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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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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**Standard Options**

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<td>DZ</td>
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**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**

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.