

**digital**

**VAX-11**  
**Information Directory**  
**and Index**

Order No. AA-D016C-TE

**READ THIS FIRST**

**VAX11**



**March 1980**

This document provides an introduction to the software documentation set shipped with the current version of the VAX/VMS operating system. It provides a synopsis of each document in the basic set and of each optional document. The order number of each document is also identified. To help you locate key information, an index is provided to direct you to the specific document containing that information.

**VAX-11  
Information Directory  
and Index**

Order No. AA-D016C-TE

**READ THIS FIRST**

**SUPERSESSION/UPDATE INFORMATION:** This revised document supersedes the VAX-11 Information Directory (Order No. AA-D016B-TE)

**OPERATING SYSTEM AND VERSION:** VAX/VMS V02

**SOFTWARE VERSION:** Not applicable

To order additional copies of this document, contact the Software Distribution Center, Digital Equipment Corporation, Maynard, Massachusetts 01754

First Printing, August 1978  
Revised, February 1979  
Revised, March 1980

The information in this document is subject to change without notice and should not be construed as a commitment by Digital Equipment Corporation. Digital Equipment Corporation assumes no responsibility for any errors that may appear in this document.

The software described in this document is furnished under a license and may only be used or copied in accordance with the terms of such license.

No responsibility is assumed for the use or reliability of software on equipment that is not supplied by DIGITAL or its affiliated companies.

Copyright © 1978, 1979, 1980 by Digital Equipment Corporation

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

The following are trademarks of Digital Equipment Corporation:

DIGITAL	DECsystem-10	MASSBUS
DEC	DECtape	OMNIBUS
PDP	DIBOL	OS/8
DECUS	EDUSYSTEM	PHA
UNIBUS	FLIP CHIP	RSTS
COMPUTER LABS	FOCAL	RSX
COMTEX	INDAC	TYPESET-8
DDT	LAB-8	TYPESET-11
DECCOMM	DECSYSTEM-20	TMS-11
ASSIST-11	RTS-8	ITPS-10
VAX	VMS	SBI
DECnet	IAS	PDT
DATATRIEVE	TRAX	

# Contents

	Page
<b>Preface</b> . . . . .	vii
<b>System Installation</b> . . . . .	1
<b>VAX/VMS Document Descriptions</b> . . . . .	1
Volume 1. General Information . . . . .	4
VAX-11 Information Directory and Index . . . . .	5
VAX/VMS Summary Description and Glossary . . . . .	5
VAX/VMS Primer . . . . .	5
VAX/VMS Release Notes . . . . .	5
Volume 2 (A and B). Command Language and System Messages . . . . .	5
VAX/VMS Command Language User's Guide . . . . .	5
VAX/VMS Guide to Using Command Procedures . . . . .	5
VAX/VMS System Messages and Recovery Procedures Manual. . . . .	5
Volume 3 (A and B). Program Development Tools . . . . .	6
VAX-11 Text Editing Reference Manual . . . . .	6
VAX-11 EDT Editor Reference Manual. . . . .	6
VAX-11 Utilities Reference Manual . . . . .	6
VAX-11 SORT User's Guide . . . . .	7
PDP-11 SORT Reference Manual . . . . .	7
VAX-11 MACRO User's Guide . . . . .	7
VAX-11 MACRO Language Reference Manual . . . . .	7
VAX-11 Linker Reference Manual . . . . .	7
VAX-11 Symbolic Debugger Reference Manual . . . . .	7
Volume 4. System Services and I/O . . . . .	7
VAX/VMS System Services Reference Manual . . . . .	7
VAX/VMS I/O User's Guide . . . . .	8
Volume 5. Run-Time Library . . . . .	8
VAX-11 Run-Time Library Reference Manual. . . . .	8
VAX-11 Guide to Creating Modular Library Procedures . . . . .	8
Volume 6. VAX-11 Record Management Services. . . . .	8
Introduction to VAX-11 Record Management Services . . . . .	8
VAX-11 Record Management Services User's Guide . . . . .	9
VAX-11 Record Management Services Reference Manual . . . . .	9
Volume 7. RMS-11 Record Management Services . . . . .	9
RMS-11 User's Guide . . . . .	9
RMS-11 MACRO-11 Reference Manual. . . . .	9
Volume 8. Compatibility Mode (RSX-11M) . . . . .	10
VAX-11/RSX-11M User's Guide . . . . .	10
VAX-11/RSX-11M Programmer's Reference Manual. . . . .	10

Volume 9. System Programming . . . . .	10
VAX/VMS Real-Time User's Guide . . . . .	10
VAX/VMS Guide to Writing a Device Driver . . . . .	10
VAX/VMS System Dump Analyzer Reference Manual . . . . .	11
VAX-11 PATCH Utility Reference Manual . . . . .	11
Volume 10. System Management and Operation . . . . .	11
VAX-11 Software Installation Guide . . . . .	11
VAX/VMS System Manager's Guide . . . . .	11
VAX/VMS Operator's Guide . . . . .	11
VAX/VMS UETP User's Guide . . . . .	11
<b>VAX/VMS Optional Document Descriptions . . . . .</b>	<b>13</b>
BASIC . . . . .	15
PDP-11 BASIC-PLUS-2 Language Reference Manual . . . . .	15
RSX/IAS/VMS BASIC-PLUS-2 User's Guide . . . . .	15
VAX-11 BASIC Language Reference Manual . . . . .	16
VAX-11 BASIC User's Guide . . . . .	16
VMS BASIC-PLUS-2 Release Notes . . . . .	16
BLISS . . . . .	16
BLISS Language Guide . . . . .	16
BLISS Pocket Guide . . . . .	16
VAX-11 BLISS-32 User's Guide . . . . .	16
COBOL . . . . .	17
PDP-11 COBOL Language Reference Manual . . . . .	17
PDP-11 COBOL Pocket Guide . . . . .	17
PDP-11 COBOL User's Guide . . . . .	17
VAX-11 COBOL-74 Language Reference Manual . . . . .	17
VAX-11 COBOL-74 User's Guide . . . . .	17
CORAL . . . . .	17
CORAL 66 Language Reference Manual . . . . .	17
IAS/RSX/VMS CORAL 66 User's Guide . . . . .	17
DATATRIEVE . . . . .	18
DATATRIEVE Primer . . . . .	18
User's Guide to DATATRIEVE-11 . . . . .	18
DECnet-VAX . . . . .	18
DECnet-VAX System Manager's Guide and Update Notice No. 1 . . . . .	18
DECnet-VAX User's Guide and Update Notice No. 1 . . . . .	18
FORTRAN . . . . .	18
IAS/RSX FORTRAN IV User's Guide . . . . .	18
PDP-11 FORTRAN Language Reference Manual . . . . .	19
VAX-11 FORTRAN Installation Guide/Release Notes . . . . .	19
VAX-11 FORTRAN Language Reference Manual . . . . .	19
VAX-11 FORTRAN User's Guide . . . . .	19

MUX200 . . . . .	19
MUX200/VAX Release Notes . . . . .	19
MUX200/VAX V1.0 Emulator System Manager's Guide . . . . .	20
MUX200/VAX V1.0 Emulator User's Guide . . . . .	20
PASCAL . . . . .	20
VAX-11 PASCAL Installation Guide/Release Notes . . . . .	20
VAX-11 PASCAL Language Reference Manual . . . . .	20
VAX-11 PASCAL Primer . . . . .	20
VAX-11 PASCAL User's Guide. . . . .	21
Protocol Emulator . . . . .	21
VAX-11 2780/3780 Protocol Emulator User's Guide . . . . .	21
<b>Index . . . . .</b>	<b>23</b>
<b>Tables</b>	
1 VAX/VMS Software Documentation Set . . . . .	2
2 Optional VAX/VMS Software Documents . . . . .	13



# Preface

The *VAX-11 Information Directory and Index* provides a brief description of each manual in the VAX/VMS documentation set, and an index of major topics covered by the set.

This manual is intended for all VAX/VMS users. Its purpose is to guide each reader to the manual most suited to his or her needs.

This manual is divided into three sections:

- A note on system installation.
- Synopses of all documents in the basic VAX/VMS documentation set and optional VAX/VMS documents. Tables 1 and 2 list the title, order number, and intended audience for each manual.
- An index of major topics covered by the VAX/VMS documentation set. (Topics covered in the optional documents are not indexed.)



# System Installation

As shipped, the VAX/VMS operating system is ready to run on your VAX-11 processor. This system must be installed according to the procedure described in the *VAX-11 Software Installation Guide*. To produce a system tailored to the specific hardware and software requirements of your facility, follow the guidelines described in the *VAX/VMS System Manager's Guide*.

Before installing the system, however, read the *VAX/VMS Release Notes* thoroughly. This document contains important, updated information concerning errors and changes in the software and documentation.

## VAX/VMS Document Descriptions

The VAX/VMS software distribution kit includes a software documentation set that provides programming and operation information for the VAX/VMS operating system. DIGITAL ships a complete software documentation set with each software system. The number of additional documents that you receive depends on the licenses that you have purchased. You can order additional complete documentation sets or individual manuals.

All VAX/VMS customers receive the software documentation set listed in Table 1. Customers receive the optional documents listed in Table 2 only when they purchase special licenses for optional software products. Check your set of manuals to make sure that it matches your system and language options.

The manuals in the basic VAX/VMS software documentation set are organized into 10 volumes covering the following topics:

- General Information
- Command Language and System Messages
- Program Development Tools
- System Services and I/O
- Run-Time Library
- VAX-11 Record Management Services
- RMS-11 Record Management Services
- Compatibility Mode (RSX-11M)
- System Programming
- System Management and Operation

Each volume consists of a ring binder containing several manuals. Table 1 lists all of the manuals contained in each volume as well as the suggested audience for each. Brief descriptions of the manuals are given below. For a more complete description of any manual, see its preface. The preface to each manual also lists pointers to other manuals containing related information.

**Table 1: VAX/VMS Software Documentation Set**

Volume	Title (Order Number)	Suggested Audience <sup>1</sup>			
		OP	AP	SP	SM
1	<b>General Information</b>				
	VAX-11 Information Directory and Index (AA-D016C-TE)	X	X	X	X
	VAX/VMS Summary Description and Glossary (AA-D022B-TE)	X	X	X	X
	VAX/VMS Primer (AA-D030B-TE)	X	X	X	X
	VAX/VMS Release Notes (AA-D015C-TE)	X	X	X	X
2A	<b>Command Language and System Messages</b>				
	VAX/VMS Command Language User's Guide (AA-D023B-TE)	X	X	X	X
	VAX/VMS Guide to Using Command Procedures (AA-H782A-TE)	X	X	X	X
2B	<b>Command Language and System Messages</b>				
VAX/VMS System Messages and Recovery Procedures Manual (AA-D017B-TE)	X	X	X	X	

(Continued on next page)

<sup>1</sup>The audiences for each document are identified by an "X" in one or more of the right-hand columns of the table. The job titles used are defined as follows:

**OP** The *operator* is anyone who uses the VAX/VMS operating system directly.

**AP** The *application programmer* uses high-level languages to develop programs for user applications.

**SP** The *system programmer* uses VAX-11 MACRO assembly language (or a development language) to maintain, modify, and develop system programs. These programs are used to operate the VAX-11 processor and its peripheral devices.

**SM** The *system manager* is responsible for overall operation of the VAX/VMS system, from installing the system to overseeing its performance to supervising day-to-day operations.

These job titles are only loosely defined, but are useful for indicating the general audience for each document. In small installations, all tasks may be performed by a single person. Elsewhere, an application programmer might program in assembly language and a system programmer might be responsible for system management. When functions overlap, you should make appropriate adjustments from the suggested audiences listed in Table 1.

**Table 1: VAX/VMS Software Documentation Set (Cont.)**

Volume	Title (Order Number)	Suggested Audience <sup>1</sup>			
		OP	AP	SP	SM
<b>3A</b>	<b>Program Development Tools</b>				
	VAX-11 Text Editing Reference Manual (AA-D029B-TE)	X	X	X	X
	VAX-11 EDT Editor Reference Manual (AA-H944A-TE)	X	X	X	X
	VAX-11 Utilities Reference Manual (AA-H781A-TE)	X	X	X	X
	VAX-11 SORT User's Guide (AA-D113A-TE)		X	X	
<b>3B</b>	PDP-11 SORT Reference Manual (AA-3341C-TC)		X	X	
	<b>Program Development Tools</b>				
	VAX-11 MACRO User's Guide (AA-D033C-TE)		X	X	
	VAX-11 MACRO Language Reference Manual (AA-D032C-TE)		X	X	
	VAX-11 Linker Reference Manual (AA-D019B-TE)		X	X	X
<b>4</b>	VAX-11 Symbolic Debugger Reference Manual (AA-D026B-TE)		X	X	
	<b>System Services and I/O</b>				
	VAX/VMS System Services Reference Manual (AA-D018B-TE)		X	X	X
<b>5</b>	VAX/VMS I/O User's Guide (AA-D028B-TE)			X	
	<b>Run-Time Library</b>				
<b>6</b>	VAX-11 Run-Time Library Reference Manual (AA-D036B-TE)		X	X	
	VAX-11 Guide to Creating Modular Library Procedures (AA-H500B-TE)		X	X	
	<b>VAX-11 Record Management Services</b>				
	Introduction to VAX-11 Record Management Services (AA-D024C-TE)		X	X	
	VAX-11 Record Management Services User's Guide (AA-D781C-TE)		X	X	
	VAX-11 Record Management Services Reference Manual (AA-D031C-TE)		X	X	

(Continued on next page)

<sup>1</sup> **OP** - operator; **AP** - application programmer; **SP** - system programmer; **SM** - system manager.

