pdp11

RSX-11M/RSX-11S
Documentation Directory

Order No. AA-2593D-TC

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RSX-11M/RSX-11S
Documentation Directory

Order No. AA-2593D-TC

READ THIS FIRST

RSX-11M Version 3.1
RSX-11S Version 2.1

December 1977

This document is a guide to the manual set shipped with Version 3.1 of RSX-11M and Version 2.1 of RSX-11S. It includes a synopsis of each manual in the set and directs the user to information needed for particular applications.

A complete documentation set is shipped with the software. The exact composition of the set depends on the license you have purchased. (RSX-11S is a subset of RSX-11M. It uses the same operating-system manuals as RSX-11M and an additional manual on system generation and installation.)

The postage-prepaid READER'S COMMENTS form on the last page of this
document requests the user's critical evaluation to assist us in pre-
paring future documentation.

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ASSIST-11	RTS-8	ITPS-10

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TABLES

RSX-11M/RSX-11S DOCUMENTATION DIRECTORY

1.0 INTRODUCTION

Along with the software, the RSX-11M/RSX-11S kit includes a set of
manuals describing and explaining the system. To use your system
effectively, you should understand how the manual set is organized and
where to look for particular kinds of information.

2.0 GETTING STARTED

As shipped, the RSX-11M baseline system is ready to run on your PDP-11
computer. The main use of this baseline system is for generating your
own system, tailored to your special hardware and software
requirements.   This tailoring process is described in the RSX-11M
System Generation Manual. (RSX-11S users also consult the RSX-11S
System Generation and Installation Guide.)

Before proceeding with system generation, you should thoroughly read
the RSX-11M/RSX-11S Release Notes. This document contains important,
updated information correcting any errors or noting any changes in the
software and documentation of your system.

3.0 HOW THE MANUALS ARE ORGANIZED

The manuals are organized in four volumes:

- System Reference Information

- System Procedures

- Record Management Services

- Language Options

A volume may consist of several ring binders with several manuals
contained in each binder.

Table 1 lists the documents in the set along with their order numbers
and suggested readership.   Check your manual set to make sure it
matches your system and language options.

The audiences for each manual are given in the right-hand column of
Table 1 by "job titles" defined as follows:

   The "system manager" is responsible for overall operation of the
   system, from generating the system to overseeing its performance
   to supervising day-to-day operations.

   The "system programmer" uses MACRO-11 assembly language to
   maintain, modify, and develop system programs. These programs
   are used to operate the computer and its peripherals.

   The "applications programmer" uses higher level languages
   (BASIC-11, BASIC 11-PLUS, FORTRAN IV, FORTRAN IV-PLUS, COBOL-11)
   to develop programs for user applications.

   The "operator" is anyone who uses the RSX-11 system directly to
   do work.

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These job titles are loosely defined. Their purpose is to help you use the document set. The most important distinction is whether you use MACRO-11 assembly language or not. In small installations all these jobs might be done by a single individual. Elsewhere, an applications programmer might work in MACRO-11 or the system programmer might do the system generation. When functions overlap in this way, make appropriate adjustments from the suggested audiences given in Table 1.

Table 1
RSX-11M/RSX-11S Documentation Set

VOLUME	DOCUMENT TITLE	ORDER NUMBER	AUDIENCE			
			Opera-tor	Applica-tions Program-mer	System Program-mer	System Manag-er
VOLUME 1A System Reference Informa-tion	RSX-11M Beginner's Guide	DEC-11-OMBGA-A-D	X	X	X	X
	RSX-11M/RSX-11S Documentation Directory	AA-2593D-TC	X	X	X	X
	RSX-11M/RSX-11S Release Notes	AA-2573E-TC				X
	Introduction To RSX-11M	AA-2555C-TC	X	X	X	X
	RSX-11M System Generation Manual	AA-2552D-TC				X
	RSX-11S System Generation and Installation Guide*	AA-2874C-TC				X
	RSX-11M Executive Reference Manual	AA-2544D-TC		X	X	X
	RSX-11M Crash Dump Analyzer Reference Manual	AA-5581A-TC			X	X
VOLUME 1B System Reference Informa-tion	IAS/RSX-11 MACRO-11 Reference Manual	DEC-11-OIMRA-B-D			X	
	RSX-11M Task Builder Reference Manual	AA-2588D-TC		X	X	X
	IAS/RSX-11 System Library Routines Reference Manual	AA-5580A-TC		X	X	X
VOLUME 1C System Informa-tion	RSX-11M I/O Drivers Reference Manual	AA-2539D-TC			X	
	IAS/RSX-11 I/O Operations Refer-ence Manual	AA-2515C-TC			X	

