line System Loading	YES	NO	YES	YES	NO	NO	YES
Down-Line Task Loading	YES	NO	YES	YES	NO	NO	NO

¹Cannot submit files to DECnet/E systems. Can tell DECnet/E to execute batch files already at the DECnet node.

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

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Table II

	EIA Sync <9.6K bits/sec	EIA Sync <19.2K bits/sec	EIA Async <9.6K bits/sec	20mA Async <9.6 bits/sec	Local Sync 56K bits/sec	Local Sync 1M bits/sec	Local Parallel
DECnet-11M Version 2.0	DP11 DU11-DA DUP11-DA DV11	DQ11-DA DMC11-AR DMC11-DA	DL11-E DZ11-A DZ11-B	DL11-C DL11-WA DZ11-C DZ11-D	DMC11-AL DMC11-MD	DMC11-AL DMC11-MA	DA11
DECnet-11S Version 2.0	DP11 DU11-DA DUP11-DA DV11 DUV11-DA	DQ11-DA DMC11-AR DMC11-DA	DL11-E DZ11-A DZ11-B	DL11-C DL11-WA DZ11-C DZ11-D	DMC11-AL DMC11-MD	DMC11-AL DMC11-MA	DA11
DECnet-11D Version 2.0	DP11 DU11-DA DUP11-DA DV11	DQ11-DA DMC11-AR DMC11-DA	DL11-E DZ11-A DZ11-B	DL11-C DL11-WA DZ11-C DZ11-D	DMC11-AL DMC11-MD	DMC11-AL DMC11-MA	DA11
DECnet-IAS Version 2.0	DP11 DU11-DA DUP11-DA DV11	DQ11-DA DMC11-AR DMC11-DA	DL11-E DZ11-A DZ11-B	DL11-C DL11-WA DZ11-C DZ11-D	DMC11-AL DMC11-MD	DMC11-AL DMC11-MA	DA11
DECnet-RT Version 1.0	DU11-DA DUP11-DA DUV11-DA	DMC11-AR DMC11-DA	DL11-E	DL11-C DL11-WA	DMC11-AL DMC11-MD	DMC11-AL DMC11-MA	
DECnet/E Version 1.0		DMC11-DA DMC11-AR			DMC11-AL DMC11-MD	DMC11-AL DMC11-MA	
DECnet-VAX Version 1.0		DMC11-AR DMC11-DA			DMC11-AL DMC11-MD	DMC11-AL DMC11-MA	

ADDENDUM
SOFTWARE SUPPORT CATEGORIES

Each software product (hereinafter 'SOFTWARE') with a designated Support Category A or B in the applicable Software Product Description (SPD) existing at the time of order will be the current release at the time of delivery and will conform to the SPD. DIGITAL's sole obligation shall be to correct defects (nonconformance of the SOFTWARE to the SPD) as described below. Any SOFTWARE with a designated Support Category C will be furnished on an 'as is' basis.

For SOFTWARE with a designated Support Category A or B, DIGITAL will provide the services set forth below without additional charge.

CATEGORY A

1. Upon notification by customer to the nearest DIGITAL office that the computer system, including all required prerequisite hardware and software, is ready for the installation of the SOFTWARE, DIGITAL will install such SOFTWARE in any location within the contiguous forty-eight (48) United States, the District of Columbia, or a country in which DIGITAL or a subsidiary of DIGITAL has a software service facility. The notification must be received by DIGITAL and the system must be ready for installation within thirty (30) days after the delivery of the SOFTWARE to customer or DIGITAL will have no obligation to install. Installation will consist of: (1) verification that all components of the SOFTWARE have been received by customer, (2) loading the SOFTWARE, and (3) executing a DIGITAL sample procedure.
2. During the ninety (90) day period after installation, if the customer encounters a problem with the current unaltered release of the SOFTWARE which DIGITAL determines to be a defect in the SOFTWARE, DIGITAL will provide the following remedial service (on site where necessary): (1) if the SOFTWARE is inoperable, apply a temporary correction (TC) or make a reasonable attempt to develop an emergency by-pass, and (2) assist the customer to prepare a Software Performance Report (SPR) and submit it to DIGITAL.
3. During the one (1) year period following installation, if the customer encounters a problem with the SOFTWARE which his diagnosis indicates is caused by a SOFTWARE defect, the customer may submit an SPR to DIGITAL. DIGITAL will respond to problems reported in SPRs which are caused by defects in the current unaltered release of the SOFTWARE via the Maintenance Periodical for the SOFTWARE, which reports SPRs received, code corrections, temporary corrections, generally useful emergency by-passes and/or notice of the availability of corrected code. Software Updates, if any, released by DIGITAL during the one (1) year period, will be provided to the customer on DIGITAL's standard distribution media as specified in the applicable SPD. The customer will be charged only for the media on which such updates are provided, unless otherwise stated in the applicable SPD, at DIGITAL's then current media prices.

CATEGORY B

During the one (1) year period following delivery, the services provided to the customer will be the same as set forth in 3 above.

CATEGORY C

SOFTWARE is provided on an 'as is' basis. Any software services, if available, will be provided at the then current charges.

DIGITAL shall have the right to make additional charges for any additional effort required to provide services resulting from customer use of other than current unaltered release of the SOFTWARE operated in accordance with the SPD.

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Software Product Description

PRODUCT NAME: RT-11, Version 03B, Single-User Operating System

SPD 12.1.9

DESCRIPTION:

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

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 partially due to the system simplicity inherent in its restriction to a single or dual partition architecture.

The RT-11 operating system offers several configurations:

The FB monitor — allows two programs to operate: 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, which operates whenever the foreground program cannot run. Within their priorities, both foreground and background are complete RT-11 systems with access to system capabilities. Although they operate independently, foreground and background can communicate through disk files and/or message transmission areas in memory.

The FB monitor — can support systems with greater than 56K bytes of memory. (When exercising this feature, the FB monitor is referred to as the XM monitor.) This feature is primarily provided for use by those optional high-level language processors that can automatically produce programs which can address areas of memory other than the lowest 56K bytes. The assembly language programmer can also take advantage of this feature for storing data arrays above the lowest 56K bytes of memory, or for loading code in other areas of memory. Because the linker builds programs only for the lowest 56K bytes of memory, however, it is the assembly language programmer's responsibility to provide base address relocation. The user must do a system generation to include XM support.

The SJ monitor — is for users not requiring FB operation or the additional FB features. SJ requires less memory and lower 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 with no modifications.

RT-11 system features include:

Ease of Use: — RT-11 is 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 statement. Indirect files allow command sequences to be stored and invoked repeatedly by the user.

Contiguous File Structure: — The RT-11 contiguous file structure incurs minimum file access overhead.

Configuration Independence: — The RT-11 system provides device-independent I/O programming. For example, at run time, the user can send output directly to a printer or write it to a disk file for later printing.

Flexible Real Time I/O: — RT-11 has been designed to satisfy a wide variety of input/output requirements by providing three modes of I/O operation:

- Synchronous I/O, where processing is suspended until the completion of the I/O event.
- Asynchronous I/O, where an I/O event is started, and 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 processing continues until the I/O event completes. Processing is then interrupted to service the completed I/O event.

Low System Overhead: — The RT-11 SJ monitor requires not more than 4.5K bytes of permanent memory to provide system control and I/O for the system device and the operator's terminal. FB operation adds not more than 4K bytes to this requirement.

RT-11's modular structure enables other functions to be swapped in as needed. On the other hand, if the program's memory requirements allow it, the complete monitor stays resident in memory to further increase system responsiveness.

Ease of Expansion: — The RT-11 system 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, storing it as a file, and installing it through a single keyboard command into the system.

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

Industry Compatible Magnetic Tape: — RT-11 supports 7- or 9-track industry-compatible magtape with ANSI-compatible labels and fixed-length blocks.

Indirect Command Files: — A set of system commands can be strung together in an indirect command file so they can be executed through a single keyboard command. In addition, an indirect command file can be called automatically on system start-up.

BATCH: — RT-11 BATCH is a 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 or other user jobs to run in the foreground. RT-11 BATCH can be used in either SJ monitor configurations of 24K or more bytes of memory, or in any FB or XM configuration.

