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Software Product Description

PRODUCT NAME: XVM/DOS, Version 1A **SPD 18.2.1**

DESCRIPTION:

XVM/DOS is a combination of disk resident interactive and batch operating systems designed to provide serial computational capability to users of DIGITAL XVM and PDP-15 computer systems. XVM/DOS supports both single processor systems and dual processor UNICHANNEL systems.

The DOS Monitor incorporates all the functions of DOS-15 and adds the power of 128K word addressing. The user controls the operating system by instructions to the monitor. The monitor runs the jobs, supervises the data and file manipulation, and interacts with the operator/user in a simple, conversational manner.

The Batch Operating SubSystem (BOSS) is a dedicated batch processing extension to the DOS software system.

BOSS and DOS share a common resident monitor which makes it possible to switch from one mode of operation to the other easily. BOSS has a unique and versatile job control language which can be modified by the user and tailored to his specific needs.

Following are some notable features of the software:

Interactive Operation
An interactive keyboard/program monitor permits a device-independent programming and automatic calling and loading of XVM/DOS system and user programs.

DOS Command Batching Operation
An alternative to interactive operation is a Batch Processing capability of the monitor permitting DOS user commands to be entered via paper tape, disk, DECtape, card reader or magtape. This allows many programs to be run without operator intervention or supervision. This capability is distinct from BOSS, the batch operating software.

BOSS Batch Operating SubSystem
BOSS provides another alternative to interactive operation with its card oriented batch processing capability. The BOSS command language is designed for the job shop environment. BOSS utilizes CR11, CR15, or CR03B card readers to allow programs to be run without operator intervention. Program results are displayed on the LP15 or LP11 line printer. In addition, BOSS includes a job accounting feature.

Input/Output Spooling
XVM/DOS systems using the RK15/RK05 UNICHANNEL Disk System provide spooling of card reader, line printer and XY plotter data.

BANK and PAGE Modes
The XVM/DOS system supports bank and page mode operation in page mode. User programs are loaded and relocated in 4K word page units. Address modification via index register is also permitted. Bank mode operation is available to users who prefer direct addressing up to 8K words. The use of the index register is not permitted in bank mode.

XVM Addressing Mode
The XVM/DOS system supports wide addressing mode operation. In the XVM mode, user programs are able to indirectly address data stored in *COMMON* blocks allocated above the traditional PDP-15 32K word boundary. The indirect addressing range of a user program is 128K words in XVM mode. In the traditional (XVM) mode indirect addressing is limited to 32K words.

MINIMUM HARDWARE REQUIRED:

For an XVM System:

- KP15 Central Processor
- 32K words of 18 bit memory
- LA36, LA30C, LT33, LT35 or VT05 Console Terminal
- PC15 High-Speed Paper Tape Reader/Punch
- KE15 Extended Arithmetic Element
- KW15 Real-Time Clock (Required on systems with UNICHANNEL-15 hardware)
- XM15 Memory System
- TC15 DECtape Control with one TU56 Dual DECtape Transport (or two TU55 DECtape transports); or TC59 Magtape Control with one TU10, TU20 or TU30 (seven or nine-track) Magtape Transport
- RF15 DECdisk Control with two RS09 DECdisk drives; or RP15 Disk Pack Control with one RP02/RP03 Disk Pack Drive; or RK15 Cartridge Disk Control with one RK05 Cartridge Disk Drive, and UNICHANNEL-15 with 8K Words of 16-Bit Core Memory
- CR15 Card Reader or CR11 Card Reader (Required only to usee the BOSS XVM Features, not required otherwise)

- LP11 Line Printer or LS11 Line Printer or LV11 Electrostatic printer; or LP15 Line Printer (required only to use BOSS feature, not required otherwise)

For a PDP-15 Computer System

- KP15 Central Processor
- 24K Words of 18-bit Core Memory
- LT35, LT33, LA30C, or LA36 Console Terminal
- PC15 High-Speed Paper Tape Reader/Punch
- KE15 Extended Arithmetic Element
- KW15 Real-Time Clock (Required on systems with UNICHANNEL-15 hardware)
- KA15 Automatic Priority Interrupt (Required only for RK15 systems in certain configurations)
- TC15 DECtape control with one TU56 Dual-DECtape transport (or two TU55 DECtape transports); or TC59 Magtape Control with one TU10, TU20 or TU30 (seven or nine-track) Magtape Transport
- RF15 DECdisk Control with two RS09 DECdisk Drives; or RP15 Disk Pack Control with one RP02/RP03 Disk Pack Drive; or RK15 Cartridge Disk Controlm with one RK05 Cartridge Disk Drive, and UNICHANNEL-15 with 8K words of 16-Bit Core Memory
- CR15 Card Reader or CR11 Card Reader or CR03B Card Reader (Required only to use the BOSS features, not required otherwise)
- LP15 Line Printer or LP11 Line Printer or LS11 Line Printer or LV11 Electrostatic Printer (Required only to use the BOSS features, not required otherwise

