

Software Product Description

PRODUCT NAME: VAX-11 FORTRAN IV-PLUS, Version 1

SPD 25.16.1

DESCRIPTION:

FORTRAN IV-PLUS is an extended FORTRAN implementation based on American National Standard (ANSI) FORTRAN, X3.9-1966. It operates under the VAX/VMS operating system to take advantage of the floating point and character string instruction set and the virtual memory system. VAX-11 FORTRAN IV-PLUS includes the following extensions to the ANSI standard:

- General expressions allowed in all meaningful contexts
- Mixed-mode arithmetic
- CHARACTER data type, including character variables, arrays, and functions
- BYTE data type
- INTEGER*2 and LOGICAL*2 data types in addition to INTEGER*4, LOGICAL*4, REAL*4, REAL*8, and COMPLEX*8
- type*size notation as well as the standard notation for data types (e.g., REAL*4, LOGICAL*1)
- IMPLICIT statement
- Block IF-THEN-ELSE statements
- Generalized DO loops
- Statement list optional in assigned GOTO
- ENTRY statement
- OPEN and CLOSE file access control statements
- END= and ERR= in Read and WRITE statements
- Direct access input/output: formatted and unformatted
- List directed input/output
- ENCODE, DECODE statements
- PRINT, TYPE, ACCEPT input/output statements
- DEFINE FILE statement
- Constants and expressions in WRITE, PRINT, and TYPE statement.
- INCLUDE statement
- PARAMETER statement
- PROGRAM statement
- 15-character symbolic names including \$ and —
- Comments allowed at end of each source line
- Lower, as well as upper, bounds specification in array declarators
- Generic function selection based on argument data type for FORTRAN defined functions
- Alternate RETURN specifiers in CALL statements

- Debug statements in source

Additional features include:

- Standard calls to system service procedures
- Generation of symbols for symbolic debugger
- Generation of sharable code

VAX-11 FORTRAN IV-PLUS compiler optimizations include:

- Optimizations of arithmetic IF, logical IF, and block IF-THEN-ELSE
- Common subexpression elimination
- Removal of invariant expressions from DO loops
- Allocation of general registers across DO loops
- Constant folding

MINIMUM HARDWARE REQUIRED:

Any valid VAX/VMS operating system configuration

OPTIONAL HARDWARE:

FP780 floating point accelerator

PREREQUISITE SOFTWARE:

VAX/VMS operating system, Version 1 or later

OPTIONAL SOFTWARE:

None

TRAINING CREDITS:

None

SUPPORT CATEGORY:

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

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None

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