FORTTRAN: — The FORTRAN IV language compiler is available under separate license as an option, and RT-11 provides access to system services directly from a FORTRAN program. Routines are provided to perform direct file I/O, asynchronous FORTRAN subroutines, FORTRAN interrupt routines, and multi-terminal support.

HELP: — The HELP command allows a user to access useful information about keyboard commands. This information can be modified to meet the user's need.

Multiterminal Support: — RT-11 is optionally able to support from 1 to 16 terminals (8 maximum on LSI-11) in addition to the console terminal. These terminals can be addressed by specially written programs (or by optional software), and may be interfaced by (up to 8) DL11s, (1 or 2) DZ11s, (up to 8) DLV11s, or one (1) DZV11, but there can only be one "console terminal" (DL or DLV only) per system at any time. The foreground task may communicate with a terminal other than the one for the background task. Only RT-11 FB has multi-terminal support. The multi-terminal support allows remote users to be connected via Bell 103A-type modems. RT-11 must be system generated for multi-terminal support.

System Generation: — RT-11 is shipped already generated and ready to use. Users can do their own system generation (not included with DIGITAL installation). This is desirable for users who require special features (such as error logging, extended memory, or multi-terminal support) or a system optimized for their application. 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 recommended that a user have at least 56K bytes of memo-

ry and an RK05 disk or larger to do a system generation.

Error Logging: — RT-11 optionally supports error logging to keep statistics on successful and unsuccessful transfers for each random access device. RT-11 must be system generated for error logging support.

RT-11 system programs include:

EDIT: — The RT-11 text editor is used to create and modify ASCII text files. Both character and line-oriented commands have been included, along with provisions for command interaction, editing macros, and file manipulation.

MACRO-11: — With at least 24K bytes of memory, MACRO-11 provides full macro programming under RT-11. It has the facilities for maintaining and using a macro library on the RT-11 system device as well as CREF (Cross REFerence) listing, conditional assembly directives, and pseudo operators. MACRO-11 offers the convenience of global symbols for linking object modules and extensive error diagnostics. MACRO-11 also runs in 16K byte configurations with limited performance and subset capability.

LINKER: — The RT-11 linker (LINK) converts the 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, linking global 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. While ease of use has been paramount, the power of the overlay system has not been compromised. The system allows any number of overlays in any number of memory areas, subject only to the memory size.

PIP: — The RT-11 peripheral interchange program (PIP) is a program that allows transfer of files (ASCII or binary) between any RT-11 supported devices. PIP also allows the user to rename and delete files.

RESOURCE: — The RT-11 Resource Program (RESOURCE) examines the currently running RT-11 system and displays useful information about the status of the monitor and the system configuration.

LIBRARIAN: — The RT-11 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.

ODT: — The on-line debugging technique utility (ODT) aids in debugging assembled and linked object programs interactively. ODT has limited use when FB is supporting extended memory.

DUP: — The RT-11 device utility program (DUP) performs general utility functions in support of disk devices. Among DUP functions are initializing devices,

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scanning for bad blocks, and compressing data on a disk.

DIRECT: — The RT-11 directory program (DIR) is used to list the file directory for file-structured devices. DIR allows directory listing sorted by file name, file type, size, or position.

UTILITIES: — Several other program development utilities are provided. 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. FILEX allows transfer of RT-11 files to and from some other DIGITAL operating system environments. PATCH and PAT allow memory images and relocatable binary files to be permanently modified. FORMAT allows the user to format RK05 media.

MINIMUM HARDWARE REQUIRED:

See Figure 1.

OPTIONAL HARDWARE:

- Additional memory to a system total of 56K bytes (60K bytes with MSV11-DD) for systems running the SJ monitor
- Additional memory to a system total of 248K bytes for systems running the FB monitor

NOTE:

Due to the complexity of memory mapping use of this feature in assembly language is suggested for advanced programmers only. High level language use of this feature, however, takes no special skills.

The following options are available for LSI-11 based systems:

- MSV11-DD memory with BDV11 Bootstrap (allow access of 60K bytes of memory using SJ or FB)
- LAV11 line printer
- RXV11 floppy disk system
- RKV11 cartridge disk system
- RLV11 cartridge disk system (24K bytes required)
- DLV11-E, DLV11-F, or DLV11-J asynchronous line unit
- One DZV11 asynchronous 4 line multiplexer (32K bytes required)
- LPV11 line printer
- 11/03 WC or WD writable control store

The following options are available for systems other than LSI-11 based:

- TA11 DECassette (24K bytes required for RT-11 based PIP operations)
- TC11 DECTape system
- TM11, TMA11, TMB11, TM02, or TM03 magnetic tape, (24K bytes required for PIP operations)
- RX11 floppy disk system
- RK11/RK05 disk cartridge system
- RK611/RK06 disk subsystem (32K bytes required)
- KK11-A cache memory for the PDP-11/34
- RL11 cartridge disk system (24K bytes required)
- RPR11/RPR02 or RPR11/RP03 disk pack

- RJS03, RJS04, or RF11 fixed-head disk
- PC11 paper tape reader/punch
- CR11 or CM11 card reader
- LP11 or LS11 line printer
- DL11 asynchronous single line unit
- DZ11 asynchronous 8-line multiplexer (32K bytes required)
- KW11-P programmable real-time clock
- VS60 display processor (graphics with FORTRAN graphics package)
- VT55 DECgraphic scope (PLOT-55 subroutines included with RT-11)
- VT11A graphics display processor (graphics with FORTRAN, FOCAL/RT-11, LA, or FORTRAN graphics package)
- LPS11 laboratory peripheral system (supported by FORTRAN extensions, FOCAL/RT-11, and LA-11 only)
- AR11 analog real-time system (supported by FORTRAN extensions, FOCAL/RT-11, and LA-11 only)
- DR11-K DIGITAL I/O option (supported by FORTRAN extensions, only)
- UNIBUS laboratory peripherals (AD11-K, AM11-K, AA11-K, and KW11-K) (supported by FORTRAN extensions only)

PREREQUISITE SOFTWARE:

None

OPTIONAL SOFTWARE:

BASIC/RT-11
 MU BASIC/RT-11(objects only, must be built and patched on RT-11, Version 2C, which is included with MU BASIC)
 GAMMA-11 F/B
 FOCAL/RT-11
 FORTRAN IV/RT-11
 APL-11
 Lab Applications-11 Library
 PLOT-11/RT-11
 MSB11 Mark Sense Batch
 DECnet/RT

TRAINING CREDITS:

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

SUPPORT CATEGORY:

A — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

UPDATE POLICY:

Software Updates, if any, released by DIGITAL during the one (1) year period following installation, will be provided to the customer for a media charge (includes no installation). After the first year, updates, if any, will be made available according to then prevailing DIGITAL policies.

Growth Constraints:

An update is the primary way in which DIGITAL provides corrected versions of a software product to users of that product. An RT-11 Version 03B update will be functionally the same product as RT-11 Version 03B, but it includes corrections to deficiencies discovered in this product, and it may include enhancements. An enhancement is a capability not explicitly provided by this product, or it is an improvement in stability or efficiency. The following items describe the growth constraints of an RT-11 Version 03B update.