OPTIONAL HARDWARE SUPPORTED:

For the DIGITAL XVM:

- Up to a system total of 128K words of 18-bit core memory. With UNICHANNEL-15 systems only, up to 12K words additional 16-bit core memory
- UNICHANNEL-15
- CR15, CR11, or CR03B Card Reader
- TC15 Controller with up to four TU56 Dual DECtape transports, or a TC02 Controller with up to eight TU55 DECtape transports
- RF15 Controller with up to eight RS09 Disk drives
- RK15 Controller with up to eight RK05 Disk Cartridge drives (Available for UNICHANNEL-15 systems only)
- RP15 Controller with up to eight RP02/RP03 Disk Pack drives (RP03 is supported as an RP02)
- FP15 Floating Point Processor
- One VT15 with up to one VT04 or VT07 with up to one VL04 Graphics Display
- LP15, LP11, LS11, or LV11 Line Printer
- TC59 Controller with up to eight (TU10, TU20, or TU30) Magtape transports
- XY11 or XY311 Plotter
- VP15A Storage Scope
- LA36, LA30C, LT33, LT35, VT05, or LK35 Terminal
- One VW01 Writing Tablet

For the PDP-15:

- XM15 Memory Processing Unit
- Up to s system total of 128K words of 18-bit core memory. With UNICHANNEL-15 systems only, up to 12K words additional 16-bit core memory
- UNICHANNEL-15
- KA15 Automatic Priority Interrupt
- CR03B, CR15, or CR11 Card Reader
- TC15 Controller with up to four TU56 dual DECtape transports or TC02 Controller with up to eight TU55 DECtape transports
- RF15 Controller with up to eight RS09 Disk drives
- RK15 Controller with up to eight RK05 Disk Cartridge drives (Available for UNICHANNEL-15 systems only)
- RP15 Controller with up to eight (RP02 or RP03) Disk Pack drives
- One VT15 with up to one VT04 or VT07 with up to one VL04 Graphics Display
- LP15, LP11, LS11, or LV11 Line Printer
- TC59 Controller with up to eight (TU10, TU20, or TU30) Magtape transports
- XY11 or XY311 Plotter
- VP15A Storage Scope
- LT33, LT35, LA30C, LA36, VT05, or LK35 Terminal
- One VW01 Writing Tablet
- FP15 Floating Point Processor

PREREQUISITE SOFTWARE:

None

OPTIONAL SOFTWARE SUPPORTED:

TENLINK, DECsystem-10 to XVM Communication Package
QUICKSCAN, LV11 Raster Scan Plotting Package

TRAINING CREDITS:

None

SUPPORT CATEGORY:

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

UPDATE POLICY:

No updates are planned for this product.

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.

Source and/or listing options are only available after a source license agreement is in effect.

The following key (C, D, F) represents the distribution media for the product and must be specified at the end of the "Q" number, i.e., QM060-YC = binaries on 9-track magnetic tape.

C = DECtape
D = 9-track Magnetic Tape
F = 7-track Magnetic Tape

Standard Options

QM060 -Y— Single-use license, source license, sources, binaries, documentation, no support services (media: C, D, F)

ADDITIONAL SERVICES:

None

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Software Product Description

PRODUCT NAME: XVM/RSX, Version 1B **SPD 19.2.2**

DESCRIPTION:

XVM/RSX is a real-time multiprogramming system designed for the needs of the computational, graphics, lab automation and industrial control users. In its full configuration, XVM/RSX can execute real-time programs concurrently with batch processing, interative programdevelopment and multi-scope graphics. It is the successor to the RSX-15, RSX-PLUS, and RSX-PLUS III software systems.

Real-time Multiprogramming -- Memory is divided into partitions so that several programs can be memory-resident simultaneously. Execution is normally based on which task is able to run and has the highest priority. A task's execution can be suspended to run another task based on a real-time event such as the result of a hardware interrupt.

Disk-Resident System/User Software -- All XVM/RSX system /user software (called tasks) reside in their executable form on any of three types of disk for ease and speed of access. Switching from one software monitor to the other is done by typed commands. User programs can reside on and be loaded and executed from disks other than the system disk.

Interactive Program Development (MULTIACCESS) -- A feature of XVM/RSX is a multiple user task development facility. This feature allows editing, compilation, task creation and debugging by more than one user simultaneously. Task development occurs concurrently with real-time task execution and does not impact real-time response.

Batch Processing -- In addition to the multi-user interactive program development facility, a batch processing mode, concurrent with interactive program development, is available. The batch facility allows a sequence of job commands to come from cards, DECtape, magnetic tape, or disk files.