**Table 1: VAX/VMS Software Documentation Set (Cont.)**

Volume	Title (Order Number)	Suggested Audience <sup>1</sup>			
		OP	AP	SP	SM
7	<b>RMS-11 Record Management Services</b>				
	RMS-11 User's Guide (AA-D538A-TC)	X	X	X	X
	RMS-11 MACRO Reference Manual (AA-H683A-TC)			X	
8	<b>Compatibility Mode (RSX-11M)</b>				
	VAX-11/RSX-11M User's Guide (AA-D037B-TE)		X	X	
	VAX-11/RSX-11M Programmer's Reference Manual (AA-D020B-TE)		X	X	
9	<b>System Programming</b>				
	VAX/VMS Real-Time User's Guide (AA-H784A-TE)		X	X	
	VAX/VMS Guide to Writing a Device Driver (AA-H499B-TE)			X	X
	VAX/VMS System Dump Analyzer Reference Manual (AA-J526A-TE)			X	
	VAX-11 PATCH Utility Reference Manual (AA-H785A-TE)		X	X	
10	<b>System Management and Operation</b>				
	VAX-11 Software Installation Guide (AA-D021C-TE)				X
	VAX/VMS System Manager's Guide (AA-D027B-TE)				X
	VAX/VMS Operator's Guide (AA-D025B-TE)	X	X	X	X
	VAX/VMS UETP User's Guide (AA-D643B-TE)	X			X

<sup>1</sup>OP - operator; AP - application programmer; SP - system programmer; SM - system manager.

## Volume 1. General Information

This volume contains manuals that introduce users to the VAX/VMS operating system. The release notes should be read first, because they describe changes, errors, and corrections that have not been documented elsewhere. Two reference documents are included in Volume 1: an index of topics covered in the documentation set, and a glossary of terms used throughout.

## **VAX-11 Information Directory and Index**

This document provides an introduction to the software documentation set shipped with the current version of the VAX/VMS operating system. It provides a summary of each document and an index that directs the reader to the manual(s) in which each entry is discussed.

## **VAX/VMS Summary Description and Glossary**

This document introduces the concepts of the operating system and contains a glossary of VAX-11 terms.

## **VAX/VMS Primer**

This tutorial document introduces a new VAX/VMS user to the DIGITAL Command Language (DCL), file manipulation, program development, and elementary operating system concepts.

## **VAX/VMS Release Notes**

This document defines the VAX/VMS release kit. It provides information on installing the kit, a summary of the differences between this version of VAX/VMS and the previous version, and notes to published documentation. This document should be read before the system is installed.

## **Volume 2 (A and B). Command Language and System Messages**

This volume provides a detailed description of the DIGITAL Command Language (DCL), a guide to developing command procedures using this command language, and a complete list of messages produced by the operating system.

### **VAX/VMS Command Language User's Guide**

This document describes the DIGITAL Command Language (DCL). It provides detailed reference information and examples of all commands available to general users.

### **VAX/VMS Guide to Using Command Procedures**

This guide presents key concepts and techniques for developing command procedures using the DIGITAL Command Language (DCL). Many examples, including examples of complete command procedures, are included to demonstrate applications of the concepts and techniques discussed.

### **VAX/VMS System Messages and Recovery Procedures Manual**

This document contains a list of system messages. For most messages, descriptions and suggested recovery procedures are also provided. The manual is intended for all users of the VAX/VMS operating system.

## **Volume 3 (A and B). Program Development Tools**

The program development volume describes how to edit, link, and debug a program with the VAX/VMS operating system. It also provides information on the VAX-11 MACRO assembly language and various utilities, including SORT routines.

### **VAX-11 Text Editing Reference Manual**

This document describes in detail the features and use of SOS, an interactive text-editing program provided with the VAX/VMS operating system. It is intended as a reference manual for users who are familiar with text-editing programs and who want to learn more about the SOS text editor.

### **VAX-11 EDT Editor Reference Manual**

This document describes EDT, an interactive text editor with screen-editing capabilities. With EDT, users can edit files by character, using the keypad, and by line. Included in the manual are descriptions of EDT commands, the command options and qualifiers, and their usage. This manual provides the user with all the information necessary to create and modify files with EDT. Users can refer to the manual as an introduction to the editor and as a reference source.

### **VAX-11 Utilities Reference Manual**

This manual is intended for users who are already familiar with VAX/VMS system concepts. The following utilities are discussed:

- Personal Mail Utility (MAIL), a program that allows users to exchange messages within the same system or between any VAX-11 processors connected via DECnet-VAX
- File Transfer Utility (FLX), a program that transfers files from one volume to another and performs volume format conversions
- SLP and SUMSLP, two batch-oriented editors used to incorporate changes into source files and to indicate these changes with an audit trail
- Disk Save and Compress Utilities (DSC), three programs used to back up and restore disk volumes that have been formatted and initialized as Files-11 volumes
- Bad Block Locator Utility (BAD), a program to determine and record the number and location of bad blocks on block-structured volumes
- File Structure Verification Utility (VFY), a program to check the readability and validity of Files-11 volumes
- Librarian Utility (Librarian), a program for storing useful modules in a central accessible location
- Message Utility, a program for creating customized message libraries

## **VAX-11 SORT User's Guide**

This document describes how to use the VAX-11 SORT Utility, and is written for all VAX/VMS system users. VAX-11 SORT can perform various sorting and merging operations and can accept a variety of specifications. VAX-11 SORT operates in native mode.

## **PDP-11 SORT Reference Manual**

This document describes the features and operations of the PDP-11 SORT Utility. PDP-11 SORT can perform various sorting operations and can accept a variety of specifications. PDP-11 SORT operates in compatibility mode (see Volume 8).

## **VAX-11 MACRO User's Guide**

This user's guide contains the information required by an assembly language programmer to assemble VAX-11 MACRO programs and to use the VAX-11 MACRO assembly language efficiently.

## **VAX-11 MACRO Language Reference Manual**

This document describes the assembly language supported by VAX/VMS. All symbols, expressions, addressing modes, and directives are described in detail. Programmers should read the *VAX-11 MACRO User's Guide* before using this manual.

## **VAX-11 Linker Reference Manual**

This document provides the information required for linking object modules into executable, shareable, or system images.

## **VAX-11 Symbolic Debugger Reference Manual**

This document contains the information required for debugging assembled and linked object programs, primarily those written in VAX-11 MACRO assembly language.

## **Volume 4. System Services and I/O**

This volume provides detailed information on VAX/VMS services as well as the information required to interface directly with the I/O device drivers supplied as a part of the operating system. Users of this volume should be familiar with a VAX-11 native-mode programming language. (VAX/VMS system services can be used only with languages that produce native code for VAX-11 hardware.)

## **VAX/VMS System Services Reference Manual**

This document describes the VAX/VMS system services. It provides coding conventions, tutorial information, examples showing how to use system ser-

vices, and detailed reference information on the arguments required by each system service.

### **VAX/VMS I/O User's Guide**

This user's guide contains the information needed to interface the I/O device drivers directly with VAX/VMS using the I/O system services supplied with the operating system. This manual is intended for system programmers who want to take advantage of the time and/or space savings that result from direct use of the I/O devices. Readers are expected to have some experience with either VAX-11 FORTRAN or VAX-11 MACRO.

## **Volume 5. Run-Time Library**

This volume provides a detailed description of the VAX-11 Run-Time Library and describes how to design and code library procedures.

### **VAX-11 Run-Time Library Reference Manual**

This manual contains detailed information about the VAX-11 Run-Time Library. It introduces the library, describes the calling and naming conventions, and presents all procedures of a general nature. Each procedure is documented with a functional description, including algorithms and examples, and instructions for access from all VAX-11 supported languages. Readers should be familiar with the VAX/VMS operating system and should be proficient in at least one of the supported languages.

### **VAX-11 Guide to Creating Modular Library Procedures**

This document describes how to design and code procedures so they can be installed in an object module library or in a shareable image. It includes the modular programming standard and recommendations for modular programming in any language.

## **Volume 6. VAX-11 Record Management Services**

This volume provides information on the VAX-11 Record Management Services (VAX-11 RMS) for all levels of user. The introductory manual presents basic record and file concepts. The other two manuals present more detailed information for VAX-11 MACRO programmers.

### **Introduction to VAX-11 Record Management Services**

This document contains a general description of the native-mode VAX-11 Record Management Services (VAX-11 RMS) of the VAX/VMS operating system. The information in this document is introductory: it outlines the basic concepts of disk and tape files and describes their interface with VAX-11 RMS; it describes the various file organizations, record access modes, and record formats; and it outlines general procedures for creating and processing files.

## **VAX-11 Record Management Services User's Guide**

This user's guide contains detailed information on using the capabilities of VAX-11 Record Management Services (VAX-11 RMS) efficiently. The manual describes how VAX-11 MACRO programmers can use VAX-11 RMS I/O routines within their programs and how high-level language programmers can use VAX-11 RMS directly through a call facility within their language. Users of this manual should be familiar with the VAX-11 MACRO conventions observed in constructing symbols and the use of numbers, operators, and expressions.

## **VAX-11 Record Management Services Reference Manual**

The intent of this manual is to enable VAX-11 MACRO programmers to use the VAX-11 Record Management Services (VAX-11 RMS) with the VAX/VMS operating system. Many data operations can be performed by using VAX-11 RMS and associated control routines. Users can perform these operations simply by calling a VAX-11 RMS routine, with the appropriate parameters, rather than writing their own routines.

## **Volume 7. RMS-11 Record Management Services**

This file-management volume consists of manuals that describe the File Control Services (FCS) of the RSX-11M and RSX-11M-PLUS operating systems. The manuals describe how to install and use Record Management Services for PDP-11 operating systems (RMS-11) on these systems. On the VAX/VMS operating system, RMS-11 utilities run in compatibility mode (see Volume 8).

### **RMS-11 User's Guide**

This document introduces data organization concepts; sequential and relative file applications; indexed file and indexed task design; and common optimization techniques. It also describes the operation and use of the following RMS-11 utilities:

- RMSDFN - create files
- RMSCNV - move data from one file to another
- RMSBCK - create back-up copies of files
- RMSDSP - list attributes of RMS-11 files and names of back-up files
- RMSRST - restore back-up files to their original state
- RMSIFL - load, using a fast method, an indexed file with records from any type of RMS-11 file

### **RMS-11 MACRO-11 Reference Manual**

This document provides a complete description of Record Management Services for PDP-11 operating systems (RMS-11) as set up on an RSX-11M,

RSX-11M-PLUS, RSTS/E, or IAS operating system. RMS-11 files can be organized sequentially, relatively, or with embedded indexes. This document will help system programmers using MACRO-11 to declare RMS-11 facilities, access fields in control blocks at run time, allocate and initialize control blocks, and perform file and record operations.

## **Volume 8. Compatibility Mode (RSX-11M)**

Compatibility mode is a processor state that allows PDP-11 programs to execute under the VAX/VMS operating system. Software controls the processor mode. When a non-native program has been prepared for execution, VAX/VMS places the processor in compatibility mode just before passing control to the program. VAX/VMS accomplishes this in a manner that is transparent to the user.

### **VAX-11/RSX-11M User's Guide**

This user's guide provides the information needed to use the VAX/VMS MCR command language, execute MCR indirect command files, and use RSX-11M components under VAX/VMS. The information in this document is intended both to allow RSX-11M users to operate in a familiar environment, and to ease their transition to the DIGITAL Command Language (DCL), the primary VAX/VMS command language. This manual also contains general information about performing an RSX-11M or RSX-11S system generation under VAX/VMS.

### **VAX-11/RSX-11M Programmer's Reference Manual**

This document describes VAX/VMS support of the RSX-11M executive directives. It contains the information needed by an RSX-11M programmer responsible for making RSX-11M Version 3.2 task images run under the VAX/VMS operating system.

## **Volume 9. System Programming**

This volume contains the information that system programmers need for real-time applications programming; for writing device drivers for devices that are not supported by DIGITAL software; and for modifying device-driver images, shareable images, and executable images. It also contains information on determining the cause of a VAX/VMS operating system failure.

### **VAX/VMS Real-Time User's Guide**

This document discusses needs common to a variety of real-time programming applications and describes the features of the VAX/VMS operating system that meet these needs. It also contains a number of examples illustrating significant or complex points.

### **VAX/VMS Guide to Writing a Device Driver**

Under VAX/VMS, a device driver is a set of routines and tables that the operating system uses to process an I/O request for a particular type of device.

This document explains how to write device drivers for devices that are not supported by DIGITAL software and how to load these drivers into the VAX/VMS operating system.

### **VAX/VMS System Dump Analyzer Reference Manual**

This document provides the information required to use the System Dump Analyzer, a utility that helps determine the cause of an operating system failure. This manual is intended for users who are familiar with VAX/VMS internal design, such as VAX/VMS developers, DIGITAL Software Support Specialists, and programmers who are writing their own device drivers.

### **VAX-11 PATCH Utility Reference Manual**

This document provides the information necessary for examining and modifying shareable images, device-driver images, and executable images written in any language supported by the VAX/VMS operating system. This manual is intended for experienced system programmers.

## **Volume 10. System Management and Operation**

This volume contains information on generation and day-to-day operation of the VAX/VMS operating system.

### **VAX-11 Software Installation Guide**

This document contains instructions for installing the VAX/VMS system and the optional software components on a VAX-11/780 processor.

### **VAX/VMS System Manager's Guide**

This document describes the tasks associated with VAX/VMS system management. These tasks include setting up the user authorization file; maintaining public files and volumes; setting up disk quotas; installing known images; setting up start-up procedures; maintaining batch, print, and terminal queues; monitoring and tuning the system; setting values for the system generation parameters; and logging errors.

### **VAX/VMS Operator's Guide**

This document describes the operating procedures and commands used by a VAX/VMS system operator. It also describes the messages produced by the Operator's Communication Process (OPCOM).