1. The minimum hardware requirements for executing an RT-11 Version 03B update will not be greater than the minimum hardware requirements for the same device configurations supported by RT-11 Version 03B.
2. Permanent memory overhead in an RT-11 Version 03B update incurred to provide 1) system control for all non-optional functions, and 2) system device and operator's console terminal I/O for those devices supported by RT-11 Version 03B will not be greater than 4.5K bytes for the baseline single job monitor and not greater than 8.5K bytes for the baseline foreground/background monitor, where .5K of these figures represents the first 512 bytes of memory required for device and program control.
3. If an RT-11 Version 03B update includes enhancements to the RT-11 Version 03B monitor, the permanent memory overhead incurred for the enhanced monitor may be greater than the permanent memory overhead stated above. Use of the enhancements and the attendant memory required is optional.
4. Permanent system device storage requirements in a RT-11 Version 03B update for the single job monitor or the foreground/background monitor, including the non-optional system control functions, the system device handler, and the operator's console terminal support, will not be greater than 150 blocks. A block contains 512 bytes.
5. System programs provided in an RT-11 Version 03B update will execute in the same minimum hardware configurations specified for the functionally equivalent RT-11 Version 03B system programs. The system programs' resident memory requirements and/or execution characteristics can change.
6. Permanent system device storage requirements in an RT-11 Version 03B update for the system programs may be different from the requirements for the functionally equivalent RT-11 Version 03B programs.
7. An RT-11 Version 03B user program's execution speed can change when run under functionally equivalent conditions using an RT-11 Version 03B update, but best efforts will be applied to minimize degradation, if any.
8. If an RT-11 Version 03B update offers enhancements to RT-11 Version 03B to provide speed or space improvements, better internal consistency, improved reliability, or other enhancements, any

of which affect the published specifications for program interfaces, the Update will include program conversion utilities and/or documented conversion procedures to protect the user software development investments. The conversion utilities and/or documented conversion procedures can include file or data conversion, source conversions or editing, program recompilation or reassembly, or relinking.

9. If an RT-11 Version 03B update includes enhancements to RT-11 Version 03B system error messages and/or command language, best efforts will be applied to minimize user inconvenience.

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 Agreement between Purchaser and DIGITAL.

A single-use license only option is a license to copy the software previously obtained under license, and use such software in accordance with DIGITAL's Standard Terms and Conditions of Sale. The category of support applicable to such copied software is Category C.

Standard options with no support services are only available after the purchase of one supported license. When a software license is ordered without support services, the category of support applicable to such software is Category C.

Source and/or listing 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 (C, D, E, Q, R, T, Y, Z) represents the distribution media for the product and must be specified at the end of the order number, e.g., QJ013-AE = binaries on RK05 disk.

C = DECTape
 D = 9-track Magnetic Tape
 E = RK05 Disk Cartridge
 Q = RL01 Disk Cartridge
 R = Microfiche
 T = RK06 Disk Cartridge
 Y = RX01 Floppy Diskette
 Z = No hardware dependency

Standard Options

- QJ013 -A— Single-use license, binaries, documentation, support services (media: C, D, E, Q, T, Y)
 QJ013 -C— Single-use license, binaries, documentation, no support services (media: C,

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D, E, Q, T, Y)

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

Upgrade Options

The following option is available as an upgrade kit from DOS/BATCH for use on the same single CPU on which DOS/BATCH is licensed. The license previously granted for DOS/BATCH shall be extended to cover this upgrade.

QJ260 -A— Single-use license for RT-11 and FORTRAN/RT-11, binaries, documentation, support services (media: C, E)

The following option is available as an upgrade kit from MSB11 for use on the same single CPU on which MSB11 is licensed. The license previously granted for MSB11 shall be extended to cover this upgrade.

QJE03 -A— Single-use license for RT-11 binaries, documentation, support services (media: Y)

Update Options

Licensed users of RT-11 whose specified Support Category warranty has not expired may order under license the following software update for the then current media charge. The update is distributed in binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

QJ013 -W— RT-11 binaries, documentation, no support services (media: C, D, E, T, Y)

Licensed users of RT-11 whose specified Support Category warranty has expired may order under license the following software update. The update is distributed in binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

QJ013 -H— RT-11 binaries, documentation, no support services (media: C, D, E, T, Y)

Source/Listing Options

QJ013 -E— All sources (media: D, E, Q, T, Y)

QJ013 -F— Listings (media: R)

Source/Listing Update Options

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

QJ013 -N— Sources update; requires RT-11 Version 3 or 03B for source assembly. (media: D, E, T)

Miscellaneous Options

QJ013 -G— Pre-delivery kit (media: Z)

ADDITIONAL SERVICES:

QJ013 -S— Consulting Service (media: Z)

QJ013 -3— Binary Program Update Service for licensed RT-11 users (media: C, D, E, T, Y)

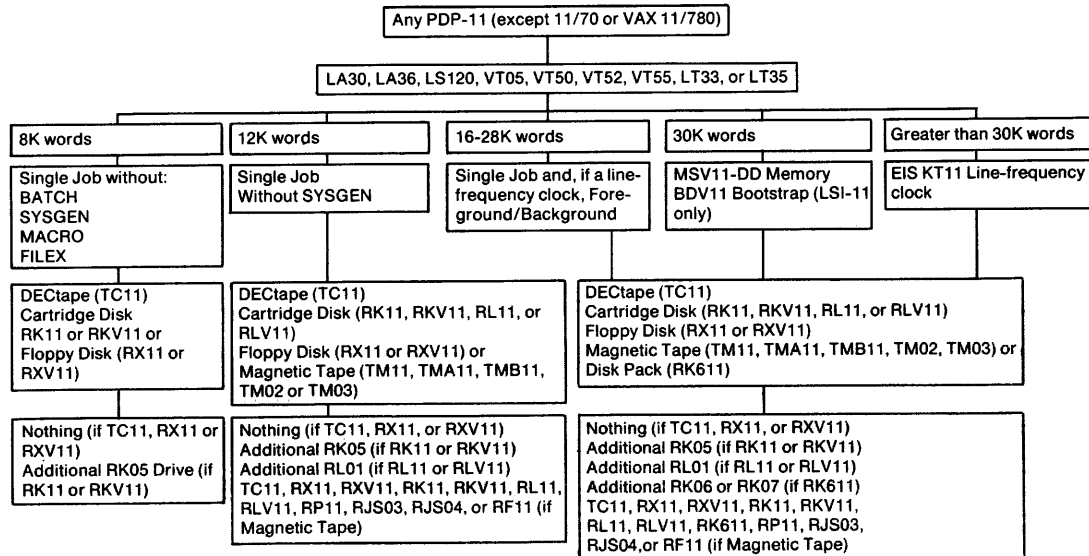
QJ926 -3— Binary Program Update Service for licensed RT-11 and FORTRAN IV/RT-11 users (media: C, D, E, T, Y)

QJ939 -3— Binary Program Update Service for licensed RT-11 and BASIC/RT-11 users (media: C, D, E, T, Y)

QJ927 -3— Binary Program Update Service for licensed RT-11, FORTRAN IV/RT-11 and BASIC/RT-11 users (media: C, D, E, T, Y)

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FIGURE 1



ADDENDUM SOFTWARE SUPPORT CATEGORIES

Each software product (hereinafter 'SOFTWARE') with a designated Support Category A or B in the applicable Software Product Description (SPD) existing at the time of order will be the current release at the time of delivery and will conform to the SPD. DIGITAL's sole obligation shall be to correct defects (nonconformance of the SOFTWARE to the SPD) as described below. Any SOFTWARE with a designated Support Category C will be furnished on an 'as is' basis.

For SOFTWARE with a designated Support Category A or B, DIGITAL will provide the services set forth below without additional charge.

CATEGORY A

1. Upon notification by customer to the nearest DIGITAL office that the computer system, including all required prerequisite hardware and software, is ready for the installation of the SOFTWARE, DIGITAL will install such SOFTWARE in any location within the contiguous forty-eight (48) United States, the District of Columbia, or a country in which DIGITAL or a subsidiary of DIGITAL has a software service facility. The notification must be received by DIGITAL and the system must be ready for installation within thirty (30) days after the delivery of the SOFTWARE to customer or DIGITAL will have no obligation to install. Installation will consist of: (1) verification that all components of the SOFTWARE have been received by customer, (2) loading the SOFTWARE, and (3) executing a DIGITAL sample procedure.
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3. During the one (1) year period following installation, if the customer encounters a problem with the SOFTWARE which his diagnosis indicates is caused by a SOFTWARE defect, the customer may submit an SPR to DIGITAL. DIGITAL will respond to problems reported in SPRs which are caused by defects in the current unaltered release of the SOFTWARE via the Maintenance Periodical for the SOFTWARE, which reports SPRs received, code corrections, temporary corrections, generally useful emergency by-passes and/or notice of the availability of corrected code. Software Updates, if any, released by DIGITAL during the one (1) year period, will be provided to the customer on DIGITAL's standard distribution media as specified in the applicable SPD. The customer will be charged only for the media on which such updates are provided, unless otherwise stated in the applicable SPD, at DIGITAL's then current media prices.