Multi-scope Graphics -- Interactive graphics on up to four scopes can be performed concurrently with the execution of real-time tasks, on-line program development and batch processing.

Programmed Monitor Commands -- Input/output programming is simplified by the use of a set of commands which are standardized for system-supported I/O devices. In addition, the system has a large repertoire of execution-related commands which simplify the orderly control and execution of multiple tasks.

Memory Sharing Among Tasks -- This feature allows tasks to share data in common memory areas. It facilitates simple, low-overhead intertask communication and data transfer.

MINIMUM HARDWARE REQUIRED:

For an XVM based system -- any valid XVM/DOS system which includes:

- At least 32K words of 18-bit memory
- An additional LA36, LA30C, LT33, LT35, VT05 or VT50 terminal
- XM15 Memory Processing Unit
- One of the following magnetic tape systems:
  1. TC15 DECtape controller with one TU56 dual transport or two TU55 transports
  2. TC59 Magnetic tape controller with one TU10, TU20, or TU30 (7- or 9-track) transport
- One of the following disk systems:
  1. RF15 Disk controller with two RS09 drives
  2. RK15 Disk cartridge controller with RK05 drive and UNICHANNEL-15 with 8K words of 16-bit local core memory
  3. RP15 Disk pack controller with one RP02 drive

For a PDP-15 computer system -- any valid XVM/DOS system which includes:

- At least 32K words of 18-bit memory
- Two LT33, LT35, LA30C, LA36, VT05, or VT50 terminals
- KE15 Extended Arithmetic Element
- KW15 Real-time Clock
- KM15 Memory Protect
- KA15 Automatic Priority Interrupt
- KT15 Memory Relocate
- One of the following magnetic tape systems:
  1. TC15 DECtape controller with one TU56 dual transport or two TU55 transports
  2. TC59 Magnetic tape controller with one TU10, TU20, or TU30 (7- or 9-track) transport
- One of the following disk systems:
  1. RF15 Disk controller with two RS09 drives
  2. RK15 Disk cartridge controller with RK05 drive and UNICHANNEL-15 with 8K words of 16-bit local core memory
  3. RP15 Disk pack controller with one RP02 drive

OPTIONAL HARDWARE SUPPORTED:

- Additional 18-bit core memory to a system total of 128K words
- Additional 16-bit core memory to a system total of 12K words (UNICHANNEL-15 systems only)
- XM15 Memory Processing Unit (PDP-15 systems only)
- FP15 Floating Point Processor
- RP15 with up to 8 RP02 or RP03 drives (RP03 is supported as an RP02)
- RF15 with up to 8 RS09 drives
- RK15 with up to 8 RK05 drives (UNICHANNEL-15 systems only)
- TC59 with up to 8 TU10, TU20 or TU30 transports
- TC15 with up to 4 TU56 dual transports or up to 8 TU55 transports
- CR15, CR11, or CR03B Card reader
- LP15, LP11, LS11 or LV11 Line printer
- XY11 or XY311 Plotter
- UDC15 Industrial interface
- AFC15 and AD15 Analog/Digital converters
- Up to 2 VT15, VT04 or VT07 with up to 4 graphics displays
- Up to 4 VW01 Writing Tablets
- Up to 4 LK35 Graphics keyboards
- Up to 4 LT19 controllers with up to 17 LA36, LA30C, LT33, LT35, VT05 or VT50 terminals

PREREQUISITE SOFTWARE:

XVM/DOS operating system, Version 1A or later

OPTIONAL SOFTWARE SUPPORTED:

None

TRAINING CREDITS:

None

SUPPORT CATEGORY:

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

UPDATE POLICY:

During the first year, Update Policy shall be in accordance with the Software Support Categories Addendum to this SPD. After the first year, updates, if any, will be made available according to then prevailing DIGITAL policies.

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.

The following key (C, D, F) represents the distribution media for the product and must be specified at the end of the "Q" number, i.e., QM070-YD = sources on 9-track magnetic tape.

C = DECtape
D = 9-track Magnetic Tape
F = 7-track Magnetic Tape

Standard Options

QM070 -Y— Single-use license, source license, sources, binaries, documentation, no support services (media: C, D, F)

Upgrade Options

The following option is available as an upgrade kit from RSX-15, RSX-PLUS or RSX-PLUS III and requires previous purchase of one license with support services.

QMAX0 -Y— Source license, sources, binaries, documentation, no support services (media: C, D, F)

Update Options

Users of XVM/RSX Version 1A whose license does not include free updates under warranty, whose warranty has expired, or whose Standard Program Update Service has expired, may purchase the following. The update is distributed in source or binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

QM070 -N— Source update (media: C, D, F)

ADDITIONAL SERVICES:

None