*Available under separate license

Table 1 (Cont.)
RSX-11M/RSX-11S Documentation Set

VOLUME	DOCUMENT TITLE	ORDER NUMBER	AUDIENCE			
			Opera-tor	Applica-tions Program-mer	System Program-mer	System Manag-er
Volume 2A System Proce-dures	RSX-11 Utilities Procedures Manual	AA-5567B-TC		X	X	
	RSX-11M Operator's Procedures Manual	AA-2567D-TC	X	X	X	X
	IAS/RSX-11 ODT Reference Manual	DEC-11-OIODA-B-D		X	X	
VOLUME 2B System Proce-dures	RSX-11M Guide To Writing An I/O Driver	AA-2600D-TC			X	
	RSX-11M Error Logging Reference Manual	AA-2542C-TC		X	X	
	RSX-11M User Mode Diagnostics Refer-ence Manual	DEC-11-OMUMA-A-D			X	X
	IAS/RSX-11M Disk Save and Compress User's Guide	AA-5569B-TC	X	X	X	X
	PDP-11 Preservation Utility (PRESRV) User's Guide	DEC-11-UPRMA-A-D		X		
	DEC EDITOR Refer-ence Manual	AA-5789A-TC	X	X	X	X
	PDP-11 SORT Refer-ence Manual*	AA-3341C-TC		X	X	
	RSX-11M Pocket Reference	AV-5570B-TC	X	X	X	X
VOLUME 3 Record Manage-ment Services	Introduction to RMS-11	AA-0001A-TC		X	X	
	RSX-11M RMS-11 V1.5 Utilities User's Guide	AA-D083A-TC		X	X	
	IAS/RSX-11M RMS-11 MACRO Programmer's Reference Manual	AA-0002A-TC			X	
	RSX-11 RMS-11K Installation Guide*	AA-5296B-TC				X

*Available under separate license

Table 1 (Cont.)
RSX-11M/RSX-11S Documentation Set

VOLUME	DOCUMENT TITLE	ORDER NUMBER	AUDIENCE			
			Opera-tor	Applica-tions Program-mer	System Program-mer	System Manag-er
VOLUME 4A *Optional Software BASIC-11	BASIC-11 Language Reference Manual*	DEC-11-LIBBB-A-D		X		
	IAS/RSX BASIC User's Guide*	DEC-11-LIBIA-B-D		X		
	IAS/RSX BASIC In-stallation Guide*	DEC-11-LIBJA-B-D				X
	IAS/RSX BASIC In-stallation Guide Update Notice No. 1*	DEC-11-LIBJA-B-DN1				X
VOLUME 4B *Optional Software BASIC PLUS-2	BASIC PLUS-2 Lan-guage Manual*	AA-0153A-TK		X		
	BASIC PLUS-2 RSX-11M User's Guide*	AA-0157A-TC		X		
	BASIC PLUS-2 RSX-11M Installation Guide*	AA-0158A-TC				X
	BASIC PLUS-2 RSX-11M Installation Guide Update Notice No. 1*	AD-0158A-TI				X
VOLUME 4C *Optional Software FORTRAN IV	PDP-11 FORTRAN Lan-guage Reference Manual*	DEC-11-LFLRA-C-D		X		
	PDP-11 FORTRAN Lan-guage Reference Manual Update Notice No. 1*	DEC-11-LFLRA-C-DN1		X		
	IAS/RSX-11 FORTRAN IV User's Guide*	DEC-11-LMFUA		X		
	IAS/RSX-11 FORTRAN IV Installation Guide*	DEC-11-LFIGA-B-D				X