CATEGORY B

During the one (1) year period following delivery, the services provided to the customer will be the same as set forth in 3 above.

CATEGORY C

SOFTWARE is provided on an 'as is' basis. Any software services, if available, will be provided at the then current charges.

DIGITAL shall have the right to make additional charges for any additional effort required to provide services resulting from customer use of other than current unaltered release of the SOFTWARE operated in accordance with the SPD.



Software Product Description

PRODUCT NAME: BASIC-11/RT-11, Version 2

SPD 12.5.4

DESCRIPTION:

BASIC is a high-level conversational programming language, developed at Dartmouth College, that uses simple English-like statements and familiar mathematical notations to perform an operation. Because of its conversational structure, BASIC is simple enough for the inexperienced programmer while having capability sufficient to control all of the system resources. Because of its simplicity, BASIC reduces programming time for developing applications programs.

BASIC-11/RT-11 is an incremental, interactive, interpretive compiler operating under the RT-11 operating system.

BASIC-11/RT-11 features include:

- A variety of program manipulation commands including commands for saving, editing, running and retrieving BASIC programs.
- Support for real, integer, double precision and string data types.
- Immediate mode statements for debugging and desk calculator usage.
- Sequential data storage using the RT-11 file system.
- String capability, including string arrays and functions.
- Disk virtual arrays for string, integer and real data types.
- Chaining with COMMON to accommodate large programs.
- CALL facility for invoking assembly language subroutines using a PDP-11 FORTRAN-compatible calling interface.
- Formatted output using the PRINT USING statement.

MINIMUM HARDWARE REQUIRED:

Any valid RT-11 operating system configuration. At least 32K bytes of memory are recommended for speed and support of all BASIC-11 features.

OPTIONAL HARDWARE:

Supports any mass storage, unit record or terminal device supported by RT-11, with the additions of:

- KE11-B Extended Arithmetic Element
- KE11-E Extended Instruction Set
- FP11 Floating Point Processor
- KE11-F or KEV11 Floating Point Instruction Set

PREREQUISITE SOFTWARE:

RT-11 Operating System, Version 3 or later

OPTIONAL SOFTWARE:

BASIC/RT-11 Extensions

TRAINING CREDITS:

None

SUPPORT CATEGORY:

B — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

UPDATE POLICY:

Software Updates, if any, released by DIGITAL during the one (1) year period following installation, will be provided to the customer for a media charge (includes no installation). After the first year, updates, if any, will be made available according to then prevailing DIGITAL policies.

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 Agreement between Purchaser and DIGITAL.

Standard options with no support services are only available after the purchase of one supported license. When a software license is ordered without support services, the category of support applicable to such software is Category C.

A single-use license only option is a license to copy the software previously obtained under license, and use such software in accordance with DIGITAL's Standard Terms and Conditions of Sale. The category of support applicable to such copied software is Category C.

Source and/or listing options are only available after the purchase of at least one binary license and after a

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source license agreement is in effect.

The following key (C, D, E, Q, R, T, Y, Z) represents the distribution media for the product and must be specified at the end of the order number, e.g., QJ913-AD = binaries on 9-track magnetic tape.

C = DECTape
 D = 9-track Magnetic Tape
 E = RK05 Disk Cartridge
 Q = RL01 Disk Cartridge
 R = Microfiche
 T = RK06 Disk Cartridge
 Y = RX01 Floppy Diskette
 Z = No hardware dependency

Standard Options

QJ913 -A— Single-use license, binaries, documentation, support services (media: C, D, E, Q, T, Y)
 QJ913 -C— Single-use license, binaries, documentation, no support services (media: C, D, E, Q, T, Y)
 QJ913 -D— Single-use license only, no binaries, no documentation, no support services (media: Z)

Update Options

Users of BASIC-11/RT-11, Version 1B, whose specified Support Category warranty has expired may order under license the following software update at the then current charge for such update. The update is distributed in binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

QJ913 -H— Binaries, documentation (media: C, D, E, T, Y)

Users of BASIC-11/RT-11, Version 1B, whose specified Support Category warranty has not expired may order under license the following software update for the then current media charge. The update is distributed in binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

QJ913 -W— Binaries, documentation (media: C, D, E, T, Y)

Source/Listing Options

QJ913 -E— All sources (media: D, E, Q, T, Y)

QJ913 -F— Listings (media: R)

Source/Listing Update Options

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

QJ913 -N— Sources update (media: D, E, T)

Miscellaneous Options

QJ913 -G— Pre-delivery kit (media: Z)

ADDITIONAL SERVICES:

None

**ADDENDUM
SOFTWARE SUPPORT CATEGORIES**

Each software product (hereinafter 'SOFTWARE') with a designated Support Category A or B in the applicable Software Product Description (SPD) existing at the time of order will be the current release at the time of delivery and will conform to the SPD. DIGITAL's sole obligation shall be to correct defects (nonconformance of the SOFTWARE to the SPD) as described below. Any SOFTWARE with a designated Support Category C will be furnished on an 'as is' basis.

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CATEGORY A

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CATEGORY B

During the one (1) year period following delivery, the services provided to the customer will be the same as set forth in 3 above.

CATEGORY C

SOFTWARE is provided on an 'as is' basis. Any software services, if available, will be provided at the then current charges.

DIGITAL shall have the right to make additional charges for any additional effort required to provide services resulting from customer use of other than current unaltered release of the SOFTWARE operated in accordance with the SPD.



Software Product Description

PRODUCT NAME: FORTRAN IV/RT-11, Version 2

SPD 12.10.7

DESCRIPTION:

FORTTRAN IV/RT-11 is an extended, optimizing FORTRAN IV system which operates on any RT-11 system. The entire system (including the compiler and optimization capabilities) is completely functional in the minimum 8K-word RT-11 system.

The FORTRAN IV system is designed to minimize the size of executable programs. Extensive optimizations such as common subexpression elimination, array vectoring, and "peephole" local code sequence tailoring decrease the size and increase the speed of object programs. The compiler produces the object code without using temporary files, and no intermediate assembly step is required.

FORTTRAN programs may be developed under RT-11 and output in absolute binary format for execution on a stand-alone PDP-11 system with minimum peripherals. Only a device such as a paper tape reader is required for program loading.

Using SYSLIB, the RT-11 FORTRAN system subroutine library, all features and services of the RT-11 monitor are available to the FORTRAN programmer without the need for assembly language coding. FORTRAN programs can schedule subroutines to be executed when an external event occurs (the receipt of a message from another job, the completion of an I/O transfer, the lapsing of a specified time interval); perform all types of monitor-level input/output and system informational calls; and handle interrupts with a FORTRAN subprogram.

In addition to routines for calling the monitor functions, SYSLIB also contains extensive string manipulation routines. These routines create strings in LOGICAL*1 arrays, and allow their manipulation as string entities. These functions operate on variable-length strings. The strings can be manipulated fully without concern for their length, adding a new FORTRAN capability.

An optional subroutine package provides mathematical and statistical routines commonly required in scientific programming.

Additional Capabilities

- Optional in-line code generation for improved object code execution speed
- Memory-resident multiple virtual array support (Each array can have up to 32,767 elements.)

- Additional optimization algorithms have been included.
- FORTRAN IV/PLUS compatible language extensions (e.g., OPEN, CLOSE, LIST, directed I/O)

MINIMUM HARDWARE REQUIRED:

Any valid RT-11 configuration (16K words of memory are required for string support)

OPTIONAL HARDWARE:

Any RT-11 supported peripheral
Additional memory to a system total of 248K bytes
KE11-A, KE11-B Extended Arithmetic Element
KEV11 Extended Arithmetic Element
KE11-E Extended Instruction Set
KE11-F Floating Instruction Set
FP11 floating point processor

PREREQUISITE SOFTWARE:

RT-11 operating system, Version 3 or later

OPTIONAL SOFTWARE:

SSP-11, Scientific Subroutine Package
PLOT 11/RT-11
FORTRAN/RT-11 Extensions

TRAINING CREDITS:

None

SUPPORT CATEGORY:

B — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

UPDATE POLICY:

Software Updates, if any, released by DIGITAL during the one (1) year period following installation, will be provided to the customer for a media charge (includes no installation). After the first year, updates, if any, will be made available according to then prevailing DIGITAL policies.