### **VAX/VMS UETP User's Guide**

This document describes the purpose of the User Environment Test Package (UETP) and provides operating instructions for running it in its entirety or for running selected test phases. It also includes a listing of UETP system messages.



# VAX/VMS Optional Document Descriptions

Optional documents are shipped only to customers who have purchased special licenses for software components. Table 2 lists the optional manuals currently available and the suggested audience for each. Brief descriptions of the manuals are listed below.

**Table 2: Optional<sup>1</sup> VAX/VMS Software Documents**

Title (Order Number)	Suggested Audience <sup>2</sup>			
	OP	AP	SP	SM
<b>BASIC</b>				
PDP-11 BASIC-PLUS-2 Language Reference Manual (AA-H774A-TC)		X		
RSX/IAS/VMS BASIC-PLUS-2 User's Guide (AA-0157C-TC)		X		
VAX-11 BASIC Language Reference Manual (AA-H867A-TE)		X		
VAX-11 BASIC User's Guide (AA-H869A-TE)		X		
VMS BASIC-PLUS-2 Release Notes (AA-J362A-TE)		X		
<b>BLISS</b>				
BLISS Language Guide (AA-H275B-TK)			X	
BLISS Pocket Guide (AV-H289B-TK)			X	
VAX-11 BLISS-32 User's Guide (AA-H322B-TE)			X	X

(Continued on next page)

<sup>1</sup> Optional documents accompany software components for which you must purchase a special license.

<sup>2</sup> The audiences for each document are identified by an "X" in one or more of the right-hand columns of the table. The job titles used are defined as follows:

**OP** The *operator* is anyone who uses the VAX/VMS operating system directly.

**AP** The *application programmer* uses high-level languages to develop programs for user applications.

**SP** The *system programmer* uses VAX-11 MACRO assembly language (or a development language) to maintain, modify, and develop system programs. These programs are used to operate the VAX-11 processor and its peripheral devices.

**SM** The *system manager* is responsible for overall operation of the VAX/VMS system, from installing the system to overseeing its performance to supervising day-to-day operations.

These job titles are only loosely defined, but are useful for indicating the general audience for each document. In small installations, all tasks may be performed by a single person. Elsewhere, an application programmer might program in assembly language and a system programmer might be responsible for system management. When functions overlap, you should make appropriate adjustments from the suggested audiences listed in Table 2.

**Table 2: Optional<sup>1</sup> VAX/VMS Software Documents (Cont.)**

Title (Order Number)	Suggested Audience <sup>2</sup>			
	OP	AP	SP	SM
<b>COBOL</b>				
PDP-11 COBOL Language Reference Manual (AA-1749E-TC)		X		
PDP-11 COBOL Pocket Guide (AV-1750C-TC)		X		
PDP-11 COBOL User's Guide (AA-1757D-TC)		X		
VAX-11 COBOL-74 Language Reference Manual (AA-C985A-TE)		X		
VAX-11 COBOL-74 User's Guide (AA-C986A-TE)		X		
<b>CORAL</b>				
CORAL 66 Language Reference Manual (AA-D111A-TC)		X	X	
IAS/RSX/VMS CORAL 66 User's Guide (AA-D112A-TK)		X	X	
<b>DATATRIEVE</b>				
DATATRIEVE Primer (AA-J106A-TC)	X			
User's Guide to DATATRIEVE-11 (AA-C742A-TC)		X	X	
<b>DECnet-VAX</b>				
DECnet-VAX System Manager's Guide (AA-D902A-TE)		X	X	X
and Update Notice No. 1 (AD-D902A-T1)		X	X	X
DECnet-VAX User's Guide (AA-D901A-TE)		X	X	
and Update Notice No. 1 (AD-D901A-T1)		X	X	
<b>FORTRAN</b>				
IAS/RSX FORTRAN IV User's Guide (AA-1936E-TC)		X		
PDP-11 FORTRAN Language Reference Manual (AA-1855D-TC)		X		
VAX-11 FORTRAN Installation Guide/Release Notes (AA-H953A-TE)				X

(Continued on next page)

<sup>1</sup> Optional documents accompany software components for which you must purchase a special license.

<sup>2</sup> **OP** - operator; **AP** - application programmer; **SP** - system programmer; **SM** - system manager.

**Table 2: Optional<sup>1</sup> VAX/VMS Software Documents (Cont.)**

Title (Order Number)	Suggested Audience <sup>2</sup>			
	OP	AP	SP	SM
<b>FORTRAN (Cont.)</b>				
VAX-11 FORTRAN Language Reference Manual (AA-D034B-TE)		X		
VAX-11 FORTRAN User's Guide (AA-D035B-TE)		X		
<b>MUX200</b>				
MUX200/VAX Release Notes (AA-H956A-TC)	X	X		X
MUX200/VAX V1.0 Emulator System Manager's Guide (AA-H955A-TC)	X			X
MUX200/VAX V1.0 Emulator User's Guide (AA-H954A-TC)	X	X		
<b>PASCAL</b>				
VAX-11 PASCAL Installation Guide/Release Notes (AA-J181A-TE)				X
VAX-11 PASCAL Language Reference Manual (AA-H484A-TE)		X		
VAX-11 PASCAL Primer (AA-J180A-TE)		X		
VAX-11 PASCAL User's Guide (AA-H485A-TE)		X		
<b>Protocol Emulator</b>				
VAX-11 2780/3780 Protocol Emulator User's Guide (AA-H473A-TE)	X	X	X	X

<sup>1</sup>Optional documents accompany software components for which you must purchase a special license.

<sup>2</sup>OP - operator; AP - application programmer; SP - system programmer; SM - system manager.

## BASIC

### **PDP-11 BASIC-PLUS-2 Language Reference Manual**

This document describes the BASIC-PLUS-2 programming language. It explains BASIC-PLUS-2 statements, functions, and error messages. For system-dependent information, see the *RSX/IAS/VMS BASIC-PLUS-2 User's Guide*.

### **RSX/IAS/VMS BASIC-PLUS-2 User's Guide**

This user's guide describes the procedures for using BASIC-PLUS-2 on the RSX-11, IAS, and VAX/VMS (compatibility mode) operating systems. It

describes system-dependent features, use of the compiler, resident libraries, files, and utilities.

### **VAX-11 BASIC Language Reference Manual**

This document describes the VAX-11 BASIC programming language. It describes the syntax and usage rules for each language element. The manual is alphabetically ordered by statement and function, with each language element on its own page. A task-oriented table of contents allows an unsophisticated VAX-11 BASIC user to find information easily.

### **VAX-11 BASIC User's Guide**

This document describes the BASIC language on the VAX-11 processor. It is divided into two parts: (1) an introduction to VAX-11 BASIC, and (2) advanced features of VAX-11 BASIC. Part 1 is designed to help the beginner acquire knowledge gradually. Part 2 describes the new features of VAX-11 BASIC and includes information on how to call procedures written in other languages, how to specify data types, and how to use the VAX-11 Symbolic Debugger.

### **VMS BASIC-PLUS-2 Release Notes**

This document describes the changes made in BASIC-PLUS-2 after Version 1.5. These changes include new features and corrections to known problems.

## **BLISS**

### **BLISS Language Guide**

This document is a combined tutorial and reference manual for the BLISS-32 programming language. BLISS-32 is oriented toward transportable system programming, and is primarily intended for knowledgeable users of the VAX-11 processor and the VAX/VMS operating system.

### **BLISS Pocket Guide**

This guide presents a syntax summary for the family of BLISS language dialects consisting of BLISS-16, BLISS-32, and BLISS-36. It describes the Common BLISS language features that constitute the bulk of all three dialects, plus the system-specific features unique to each dialect. A summary of the command line syntax for each of the compilers is also provided.

### **VAX-11 BLISS-32 User's Guide**

This document describes the VAX-11 BLISS-32 compiler and its use, and gives basic information about linking, executing, and debugging BLISS-32 programs. It also describes BLISS-32 machine-specific functions, BLISS tools, and other topics relevant to BLISS-32 programming.

## COBOL

### **PDP-11 COBOL Language Reference Manual**

This document describes the PDP-11 COBOL programming language, including its organization, syntax, and semantics. For system-dependent information, see the *PDP-11 COBOL User's Guide*.

### **PDP-11 COBOL Pocket Guide**

This guide contains the general formats for PDP-11 COBOL statements; it also includes other frequently needed information, such as data formats, in a convenient form.

### **PDP-11 COBOL User's Guide**

This document describes the use of PDP-11 COBOL. It includes procedures for compiling, task building, and running PDP-11 COBOL programs. This user's guide also lists compiler, record management services, and Object Time System diagnostics. Under VAX/VMS, PDP-11 COBOL operates in compatibility mode and generates compatibility-mode object programs.

### **VAX-11 COBOL-74 Language Reference Manual**

This document describes the VAX-11 COBOL-74 programming language, including its organization, syntax, and semantics. For system-dependent information, see the *VAX-11 COBOL-74 User's Guide*.

### **VAX-11 COBOL-74 User's Guide**

This document describes the use of VAX-11 COBOL-74. It includes procedures for compiling, linking, and running VAX-11 COBOL-74 programs. This user's guide also lists compiler, record management services, and run-time system diagnostics. VAX-11 COBOL-74 operates in compatibility mode and generates native-mode object modules.

## CORAL

### **CORAL 66 Language Reference Manual**

This manual is intended for programmers using CORAL 66 on any DIGITAL computer. It provides a definition of DIGITAL CORAL 66. The manual should be used for reference purposes only; it does not attempt to teach CORAL 66 to the reader.

### **IAS/RSX/VMS CORAL 66 User's Guide**

This manual describes the compiling, linking, and running of CORAL source programs under the IAS, RSX-11D, and RSX-11M operating systems. Two CORAL run-time libraries are also described: the Object Time System Li-

brary and the Stand-Alone Object Time System Library. In addition, this guide describes use of the compiler under VAX/VMS. Compiling is performed in compatibility mode; the linking and running processes, in native mode. The CORAL run-time library is also explained. Users of this manual should have some knowledge of the operating system, and should have an appropriate set of operating system manuals for reference.

## **DATATRIEVE**

### **DATATRIEVE Primer**

This document provides a tutorial approach to the basics of DATATRIEVE-11. It describes how to:

- Enter, store, change, and sort data
- Create tables
- Create domains and fields using the Application Design Tool

### **User's Guide to DATATRIEVE-11**

This document describes the use of DATATRIEVE-11 to extract, display, create, and change data from RMS-11 files. On VAX/VMS, DATATRIEVE-11 operates in compatibility mode.

## **DECnet-VAX**

### **DECnet-VAX System Manager's Guide and Update Notice No. 1**

This document tells the DECnet system manager how to control, monitor, and test a DECnet-VAX system, and how to down-line load a DECnet-11S node.

### **DECnet-VAX User's Guide and Update Notice No. 1**

This document describes the programmed requests and terminal functions that allow a DECnet-VAX node to communicate with another DECnet node. It explains how to write a MACRO or FORTRAN program that uses DECnet, how to perform intertask communications, and how to access remote files. It also describes interactive facilities for transferring files to and from remote nodes.

## **FORTRAN**

### **IAS/R SX FORTRAN IV User's Guide**

This user's guide describes the procedures for compiling, linking, and executing PDP-11 FORTRAN IV programs on the IAS and RSX operating systems.

It also explains the FORTRAN Object Time System (OTS), a collection of routines that includes mathematical functions, utilities, input/output handlers, and system services; OTS routines are optional and may be selected during installation. On VAX/VMS, PDP-11 FORTRAN IV operates in compatibility mode.

### **PDP-11 FORTRAN Language Reference Manual**

This document describes PDP-11 FORTRAN IV, which is supported by VAX/VMS in compatibility mode. The manual defines the elements of FORTRAN IV and the structure of FORTRAN IV programming. It also describes the components of a FORTRAN IV statement in general, and the assignment, control, input/output, format, and specification statements in particular. The manual contains directions for using and writing FORTRAN IV library subprograms. It does not include system-dependent information, which is described in the *IAS/RSX FORTRAN IV User's Guide*. This manual also clarifies the relationships between PDP-11 FORTRAN IV and PDP-11 FORTRAN IV-PLUS, which is not supported by VAX/VMS.

### **VAX-11 FORTRAN Installation Guide/Release Notes**

This document contains instructions for installing the VAX-11 FORTRAN compiler on the VAX/VMS operating system. It also contains information not included elsewhere in the documentation set, typically concerning software and/or documentation changes that were made late in the development cycle. This document should be read before the VAX-11 FORTRAN compiler is installed or used.

### **VAX-11 FORTRAN Language Reference Manual**

This document describes the FORTRAN language elements supported by VAX-11 FORTRAN. It is intended to be used as a reference manual in preparing VAX-11 FORTRAN source programs; it is not intended to be a tutorial document or to present information on the VAX-11 FORTRAN user's interface with the VAX/VMS system.

### **VAX-11 FORTRAN User's Guide**

This document describes how to compile, debug, and execute VAX-11 FORTRAN language programs using the VAX/VMS operating system facilities. It also includes information on programming efficiency, VAX-11 FORTRAN input/output, error processing, and the compatibility of VAX-11 FORTRAN with PDP-11 FORTRAN.

## **MUX200**

### **MUX200/VAX Release Notes**

This manual contains information not included elsewhere in the MUX200/VAX documentation concerning changes in software and/or docu-

mentation that were made late in the development cycle. This information should be read before the MUX200/VAX V1.0 Emulator is installed or used.