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Table 1 (Cont.)
RSX-11M/RSX-11S Documentation Set

VOLUME	DOCUMENT TITLE	ORDER NUMBER	AUDIENCE			
			Opera-tor	Applica-tions Program-mer	System Program-mer	System Manag-er
VOLUME 4D *Optional Software FORTRAN IV-PLUS	PDP-11 FORTRAN Lan-guage Reference Manual*	DEC-11-LFLRA-C-D		X		
	PDP-11 FORTRAN Lan-guage Reference Manual Update Notice No. 1*	DEC-11-LFLRA-C-DN1		X		
	FORTRAN IV-PLUS User's Guide*	DEC-11-LFPUA-B-D		X		
	FORTRAN IV-PLUS User's Guide Update Notice No. 1*	DEC-11-LFPUA-B-DN1		X		
	FORTRAN IV-PLUS Object Time System Reference Manual*	DEC-11-LFPOA-A-D		X		
	FORTRAN IV-PLUS Installation Guide*	DEC-11-LFPGB-C-D				X
VOLUME 4E *Optional Software COBOL	PDP-11 COBOL Lan-guage Reference Manual*	AA-1749D-TC		X		
	PDP-11 COBOL User's Guide*	AA-1757C-TC				
	PDP-11 COBOL Pocket Guide*	AA-1750C-TC		X		
	PDP-11 COBOL In-stallation Guide*	AA-1745C-TC				X
	VT55 Programming Manual*	AA-4949A-TC		X		

*Available under separate license

4.0 RSX-11M/RSX-11S DOCUMENT DESCRIPTIONS

Here are brief descriptions of the documents in the RSX-11M/RSX-11S set.

Documents marked with an asterisk (*) are available under separate license.

Additional optional software is described in the Software Product Description (SPD) for RSX-11M V3.1.

4.1 RSX-11M Beginner's Guide

This guide teaches new users to develop programs on the RSX-11M system. The user learns system terms and procedures while developing and running a simple program. This guide is for anyone who wishes to learn the fundamentals of using RSX-11M.

4.2 RSX-11M/RSX-11S Release Notes

These notes describe new features of the release and summarize known bugs in the system (with fixes). These notes include any updated material on the documentation or features of RSX-11M/RSX-11S. Read it before generating and using your system.

4.3 Introduction to RSX-11M

This manual introduces the reader with a general knowledge of computing to the basic concepts and capabilities of the RSX-11M/RSX-11S real-time multiprogramming operating systems.

4.4 RSX-11M System Generation Manual

This manual gives instructions for installing the RSX-11M baseline system on your PDP-11 computer. This system provides a question-and-answer dialogue which enables you to tailor the RSX-11M system to your applications and hardware. (RSX-11S users also start with this manual.)

4.5 RSX-11S System Generation and Installation Guide*

This document explains how to use RSX-11M as a host system for generation of a tailored RSX-11S system.

4.6 RSX-11M Executive Reference Manual

This manual describes the services provided by the RSX-11M Executive. These services are called by system directives within a task using either MACRO-11 assembly language or FORTRAN. The directives may be used to request the Executive to:

- obtain task and system information

- measure time intervals

- perform input/output functions

- communicate with other tasks

- manage memory

- start and stop execution

- exit

4.7 RSX-11M Crash Dump Analyzer Reference Manual

This manual tells the system programmer how to use the Crash Dump Analyzer (CDA) to determine the causes of system crashes. In addition to operating instructions, the manual includes summaries of CDA switch operation with explanatory material and CDA output listings and error messages.

4.8 IAS/RSX-11 MACRO-11 Reference Manual

This manual describes the assembly language supported by RSX-11M. All symbols, terms, and expressions of the language are defined. Also included are suggested programming standards (and the benefits of following them), operating procedures, and methods of writing position-independent code. The manual is tutorial in form. Knowledge of the MACRO-11 language is not a prerequisite.

4.9 RSX-11M Task Builder Reference Manual

This document introduces the concepts and capabilities of the Task Builder (the RSX-11M linker). It includes both programmer reference and operating information. Examples in the text proceed from simple to complex in a tutorial form. Subjects covered include memory allocation, task overlay capability, building common areas shared with other tasks, and building a task on one system to run on another system with different hardware.