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

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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 Agreement between Purchaser and DIGITAL.

Standard options with no support services are only available after the purchase of one supported license. When a software license is ordered without support services, the category of support applicable to such software is Category C.

A single-use license only option is a license to copy the software previously obtained under license, and use such software in accordance with DIGITAL's Standard Terms and Conditions of Sale. The category of support applicable to such copied software is Category C.

Source and/or listing 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 (C, D, E, F, Q, R, T, Y, Z) represents the distribution media for the product and must be specified at the end of the order number, e.g., QJ813-AD = binaries on 9-track magnetic tape.

C = DECTape
 D = 9-track Magnetic Tape
 E = RK05 Disk Cartridge
 F = 7-track Magnetic Tape
 Q = RL01 Disk Cartridge
 R = Microfiche
 T = RK06 Disk Cartridge
 Y = RX01 Floppy Diskette
 Z = No hardware dependency

Standard Options

- QJ813 -A— Single-use license, binaries, documentation, support services (media: C, D, E, F, Q, T, Y)
- QJ813 -C— Single-use license, binaries, documentation, no support services (media: C, D, E, F, Q, T, Y)
- QJ813 -D— Single-use license only, no binaries, no documentation, no support services (media: Z)

Source/Listing Options

- QJ813 -E— All sources (media: D, E, F, T)
- QJ813 -F— Listings (media: R)

Upgrade Options

The following option is available as an upgrade kit from DOS/BATCH for use on the same single CPU on which DOS/BATCH is licensed. The license previously granted for DOS/BATCH shall be extended to cover this upgrade

- QJ260 -A— Single-use license, binaries, documentation, support services (media: C, E)

Update Options

Users of FORTRAN IV/RT-11, Version 1C, whose specified Support Category warranty has expired may order under license the following software update at the then current charge for such update. The update is distributed in source or binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

- QJ813 -H— Binaries, documentation (media: C, D, E, F, T, Y)
- QJ813 -N— Sources update (media: D, E, F, T)

Users of FORTRAN IV/RT-11, Version 1C, whose specified Support Category warranty has not expired may order under license the following software update for the then current media charge. The update is distributed in source or binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

- QJ813 -W— Binaries, documentation (media: C, D, E, F, T, Y)

Miscellaneous Options

- QJ813 -G— Pre-delivery kit (media: Z)

ADDITIONAL SERVICES:

None

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ADDENDUM
SOFTWARE SUPPORT CATEGORIES

Each software product (hereinafter 'SOFTWARE') with a designated Support Category A or B in the applicable Software Product Description (SPD) existing at the time of order will be the current release at the time of delivery and will conform to the SPD. DIGITAL's sole obligation shall be to correct defects (nonconformance of the SOFTWARE to the SPD) as described below. Any SOFTWARE with a designated Support Category C will be furnished on an 'as is' basis.

For SOFTWARE with a designated Support Category A or B, DIGITAL will provide the services set forth below without additional charge.

CATEGORY A

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CATEGORY B

During the one (1) year period following delivery, the services provided to the customer will be the same as set forth in 3 above.

CATEGORY C

SOFTWARE is provided on an 'as is' basis. Any software services, if available, will be provided at the then current charges.

DIGITAL shall have the right to make additional charges for any additional effort required to provide services resulting from customer use of other than current unaltered release of the SOFTWARE operated in accordance with the SPD.



Software Product Description

PRODUCT NAME: FORTRAN/RT-11 Extensions, Version 1B

SPD 12.12.3

DESCRIPTION:

The FORTRAN/RT-11 Extensions consist of:

- FORTRAN IV/RT-11
- A library of graphics subroutines supporting the VT11 and VS60 display processors
- A library of laboratory subroutines supporting the LPS11 Laboratory Peripheral System, the AR11 Analog Real Time Subsystem, and the AD11-K, KW11-K, and DR11-K laboratory I/O modules
- A FORTRAN debugger

The FORTRAN/RT-11 graphics library is a comprehensive set of FORTRAN-callable subroutines which enable the user to create and interact with graphic output on the VT11 and VS60 display processors. The subroutines enable the programmer to use many of the features of the VS60. If the library is configured for the VT11, the subroutines emulate the VS60 features whenever possible. Programs can thus be written for either device. The user need only link the program with the appropriate library. For additional flexibility, most subroutines are written in FORTRAN to facilitate maintenance and modification.

The FORTRAN/RT-11 VT55 subroutine provides access to all of the graphics features of the VT55 graphics terminal. In addition, single subroutine calls can be used to plot lines or complete data curves.

The laboratory subroutine library provides the capability of acquiring data in all of the modes provided by the LPS11 and AR11 hardware and to operate a CRT display through the digital-to-analog converters provided in these units. A completion routine capability allows the user to write subroutines which are activated asynchronously upon completion of many actions, such as the filling of a data buffer. DR11-K support allows up to eight of these interfaces to be operated simultaneously. The AD11-K (with optional AM11-K), AA11-K, and KW11-K are supported in a fashion compatible with the LPS11 support. The library is easily configured for the particular set of hardware on the user's machine.

MINIMUM HARDWARE REQUIRED:

Any valid RT-11 configuration with at least 16K words of memory. 24K words of memory are recommended for large graphics display files such as may be encountered with the VS60.

OPTIONAL HARDWARE:

Any optional devices supported by the operating system and FORTRAN IV/RT-11, Version 2.0.

VT11A Graphics Display Processor
VS60 Graphics Display Processor
VT55 Graphics Terminal
LPS-11 Laboratory Peripheral System
AR11 Analog Real Time Subsystem
DR11-K Digital I/O System (up to 8)
AD11-K Analog-to-digital converter
KW11-K Real-time clock
AM11-K Multiplexer
AA11-K Digital-to-analog converter

PREREQUISITE SOFTWARE:

RT-11 Operating System, Version 3 (with the exception of the XM feature under the foreground/background monitor) or later.

OPTIONAL SOFTWARE:

None

TRAINING CREDITS:

None

SUPPORT CATEGORY:

B — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

UPDATE POLICY:

Software Updates, if any, released by DIGITAL during the one (1) year period following installation, will be provided to the customer for a media charge (includes no installation). After the first year, updates, if any, will be made available according to then prevailing DIGITAL policies.

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Software Program Sources Agreement between Purchaser and DIGITAL.

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Source and/or listing 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 (C, D, E, Q, R, T, Y, Z) represents the distribution media for the product and must be specified at the end of the order number, e.g., QJ980-AD = binaries on 9-track magnetic tape.

C = DECTape
 D = 9-track Magnetic Tape
 E = RK05 Disk Cartridge
 Q = RL01 Disk Cartridge
 R = Microfiche
 T = RK06 Disk Cartridge
 Y = RX01 Floppy Diskette
 Z = No hardware dependency

Standard Options

QJ980 -A— Single-use license, binaries, documentation, support services (media: C, D, E, Q, T, Y)

QJ980 -C— Single-use license, binaries, documentation, no support services (media: C, D, E, T, Y)

QJ980 -D— Single-use license only, no binaries, no documentation, no support services (media: Z)

Source/Listing Options

QJ980 -E— All sources (media: D, E, Q, T)

QJ980 -F— Listings (media: R)

Update Options

Users of FORTRAN/RT-11 Extensions, Version 1 whose specified Support Category warranty has expired may order under license the following software update at the then current charge for such update. The update is distributed in source or binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

QJ980 -H— Binaries, documentation (media: C, D, E, T, Y)

QJ980 -N— Sources update (media: D, E, Q, T)

Users of FORTRAN/RT-11 Extensions, Version 1 whose specified Support Category warranty has not expired may order under license the following software update for the then current media charge. The update is distributed in source or binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

QJ980 -W— Binaries, documentation (media: C, D, E, T, Y)

ADDITIONAL SERVICES:

None

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ADDENDUM
SOFTWARE SUPPORT CATEGORIES

Each software product (hereinafter 'SOFTWARE') with a designated Support Category A or B in the applicable Software Product Description (SPD) existing at the time of order will be the current release at the time of delivery and will conform to the SPD. DIGITAL's sole obligation shall be to correct defects (nonconformance of the SOFTWARE to the SPD) as described below. Any SOFTWARE with a designated Support Category C will be furnished on an 'as is' basis.