### **MUX200/VAX V1.0 Emulator System Manager's Guide**

This manual is intended for the system manager or whoever installs and controls the MUX200/VAX V1.0 Emulator. Users should first read the *MUX200/VAX V1.0 Emulator User's Guide* and should possess knowledge of the VAX/VMS operating system. The manual covers the following subjects:

- Subsystem control using privileged commands
- Installation and trouble-shooting procedures

### **MUX200/VAX V1.0 Emulator User's Guide**

This manual describes how to start and operate the MUX200/VAX V1.0 Emulator. It explains how to use the MUX200/VAX system to emulate as many as 16 CDC 200 User Terminals (UT) and how to communicate with the remote CDC or other host computer capable of using 200 UT mode 4A communications protocol. Users should have a basic knowledge of the VAX/VMS operating system. The manual gives no details about control of the host computer, because the facilities available will vary with the installation. Control of the host computer is described in the relevant host documentation.

## **PASCAL**

### **VAX-11 PASCAL Installation Guide/Release Notes**

This document contains instructions for installing the VAX-11 PASCAL compiler on the VAX/VMS operating system. It also contains information not included elsewhere in the documentation set, typically concerning software and/or documentation changes that were made late in the development cycle. This document should be read before the VAX-11 PASCAL compiler is installed or used.

### **VAX-11 PASCAL Language Reference Manual**

This document describes the elements of the Pascal language supported by VAX-11 PASCAL. It is intended as a reference manual for use in preparing VAX-11 PASCAL source programs.

### **VAX-11 PASCAL Primer**

This document introduces VAX-11 PASCAL for programmers unfamiliar with the Pascal language. It also outlines the steps to compile, link, and execute VAX-11 PASCAL programs.

## **VAX-11 PASCAL User's Guide**

This document describes how to compile, link, and execute VAX-11 PASCAL programs on the VAX/VMS operating system. It also contains information useful to VAX-11 PASCAL programmers, dealing with input and output, procedure calling, error processing, and storage allocation.

## **Protocol Emulator**

### **VAX-11 2780/3780 Protocol Emulator User's Guide**

This document describes how to use the VAX-11 2780/3780 Protocol Emulator to pass files between a VAX-11 processor and an IBM system that is configured to support a 2780 or 3780 remote batch terminal. It also describes hardware and software requirements of the interconnected systems, how to install the software in your VAX/VMS system, and how to test your communications link.



# Index

The following general index contains entries for major topics covered in the basic VAX/VMS documentation set. No entries are listed for optional manuals, that is, documents for software products purchased by special license. The index is not exhaustive, and is not intended to replace the indexes of the individual manuals. Rather, its purpose is to guide you to primary sources of information on the wide variety of topics covered by the documentation set.

Most index entries refer to one manual only, the primary source of information on that topic. When more than one manual is listed, you can assume that these sources contain closely related information.

Each manual is identified by a 3- or 4-letter abbreviation. The number of the volume that contains the manual appears in parentheses after the abbreviation. For example, the entry

Bus adapters, *WDD (9)*

points you to the *VAX/VMS Guide to Writing a Device Driver (WDD)*, which is in volume 9. To find the actual chapter or page where bus adapters are discussed, you must consult the table of contents or the index of the manual specified.

The abbreviations and volume numbers of all of the manuals in the VAX/VMS documentation set are listed on the following pages.

## **Volume 1. General Information**

- IDI (1)* - VAX-11 Information Directory and Index
- SUM (1)* - VAX/VMS Summary Description and Glossary
- PRM (1)* - VAX/VMS Primer
- REL (1)* - VAX/VMS Release Notes

## **Volume 2A. Command Language and System Messages**

- DCL (2A)* - VAX/VMS Command Language User's Guide
- GCP (2A)* - VAX/VMS Guide to Using Command Procedures

## **Volume 2B. Command Language and System Messages**

- MSG (2B)* - VAX/VMS System Messages and Recovery Procedures Manual

## **Volume 3A. Program Development Tools**

- SOS (3A)* - VAX-11 Text Editing Reference Manual
- EDT (3A)* - VAX-11 EDT Editor Reference Manual
- UTIL (3A)* - VAX-11 Utilities Reference Manual
- SORT (3A)* - VAX-11 SORT User's Guide
- SORT<sub>11</sub> (3A)* - PDP-11 SORT Reference Manual

## **Volume 3B. Program Development Tools**

- MACU (3B)* - VAX-11 MACRO User's Guide
- MACR (3B)* - VAX-11 MACRO Language Reference Manual
- LINK (3B)* - VAX-11 Linker Reference Manual
- DEBUG (3B)* - VAX-11 Symbolic Debugger Reference Manual

## **Volume 4. System Services and I/O**

- SSR (4)* - VAX/VMS System Services Reference Manual
- IOG (4)* - VAX/VMS I/O User's Guide

## **Volume 5. Run-Time Library**

- RTL (5)* - VAX-11 Run-Time Library Reference Manual
- MOD (5)* - VAX-11 Guide to Creating Modular Library Procedures

## **Volume 6. VAX-11 Record Management Services**

- IRMS (6)* - Introduction to VAX-11 Record Management Services
- RMSU (6)* - VAX-11 Record Management Services User's Guide
- RMSR (6)* - VAX-11 Record Management Services Reference Manual

## **Volume 7. RMS-11 Record Management Services**

- RMS<sub>11</sub>U (7)* - RMS-11 User's Guide
- RMS<sub>11</sub>R (7)* - RMS-11 MACRO Reference Manual

## **Volume 8. Compatibility Mode (RSX-11M)**

- RSXU (8)* - VAX-11/RSX-11M User's Guide
- RSXR (8)* - VAX-11/RSX-11M Programmer's Reference Manual

## **Volume 9. System Programming**

- REAL (9)* - VAX/VMS Real-Time User's Guide
- WDD (9)* - VAX/VMS Guide to Writing a Device Driver
- SDA (9)* - VAX/VMS System Dump Analyzer Reference Manual
- PTCH (9)* - VAX-11 PATCH Utility Reference Manual

## **Volume 10. System Management and Operation**

- SIG (10)* - VAX-11 Software Installation Guide
- SMGR (10)* - VAX/VMS System Manager's Guide
- OPG (10)* - VAX/VMS Operator's Guide
- UETP (10)* - VAX/VMS UETP User's Guide

## A

Abbreviating commands, *PRM* (1)  
in EDT, *EDT* (3A)

Accessing  
devices  
in batch jobs, *DCL* (2A)

files  
RMS-11, *RMS11U* (7)

processor status longword (PSL)  
in debugger, *DEBUG* (3B)

records  
RMS-11, *RMS11U* (7)

the system, *PRM* (1)  
commands for, *DCL* (2A)  
in EDT, *EDT* (3A)

Access modes  
definition of, *SUM* (1)  
specifying for system services, *SSR* (4)

Access violation, *SDA* (9)

Accounting file, *SMGR* (10)  
operator's command for, *OPG* (10)  
\$SNDACC system service, *SSR* (4)

Accounting log file, *SMGR* (10)

ACP (Ancillary control process), *IOG* (4)

Activating a fork process, *WDD* (9)

Adapter control block (ADP), *WDD* (9)

Addressing modes, *MACR* (3B)

Address Routing Sort  
PDP-11, *SORT11* (3A)

Address sort  
PDP-11, *SORT11* (3A)  
VAX-11, *SORT* (3A)

ADP (Adapter control block), *WDD* (9)

ALLOCATE command, *DCL* (2A)

Allocation  
of devices, *IOG* (4)  
commands for, *DCL* (2A)  
system services for, *SSR* (4)

of map registers, *WDD* (9)

of resources  
in modular procedures, *MOD* (5)  
process-wide, *RTL* (5)

of virtual memory, *SUM* (1)  
process-wide, *RTL* (5)

Ampersand (&)  
as substitution operator, *GCP* (2A)

Analog-to-digital converter (LPA11-K),  
*IOG* (4)

ANALYZE command, *LINK* (3B)

Analyzing  
object modules, *LINK* (3B)  
a VAX/VMS system crash, *SDA* (9)

Ancillary control process (ACP)  
Queue I/O (QIO) functions, *IOG* (4)

Apostrophe (')  
as substitution operator, *GCP* (2A)

APPEND command, *DCL* (2A)

ASCII output  
formatted, *SSR* (4)

Assembler directives  
general, *MACR* (3B)

Assembling  
a MACRO program, *MACU* (3B)  
introduction to, *PRM* (1)  
a program, *PRM* (1)

ASSIGN command, *DCL* (2A)

Assignment of channels, *IOG* (4)  
through system services, *SSR* (4)

Assignment statements, *DCL* (2A)  
= (assignment statement), *DCL* (2A)  
introduction to, *PRM* (1)  
MACRO, *MACR* (3B)

ASSIGN/MERGE operator's command,  
*OPG* (10)

ASSIGN/QUEUE operator's command,  
*OPG* (10)

\$ASSIGN system service, *SSR* (4)

AST (See Asynchronous system trap)

Asynchronous system trap (AST), *SSR* (4)  
definition, *SUM* (1)  
I/O functions, *IOG* (4)  
kernel mode, *WDD* (9)  
quota, *IOG* (4)  
service routines  
real-time programming, *REAL* (9)  
system services, *SSR* (4)  
user mode, *WDD* (9)

@(Execute procedure), *DCL* (2A)

Attribute control block, *IOG* (4)

Audit trail  
SLP, *UTIL* (3A)  
SUMSLP, *UTIL* (3A)

AUTHORIZE Utility, *SMGR* (10)

Autoconfiguration, *WDD* (9)

AUTOCONFIGURE command, *WDD* (9)

Automatic restart of system, *SIG* (10)

## B

Backing up  
files, *OPG* (10)  
RMS-11, *RMS11U* (7)  
the system, *OPG* (10), *SIG* (10)  
volumes, *OPG* (10)  
disk, *UTIL* (3A)  
public, *SMGR* (10)

BAD (Bad Block Locator Utility), *UTIL* (3A)  
 Bad Block Locator Utility (BAD), *UTIL* (3A)  
 Balance set  
   definition of, *SUM* (1)  
   system services affecting, *SSR* (4)  
 Base priority (*See* Priority, process)  
 Base registers, *WDD* (9)  
 BASIC command, *DCL* (2A)  
 BASIC/RXS11 command, *DCL* (2A)  
 Batch editors  
   SLP, *UTIL* (3A)  
     invoking, *DCL* (2A)  
   SUMSLP, *UTIL* (3A)  
     invoking, *DCL* (2A)  
 Batch job(s)  
   card reader, *DCL* (2A)  
   commands, *DCL* (2A)  
   execution, *GCP* (2A)  
   log file, *GCP* (2A)  
   processing, *DCL* (2A)  
     introduction to, *PRM* (1)  
   queues, *GCP* (2A)  
     operator's commands for, *OPG* (10)  
     commands for, *DCL* (2A)  
     controlling, *OPG* (10), *SMGR* (10)  
     deleting jobs in, *DCL* (2A)  
     submitting jobs in, *DCL* (2A)  
   synchronization, *GCP* (2A)  
   terminating, *OPG* (10)  
 Batch mode  
   command procedures, *GCP* (2A)  
   sorting  
     PDP-11, *SORT11* (3A)  
     VAX-11, *SORT* (3A)  
 Binary synchronous communications (BSC)  
   mode transfer (DUP11), *IOG* (4)  
 BLISS command, *DCL* (2A)  
 Block  
   adapter control (ADP), *WDD* (9)  
   attribute control, *IOG* (4)  
   Bad Block Locator Utility (BAD),  
     *UTIL* (3A)  
   bootstrap, *IRMS* (6)  
   channel control (CCB), *WDD* (9)  
   channel request (CRB), *WDD* (9)  
   control (*See* Control block)  
   data, *WDD* (9)  
   home, *RMSR* (6)  
     introduction to, *IRMS* (6)  
 I/O  
   introduction to, *IRMS* (6)  
   macroinstructions for, *RMSR* (6)  
   performing, *RMSR* (6)  
   RMS-11, *RMS11R* (7), *RMS11U* (7)  
 Block, I/O, (Cont.)  
   name, *RMSR* (6)  
   types  
     formatting, *SDA* (9)  
 Blocking interrupts, *WDD* (9)  
 Booting the system, *SIG* (10)  
 Bootstrap  
   block, *IRMS* (6)  
   console command files, *SIG* (10)  
   conversational, *SIG* (10)  
   non-stop, *SIG* (10)  
   system bootstrap (SYSBOOT) program,  
     *SIG* (10)  
 Breakpoints, *DBUG* (3B)  
 BSC (Binary synchronous communications)  
   mode transfer (DUP11), *IOG* (4)  
 Buckets, *RMSR* (6)  
   introduction to, *IRMS* (6)  
 Buffer  
   text, *EDT* (3A)  
   type-ahead, *DCL* (2A)  
 Buffered data path, *WDD* (9)  
 Buffered I/O, *WDD* (9)  
   quota, *IOG* (4)  
 Bug check conditions  
   fatal exceptions, *SDA* (9)  
   page faults, *SDA* (9)  
 Building  
   a library, *MOD* (5)  
   a system, *SIG* (10)  
 Bus adapters, *WDD* (9)

## C

Calling  
   routines  
     in debugger, *DBUG* (3B)  
   run-time library procedures, *RTL* (5)  
   system services  
     with high-level language coding, *SSR* (4)  
     with MACRO coding, *SSR* (4)  
 Calls  
   showing, *DBUG* (3B)  
 CANCEL command, *DCL* (2A)  
 Card reader  
   batch jobs, *DCL* (2A)  
   driver, *IOG* (4)  
   function codes, *IOG* (4)  
   tending, *OPG* (10)  
 CCB (Channel control block), *WDD* (9)  
 Change-mode services, *SSR* (4)  
 Changing defaults, *PRM* (1)  
 Changing file attributes, *RMSR* (6)