4.10 IAS/RSX-11 System Library Routines Reference Manual

This manual describes the system library routines available for inclusion in user-written programs in MACRO-11 assembly language. System library routines provide the following services:

- register handling and control swapping

- integer and double-precision multiplication and division

- input and output data conversion

- output data formatting for printout or display

- management of dynamic and virtual memories.

4.11 RSX-11M I/O Drivers Reference Manual

This manual describes the functions of all DIGITAL-supplied I/O drivers. The manual provides the data needed by experienced programmers who want the time and space advantages of directly interfacing with I/O drivers. The manual is tutorial for system programmers using MACRO-11 assembly language or FORTRAN.

4.12 IAS/RSX-11 I/O Operations Reference Manual

This manual provides reference material on the File Control Services of RSX-11M. It explains how to create, use and delete files with FCS. Prerequisites are MACRO-11 assembly language or FORTRAN.

4.13 RSX-11M Utilities Procedures Manual

This manual details the functions and operations of the following RSX-11M utility programs:

- PIP - Peripheral Interchange

- FLX - File Transfer

- DMP - File Dump

- EDI - Line Text Editor

- SLP - Source Language Input

- LBR - Librarian

- VFY - File Structure Verification

- PAT - Object Module Patch

- ZAP - Task/File Patch

- BAD - Bad Block Locator

- CMP - File Compare

For each utility, the manual gives a detailed description of command formats and syntax rules as well as summaries of commands and switches. It also includes general information on use of the utilities.

4.14 RSX-11M Operator's Procedures Manual

This manual describes the operator's interface with the RSX-11M system. It includes bootstrapping information as well as full descriptions of all Monitor Console Routine (MCR) commands and an alphabetical listing of all MCR and Task Termination Notification (TKTN) messages that may be returned by the system. The manual explains the concepts, procedures, and conventions of RSX-11M operations.

4.15 IAS/RSX-11 ODT Reference Manual

This manual describes the use of the Online Debugging Tool (ODT), which aids the user in debugging assembled and linked object programs. Prerequisites include familiarity with MACRO-11 assembly language and the Task Builder. The manual is tutorial in form with explanatory text following actual ODT command sequences. All significant terms and expressions are defined.

4.16 RSX-11M Guide to Writing an I/O Driver

This guide provides the information needed to write an I/O driver to service a peripheral device for which DIGITAL has not supplied a driver. A user-written driver must adhere to the RSX-11M programming conventions described in this guide. The guide is tutorial in form for system managers, system programmers, and other senior professionals.

4.17 RSX-11M Error Logging Reference Manual

This manual describes and explains Error Logging, a subsystem that continually detects and records information on hardware reliability in an RSX-11M system. Even if the error causes no immediate problem, each error is logged along with the state of the system at the time. At user-determined intervals, Error Logging generates individual error or summary reports in readable form.

4.18 RSX-11M User Mode Diagnostics Reference Manual

This manual describes and explains User Mode Diagnostics, a subsystem that tests and reports on the operation of DIGITAL peripheral devices, including disk and tape units, hard-copy terminals, video-display terminals, and line printers. User Mode Diagnostics is complementary to Error Logging. These two subsystems together are useful in preventive maintenance programs and problem analysis by system managers or DIGITAL field service engineers.

4.19 IAS/RSX-11 Disk Save and Compress User's Guide

This guide describes the IAS/RSX-11 Disk Save and Compress (DSC) utility. DSC copies a FILES-11 disk to disk or tape for backup and storage, reallocates and consolidates the disk area used for data storage. DSC also concatenates files and extensions into contiguous data blocks and reduces the required number of retrieval pointers and file headers. DSC is needed for preserving the baseline system used in system generation. Familiarity with FILES-11 is a prerequisite.

4.20 PDP-11 Preservation Utility (PRESRV) User's Guide

This guide describes PRESRV, a stand-alone utility that copies volumes to and from magnetic tapes, DECtapes, cassette tapes, and disks (except RK06). PRESRV is most often used to preserve a system or master disk for backup purposes. PRESRV may be needed for saving the baseline system used in system generation. The guide includes explanations and summaries of all PRESRV error messages.

