

# digital

## Software Product Description

**PRODUCT NAME: FORTRAN IV/RSTS/E, Version 2.5**

**SPD 12.41.10**

### **DESCRIPTION:**

FORTRAN IV is an extended implementation of the FORTRAN language based on the ANSI FORTRAN, X3.9-1966 standard. It operates under the RSTS/E Operating System. The PDP-11 FORTRAN IV language includes the following extensions to the ANSI standard:

- General expressions allowed in all meaningful contexts
- Mixed-mode arithmetic
- BYTE data type for character manipulation
- ENCODE, DECODE statements
- PRINT, TYPE, ACCEPT input/output statements
- Direct-access unformatted input/output DEFINE FILE statement
- Comments allowed at end of each source line
- PROGRAM statement
- OPEN and CLOSE file access control statements
- List-directed input/output

The PDP-11 FORTRAN IV compiler is a fast, one-pass compiler. Compiler options allow program size versus execution speed (threaded code vs. in-line code) tradeoffs. FORTRAN IV compiler optimizations include:

- Common subexpression elimination
- Local code tailoring
- Array vectoring
- Optional in-line code generation for integer and logical operations

MACRO-11 assembly language subroutines can be called from FORTRAN IV programs.

### *Object Time System*

FORTRAN IV includes a set of object modules, called the Object Time System (OTS), that is selectively linked with compiler-produced object modules to produce an executable program.

The RSTS/E system provides several special features for FORTRAN IV. FORTRAN programs may be developed under RSTS/E and output in absolute binary format for execution on a stand-alone PDP-11 system with minimal peripherals, or for loading into ROM or PROM memory.

Although MACRO-11 subroutines may be invoked from FORTRAN IV programs, no facility is provided for monitor communication or input/output from within these MACRO subprograms.

### **MINIMUM HARDWARE REQUIRED:**

Any valid RSTS/E configuration with at least 64K bytes of memory for user job space.

### **OPTIONAL HARDWARE:**

FORTRAN IV supports all devices supported by the operating system.

FORTRAN IV generated code can be selected to support the following arithmetic hardware options:

- KE11-A Extended Arithmetic Element
- KE11-B Extended Arithmetic Element
- KE11-E Extended Instruction Set
- KE11-F Floating Instruction Set
- KEV11 Extended Arithmetic Chip

The FORTRAN IV OTS additionally supports the FP11 floating point processor.

### **PREREQUISITE SOFTWARE:**

RSTS/E Operating System, Version 7.0

### **OPTIONAL SOFTWARE:**

None

### **TRAINING CREDITS:**

None

### **SUPPORT CATEGORY:**

DIGITAL SUPPORTED

FORTRAN IV/RSTS/E is a DIGITAL Supported Software Product.

### **SOFTWARE INSTALLATION:**

CUSTOMER INSTALLED

FORTRAN IV/RSTS/E is a software product engineered to be installed by the customer and includes other Software Product Support services listed below.

### **SOFTWARE PRODUCT SUPPORT:**

FORTRAN IV/RSTS/E includes standard warranty services as defined in the Software Support Categories Addendum of this SPD.

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- D = 9-track 800 BPI Magtape (NRZI)
- E = RK05 Disk Cartridge
- F = 7-track Magtape
- H = RL02 Disk Cartridge
- M = 9-track 1600 BPI Magtape (PE)
- Q = RL01 Disk Cartridge
- T = RK06 Disk Cartridge
- V = RK07 Disk Cartridge
- Z = No hardware dependency

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- QR435 -D— Single-use license only, no binaries, no documentation, no support services (media: Z)

*Update Options*

Users of FORTRAN IV/RSTS/E 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.

- QR435 -H— Binaries, documentation (media: D, E, F, H, M, Q, T, V)
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*Miscellaneous Options*

- QR435 -G— Documentation only kit (media: Z)

**ADDITIONAL SERVICES:**

Post-warranty Software Product Services for this software product are available with the prerequisite being the purchase of the RSTS/E Self-Maintenance Service for Software. Customers should contact their local DIGITAL office for additional information.