

# digital

# Software Product Description

**PRODUCT NAME: FORTRAN IV/VAX to RSX, Version 2.5**  
PDP-11 Cross Compiler

**SPD 25.17.3**

## **DESCRIPTION:**

FORTTRAN IV is an extended FORTRAN implementation based on American National Standard (ANSI) FORTRAN, X3.9-1966. The compiler operates in compatibility mode under the RSX-11M AME on VAX/VMS systems. Programs compiled and tasks built can be transported to remote RSX-11M or RSX-11S target systems or executed on VAX/VMS in compatibility mode.

The 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, and ACCEPT input/output statements
- Direct-access unformatted input/output DEFINE FILE statement
- Comments allowed at the end of each source line
- PROGRAM statement
- OPEN and CLOSE file access control statements
- List-directed input/output

Additionally, virtual arrays are supported on target systems with memory management directives. Virtual arrays are memory-resident and require enough main memory to contain all elements of all arrays.

The PDP-11 FORTRAN IV compiler is a fast, one-pass compiler. Compiler options allow program size versus execution speed (threaded code versus 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*

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

### *Compatibility*

FORTTRAN IV/VAX to RSX, Version 2.5 is equivalent to Version 2.5 of FORTRAN IV/IAS-RSX.

### **MINIMUM HARDWARE REQUIRED:**

Any valid VAX/VMS system configuration for compiler execution.

EIS hardware is required for virtual arrays on RSX target systems.

### **OPTIONAL HARDWARE:**

FORTTRAN IV supports all hardware supported by the operating system.

When executed on remote RSX-11M or RSX-11S target systems, 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:**

VAX/VMS, Version 2.0

### **OPTIONAL SOFTWARE:**

None

### **TRAINING CREDITS:**

None

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**SUPPORT CATEGORY:**

DIGITAL SUPPORTED

FORTRAN IV/VAX to RSX is a DIGITAL Supported Software Product.

**SOFTWARE INSTALLATION:**

CUSTOMER INSTALLED

FORTRAN IV/VAX to RSX 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/VAX to RSX includes standard warranty services as defined in the Software Support Categories Addendum of this SPD.

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The following key (D, E, H, M, Q, R, T, V, Y, Z) represents the distribution media for the product and must be specified at the end of the order number, e.g., QE107-AY = binaries on RX01 Floppy Diskette.

D = 9-track 800 BPI Magtape (NRZI)  
 E = RK05 Disk Cartridge  
 H = RL02 Disk Cartridge  
 M = 9-track 1600 BPI Magtape (PE)  
 Q = RL01 Disk Cartridge  
 R = Microfiche  
 T = RK06 Disk Cartridge  
 V = RK07 Disk Cartridge  
 Y = RX01 Floppy Diskette  
 Z = No hardware dependency

QE107 -A— Single-use license, binaries, documentation, support services (media: Y)

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QE107 -D— Single-use license only, no binaries, no documentation, no support services, (media: Z)

*Sources/Listings Options*

QP230 -E— Sources (media: D, E, H, M, Q, T, V)

QP230 -F— Sources Listings (media: R)

*Update Options*

Users of FORTRAN IV/VAX to RSX 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.

QE107 -H— Binaries, documentation (media: Y)

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*Miscellaneous Options*

QE107 -G— Documentation only kit (media: Z)

**ADDITIONAL SERVICES:**

None