4.21 DEC EDITOR Reference Manual

This manual documents the operations of the DEC EDITOR (EDT). The manual covers all EDT features and functions. These include on-line error analysis, file and buffer I/O handling, line and character modes, creating and manipulating files and contents, the EDT backup facility, on-line allocation of text storage buffers, variable command range specifications, and character string searches. The manual includes command summaries and explanations.

4.22 PDP-11 SORT Reference Manual*

This manual describes the features and operations of the optional SORT utility program. SORT can be used for sequential access to records in mass storage using a variety of file specifications and sorting techniques.

4.23 RSX-11M Pocket Reference

This booklet is a convenient reference for system users. It includes sections on Monitor Console Routine (MCR), Task Builder (TKB), Peripheral Interchange (PIP), Online Debugging Tool (ODT), Error Logging, I/O Error Codes, Directive Error Codes, User Mode Diagnostics, Radix-50 and Octal-Decimal Conversions, and ASCII Character Subset.

4.24 Introduction to RMS-11

This manual describes the concepts and facilities of Record Management Services for PDP-11 (RMS-11). The manual explains how to build and access files, summarizes RMS-11 operations, and describes the runtime environment. Since RMS-11 runs on several operating systems, you will also need to consult the Reference Manual and the User's Guide for your system's language processor.

4.25 RSX-11M RMS-11 V1.5 Utilities User's Guide

This manual describes the operation and use of RMS-11 utilities as follows:

- DEFINE - create files

- CONVERT - move data from one file to another

- BACKUP - create backup copies of files

- DISPLAY - list attributes of RMS-11 files and names of backup files

- RESTORE - restore backup files to their original state.

Since RMS-11 runs on several operating systems, you should also be familiar with the Reference Manual and the User's Guide for your system's language processor.

4.26 IAS/RSX-11M RMS-11 MACRO Programmer's Reference Manual

This manual gives a complete description of RMS-11 (Record Management Services for PDP-11) as set up on IAS and RSX-11M operating systems. RMS-11 files can be organized sequentially, relatively, or with embedded indexes. The manual will help the system programmer using MACRO-11 to declare RMS-11 facilities, access fields in control blocks at runtime, allocate and initialize control blocks, and perform file and record operations.

4.27 RSX-11 RMS-11K Installation Guide*

This manual gives instructions for installing the optional RMS-11K facility on your system. RMS-11K supports indexed file organization and associated access methods.

4.28 BASIC-11 Language Reference Manual*

This manual describes BASIC-11 as implemented in several PDP-11 software systems. It introduces you to programming in BASIC and explains and lists BASIC-11 statements, functions, commands, and error messages. The manual does not teach BASIC. For system-dependent information, consult the BASIC-11 User's Guide.

4.29 IAS/RSX BASIC User's Guide*

This manual describes the procedures for using BASIC-11 on the RSX-11M operating system. The manual also describes system-dependent features, utilities, and how to use assembly-language routines with BASIC-11.

4.30 IAS/RSX BASIC Installation Guide and Update Notice No. 1*

This manual gives instructions for installing BASIC-11 on an RSX-11M system. It includes descriptions of optional features that can be selected during installation.

4.31 BASIC-PLUS-2 Language Manual*

This manual describes the BASIC-PLUS-2 programming language, an extension of BASIC-11 with some advanced features. The manual introduces you to programming in BASIC and explains and lists BASIC-PLUS-2 statements, functions, commands, and error messages. The manual is arranged to help the beginner acquire knowledge gradually. For system-dependent information, consult the BASIC-PLUS-2 User's Guide.

4.32 BASIC-PLUS-2 RSX-11M/IAS User's Guide*

This manual describes the procedures for using BASIC-PLUS-2 on the RSX-11M operating system, including system-dependent features, utilities, and the use of assembly-language routines with BASIC-PLUS-2.

4.33 BASIC-PLUS-2 RSX-11M Installation Guide and Update Notice No. 1*

This manual gives instructions for installing BASIC-PLUS-2 on an RSX-11M system. It includes descriptions of optional features that can be selected during installation.