Channel assignment, *IOG* (4)  
 through system services, *SSR* (4)  
 Channel control block (CCB), *WDD* (9)  
 Channel request block (CRB), *WDD* (9)  
 Character(s)  
 control (*See* Control characters)  
 editing  
 in EDT, *EDT* (3A)  
 in SOS, *SOS* (3A)  
 shorthand  
 EDT, *EDT* (3A)  
 SOS, *SOS* (3A)  
 strings  
 in EDT, *EDT* (3A)  
 equating symbols to, *GCP* (2A)  
 in SOS, *SOS* (3A)  
 CLOSE command, *DCL* (2A)  
 \$CLOSE macroinstruction, *RMSR* (6)  
 Clusters  
 common event flag, *SSR* (4)  
 image, *LINK* (3B)  
 COBOL/C74 command, *DCL* (2A)  
 COBOL/RX11 command, *DCL* (2A)  
 Coding  
 driver tables, *WDD* (9)  
 interrupt service routines, *WDD* (9)  
 Command descriptions, *DCL* (2A)  
 (*See also* individual commands)  
 Command environment, *DCL* (2A)  
 Command file (*See also* Command procedure)  
 for system bootstrap, *SIG* (10)  
 EDT, *EDT* (3A)  
 indirect (MCR), *RSXU* (8)  
 RSX-11M, *RSXU* (8)  
 Command interpreter  
 MCR (Monitor Console Routine), *RSXU* (8)  
 Command language  
 DCL (DIGITAL Command Language),  
*DCL* (2A)  
 MCR (Monitor Console Routine), *RSXU* (8)  
 Command levels  
 in command procedures, *GCP* (2A)  
 Command packets (DR32), *IOG* (4)  
 Command procedure file (*See* Command  
 procedure)  
 Command procedure(s)  
 batch mode, *GCP* (2A)  
 command data, *GCP* (2A)  
 command levels, *GCP* (2A)  
 controlling, *DCL* (2A)  
 creating, *GCP* (2A)  
 introduction to, *DCL* (2A)  
 CTRL/Y interrupts, *GCP* (2A)  
 debugger, *DEBUG* (3B)  
 Command procedure(s), (Cont.)  
 debugging, *GCP* (2A)  
 deleting symbols from, *GCP* (2A)  
 detached process, *GCP* (2A)  
 developing a, *GCP* (2A)  
 documenting a, *GCP* (2A)  
 end-of-file condition, *GCP* (2A)  
 equating symbols to character strings,  
*GCP* (2A)  
 error checking in, *GCP* (2A)  
 Execute procedure (@) command,  
*GCP* (2A)  
 executing, *DCL* (2A)  
 in batch mode, *GCP* (2A)  
 interactively, *GCP* (2A)  
 exiting from, *GCP* (2A)  
 file error, *GCP* (2A)  
 file formats, *GCP* (2A)  
 flow of execution, *GCP* (2A)  
 format for, *GCP* (2A)  
 I/O control, *GCP* (2A)  
 interactive mode, *GCP* (2A)  
 introduction to, *PRM* (1)  
 lexical functions in, *GCP* (2A)  
 logical name assignment, *GCP* (2A)  
 commands for, *DCL* (2A)  
 logical name equivalence, *GCP* (2A)  
 maintaining a, *GCP* (2A)  
 nesting, *GCP* (2A)  
 passing parameters to, *GCP* (2A)  
 PATCH  
 creating, *PTCH* (9)  
 submitting, *PTCH* (9)  
 process logical name, *GCP* (2A)  
 program data, *GCP* (2A)  
 programming, *DCL* (2A)  
 in EDT, *EDT* (3A)  
 introduction to, *PRM* (1)  
 reading, *DCL* (2A)  
 sequential file, *GCP* (2A)  
 \$SEVERITY global symbol, *GCP* (2A)  
 start-up, *SMGR* (10)  
 \$STATUS global symbol, *GCP* (2A)  
 subprocess, *GCP* (2A)  
 substitution operators in, *GCP* (2A)  
 symbols, *GCP* (2A)  
 introduction to, *DCL* (2A)  
 symbol substitution, *GCP* (2A)  
 symbol tables for, *GCP* (2A)  
 for system bootstrap, *SIG* (10)  
 verification, *GCP* (2A)  
 writing files using, *DCL* (2A)  
 Command(s) (*See also* individual listings)  
 abbreviating, *PRM* (1)

Commands, (Cont.)  
   for accessing the system, *DCL (2A)*  
   batch job, *DCL (2A)*  
   bootstrap, *SIG (10)*  
   command procedure, *DCL (2A)*  
   debugger, *DEBUG (3B)*  
   descriptions, *DCL (2A)*  
   device-handling, *DCL (2A)*  
   EDT, *EDT (3A)*  
   file manipulation, *DCL (2A)*  
   HELP, *PRM (1)*  
   operator's, *OPG (10)*  
   program control, *DCL (2A)*  
   program development, *DCL (2A)*  
   prompting, *PRM (1)*  
   SOS, *SOS (3A)*  
   summary of, *DCL (2A)*  
   syntax  
     DCL (DIGITAL Command Language),  
       *DCL (2A)*  
     EDT, *EDT (3A)*  
     MCR (Monitor Console Routine),  
       *RSXU (8)*  
     SOS, *SOS (3A)*  
     SLP, *UTIL (3A)*  
     SUMSLP, *UTIL (3A)*  
   system dump analyzer (SDA), *SDA (9)*  
   terminal communications, *DCL (2A)*  
   terminal control, *DCL (2A)*  
 Common event flag cluster(s), *SSR (4)*  
   name translation, *SSR (4)*  
   in real-time programming, *REAL (9)*  
   in shared (multiport) memory, *SSR (4)*,  
     *REAL (9)*  
   system services for, *SSR (4)*  
 Common event flags, *SSR (4)*  
   definition of, *SUM (1)*  
 Common run-time library (See Run-time  
   library)  
 Compatibility mode  
   definition of, *SUM (1)*  
   instruction set, *RSXR (8)*  
   with RSX-11M, *RSXR (8)*  
   test, *UETP (10)*  
 Compatability Mode Test, *UETP (10)*  
 Compiling a program, *PRM (1)*  
 Completion status codes, *RMSR (6)*  
 Complex functions  
   run-time library procedure for, *RTL (5)*  
 Compressing disk volumes, *UTIL (3A)*  
 Condition handlers, *SSR (4)*  
   commands for, *DCL (2A)*  
   definition of, *SUM (1)*  
 Condition-handling procedures, *RTL (5)*  
   Condition-handling system services, *SSR (4)*  
 CONNECT command, *WDD (9)*  
 \$CONNECT macroinstruction, *RMSR (6)*  
 Connect-to-interrupt capability, *REAL (9)*  
 Console  
   bootstrap command files, *SIG (10)*  
   subsystem, *SIG (10)*  
 CONTINUE command, *DCL (2A)*  
 Continue processing on next volume,  
   *RMSR (6)*  
 Control block  
   adapter (ADP), *WDD (9)*  
   attribute, *IOG (4)*  
   channel, *WDD (9)*  
   run-time, *RMSR (6)*  
   unit (UCB), *WDD (9)*  
   user, *RMSR (6)*, *RMSU (6)*  
 Control characters, *RTL (5)*  
   CTRL (control) keys, *DCL (2A)*  
   EDT, *EDT (3A)*  
   SOS, *SOS (3A)*  
   terminal driver, *IOG (4)*  
 Controller data channel, *WDD (9)*  
 Control routines  
   halt I/O and close files, *RMSR (6)*  
   set default directory, *RMSR (6)*  
   set default file protection, *RMSR (6)*  
 Control/status register (CSR) addresses,  
   *WDD (9)*  
 Conversational bootstrap, *SIG (10)*  
 COPY command, *DCL (2A)*  
 Copying  
   files  
     commands for, *DCL (2A)*  
     in EDT, *EDT (3A)*  
     introduction to, *PRM (1)*  
     in SOS, *SOS (3A)*  
   a system, *SIG (10)*  
 CORAL command, *DCL (2A)*  
 CPU users  
   top (TOPUSERS), *SMGR (10)*  
 Crash  
   VAX/VMS  
     analyzing, *SDA (9)*  
     sample, *SDA (9)*  
 CRB (Channel request block), *WDD (9)*  
 CREATE command, *DCL (2A)*  
 CREATE/DIRECTORY command,  
   *DCL (2A)*  
 \$CREATE macroinstruction, *RMSR (6)*  
 Creating  
   a file  
     in EDT, *EDT (3A)*  
     introduction to, *PRM (1)*

Creating, (Cont.)  
 in SOS, *SOS (3A)*  
 in VAX-11 RMS, *RMSR (6)*, *RMSU (6)*  
 an image, *LINK (3B)*  
 a library, *UTIL (3A)*, *DCL (2A)*  
 permanent global sections, *SSR (4)*  
 a process, *SSR (4)*  
   commands for, *DCL (2A)*  
   in real-time programming, *REAL (9)*  
 a program  
   in EDT, *EDT (3A)*  
   introduction to, *PRM (1)*  
 Cross reference, *RTL (5)*  
   assembly listing, *MACU (3B)*  
   link maps, *LINK (3B)*  
   procedures, *RTL (5)*  
 CSR (Control/status register) addresses,  
   *WDD (9)*  
 CTRL (Control) characters, *DCL (2A)*  
 CTRL/Y interrupts, *GCP (2A)*  
 Current problems in VAX/VMS, *REL (1)*

## D

Data  
 block  
   device, *WDD (9)*  
 check (I/O drivers), *IOG (4)*  
 path  
   buffered, *WDD (9)*  
   direct, *WDD (9)*  
 structures, VAX/VMS  
   analyzing, *SDA (9)*  
 types  
   debugger, *DEBUG (3B)*  
 Data-acquisition device (LPA11-K), *IOG (4)*  
 Date/time  
   in EDT, *EDT (3A)*  
   run-time library procedure, *RTL (5)*  
 DCL (See DIGITAL Command Language)  
 DDB (Device data block), *WDD (9)*  
 DDT (Driver dispatch table), *WDD (9)*  
 DEALLOCATE command, *DCL (2A)*  
 DEASSIGN command, *DCL (2A)*  
 DEASSIGN/QUEUE operator's command,  
   *OPG (10)*  
 DEBUG command, *DCL (2A)*, *DEBUG (3B)*  
 Debugger (symbolic), *DEBUG (3B)*  
   commands, *DEBUG (3B)*  
   data types, *DEBUG (3B)*  
   description, *SUM (1)*  
   facilities, *DEBUG (3B)*  
   initiating, *DEBUG (3B)*

Debugger (symbolic), (Cont.)  
 interfacing, *DCL (2A)*  
 invoking, *DCL (2A)*  
 modes, *DEBUG (3B)*  
 special characters, *DEBUG (3B)*  
 symbol table, *DEBUG (3B)*  
 terminating, *DEBUG (3B)*  
 Debugging  
   command procedures, *GCP (2A)*  
   device drivers  
     DELTA Utility, *WDD (9)*  
     XDELTA Utility, *WDD (9)*  
   executable images, *DEBUG (3B)*  
   MACRO programs, *DEBUG (3B)*  
   PATCH, *PTCH (9)*  
   programs, *DEBUG (3B)*  
   VAX/VMS operating system, *SDA (9)*  
 DECK command, *DCL (2A)*  
 DECnet-VAX  
   description, *SUM (1)*  
 Decoding instructions  
   with debugger, *DEBUG (3B)*  
 Default(s)  
   directory  
     control routines, *RMSR (6)*  
   EDT, *EDT (3A)*  
   file protection  
     control routine, *RMSR (6)*  
   file types, *DCL (2A)*  
   library, *LINK (3B)*  
   logical names, *DCL (2A)*  
     introduction to, *PRM (1)*  
   SOS, *SOS (3A)*  
   temporary, *DCL (2A)*  
 DEFINE command, *DCL (2A)*  
 DELETE command, *DCL (2A)*  
 DELETE/ENTRY command, *DCL (2A)*  
 DELETE/QUEUE operator's command,  
   *OPG (10)*  
 DELETE/SYMBOL command, *DCL (2A)*  
 Deleting  
   a file  
     commands for, *DCL (2A)*  
     in EDT, *EDT (3A)*  
     introduction to, *PRM (1)*  
     in VAX-11 RMS, *RMSR (6)*  
   a process, *SSR (4)*  
   a record, *RMSR (6)*  
   symbols from command procedures,  
     *GCP (2A)*  
 DELTA debugging utility, *WDD (9)*  
 DEPOSIT command, *DCL (2A)*  
 Depositing data  
   with debugger, *DEBUG (3B)*