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CATEGORY B

During the one (1) year period following delivery, the services provided to the customer will be the same as set forth in 3 above.

CATEGORY C

SOFTWARE is provided on an 'as is' basis. Any software services, if available, will be provided at the then current charges.

DIGITAL shall have the right to make additional charges for any additional effort required to provide services resulting from customer use of other than current unaltered release of the SOFTWARE operated in accordance with the SPD.



Software Product Description

PRODUCT NAME: LSP-11, Version 1, Laboratory Subroutine Package

SPD 15.44.0

DESCRIPTION:

The Laboratory Subroutine Package is a set of FORTRAN-callable subroutines that perform a variety of standard analytical tasks commonly encountered in the laboratory. All of the subroutines are dedicated to processing of data that has been acquired by other laboratory data acquisition software.

The Laboratory Subroutine Package provides the user with the following data manipulation subroutines.

- peak-processing
- envelope processing
- interval histogramming with reference points
- Fast Fourier transform
- phase angle and amplitude spectra
- power spectrum
- correlation function

MINIMUM HARDWARE REQUIRED:

One of the following:

- Any valid RT-11 operating system configuration supporting FORTRAN-IV/RT-11.
- Any valid RSX-11M operating system configuration supporting either FORTRAN IV/IAS-RSX or FORTRAN IV-PLUS.

OPTIONAL HARDWARE:

- PDP-11 Extended Instruction Set
- PDP-11 Extended Arithmetic Element

PREREQUISITE SOFTWARE:

One of the following:

- RSX-11M, Version 3.1 and either FORTRAN IV/IAS-RSX, Version 2 or FORTRAN IV-PLUS, Version 2.5.
- RT-11, Version 3 and FORTRAN IV/RT-11, Version 2.

OPTIONAL SOFTWARE:

None

TRAINING CREDITS:

None

SUPPORT CATEGORY:

B — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

UPDATE POLICY:

Software Updates, if any, released by DIGITAL during the one (1) year period following installation, will be provided to the customer for a media charge (includes no installation). After the first year, updates, if any, will be made available according to then prevailing DIGITAL policies.

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 Agreement between Purchaser and DIGITAL.

The following key (D, E, Q, T, Y) represents the distribution media for the product and must be specified at the end of the order number, e.g., QJ624-AD = binaries on 9-track magnetic tape.

- D = 9-track Magnetic Tape
- E = RK05 Disk Cartridge
- Q = RL01 Disk Cartridge
- T = RK06 Disk Cartridge
- Y = Floppy Diskette

Standard Options

For RT-11 Systems:

QJ624 -A— Single-use license, binaries, documentation, support services (media: E, Q, T, Y)

For RSX-11M Systems:

QJ624 -A— Single-use license, binaries, documentation, support services (media: D, E, Q, T, Y)

ADDITIONAL SERVICES:

None

March 1978

AE-D607A-TC

ADDENDUM
SOFTWARE SUPPORT CATEGORIES

Each software product (hereinafter 'SOFTWARE') with a designated Support Category A or B in the applicable Software Product Description (SPD) existing at the time of order will be the current release at the time of delivery and will conform to the SPD. DIGITAL's sole obligation shall be to correct defects (nonconformance of the SOFTWARE to the SPD) as described below. Any SOFTWARE with a designated Support Category C will be furnished on an 'as is' basis.

For SOFTWARE with a designated Support Category A or B, DIGITAL will provide the services set forth below without additional charge.

CATEGORY A

1. Upon notification by customer to the nearest DIGITAL office that the computer system, including all required prerequisite hardware and software, is ready for the installation of the SOFTWARE, DIGITAL will install such SOFTWARE in any location within the contiguous forty-eight (48) United States, the District of Columbia, or a country in which DIGITAL or a subsidiary of DIGITAL has a software service facility. The notification must be received by DIGITAL and the system must be ready for installation within thirty (30) days after the delivery of the SOFTWARE to customer or DIGITAL will have no obligation to install. Installation will consist of: (1) verification that all components of the SOFTWARE have been received by customer, (2) loading the SOFTWARE, and (3) executing a DIGITAL sample procedure.
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CATEGORY B

During the one (1) year period following delivery, the services provided to the customer will be the same as set forth in 3 above.

CATEGORY C

SOFTWARE is provided on an 'as is' basis. Any software services, if available, will be provided at the then current charges.

DIGITAL shall have the right to make additional charges for any additional effort required to provide services resulting from customer use of other than current unaltered release of the SOFTWARE operated in accordance with the SPD.



Software Product Description

PRODUCT NAME: SSP-11, Version 1.1, PDP-11 Scientific Subroutine Package

SPD 15.45.3

DESCRIPTION:

The Scientific Subroutine Package is a collection of over 100 mathematical and statistical routines commonly required in scientific programming. The subroutines are written in FORTRAN and contain no I/O statements.

The algorithm used in each routine was selected on the basis of (1) minimum storage, (2) accuracy of the implementation (which was determined by its past history, among other factors), and (3) its speed of execution. In certain cases, these criteria were self-conflicting and the speed of execution was considered more important. Many of the larger statistical routines are provided as a collection of several smaller routines. This enables easier incorporation in larger programs requiring overlays.

Among the SSP-11 subroutines are the following:

ABSNT	detection of missing data	DCLA	replace diagonal with scalar
ARRAY	vector storage double dimensioned storage conversion	DCPY	copy diagonal of matrix into vector
AUTO	autocovariances	DISCR	discriminant functions
AVCAL	and operation	DMATX	means and dispersion matrix
AVDAT	data storage allocation	EIGEN	eigenvalues and eigenvectors of a real, symmetric matrix
BESI	I Bessel function	EXPI	exponential integral
BESJ	J Bessel function	EXSMO	triple exponential smoothing
BESK	K Bessel function	FORIF	Fourier analysis of a given function
BESY	Y Bessel function	FORIT	Fourier analysis of a tabulated function
BOUND	selections of observations within bounds	GAMMA	gamma function
CADD	add column of one matrix to column of another matrix	GAUSS	normal random numbers
CANOR	canonical correlation	GDATA	data generation
CCPY	copy column of matrix into vector	GMADD	add two general matrices
CCUT	partition column-wise	GMPRD	product of two general matrices
CEL1	elliptic integrals of the first kind	GMSUB	subtract two general matrices
CEL2	elliptic integrals of the second kind	GMTRA	transpose of a general matrix
CHISQ	CHI square test for a contingency table	GTPRD	transpose product of two general matrices
CINT	interchange two columns	KRANK	Kendall rank correlation
CORRE	means, standard deviations, and correlations	LEP	Legendre polynomial
CROSS	cross covariances	LOAD	factor loading
CS	Fresnel integrals	LOC	location in compressed-stored matrix
CSRT	sort matrix columns	MADD	add two matrices
CSUM	sum the columns of a matrix	MATA	transpose product of matrix by itself
CTAB	tabulate the columns of a matrix	MCPY	matrix copy
CTIE	adjoin two matrices column-wise	MEANQ	mean square operation
		MFUN	matrix transformation by function
		MOMEN	first four moments
		MPRD	matrix product (row into column)
		MSTR	storage conversion
		MSUB	subtract two matrices
		MTRA	transpose a matrix
		MULTR	multiple regression and correlation
		NROOT	eigenvalues and eigenvectors of a special nonsymmetric matrix
		ORDER	rearrangement of interger correlations
		PADD	add two polynomials
		PADDM	multiply polynomial by constant and add to another polynomial
		PCLA	replace one polynomial by another
		PLCD	complete linear synthetic division
		PDER	derivative of a polynomial
		PDIV	divide one polynomial by another

