



# Software Product Description

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PRODUCT NAME: CLASSIC OS/8 FORTRAN IV

SPD 4.11.1

DESCRIPTION:

The CLASSIC (CLASSroom Interactive Computer) system is one of Digital Equipment Corporation's educational computer systems. It was designed for use in instructional applications in all levels of education for problem solving and computational tasks. Compact, powerful, and easy to use and operate, the CLASSIC system is ideal for use by computer knowledgeable and inexperienced users alike.

The CLASSIC system software, CLASSIC OS/8 FORTRAN IV, is a pure subset of the standard OS/8 operating system. The subset has been defined for ease of use in any educational environment. Yet the power of the CLASSIC system is not limited by this software system design. This software contains a prebuilt system monitor which contains only the device handlers needed by the standard CLASSIC hardware package. CLASSIC OS/8 FORTRAN IV is contained on a single flexible disk.

The CLASSIC OS/8 FORTRAN IV system includes the following programs:

Concise Command Language (CCL) - Provides the user with an extensive set of terminal commands including COPY, DATE, DIRECT, LIST, DELETE, EDIT, RENAMF, SQUISH, TYPE, and ZERO.

PIP (Peripheral Interchange Program) is a versatile file manipulation routine. PIP may be used to copy the CLASSIC system disk onto a blank disk.

FOTP (File Oriented Transfer Program) allows the user to transfer files and/or groups of files between two devices.

EDIT is used to create or modify source and data files for use as input to the FORTRAN IV language compiler. EDIT contains powerful text manipulation commands for quick and easy interactive editing.

FORTRAN IV is a widely-accepted programming language made up of formatted statements that are very similar to the language of conventional algebra and higher mathematics. The FORTRAN IV language is an extended version of ANSI FORTRAN Standard

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All the standard FORTRAN language features except double precision arithmetic are supported by CLASSIC FORTRAN IV. It provides an easy-to-use, versatile system that finds wide application whenever fast, powerful mathematical capabilities are required.

FORTRAN IV permits generalized array subscripting and one- to seven-dimensional arrays. This makes bulk data easier to store and access than in any other PDP-8 language. FORTRAN IV also offers direct access I/O. With this additional feature, the user may directly reference any record in a data file. In the traditional scientific area, direct access I/O provides the capability for virtual arrays; in the commercial area, it greatly simplifies and speeds up access to data bases.

Mixed mode arithmetic is implemented under FORTRAN IV, along octal constants, logical IF statements, and general arithmetic expressions in IF statements. In addition, FORTRAN IV provides for initial values in specification statements and a full set of Boolean operators.

Text manipulation is greatly facilitated by Hollerith field specifications for text, as well as literals and constants. DATA statements, BLOCK DATA, and common and EQUIVALENCE are fully supported. There is also provision for arithmetic function definition. All features are optimized with respect to execution timing.

CLASSIC FORTRAN IV has an extensive library of mathematical functions for calculating logarithms, absolute values, and trigonometric functions. Other functions facilitate the manipulation of character strings.

Overlays are another key design feature of FORTRAN IV, which provides a tree-structured dynamic overlay mechanism that automatically loads overlays on call, without the need for call overlay, call link or call chain statements. As many as seven independent overlay levels may be defined with up to 16 overlays in each level. Overlays allow programs larger than the main memory size to be run on CLASSIC.

Error diagnostics are an important aspect of the FORTRAN language. Like any other good FORTRAN compiler, FORTRAN IV detects, flags, and explains many format errors, giving clear English comments. However, beyond that, OS/8 FORTRAN IV provides complete error traceback, showing the entire flow of program control that terminated in the erroneous statement.

The high speed and full language capability of FORTRAN IV are ideally suited to an educational environment, in which students are expected to perform computational tasks on large amounts of data, as well as learn the FORTRAN language. The large set of

diagnostics makes it easy for a student to locate and correct his errors.

MINIMUM HARDWARE REQUIRED:

CLASSIC system

OPTIONAL HARDWARE SUPPORTED:

None

PREREQUISITE SOFTWARE:

None

OPTIONAL SOFTWARE SUPPORTED:

None

TRAINING CREDITS:

None

SUPPORT CATEGORY:

C, all services for a fee.

UPDATE POLICY:

Any future updates will be available at the prevailing handling and service charges.

ORDERING INFORMATION:

This software is furnished under a license for use on a single CPU and can be copied and modified (with inclusion of DIGITAL's copyright notice) only for use on such CPU, except as may otherwise be provided in writing by DIGITAL.

CLASSIC OS/8 FORTRAN IV software is a CLASSIC option and may be purchased only by licensed CLASSIC OS/8 BASIC users.

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