Detached processes, *SSR (4)*  
   commands for, *DCL (2A)*  
   command procedures for, *GCP (2A)*  
   definition of, *SUM (1)*  
   in real-time programming, *REAL (9)*  
 Device-independent I/O services, *SSR (4)*  
 Device(s)  
   accessing  
     in batch jobs, *DCL (2A)*  
   activation, *WDD (9)*  
   allocation, *IOG (4)*  
     commands for, *DCL (2A)*  
     system services for, *SSR (4)*  
   assignment, *RSXR (8)*  
   data-acquisition, *IOG (4)*  
   data block (DDB), *WDD (9)*  
   driver, *WDD (9)*  
   -driver image  
     patching, *PTCH (9)*  
   -independent I/O services, *SSR (4)*  
   initialization routines (LPA11-K), *IOG (4)*  
   interrupt priority level (IPL), *WDD (9)*  
   introduction to, *PRM (1)*  
   name mapping, *RSXR (8), RSXU (8)*  
   names, *RMSU (6)*  
     RSX-11M, *RSXR (8), RSXU (8)*  
     table of, *DCL (2A)*  
   peripheral  
     real-time programming for, *REAL (9)*  
   protection, *SMGR (10)*  
     operator's command for, *OPG (10)*  
   registers, *WDD (9)*  
   table  
     for SYSGEN, *WDD (9)*  
   test, *UETP (10)*  
 Device Test, *UETP (10)*  
 Diagnostic messages  
   constructing, *UTIL (3A)*  
 Dial-up lines, *IOG (4)*  
 DIFFERENCES command, *DCL (2A)*  
 DIGITAL Command Language (DCL)  
   commands, *DCL (2A)*  
   introduction to, *PRM (1)*  
 Digital I/O register (LPA11-K), *IOG (4)*  
 Digital-to-analog converter (LPA11-K),  
   *IOG (4)*  
 Direct data path, *WDD (9)*  
 Directives  
   assembler, *MACR (3B)*  
   MCR (Monitor Console Routine) indirect  
     file, *RSXR (8)*  
   RSX-11M executive, *RSXR (8)*  
     test, *UETP (10)*  
   VAX-11 MACRO, *MACR (3B)*  
 Direct memory access (DMA), *WDD (9)*  
 Directory  
   commands for creating, *DCL (2A)*  
   default  
     control routines, *RMSR (6)*  
   DIGITAL-supplied, *SIG (10)*  
   in file specification  
     for VAX-11 RMS files, *RMSR (6),*  
       *RMSU (6)*  
   hierarchy, *DCL (2A)*  
   listing, *PRM (1)*  
     in EDT, *EDT (3A)*  
 DIRECTORY command, *DCL (2A)*  
 \$DISCONNECT macroinstruction, *RMSR (6)*  
 Disk  
   advantages of, *IRMS (6)*  
   basic concepts, *IRMS (6)*  
   copying files to/from, *DCL (2A)*  
   driver, *IOG (4)*  
   function codes, *IOG (4)*  
   Queue I/O (QIO) functions, *IOG (4)*  
   quota (*See Quota, disk*)  
   sections, *SSR (4)*  
   structure, Files-11 (*See Files-11*  
     disk structure)  
   volume(s) (*See Volumes, disk*)  
 DISKQUOTA Utility, *SMGR (10)*  
 Disk Save and Compress utilities (DSC)  
   DSC1, *UTIL (3A)*  
   DSC2, *UTIL (3A)*  
   DSC-2 (stand-alone), *UTIL (3A)*  
     copying distribution medium,  
       *SIG (10)*  
     operator's command, *OPG (10)*  
     running, *UTIL (3A)*  
 DISMOUNT command, *DCL (2A)*  
 Dispatching fork processes, *WDD (9)*  
 Displaying  
   files (*See Files, displaying*)  
   memory locations, *SDA (9)*  
   page frame number (PFN) data base,  
     *SDA (9)*  
   process information, *SDA (9)*  
   stacks, *SDA (9)*  
   system page table, *SDA (9)*  
 \$DISPLAY macroinstruction, *RMSR (6)*  
 Display modes  
   PATCH, *PTCH (9)*  
 DISPLAY Utility, *SMGR (10)*  
 Distribution kits, *SIG (10)*  
 DMA (Direct memory access), *WDD (9)*  
 DMC11 interface driver  
   function codes, *IOG (4)*  
 Documentation notes for VAX/VMS, *REL (1)*

- Documentation set
  - description of, *IDI (1)*
  - summary of, *PRM (1)*
- DOS-11 volumes, *UTIL (3A)*
- DPT (Driver prologue table), *WDD (9)*
- DR11-W interface driver, *IOG (4)*
- DR32 interface driver
  - command packets, *IOG (4)*
  - function codes, *IOG (4)*
  - general description, *IOG (4)*
- Driver(s)
  - card reader, *IOG (4)*
  - device, *WDD (9)*
  - disk, *IOG (4)*
  - dispatch table (DDT), *WDD (9)*
  - DMC11, *IOG (4)*
  - DR11-W, *IOG (4)*
  - DR32, *IOG (4)*
  - DUP11, *IOG (4)*
  - fork interrupt priority level (IPL),  
*WDD (9)*
  - fork process, *WDD (9)*
  - interface, *IOG (4)*
  - line printer, *IOG (4)*
  - LPA11-K, *IOG (4)*
  - magnetic tape, *IOG (4)*
  - mailbox, *IOG (4)*
  - prologue table (DPT), *WDD (9)*
  - routines, *WDD (9)*
  - sources, *WDD (9)*
  - tables, *WDD (9)*
  - terminal, *IOG (4)*
- DSC (See Disk Save and Compress utilities)
- DSW return codes
  - VAX/VMS emulation of, *RSXR (8)*
- DUMP command, *DCL (2A)*
- DUP11 interface driver
  - binary mode transfer, *IOG (4)*
  - BSC mode transfer, *IOG (4)*

## E

- EDIT/EDT command, *DCL (2A)*
- Editing a file
  - with EDT, *EDT (3A)*
  - introduction to, *PRM (1)*
  - with SOS, *SOS (3A)*
- Editors (text)
  - batch-oriented
    - introduction to, *PRM (1)*
    - invoking, *DCL (2A)*
    - SLP, *UTIL (3A)*

- Editors (text), (Cont.)
  - SUMSLP, *UTIL (3A)*
  - interactive
    - EDT, *EDT (3A)*
    - introduction to, *PRM (1)*
    - invoking, *DCL (2A)*
    - SOS, *SOS (3A)*
  - EDIT/SLP command, *DCL (2A)*
  - EDIT/SOS command, *DCL (2A)*
  - EDIT/SUM command, *DCL (2A)*
  - EDT text editor
    - detailed description, *EDT (3A)*
    - invoking, *DCL (2A)*
  - Emulation of RSX-11M, *RSXR (8)*,  
*RSXU (8)*
  - Encoding instructions
    - with debugger, *DEBUG (3B)*
  - End-of-file condition
    - command procedures for, *GCP (2A)*
  - Entering
    - commands, *DCL (2A)*
      - in EDT, *EDT (3A)*
      - in SLP, *UTIL (3A)*
      - in SOS, *SOS (3A)*
      - in SUMSLP, *UTIL (3A)*
    - file names
      - in EDT, *EDT (3A)*
      - in VAX-11 RMS, *RMSR (6)*, *RMSU (6)*
  - \$ENTER macroinstruction, *RMSR (6)*,  
*RMSU (6)*
  - Entry modes
    - debugger, *DEBUG (3B)*
    - PATCH, *PTCH (9)*
  - Entry points
    - run-time library, *RTL (5)*
  - EOD command, *DCL (2A)*
  - EOJ command, *DCL (2A)*
  - \$ERASE macroinstruction, *RMSR (6)*
  - Error
    - checking
      - in command procedures, *GCP (2A)*
    - codes
      - File control services (FCS), *MSG (2B)*
    - conditions
      - command procedures for, *GCP (2A)*
      - in PDP-11 SORT, *SORT11 (3A)*
    - log file, *SMGR (10)*
    - printing, *OPG (10)*
    - locating with debugger, *DEBUG (3B)*
    - message(s), *MSG (2B)*
      - constructing, *UTIL (3A)*
      - in EDT, *EDT (3A)*
      - in SOS, *SOS (3A)*
    - recovery procedures, *MSG (2B)*

Error, messages, (Cont.)  
 reporting, *MSG (2B)*  
 severity levels, *MSG (2B)*  
 system dump analyzer (SDA), *SDA (9)*  
 utility, *UTIL (3A)*

Escape sequences  
 terminal driver, *IOG (4)*

Evaluating expressions  
 with debugger, *DEBUG (3B)*

Event flag, *SSR (4)*  
 allocation procedures, *RTL (5)*  
 system services, *SSR (4)*

EXAMINE command, *DCL (2A)*

Examining  
 data structures, *SDA (9)*  
 locations  
 with debugger, *DEBUG (3B)*  
 running system, *SDA (9)*  
 system dump file, *SDA (9)*

Exception conditions, *SSR (4)*  
 debugging, *DEBUG (3B)*  
 error messages, *MSG (2B)*  
 fatal, *SDA (9)*  
 handling, *RTL (5)*

Executable images, *LINK (3B)*  
 analyzing, *LINK (3B)*  
 debugging, *DEBUG (3B)*  
 installing, *SMGR (10)*  
 linking, *LINK (3B)*  
 patching, *PTCH (9)*

Execute Procedure (@) command, *GCP (2A)*

Executing  
 batch jobs, *GCP (2A)*  
 programs, *PRM (1)*  
 RSX-11M indirect command files,  
*RSXU (8)*

Executive directives  
 RSX-11M  
 emulation of, *RSXR (8)*  
 test, *UETP (10)*

Executive mode, *SSR (4)*  
 definition, *SUM (1)*

EXIT command, *DCL (2A)*

Exit handlers, *SSR (4)*  
 debugging, *DEBUG (3B)*  
 interfacing with, *DCL (2A)*

Exponentiation  
 run-time library procedure for, *RTL (5)*

Extended attribute block  
 chaining, *RMSR (6)*  
 purpose of, *RMSR (6)*

Extending a file's allocated space,  
*RMSR (6)*

\$EXTEND macroinstruction, *RMSR (6)*

## F

FAB (File access block), *RMSR (6)*

\$FAB macroinstruction, *RMSR (6)*

\$FAO (Formatted ASCII output), *SSR (4)*

Fatal exceptions  
 access violation, *SDA (9)*

FCP (File primitive statistics), *SMGR (10)*

FCS (*See* File control services)

FDT (Function decision table), *WDD (9)*

FIB (File information block), *IOG (4)*

File access block (FAB), *RMSR (6)*

File ancillary control process  
 Queue I/O (QIO) interface to, *IOG (4)*

File control services (FCS)  
 error codes, *MSG (2B)*  
 RSX-11M  
 emulation of, *RSXR (8)*  
 running under VAX/VMS, *RSXR (8)*

File information block (FIB), *IOG (4)*

File primitive statistics (FCP), *SMGR (10)*

File(s)  
 accounting  
 operator's command for, *OPG (10)*  
 \$SNDACC system service, *SSR (4)*  
 accounting log, *SMGR (10)*  
 attributes  
 changing, *RMSR (6)*  
 obtaining, *RMSR (6)*  
 backing up, *OPG (10)*  
 RMS-11, *RMS11U (7)*  
 command (*See* Command file)  
 copying  
 commands for, *DCL (2A)*  
 in EDT, *EDT (3A)*  
 in SOS, *SOS (3A)*  
 introduction to, *PRM (1)*  
 creating  
 in EDT, *EDT (3A)*  
 in SOS, *SOS (3A)*  
 introduction to, *PRM (1)*  
 in VAX-11 RMS, *RMSR (6)*, *RMSU (6)*  
 data  
 for PDP-11 SORT utility, *SORT11 (3A)*  
 deleting  
 commands for, *DCL (2A)*  
 in EDT, *EDT (3A)*  
 introduction to, *PRM (1)*  
 in VAX-11 RMS, *RMSR (6)*  
 description of, *PRM (1)*  
 in EDT, *EDT (3A)*  
 in SOS, *SOS (3A)*  
 displaying  
 commands for, *DCL (2A)*

- Files, displaying, (Cont.)
  - in EDT, *EDT* (3A)
  - introduction to, *PRM* (1)
- editing
  - with EDT, *EDT* (3A)
  - with SLP, *UTIL* (3A)
  - with SOS, *SOS* (3A)
  - with SUMSLP, *UTIL* (3A)
- end-of-file condition
  - command procedure for, *GCP* (2A)
- error log, *OPG* (10)
- errors
  - command procedures for, *GCP* (2A)
- extending allocated space for,
  - RMSR* (6)
- format
  - command procedures for, *GCP* (2A)
- handling, *OPG* (10)
- header, *RMSR* (6)
  - introduction to, *IRMS* (6)
- input, *EDT* (3A)
- input image, *PTCH* (9)
- journal
  - debugger, *DEBUG* (3B)
  - EDT, *EDT* (3A)
  - PATCH, *PTCH* (9)
- log (See Log file)
- manipulating
  - commands for, *DCL* (2A)
  - introduction to, *PRM* (1)
- modifying (See Editors)
- names, *DCL* (2A)
  - removing, *RMSR* (6)
  - searching for, *RMSR* (6)
- naming
  - in EDT, *EDT* (3A)
  - introduction to, *PRM* (1)
  - macroinstructions for, *RMSR* (6)
  - in VAX-11 RMS, *RMSR* (6)
- opening, *RMSR* (6)
- operations
  - introduction to, *IRMS* (6)
- operator's log, *OPG* (10)
- OPTIONS, *LINK* (3B)
- organization, *RMSR* (6), *RMSU* (6)
  - introduction to, *IRMS* (6)
- output image, *PTCH* (9)
- parameter, *SMGR* (10)
- patching, *PTCH* (9)
- printing
  - commands for, *DCL* (2A)
  - in EDT, *EDT* (3A)
  - in SOS, *SOS* (3A)
  - introduction to, *PRM* (1)

