



Software Product Description

PRODUCT NAME: APL-E, Version 10, KA10 Extended APL System

SPD 8.10.3

DESCRIPTION:

APL (A Programming Language) is a concise programming language suitable for manipulating numeric and character array-structured data. It includes operators for array calculations. APL-E is an extended APL system for the KA10-based DECSYSTEM-10. It is a conversational system which allows the programmer to interact with the APL system and running programs.

Features:

- Multiple statements can appear in a single line.
- Statement branching can occur anywhere in a statement line.
- The system provides immediate-mode line editing of complex APL expressions.
- The language permits user-controlled tab positioning for I/O operations.
- System command formats use standard DECSYSTEM-10 file conventions.
- The user's active workspace size is dynamically variable.
- The workspace symbol table size is dynamically variable.
- The user workspace can be saved on disk, DEC-tape, or magnetic tape.
- The language includes the extended single operators Divide-Quad, Execute, Quote, and Dyadic-Format, which allow the user to:
 1. solve a set of linear equations
 2. take the inverse of a matrix
 3. solve an over-determined set of linear equations
 4. perform unlimited evaluation of a character string (commands, function definitions, statement lines)
 5. write user-defined functions to perform output formatting and function editing
- User-level file access is provided for:
 1. standard ASCII sequential files
 2. internal format random access files
 3. internal format sequential files
 4. immediate mode output to any suitable device through OUTPUT command

Restrictions:

- The system does not provide double-precision data

manipulation.

The extended APL system code is sharable and resides in the DECSYSTEM-10 high segment. The high segment is 24K 36-bit words. Each user's low segment contains approximately 7,500 characters of system variables plus the user's workspace area (which is dynamically variable). User workspaces are typically 5 to 6K words in size.

MINIMUM HARDWARE REQUIRED:

Any valid DECSYSTEM-10 configuration which includes:

- a KA10 central processor
- 30K words user memory
- 33K words minimum permanent file storage
- standard ASCII or 2741 hard-copy or display terminal

OPTIONAL HARDWARE:

Supports any unit record, terminal or mass storage device supported by the TOPS-10 operating system.

PREREQUISITE SOFTWARE:

TOPS-10 operating system, Version 6.02 or later

OPTIONAL SOFTWARE:

None

TRAINING CREDITS:

None

SUPPORT CATEGORY:

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

UPDATE POLICY:

No updates are planned for this product.

ORDERING INFORMATION:

All binary licensed software, including any subsequent updates, is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of the DIGITAL copyright notice and any DIGITAL proprietary notices on the software) only for use on

such CPU. All source licensed software is furnished only under the terms and conditions of a separate Software Program Sources Agreement between Purchaser and DIGITAL.

The following key (F, P) represents the distribution media for the product and must be specified at the end of the order number, e.g., QHAPE-AP = binaries on 9-track magnetic tape.

F = 7-track Magnetic Tape
 P = 800 bpi 9-track Magnetic Tape

Standard Options

QHAPE -C— Single-use license, binaries, documentation, no support services (media: F, P)

ADDITIONAL SERVICES:

None

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.