Software Product Description

DESCRIPTION

FORTRAN IV is an extended FORTRAN implementation based upon the former American National Standard (ANSI) FORTRAN, X3.9-1966. The compiler operates under the VAX-11 RSX layered product on VMS systems. Compiled programs can be transported to supported RSX-11M-PLUS and RSX-11M. In addition, programs that do not utilize virtual array support can be task built under VAX-11 RSX. The resulting task image may be executed on RSX-11M, RSX-11M-PLUS or RSX-11S systems or the VMS System under VAX-11 RSX. Programs utilizing virtual arrays must be task built and executed on the target PDP-11 that is configured with appropriate memory management hardware and operating system support.

The FORTRAN IV language includes the following extensions to the 1966 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 compiler. Compiler options allow program size versus execution speed (threaded code versus in-line code) tradeoffs. FORTRAN IV compiler optimizations include:

- Common sub-expression elimination
- Local code tailoring

- Array vectoring
- Optional in-line code generation for integer and logical operations

FORTRAN IV compiler can optionally generate in-line code for the following instruction sets for execution on the target system:

- EIS
- FPU

In addition, FORTRAN-IV can generate code for FIS and EAE, but these instructions sets are no longer supported by the compiler.

Note: Only code generated for the EIS instruction set is supported for execution on VMS.

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 are selectively linked with compiler-produced object modules to produce an executable program.

HARDWARE REQUIREMENTS

VAX configuration as specified in the System Support Addendum (SSA 25.17.11-x).

EIS hardware is required for virtual array support on RSX target systems.

OPTIONAL HARDWARE

When executed on remote RSX-11M, RSX-11M-PLUS, or RSX-11S target systems, FORTRAN IV generated code can be selected to support the standard hardware options.

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

SOFTWARE REQUIREMENTS*

VMS Operating System

VAX-11 RSX

* Refer to the System Support Addendum (SSA 25.17.11-x) for availability and required versions of Prerequisite software

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software

FORTRAN IV/VAX to RSX, Version 2.8
PDP-11 Cross Compiler

<div align="right">SPD 25.17.11</div>

ORDERING INFORMATION

Software Licenses: QL-107A*-**
Software Media: QA-107A*-**
Software Documentation: QA-107AA-GZ
Software Product Services: QT-107A*-**

* Denotes variant fields. For additional information on available licenses, services and media, refer to the appropriate price book.

SOFTWARE WARRANTY

Warranty for this software product is provided by DIGITAL with the purchase of a license for the product as defined in the Software Warranty Addendum of this SPD.

SOFTWARE LICENSING

This software is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions. For more information about DIGITAL's licensing terms and policies, contact your local DIGITAL office.

LICENSE MANAGEMENT FACILITY SUPPORT

This layered product supports the VMS License Management Facility. License units for this product are allocated on a CPU-capacity basis.

For more information on the License Management Facility, refer to the VMS Operating System Software Product Description (SPD 25.01.xx) or the Licnese Management Facility manual of the VMS Operating System documentation set.

SOFTWARE PRODUCT SERVICES

A variety of service options are available from DIGITAL. For more information contact your local DIGITAL office.

System
Support
Addendum

PRODUCT NAME: **FORTRAN IV/VAX to RSX**
PDP-11 Cross Compiler, Version 2.8

HARDWARE REQUIREMENTS

Processor Support

VAX: VAX 6210, VAX 6220, VAX 6230, VAX 6240,
       VAX 8200, VAX 8250, VAX 8300, VAX 8350,
       VAX 8500, VAX 8530, VAX 8550, VAX 8600,
       VAX 8650, VAX 8700, VAX 8800, VAX 8810,
       VAX 8820, VAX 8830, VAX 8840, VAX 8974,
       VAX 8979

       VAX-11/725, VAX-11/730, VAX-11/750, VAX
       11/780, VAX 11/782, VAX-11/785

Not Supported on any configuration: MicroVAX,
VAXstation, VAXserver

Block Space Requirements (Block Cluster Size = 1):

Disk space required for installation:2,350 blocks (1,203K
bytes)

(350 blocks for Release Notes)

Disk space required for use (permanent):1,150 blocks
(589K bytes)

(350 blocks for Release Notes)

These counts refer to the disk space required on the
system disk. The sizes are approximations; actual sizes
may vary depending on the users system environment,
configuration and software options selected. Verify that
within this disk space you have 400 contiguous blocks
for the compiler.

Processor Support (Target System)

Any valid RSX-11M, RSX-11M-PLUS, RSX-11S, or
Micro/RSX system configuration for execution of the task
images produced. A Floating Point Processor (FPP) is
required on target systems where the user's source code
exercises floating point arithmetic.

FORTRAN-IV can optionally generate code for the fol-
lowing arithmetic instruction sets:

- EIS

- FPU

In addition, FORTRAN-IV can generate code for FIS and
EAE, but these instruction sets are no longer supported
by the compiler.

OPTIONAL HARDWARE

None

CLUSTER ENVIRONMENT

This layered product is fully supported when installed on
any valid licensed VAXcluster* configuration without re-
strictions. The HARDWARE REQUIREMENTS sections
of this product's Software Product Description and Sys-
tem Support Addendum detail any special hardware re-
quired by this product.

*   V5.x VAXcluster configurations are fully described in
    the VAXcluster Software Product Description
    (29.78.xx) and include CI, Ethernet, and Mixed Inter-
    connect configurations.

SOFTWARE REQUIREMENTS

VMS Operating System V4.7 - V5.0

VAX-11 RSX V2.3 - V2.4

VMS Tailoring

This product runs under VAX-11 RSX and for VMS V5.x
systems, the following VMS classes are required for full
functionality of this layered product:

- VMS Required Saveset

For more information on VMS classes and tailoring, refer
to the VMS Operating System Software Product Descrip-
tion (SPD 25.01.xx).

GROWTH CONSIDERATIONS

The minimum hardware/software requirements for any
future version of this product may be different from the
minimum requirements of the current version.

DISTRIBUTION MEDIA

DISK: RX01

TAPE: 9-track 1600 BPI Magtape (PE), TU58 Cartridge

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The above information is valid at time of release. Please contact your local DIGITAL office for the most up-to-date information.