- Files, (Cont.)
  - processing
    - macroinstructions for, *RMSR* (6)
    - process permanent, *RMSR* (6), *RMSU* (6)
    - introduction to, *DCL* (2A)
  - protection, *IRMS* (6)
    - default, *RMSR* (6)
    - summary, *SUM* (1)
  - public, *SMGR* (10)
  - purging
    - commands for, *DCL* (2A)
    - in EDT, *EDT* (3A)
    - error log, *OPG* (10)
    - introduction to, *PRM* (1)
    - operator's log, *OPG* (10)
  - renaming
    - commands for, *DCL* (2A)
    - in EDT, *EDT* (3A)
    - introduction to, *PRM* (1)
    - in VAX-11 RMS, *RMSR* (6)
- RMS-11
  - accessing, *RMS11U* (7)
  - backing up, *RMS11U* (7)
  - creating, *RMS11U* (7)
  - converting, *RMS11U* (7)
  - indexed, *RMS11U* (7)
  - I/O operations, *RMS11U* (7)
  - On-Disk Structure, *RMS11U* (7)
  - organization, *RMS11R* (7), *RMS11U* (7)
  - operation macro calls, *RMS11R* (7)
  - placement control, *RMS11R* (7),
    - RMS11U* (7)
  - record access, *RMS11U* (7)
- sequential
  - command procedures for, *GCP* (2A)
  - truncating, *RMSR* (6)
- sharing, *IRMS* (6)
- size, *IRMS* (6)
- specification, *RMSR* (6), *RMSU* (6)
  - default, *DCL* (2A)
  - logical name, *DCL* (2A)
- specifying
  - in EDT, *EDT* (3A)
- storage media for, *IRMS* (6)
- system dump, *SDA* (9)
- temporary
  - in EDT, *EDT* (3A)
  - in SOS, *SOS* (3A)
- transferring, *UTIL* (3A)
- type(s), *DCL* (2A)
  - default, *DCL* (2A)
  - in EDT, *EDT* (3A)
  - introduction to, *PRM* (1)
  - updating (See Editors)

Files, type(s), (Cont.)  
 user authorization file (UAF), *SMGR* (10)  
 writing onto disk  
 command procedures for, *GCP* (2A)  
 introduction to, *PRM* (1)

Files-11 disk structure, *RMSR* (6)  
 format for, *IRMS* (6)  
 default, *DCL* (2A)  
 overview, *SUM* (1)  
 summary, *SMGR* (10)

Files-11 volume(s), *IRMS* (6)  
 backing up, *UTIL* (3A)  
 copying, *DCL* (2A)  
 initializing, *DCL* (2A)  
 readability check, *UTIL* (3A)  
 restoring, *UTIL* (3A)  
 structure, *SUM* (1)  
 validity check, *UTIL* (3A)

File Structure Verification Utility (VFY),  
*UTIL* (3A)

File Transfer Utility (FLX), *UTIL* (3A)  
 Test, *UETP* (10)

Fixed-length records, *RMSR* (6)  
 introduction to, *IRMS* (6)

Floating-point functions  
 emulation of FPP instruction, *RSXR* (8)  
 run-time library procedure for, *RTL* (5)

Floating-point instruction (FPP)  
 emulation of, *RSXR* (8)

FLX (File Transfer Utility), *UTIL* (3A)

Fork  
 block, *WDD* (9)  
 dispatcher, *WDD* (9)  
 interrupt priority level (IPL), *WDD* (9)  
 process  
 activating, *WDD* (9)  
 dispatching, *WDD* (9)

Format  
 for command procedures, *GCP* (2A)  
 for MACRO source statements,  
*MACR* (3B)  
 for records, *IRMS* (6)  
 for system messages, *MSG* (2B)

Formatted ASCII output (\$FAO), *SSR* (4)

Formatted I/O conversion, *RTL* (5)

FORTTRAN command, *DCL* (2A)

FORTTRAN, VAX-11  
 coding  
 for LPA11-K driver, *IOG* (4)  
 glossary, *PRM* (1)

I/O  
 introduction to, *PRM* (1)  
 programming  
 introduction to, *PRM* (1)

FPP floating point instruction  
 emulation of, *RSXR* (8)

Function codes  
 card reader, *IOG* (4)  
 disk, *IOG* (4)  
 DMC11, *IOG* (4)  
 DR11-W, *IOG* (4)  
 DR32, *IOG* (4)  
 DUP11, *IOG* (4)  
 I/O, *IOG* (4)  
 emulation of RSX-11M, *RSXR* (8)  
 interface drivers, *IOG* (4)  
 line printer, *IOG* (4)  
 LPA11-K, *IOG* (4)  
 magnetic tape, *IOG* (4)  
 mailbox, *IOG* (4)  
 terminal, *IOG* (4)

Function decision table (FDT), *WDD* (9)

Function encoding, *IOG* (4)

Function keys, *DCL* (2A)  
 in EDT, *EDT* (3A)

Function requests, *IOG* (4)

## G

General assembler directives, *MACR* (3B)

General utility procedures  
 date/time utility, *RTL* (5)  
 formatted I/O conversion, *RTL* (5)  
 I/O control, *RTL* (5)  
 performance measurement, *RTL* (5)  
 variable bit field instructions, *RTL* (5)

Generation  
 of system, *SMGR* (10)

Global section(s), *SMGR* (10), *SSR* (4)  
 definition, *SUM* (1)  
 installing, *SMGR* (10)  
 name translation, *SSR* (4)  
 permanent, *SSR* (4)  
 real-time programming, *REAL* (9)  
 in shared (multiport) memory, *SSR* (4)

Global symbols, *LINK* (3B)  
 debugger, *DEBUG* (3B)  
 in PATCH, *PTCH* (9)  
 \$SEVERITY, *GCP* (2A)  
 \$STATUS, *GCP* (2A)  
 VAX-11 MACRO, *MACR* (3B)

Global symbol table, *LINK* (3B)

Glossary, *SUM* (1)  
 for VAX-11 RMS terms, *IRMS* (6)

GO command (debugger), *DEBUG* (3B)

GOTO command, *DCL* (2A)

Groups, *SMGR* (10)

## H

Hardware interrupt, *WDD* (9)  
  priority level, *WDD* (9)  
Hardware requirements of system, *SMGR* (10)  
HELP command, *DCL* (2A)  
  in EDT, *EDT* (3A)  
  in SOS, *SOS* (3A)  
  introduction to, *PRM* (1)  
Help files, *UTIL* (3A)  
Help libraries, *DCL* (2A)  
Hibernation, *SSR* (4)  
  definition, *SUM* (1)  
  real-time programming examples, *REAL* (9)  
High-level language coding  
  calling system services, *SSR* (4)  
Home block, *RMSR* (6)  
  introduction to, *IRMS* (6)

## I

IDB (Interrupt data block), *WDD* (9)  
IF command, *DCL* (2A)  
Image(s)  
  clusters, *LINK* (3B)  
  creation, *LINK* (3B)  
  debugging, *DEBUG* (3B)  
  device-driver  
    patching, *PTCH* (9)  
  executable, *LINK* (3B)  
    installing, *SMGR* (10)  
    patching, *PTCH* (9)  
  files  
    patching, *PTCH* (9)  
  installing known, *SMGR* (10)  
  known, *SMGR* (10)  
  map, *LINK* (3B)  
  patching, *PTCH* (9)  
  RSX-11M, *RSXU* (8)  
  sections, *LINK* (3B)  
  shareable, *LINK* (3B)  
    installing, *SMGR* (10)  
    patching, *PTCH* (9)  
    privileged, *REAL* (9)  
    VAX-11 MACRO, *MACR* (3B),  
      *MACU* (3B)  
  system, *LINK* (3B)  
  types, *LINK* (3B)  
Index Sort  
  PDP-11, *SORT11* (3A)  
  VAX-11, *SORT* (3A)  
Indirect command files  
  MCR (Monitor Console Routine), *RSXU* (8)

Indirect command files, (Cont.)  
  RSX-11M  
    execution of, *RSXU* (8)  
    nesting of, *RSXU* (8)  
    switches, *RSXU* (8)  
    system generation, *RSXU* (8)  
INITIALIZE command, *DCL* (2A)  
INITIALIZE/QUEUE operator's command,  
  *OPG* (10)  
Initializing  
  the system, *SIG* (10)  
  a tape, *DCL* (2A)  
Initiating  
  the debugger, *DEBUG* (3B)  
  EDT, *EDT* (3A)  
  SOS, *SOS* (3A)  
    defaults, *SOS* (3A)  
Input image file, *PTCH* (9)  
\$INPUT macroinstruction, *IOG* (4)  
  format for, *SSR* (4)  
INQUIRE command, *DCL* (2A)  
Installing  
  known images, *SMGR* (10)  
  VAX/VMS, *SMGR* (10)  
    release notes for, *REL* (1)  
INSTALL Utility, *SMGR* (10)  
Instructions  
  decoding with debugger, *DEBUG* (3B)  
  encoding with debugger, *DEBUG* (3B)  
Interactive mode  
  command procedures for, *GCP* (2A)  
  sorting  
    PDP-11, *SORT11* (3A)  
    VAX-11, *SORT* (3A)  
Interactive text editor  
  EDT, *EDT* (3A)  
  SOS, *SOS* (3A)  
Interface drivers  
  DMC11, *IOG* (4)  
  DR11-W, *IOG* (4)  
  DR32, *IOG* (4)  
  DUP11, *IOG* (4)  
Interprocess communication, *SSR* (4)  
  definition of, *SUM* (1)  
Interprocess control, *SSR* (4)  
Interrupt data block (IDB), *WDD* (9)  
Interrupt priority level (IPL), *WDD* (9)  
Interrupt(s)  
  blocking, *WDD* (9)  
  connect-to-interrupt capability, *REAL* (9)  
  CTRL/Y, *GCP* (2A)  
  data block (IDB), *WDD* (9)  
  hardware, *WDD* (9)  
  priority level (IPL), *WDD* (9)

## Interrupt(s), (Cont.)

- of program execution, *DCL* (2A)
- service routines, *WDD* (9)
- vector
  - connecting to, *REAL* (9)
- Intraprocess communication, *SUM* (1)
- I/O (Input/output)
  - block
    - introduction to, *IRMS* (6)
    - macroinstructions, *RMSR* (6)
    - performing, *RMSR* (6)
    - RMS-11, *RMS11R* (7), *RMS11U* (7)
  - buffered, *WDD* (9)
    - quota, *IOG* (4)
  - command procedures for, *GCP* (2A)
  - completion, *IOG* (4)
  - control
    - run-time library procedure for, *RTL* (5)
  - conversion (formatted)
    - run-time library procedure for, *RTL* (5)
  - data base, *WDD* (9)
  - device-independent, *SSR* (4)
  - digital I/O register, *IOG* (4)
  - drivers, *IOG* (4)
  - function codes, *IOG* (4)
    - RSX-11M, *RSXR* (8)
    - function encoding, *IOG* (4)
    - function requests, *IOG* (4)
  - halt, *RMSR* (6)
  - issuing I/O requests, *IOG* (4)
  - logical, *IOG* (4)
  - operations, *IOG* (4)
    - RMS-11 file, *RMS11U* (7)
    - physical, *IOG* (4)
  - postprocessing, *WDD* (9)
  - Queue I/O (QIO) (*See* Queue I/O)
  - register, *IOG* (4)
  - request packet (IRP), *WDD* (9)
  - requests, *IOG* (4)
  - space mapping, *REAL* (9)
  - status block, *IOG* (4)
  - subfunction bits
    - RSX-11M, *RSXR* (8)
  - system
    - real-time programming, *REAL* (9)
  - system rates, *SMGR* (10)
  - system services, *SSR* (4)
  - virtual, *IOG* (4)
- IORATES, *SMGR* (10)
- IPL (Interrupt priority level), *WDD* (9)
- IRP (I/O request packet), *WDD* (9)
- Issuing I/O requests, *IOG* (4)

## J

- JOB command, *DCL* (2A)
- Journal file
  - debugger, *DBUG* (3B)
  - EDT, *EDT* (3A)
  - PATCH, *PTCH* (9)

## K

- Kernel mode, *SSR* (4)
  - asynchronous system trap (AST), *WDD* (9)
  - definition of, *SUM* (1)
- Keyboard layout (EDT), *PRM* (1)
- Keypad editing, *EDT* (3A)
- Keypad layout, *EDT* (3A)
- Known image, *SMGR* (10)

## L

- Laboratory peripheral accelerator (LPA11-K)
  - driver, *IOG* (4)
- Languages (programming)
  - descriptions of, *SUM* (1)
- Lexical functions
  - in command procedures, *GCP* (2A)
  - summary table of, *DCL* (2A)
- LIBR, *RSXR* (8)
- Librarian Utility, *UTIL* (3A)
- Library, *UTIL* (3A)
  - building a, *MOD* (5)
  - creating a, *DCL* (2A)
  - Help, *DCL* (2A)
  - linking with a, *LINK* (3B)
  - macro, *DCL* (2A)
  - maintaining a, *DCL* (2A)
  - modifying a, *MOD* (5)
  - object module, *LINK* (3B)
    - creating, *DCL* (2A)
    - maintaining, *DCL* (2A)
  - program, *DCL* (2A)
  - RSX-11M, *RSXR* (8)
  - run-time (*See* Run-time library)
  - table, *LINK* (3B)
  - text, *DCL* (2A)
  - user-defined default, *LINK* (3B)
- LIBRARY command, *DCL* (2A)
- LIBRARY/RSX11 command, *DCL* (2A)
- Limits, resource (*See* Quota, resource)
- Line numbers
  - in EDT, *EDT* (3A)
  - in SOS, *SOS* (3A)

Line printer drivers, *IOG* (4)  
 Line terminators  
   terminal driver, *IOG* (4)  
 LINK command, *DCL* (2A)  
   format, *LINK* (3B)  
   qualifiers, *LINK* (3B)  
 Linker  
   functions, *LINK* (3B)  
   operation, *LINK* (3B)  
   overview, *LINK* (3B)  
 Linking object modules, *LINK* (3B)  
   introduction to, *PRM* (1)  
   map, *LINK* (3B)  
   image, *LINK* (3B)  
 Link mode transfers (DR11-W), *IOG* (4)  
 LINK/RSX11 command, *DCL* (2A)  
 Local event flags, *SUM* (1)  
 Local symbols  
   in a patch, *PTCH* (9)  
   VAX-11 MACRO, *MACR* (3B)  
 Local terminals, *DCL* (2A)  
 Locking  
   a record, *IRMS* (6)  
   a resource, *REAL* (9)  
 Log file(s), *GCP* (2A)  
   accounting, *SMGR* (10)  
   debugger, *DEBUG* (3B)  
   error, *SMGR* (10)  
   printing, *OPG* (10)  
   operator's, *SMGR* (10)  
   printing, *OPG* (10)  
   UETP (User Environment Test Package),  
     *UETP* (10)  
 Logical I/O, *IOG* (4)  
 Logical name(s), *SSR* (4)  
   assignment, *GCP* (2A)  
     commands for, *DCL* (2A)  
     in start-up procedures, *SMGR* (10)  
     for VAX-11 RMS, *RMSU* (6)  
   in commands, *DCL* (2A)  
     introduction to, *PRM* (1)  
   default, *DCL* (2A)  
     introduction to, *PRM* (1)  
   equivalence, *GCP* (2A)  
   process, *GCP* (2A)  
     default, *DCL* (2A)  
   summary, *SUM* (1)  
   system default, *DCL* (2A)  
     introduction to, *PRM* (1)  
   system services, *SSR* (4)  
   tables, *DCL* (2A), *SSR* (4)  
   translation, *DCL* (2A), *RMSU* (6)  
     of common event flag cluster names,  
       *SSR* (4)

