

# Software Product Description

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**PRODUCT NAME: RMS-11K for RSX-11M, Version 1.5, Record Management Services-11, Keyed Access**

**SPD 12.50.1**

## **DESCRIPTION:**

RMS-11K provides keyed access record management services for the RSX-11M operating system. RMS-11K is comprised of a set of run-time service routines and utility programs that enable keyed access data files to be defined, populated, updated, and maintained on direct access storage devices. The RMS-11K run-time service routines provide an interface between PDP-11 multi-programmed operating systems and user developed application programs. User programs include RMS-11K extended syntax statements or function calls that provide logical record input/output access to key structured data files.

Original data record and file attributes are established by interactive utility program functions. RMS-11K keyed access files can be initialized either from sequential or relative file input to a utility program or by being directly loaded by a user program. Once established, application programs retrieve, modify, or store logical data records by using key field reference values. RMS-11 run-time service routines provide all necessary access control, data buffering, record blocking/deblocking, and file structure maintenance. Additional utility program functions allow data files to be logically moved, copied, and restored from one storage device to alternate logical or physical storage devices.

RMS-11K facilities are used as an extended option to the standard RMS-11 software provided with PDP-11 multi-programmed operating systems. RMS-11K software supports the multi-key indexed sequential file organization and access method described below.

### *Multi-Key Indexed Sequential*

RMS-11K provides keyed access data file support in the form of a multi-key indexed sequential file organization. The record management services file access technique is called Indexed Sequential Access Method (ISAM). Each logical data record within the file has associated with it one or more key field values used to store and retrieve records. Records can be accessed either randomly by specifying a key field value, or sequentially in the order associated with one of the key fields. The indexes are created and maintained by RMS-11K software routines. Key fields must appear within data records.

User programs are provided with logical data record access to indexed files through extended syntax program statement or function calls. The form of the statement is dependent upon the application language interface. The functional facilities are as follows:

- OPEN—establish file access mode and ready for processing
- CLOSE—clear processing and release file access rights
- READ/GET—move a logical record into user program access space
- WRITE/PUT—insert a new record into a file
- REWRITE/UPDATE—move contents of an altered record into file
- DELETE—remove an existing record from a file

### *Utility Programs*

A set of utility programs are provided for the support of keyed access data files. These programs are available as extended forms of the standard RMS-11 software used for sequential and relative file structures. The functions provided are:

DEFINE (DFN)—establish RMS-11K file and record parameters

DEFINE (DEF)—tutorial mode utility to define RMS-11K files

BACKUP—create a backup copy of one or more keyed access data files from a direct access device to another logical device or physical media (typically, magnetic tape)

RESTORE—recreate from a backup copy the original keyed access data file on a direct access device or physical media

CONVERT—initially load or add records to a keyed access output file from input data recorded on either a sequential relative, or another keyed access file; creates, supercedes or extends a sequential output file from a keyed access input file

DISPLAY—lists attributes of keyed access files and records

**MINIMUM HARDWARE REQUIRED:**

Any valid RSX-11M configuration with memory management that meets the minimum memory requirements for the operating system and language processors, plus an additional 4K words.

**OPTIONAL HARDWARE:**

Supports any mass storage, unit record or terminal device supported by the prerequisite software with the following exceptions:

- RX11 Floppy disk system
- TA11 Cassette system
- TC11 DECTape system

A 9-track magnetic tape transport is recommended for use of RMS-11 back-up and restore utility functions.

**PREREQUISITE SOFTWARE:**

RSX-11M, Version 3.1 or later

**OPTIONAL SOFTWARE:**

PDP-11 COBOL  
PDP-11 BASIC-PLUS-2

**TRAINING CREDITS:**

None

**SUPPORT CATEGORY:**

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

**UPDATE POLICY:**

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.

**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.

Standard options with no support services are only available after the purchase of one supported license. When a software license is ordered without support services, the category of support applicable to such software is Category C.

A single-use license only option is a license to copy the software previously obtained under license, and use such software in accordance with DIGITAL's

Standard Terms and Conditions of Sale. The category of support applicable to such copied software is Category C.

The following key (D, E, Q, T, V, Z) represents the distribution media for the product and must be specified at the end of the order number, e.g., QP901-AD = binaries on 9-track magnetic tape.

- D = 9-track Magnetic Tape
- E = RK05 Disk Cartridge
- Q = RL01 Disk Cartridge
- T = RK06 Disk Cartridge
- V = RK07 Disk Cartridge
- Z = No hardware dependency

*Standard Options*

- QP901 -A— Single-use license, binaries, documentation, support services (media: D, E, Q, T, V)
- QP901 -C— Single-use license, binaries, documentation, no support services (media: D, E, Q, T, V)
- QP901 -D— Single-use license only, no binaries, no documentation, no support services (media: Z)

*Update Options*

Users of RMS-11K, Version 1, whose specified Support Category warranty has expired may order under license the following software update at the then current charge for such update. The update is distributed in binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

- QP901 -H— Binaries, documentation (media: D, E, Q, T, V)

Users of RMS-11K, Version 1, whose specified Support Category warranty has not expired may order under license the following software update for the then current media charge. The update is distributed in binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

- QP901 -W— Binaries, documentation (media: D, E, T)

**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.