4.34 PDP-11 FORTRAN Language Reference Manual and Update Notice No. 1*

This manual describes both FORTRAN IV and FORTRAN IV-PLUS as supported by RSX-11M. It defines the elements of FORTRAN and the structure of FORTRAN programming and describes the components of a FORTRAN statement. Also included are descriptions of assignment, control, input/output, format, and specification statements, as well as how to use subprograms in the FORTRAN library or write your own. The manual does not include system-dependent information. Consult the appropriate User's Guide for this information. The update gives clarifications on some relationships between FORTRAN IV and FORTRAN IV-PLUS. It also includes a new appendix covering virtual arrays.

4.35 IAS/RSX FORTRAN IV User's Guide*

This manual describes the procedures for compiling, linking, and executing programs in FORTRAN IV on RSX-11M. It also explains the FORTRAN Object Time System, a collection of routines, including mathematics, utilities, input/output handlers, and system services. OTS routines are optional; you may choose those you want during installation.

4.36 IAS/RSX FORTRAN IV Installation Guide*

This manual gives instructions for installing FORTRAN IV on an RSX-11M system, including choices of optional features that can be made during installation.

4.37 FORTRAN IV-PLUS User's Guide and Update Notice No. 1*

This manual describes FORTRAN IV-PLUS, an extension of FORTRAN IV with some advanced features. It explains how to compile, edit, debug, and link FORTRAN IV-PLUS programs.

4.38 FORTRAN IV-PLUS Object Time System Reference Manual*

This manual describes the FORTRAN IV-PLUS Object Time System, a collection of routines in object code from which you can choose during installation.

4.39 FORTRAN IV-PLUS Installation Guide*

This manual gives instructions for installing FORTRAN IV-PLUS on an RSX-11M system, including choices of optional features that can be made during installation.

4.40 PDP-11 COBOL Language Reference Manual*

This manual is an introduction to COBOL programming and describes and lists COBOL statements, functions, commands, and error messages. System-dependent information is not included, but will be found in the COBOL User's Guide for RSX-11M.

4.41 PDP-11 COBOL User's Guide*

This manual describes the procedures for using COBOL on the RSX-11M operating system, including system-dependent features, available utilities, and the use of assembly-language routines in COBOL programs.

4.42 PDP-11 COBOL Pocket Guide*

This booklet gives COBOL commands and other reference information in a convenient format.

4.43 PDP-11 COBOL Installation Guide*

This manual gives instructions for installing COBOL on an RSX-11M system, including choices of optional features that can be made during installation.

4.44 VT-55 Programming Manual*

This manual is shipped with the VT-55 Graphics Display Terminal. It introduces and explains the extended graphics capabilities of VT55. Software support for VT55 has been included in this release of RSX-11M.

READER'S COMMENTS

NOTE: This form is for document comments only. DIGITAL will
         use comments submitted on this form at the company's
         discretion. Problems with software should be reported
         on a Software Performance Report (SPR) form. If you
         require a written reply and are eligible to receive
         one under SPR service, submit your comments on an SPR
         form.

Did you find errors in this manual? If so, specify by page.

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Did you find this manual understandable, usable, and well-organized?
Please make suggestions for improvement.

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Is there sufficient documentation on associated system programs
required for use of the software described in this manual? If not,
what material is missing and where should it be placed?

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Please indicate the type of user/reader that you most nearly represent.

☐ Assembly language programmer
☐ Higher-level language programmer
☐ Occasional programmer (experienced)
☐ User with little programming experience
☐ Student programmer
☐ Non-programmer interested in computer concepts and capabilities

Name_____ Date _____

Organization_____

Street_____

City_____ State_____ Zip Code_____
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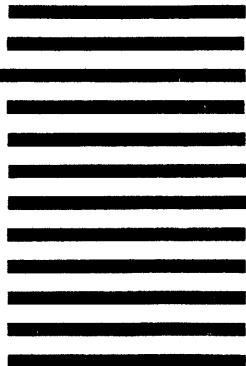   Country

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