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PILD	evaluate polynomial and its first derivative	SSUB	subtract scalar from matrix
PINT	integral of a polynomial	SUBMX	build subset matrix
PGCD	greatest common divisor of two polynomials	SUBST	subset selection from observation matrix
PMPY	multiply two polynomials	TAB1	tabulation of data (one variable)
PNORM	normalize coefficient vector of polynomial	TAB2	tabulation of data (two variables)
POLRT	real and complex roots of a real polynomial	TALLY	totals, means, standard deviations, minimums, and maximums
PSUB	subtract one polynomial from another	TPRD	transpose product
PQSD	quadratic synthetic division of a polynomial	TRACE	cumulative percentage of eigenvalues
PVAL	value of a polynomial	TTSTT	tests on population means
PVSUB	substitute variable of polynomial by another polynomial	TWOAV	Friedman 2-way analysis of variance
QATR	integral of a given function by trapezoidal rule using Romberg's extrapolation method	UTEST	Mann-Whitney U-test
QSF	integral of equidistantly tabulated function by Simpson's Rule	VARMX	varimax rotation
QTEST	Cochran Q-test	WTEST	Kendall coefficient of concordance
RADD	add row of one matrix to row of another matrix	XCPY	copy submatrix from given matrix
RCPY	copy row of matrix into vector	MINIMUM HARDWARE REQUIRED:	
RANK	rank observations	<ul style="list-style-type: none"> Any valid RT-11 operating system configuration supporting FORTRAN IV/RT-11 Any valid RSX-11M operating system configuration supporting either FORTRAN IV/IAS-RSX or FORTRAN IV-PLUS 	
RECP	reciprocal function for MFUN	OPTIONAL HARDWARE:	
RCUT	partition by row	None	
RKGS	solution of a system of first order differential equations with given initial values by the Runge-Kutta method	PREREQUISITE SOFTWARE:	
RINT	interchanges two rows	<ul style="list-style-type: none"> RSX-11M, Version 3.1, and either FORTRAN IV/IAS-RSX, Version 2, or FORTRAN IV-PLUS, Version 2.5 RT-11, Version 3 and FORTRAN IV/RT-11, Version 2 	
RK2	tabulated integral of first order differential equation by Runge-Kutta method	OPTIONAL SOFTWARE:	
RK1	integral of first-order differential equation by Runge-Kutta method	None	
RSUM	sum the rows of a matrix	TRAINING CREDITS:	
RTAB	tabulate the rows of a matrix	None	
RSRT	sort matrix rows	SUPPORT CATEGORY:	
RTMI	determine root within a range by Mueller's iteration	B — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.	
RTIE	adjoin two matrices row-wise	UPDATE POLICY:	
RTWI	refine estimate of root by Wegstein's iteration	Software Updates, if any, released by DIGITAL during the one (1) year period following installation, will be provided to the customer for a media charge (includes no installation). After the first year, updates, if any, will be made available according to then prevailing DIGITAL policies.	
RTNI	refine estimate of root by Newton's iteration	ORDERING INFORMATION:	
SCLA	matrix clear and add scalar	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	
SADD	add scalar to matrix		
SDIV	matrix divided by a scalar		
SCMA	scalar multiply column and add to another column		
SICI	sine/cosine integral		
SIMQ	solution of simultaneous linear algebraic equations		
SMO	application of filter coefficients (weights)		
SMPY	matrix multiplied by a scalar		
SANK	Spearman rank correlation		
SRMA	multiply a row by a scalar and add to another row		

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only under the terms and conditions of a separate Software Program Sources Agreement between Purchaser and DIGITAL.

A single-use license only option is a license to copy the software previously obtained under license, and use such software in accordance with DIGITAL's Standard Terms and Conditions of Sale. The category of support applicable to such copied software is Category C.

The following key (D, E, Q, T, Y, Z) represents the distribution media for the product and must be specified at the end of the order number, e.g., QJ960-AD = binaries on 9-track magnetic tape.

D = 9-track Magnetic Tape
 E = RK05 Disk Cartridge
 Q = RL01 Disk Cartridge
 T = RK06 Disk Cartridge
 Y = RX01 Floppy Diskette
 Z = No hardware dependency

Standard Options

QJ960 -A— Single-use license, binaries, documentation, support services (media: D, E, Q, T, Y)

QJ960 -D— Single-use license only, no binaries, no documentation, no support services (media: Z)

Update Options

Users of SSP-11 whose specified Support Category warranty has expired may order under license the following software update at the then current charge for such update. The update is distributed in binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

QJ960 -H— Binaries, documentation (media: D, E, Y)

Users of SSP-11 whose specified Support Category warranty has not expired may order under license the following software update for the then current media charge. The update is distributed in binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

QJ960 -W— Binaries, documentation (media: D, E, Y)

ADDITIONAL SERVICES:

None

ADDENDUM SOFTWARE SUPPORT CATEGORIES

Each software product (hereinafter 'SOFTWARE') with a designated Support Category A or B in the applicable Software Product Description (SPD) existing at the time of order will be the current release at the time of delivery and will conform to the SPD. DIGITAL's sole obligation shall be to correct defects (nonconformance of the SOFTWARE to the SPD) as described below. Any SOFTWARE with a designated Support Category C will be furnished on an 'as is' basis.

For SOFTWARE with a designated Support Category A or B, DIGITAL will provide the services set forth below without additional charge.

CATEGORY A

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CATEGORY B

During the one (1) year period following delivery, the services provided to the customer will be the same as set forth in 3 above.

CATEGORY C

SOFTWARE is provided on an 'as is' basis. Any software services, if available, will be provided at the then current charges.

DIGITAL shall have the right to make additional charges for any additional effort required to provide services resulting from customer use of other than current unaltered release of the SOFTWARE operated in accordance with the SPD.



Software Product Description

PRODUCT NAME: CLASSIC RT-11 Curriculum Package, Version 1

SPD 15.87.0

DESCRIPTION:

The CLASSIC RT-11 Curriculum Package is a series of classroom tested materials that includes instructional computer programs.

The CLASSIC RT-11 Curriculum Package includes textbooks, resource guides, problem sets, visual aids, the Huntington II series of BASIC simulation programs, and the BASIC 101 Computer Games.

The CLASSIC RT-11 Curriculum materials include the following subjects and components:

- Mathematics (HUNTINGTON II)
- Science (HUNTINGTON II)
 1. Biology and Ecology
 2. Chemistry
 3. Earth Science
 4. Physics
- Computer Science (HUNTINGTON II)
 1. Computer Familiarization
 2. Hardware Familiarization
 3. Software
 4. Self-Paced Audio/Visual Courses
 5. Test Grading
 6. Individualized Instruction
- Social Studies (HUNTINGTON II)
- Business (HUNTINGTON II)
- Miscellaneous
 1. Bibliography of text and resources on uses of computer in education
 2. 101 BASIC Computer Games

MINIMUM HARDWARE REQUIRED:

Any valid MU-BASIC/RT-11 operating system configuration

OPTIONAL HARDWARE:

None

PREREQUISITE SOFTWARE:

RT-11, Version 2C or later, and MU BASIC/RT, Version 1 or later.

OPTIONAL SOFTWARE:

None

TRAINING CREDITS:

None

March 1978

SUPPORT CATEGORY:

C — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

UPDATE POLICY:

Software Updates, if any, released by DIGITAL during the one (1) year period following installation, will be provided to the customer for a media charge (includes no installation). After the first year, updates, if any, will be made available according to then prevailing DIGITAL policies.

ORDERING INFORMATION:

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The following key (Y) represents the distribution media for the product and must be specified at the end of the order number, e.g., QJE10-YY = sources on Floppy Diskette.

Y = Floppy Diskette

Standard Options

QJE10 -Y— Single-use license, source license, sources, documentation, no support services (media: Y)

ADDITIONAL SERVICES:

None

AE-D551A-TC

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ADDENDUM
SOFTWARE SUPPORT CATEGORIES

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CATEGORY B

During the one (1) year period following delivery, the services provided to the customer will be the same as set forth in 3 above.

CATEGORY C

SOFTWARE is provided on an 'as is' basis. Any software services, if available, will be provided at the then current charges.

DIGITAL shall have the right to make additional charges for any additional effort required to provide services resulting from customer use of other than current unaltered release of the SOFTWARE operated in accordance with the SPD.



DECUS SPECIAL INTEREST GROUPS

A DECUS Special Interest Group (SIG) is an activity whereby members of the DIGITAL Equipment Computer Users Society who share common interests in a particular field, join together to promote the interchange of information. Specialization may be in application areas such as education or industry, specific software systems such as OS/8 and RSX-11, or a specific main-frame such as the DECsystem-10/20.

SIG members derive numerous benefits from communicating with others who share specialized interests and who may wish to share their experiences. SIG s sponsor business meetings, tutorials, and workshops at the various chapter symposia which fulfill the two-fold purpose of fostering communication among users and between users and DIGITAL. Channeled communication provides DIGITAL and the users with insight into the direction of future developments. SIG s provide direct feedback to DIGITAL's in-house activities and have thereby made substantial contributions to OS/8, RSX-11, RSTS and TOPS-10.

User submitted articles, minutes of local meetings, and letters comprise the major portion of the individual SIG newsletters. Suggestions, hints, bug fixes, program plans, or questions of a non-commercial nature are suitable material for SIG newsletters.

SIG members are encouraged to make presentations at the SIG sessions held during DECUS Symposia.

The semi-annual U.S. Symposia sessions are organized by special interest areas. Submissions received from the user community are reviewed by symposia committee members from the special interest groups for appropriate placement on the agenda.

Special Interest Group participation in the review of programs submitted to the DECUS Program Library provides an opportunity to improve the quality and utility of programs available to you and to fellow users.

DIGITAL standards are issued to DECUS members for review and on the theory and philosophy of the standards. DECUS is a voting member of ANSI X3. Users are encouraged to register their areas of expertise with DECUS and assist with reviewing standards. SIG s often play a role in this process.

Below is a list of U.S. based Special Interest Groups within DECUS.

If you would like information regarding membership in any of the Special Interest Groups, contact DECUS U.S. Chapter, 129 Parker Street, PK3-1/E55, Maynard, Massachusetts 01754 or one of the other DECUS Chapter offices in Kanata, Sidney or Geneva.

MCPU SIG - Multi-CPU Special Interest Group
NETSIG - Networks Special Interest Group
Biomed SIG - Biomedical Special Interest Group
RSTS SIG - RSTS and RSTS/E Special Interest Group
SIGIG - Special Interest Group on Interactive Graphics
ESIG - Engineering Applications Special Interest Group
SIG-18 - 18-Bit Users Special Interest Group
12-Bit SIG - 12-Bit User Special Interest Group
RSX-11/IAS SIG
RT-11 SIG
EDUSIG - Educational Users Special Interest Group
DEBUG - Digital Equipment Business Users Group
MUSIG - Mumps Special Interest Group
PASCAL SIG
DBMS SIG
TECO SIG
SIGIL - Special Interest Group on Implementation Languages
LSI-11 SIG
FOCAL SIG
STANDARDS SIG



RT-11 SPECIAL INTEREST GROUP

A Special Interest Group has been formed to serve users of RT-11. The organization of the SIG consists of a SIG Chairman and working committees for standards, documentation, library submissions, newsletter, and help for new users.

Submissions to the newsletter should be directed to:

*John T. Rasted
CAM Systems, Inc.
17 Brown Street
Waterbury, CT 06702
(203) 757-8010*

Other communications can be sent to:

*Thomas J. Provost
P. O. Box 95
Middleton, MA 01949
(617) 774-2370
(617) 245-6600 (Boston tie line)*

or

*Thomas J. Provost
RT-11 SIG Chairman
c/o DECUS
129 Parker Street, PK3-1/E55
Maynard, MA 01754
(617) 897-5111, ext: 2414*

SIG's activities encompass the following:

1. Preparation of a SIG newsletter (user submissions are strongly encouraged).
2. Exchange of user-written programs. This exchange could include TASKS representing user-written extensions to RT-11 (including, but not limited to device drivers) as well as utility and applications programs, etc.
3. Establishment of communications with the DECUS staff to obtain for SIG members early information on RT-11 related additions to the DECUS Library. These communications will also serve to provide prompt testing of such submissions.
4. Establishment of user input to appropriate groups within DEC, so that they will receive user feedback on any additions or needed changes to RT-11. Additionally, SIG members may receive early warning from DEC about RT-11 changes.
5. Establishment of SIG-maintained files of RT-11 errors and error solutions, where they exist, independent of DEC publications.
6. Establishment of RT-11 "Welcome Wagon" type services to aid new users.
7. Coordination of user input to standards and documentation work.

If you wish to become a member of the RT-11 SIG, please fill out the form below and return it to the DECUS Office.
(Please type or print).

NAME _____ *DECUS MEMBERSHIP NO. _____

AFFILIATION _____

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____

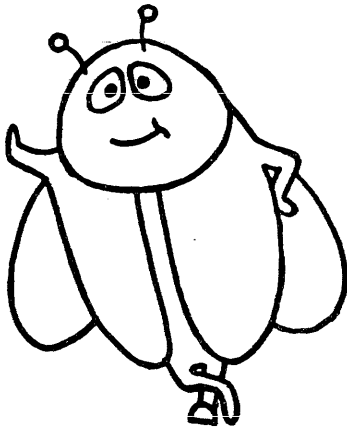
Are you registered with DEC as an RT-11 user? _____

Version Number _____

Fortran? _____

Basic? _____

**Please note one must be a member of DECUS prior to requesting RT-11 SIG involvement. For general membership information, contact the DECUS Office, 129 Parker Street, Maynard, MA 01754*



debug

DEBUG is dedicated to establishing an interchange of ideas between business users of DEC computers in accounting allied applications, and between the users and DEC.

DEBUG MEMBERSHIP APPLICATION

Name _____ Title _____

Firm _____

Address _____ Telephone _____

City _____ State _____ Zip _____

DECUS NO. *

_____ BACKGROUND AND EXPERIENCES _____

Like all non-profit service organizations, DEBUG can best serve its members by utilizing the skills, experiences and viewpoints of its own membership. To let us know where your own experiences and interests lie, we ask that you fill out the following vitae form. You may, of course, decline to do so – we will treat your response with respect and confidentiality in any case.

ACADEMIC BACKGROUND	favorite subject area	minor subject area	also studied
BUSINESS AREAS AND/OR FUNCTIONS	most experience with	fair experience with	worked around
COMPUTER SYSTEMS WORKED WITH	favorite system, language	also experienced with	smattering of

*Please note one must be a member of DECUS prior to requesting DEBUG SIG involvement. For general membership information, contact the DECUS office, 129 Parker Street, PK3-1/E55, Maynard, MA 01754.

I would consider:

- Chairing a DEBUG session
- Organizing a session
- Working with the DEBUG steering committee

2/18/76



DIGITAL EQUIPMENT COMPUTER USERS SOCIETY
Special Interest Group in Implementation Languages

SIGIL

A Special Interest Group on System Implementation Languages, Tools and Techniques (SIGIL) was formed at the 1973 Fall DECUS Symposium.

The initial goals of the group are to provide the following:

1. Interchange of ideas and modules among programmers working in the system implementation area. The chief aim in this area is to avoid inventing square wheels when someone else has already developed round ones. The contributions in this area can range from core management modules to internal documentation practices, with distribution by newsletter.
2. Work with DEC Software Development for the user community on improving the existing languages used for systems implementation (MACRO-10, BLISS-10 and ALGOL). This is envisioned as a small group of users willing to spend the time and effort necessary.

To make a success of SIGIL, or to widen the area of interest across product lines, requires active participation of the members. Submissions to the newsletter or other communications may be sent to the following address:

SIGIL
c/o DECUS Office
129 Parker Street, PK3/E55
Maynard, MA 01754

**Please note one must be a member of DECUS prior to requesting SIGIL involvement. For general membership information, contact the DECUS Office, 129 Parker Street, Maynard, MA 01754*

To join SIGIL, please fill out the form below and return it to the DECUS Office.

Are you a DECUS Member? _____ DECUS Membership Number _____

NAME _____

AFFILIATION _____

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____

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

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