Logical name(s), translation, (Cont.)  
   of global section names, *SSR* (4)  
   of mailbox names, *SSR* (4)  
   for VAX-11 RMS, *RMSU* (6)  
   UETP\$MAGTAP, *UETP* (10)  
   VAX-11 RMS, *RMSU* (6)  
 Logical to physical translation  
   RX01, *IOG* (4)  
   RX02, *IOG* (4)  
 Logical unit numbers, *RTL* (5)  
 Login procedure  
   commands for, *DCL* (2A)  
   introduction to, *PRM* (1)  
 LOGOUT command, *DCL* (2A)  
 Logout procedure  
   commands for, *DCL* (2A)  
   introduction to, *PRM* (1)  
 LPA11-K driver  
   design considerations, *REAL* (9)  
   FORTRAN coding, *IOG* (4)  
   function codes, *IOG* (4)  
   programming considerations, *REAL* (9)

## M

MA780 multiport memory (*See* Shared  
 memory)  
 MACRO command, *DCL* (2A)  
 Macroinstruction(s)  
   for block I/O, *RMSR* (6)  
   coding for system services, *SSR* (4)  
   calls  
     RSX-11M, *RMS11R* (7)  
     VAX-11 MACRO, *MACR* (3B)  
   file-naming, *RMSR* (6)  
   file-processing, *RMSR* (6)  
   format  
     VAX-11 MACRO, *MACR* (3B),  
       *MACU* (3B)  
   for I/O, *SSR* (4)  
     \$INPUT, *IOG* (4)  
     introduction to, *PRM* (1)  
     \$OUTPUT, *IOG* (4)  
   libraries, *DCL* (2A), *UTIL* (3A)  
 MACRO/RSX11 command, *DCL* (2A)  
 MACRO, VAX-11  
   addressing modes, *MACR* (3B)  
   assembling, *MACU* (3B)  
   introduction to, *PRM* (1)  
   boilerplate, *MACU* (3B)  
   character set, *MACR* (3B)  
   direct assignment statement, *MACR* (3B)  
   directives, *MACR* (3B)  
   expressions, *MACR* (3B)

MACRO, VAX-11, (Cont.)  
   listings, *MACU (3B)*  
   local labels, *MACR (3B)*  
   macros, *MACU (3B)*  
   operators, *MACR (3B)*  
   program section, *MACR (3B)*, *MACU (3B)*  
     attributes, *MACR (3B)*  
   source statement format, *MACR (3B)*  
   symbols, *MACR (3B)*  
   terms, *MACR (3B)*  
   updating, *MACU (3B)*  
 Magnetic tape (*See Tape, magnetic*)  
 Mailbox(es)  
   driver, *IOG (4)*  
   function codes, *IOG (4)*  
   I/O system services for, *SSR (4)*  
   message format, *IOG (4)*  
   names for, *SSR (4)*  
   name translation, *SSR (4)*  
     in real-time programming, *REAL (9)*  
     in shared (multiport) memory, *SSR (4)*  
     system services for, *SSR (4)*  
   summary of, *SUM (1)*  
   /terminal interaction, *IOG (4)*  
 MAIL command, *DCL (2A)*  
 MAIL Utility, *UTIL (3A)*  
 Maintenance updates, *SIG (10)*  
 Manipulating files  
   commands for, *DCL (2A)*  
   introduction to, *PRM (1)*  
 Map  
   image, *LINK (3B)*  
 Mapping  
   device names, *RSXR (8)*, *RSXU (8)*  
   I/O space, *REAL (9)*  
   page frame number (PFN), *SSR (4)*  
   a process, *SSR (4)*  
     summary, *SUM (1)*  
 Map registers  
   allocation of, *WDD (9)*  
 MASSBUS adapter, *WDD (9)*  
 Mathematical procedures  
   complex functions, *RTL (5)*  
   exponentiation, *RTL (5)*  
   floating-point functions, *RTL (5)*  
   processor-defined, *RTL (5)*  
 MCR (Monitor Console Routine)  
   command interpreter, *RSXU (8)*  
   command language, *RSXU (8)*  
   command syntax, *RSXU (8)*  
   directives, *RSXU (8)*  
   indirect command file, *RSXU (8)*  
   indirect command file processor, *RSXU (8)*  
   utilities under VAX/VMS, *RSXU (8)*  
 MCR command, *DCL (2A)*  
 Memory  
   locations  
     displaying, *SDA (9)*  
   management  
     in real-time programming, *REAL (9)*  
     summary of, *SUM (1)*  
     system services for, *SSR (4)*  
   multiport (*See Shared memory*)  
   virtual (*See Virtual memory*)  
 MESSAGE command, *DCL (2A)*  
 Message files, *UTIL (3A)*  
 Message-issuing facilities, *MSG (2B)*  
 Message(s)  
   diagnostic  
     constructing, *UTIL (3A)*  
   error (*See Error messages*)  
   I/O services, *SSR (4)*  
   MAIL Utility, *UTIL (3A)*  
   system, *DCL (2A)*  
     display of, *MSG (2B)*  
     format for, *MSG (2B)*  
     how to use, *MSG (2B)*  
 Message Utility, *UTIL (3A)*  
 Microcode loading routines  
   DR32, *IOG (4)*  
   LPA11-K, *IOG (4)*  
 Mode(s)  
   access  
     definition of, *SUM (1)*  
     specifying for system services,  
       *SSR (4)*  
   addressing, *MACR (3B)*  
   batch (*See Batch mode*)  
   changing, *SSR (4)*  
   compatibility (*See Compatibility mode*)  
   display  
     PATCH, *PTCH (9)*  
   entry  
     debugger, *DEBUG (3B)*  
     PATCH, *PTCH (9)*  
   executive, *SSR (4)*  
     definition, *SUM (1)*  
   kernel, *SSR (4)*  
     asynchronous system trap (AST),  
       *WDD (9)*  
     definition, *SUM (1)*  
   of operation  
     SOS, *SOS (3A)*  
   processor, *SMGR (10)*  
   qualifiers  
     PATCH, *PTCH (9)*  
   record access, *RMSR (6)*, *RMSU (6)*  
   introduction to, *IRMS (6)*

Mode(s), supervisor, (Cont.)  
 supervisor, *SSR* (4)  
   definition of, *SUM* (1)  
 transfer, *IOG* (4)  
 user, *SSR* (4)  
   asynchronous system trap (AST),  
     *WDD* (9)  
   definition of, *SUM* (1)  
 Modifying locations  
   with debugger, *DEBUG* (3B)  
 Modular procedures  
   building libraries, *MOD* (5)  
   coding rules for, *MOD* (5)  
   designing software interfaces, *MOD* (5)  
   passing strings as parameters, *MOD* (5)  
   resource allocation, *MOD* (5)  
   in EDT, *EDT* (3A)  
   use of storage, *MOD* (5)  
   use of VAX/VMS system services, *MOD* (5)  
 Modular programming, *LINK* (3B)  
   VAX-11 MACRO, *MACU* (3B)  
 Modular programming standard, *MOD* (5)  
 Module names, *LINK* (3B)  
   PATCH, *PTCH* (9)  
   debugger, *DEBUG* (3B)  
 Monitor Console Routine (See MCR)  
 Monitoring the system, *SMGR* (10), *OPG* (10)  
   DISPLAY Utility, *SMGR* (10)  
   error log file, *OPG* (10), *SMGR* (10)  
   operator's log file, *OPG* (10)  
 MOUNT command, *DCL* (2A)  
 Mount privilege, *IOG* (4)  
 Mounting public volumes, *OPG* (10)  
   on devices, *DCL* (2A)  
   guidelines for, *SMGR* (10)  
   operator's commands for, *OPG* (10)  
 Multiport memory (See Shared memory)  
 Mutual exclusion (Mutex), *REAL* (9)

## N

\$NAM macroinstruction, *RMSR* (6)  
 Name block, *RMSR* (6)  
 Native Mode Test, *UETP* (10)  
 Nesting  
   command procedures, *GCP* (2A)  
   RSX-11M indirect command files,  
     *RSXU* (8)  
 New features of VAX/VMS, *REL* (1)  
 Nonfile-structured operations, *RMSR* (6)  
 Nonpaged pool statistics, *SMGR* (10)  
 Non-stop bootstrap, *SIG* (10)  
 Numeric values  
   in EDT, *EDT* (3A)

## O

Object language, *LINK* (3B)  
 Object module(s)  
   analyzing, *LINK* (3B)  
   libraries, *LINK* (3B)  
     commands for, *DCL* (2A)  
   linking, *LINK* (3B)  
     introduction to, *PRM* (1)  
 ON command, *DCL* (2A)  
 Opcode tracing, *DEBUG* (3B)  
 OPEN command, *DCL* (2A)  
 \$OPEN macroinstruction, *RMSR* (6)  
 Opening a file, *RMSR* (6)  
 Operating procedures, *OPG* (10)  
 Operating system  
   crash, *SDA* (9)  
   debugging, *SDA* (9)  
 Operator's  
   commands, *OPG* (10)  
   duties, *OPG* (10)  
   intervention, *DCL* (2A)  
   log file, *SMGR* (10)  
     printing, *OPG* (10)  
   notes, *OPG* (10)  
   procedures, *OPG* (10)  
   terminal, *OPG* (10)  
 Optional software for VAX/VMS, *REL* (1)  
   document descriptions, *IDI* (1)  
 OPTIONS file, *LINK* (3B)  
 /OPTIONS file qualifier, *LINK* (3B)  
 Output image file, *PTCH* (9)  
 \$OUTPUT macroinstruction, *IOG* (4)  
   format for, *SSR* (4)

## P

Page fault, *SDA* (9)  
 Page frame number (PFN)  
   data base  
     displaying, *SDA* (9)  
     mapping, *SSR* (4)  
 Page frame sections, *SSR* (4)  
 Page-management statistics, *SMGR* (10)  
 Page numbers  
   EDT, *EDT* (3A)  
   SOS, *SOS* (3A)  
 Page table  
   system, *SMGR* (10)  
 Parameters  
   in EDT, *EDT* (3A)  
   passing to command procedures, *GCP* (2A)  
   passing strings as, *MOD* (5)

## Parameters, (Cont.)

- SOS, *SOS* (3A)
- system generation, *SMGR* (10)
- \$PARSE macroinstruction, *RMSR* (6)
- Parsing a file name string, *RMSR* (6)
- PASCAL command, *DCL* (2A)
- PASSWORD command, *DCL* (2A)
- Patch area, *PTCH* (9)
- PATCH command, *DCL* (2A)
- PATCH Utility, *PTCH* (9)
- Pathnames, *DEBUG* (3B)
  - in PATCH, *PTCH* (9)
- PDP-11 SORT Utility, *SORT11* (3A)
- Performance measurement
  - run-time library procedure for, *RTL* (5)
- Peripheral devices
  - real-time programming for, *REAL* (9)
- Permanent global sections
  - creating, *SSR* (4)
- Personal Mail Utility, *UTIL* (3A)
  - invoking, *DCL* (2A)
- PFN (*See* Page frame number)
- Physical I/O, *IOG* (4)
- Position-independent code, *LINK* (3B)
  - VAX-11 MACRO, *MACU* (3B)
- Positioning
  - to a block, *RMSR* (6)
  - to a first record, *RMSR* (6)
- Powerfail recovery, *WDD* (9)
- PRINT command, *DCL* (2A)
- Printing files
  - commands for, *DCL* (2A)
  - error log files, *OPG* (10)
  - in EDT, *EDT* (3A)
  - introduction to, *PRM* (1)
  - operator's log file, *OPG* (10)
- Print job
  - terminating, *OPG* (10)
    - commands for, *DCL* (2A)
- Print queues, *SMGR* (10)
  - controlling, *OPG* (10)
- Priority
  - process, *SMGR* (10)
    - changing, *DCL* (2A)
    - in real-time programming, *REAL* (9)
    - introduction to, *DCL* (2A)
    - summary of, *SUM* (1)
    - system services affecting, *SSR* (4)
    - in user authorization file (UAF),  
*SMGR* (10)
- Private sections, *SSR* (4)
- Privileged shareable images, *REAL* (9)
- Privilege(s), *SMGR* (10)
  - logical I/O, *IOG* (4)

## Privilege(s), (Cont.)

- mount, *IOG* (4)
- operator's, *OPG* (10)
- physical I/O, *IOG* (4)
- real-time programming needs, *REAL* (9)
- requirements for commands, *DCL* (2A)
- requirements for system services, *SSR* (4)
- summary table of, *DCL* (2A)
- in user authorization file (UAF),  
*SMGR* (10)

## Problems resolved by VAX/VMS, *REL* (1)

## Process

- characteristics, *SUM* (1)
- context, *WDD* (9)
- control, *SSR* (4)
  - summary of, *SUM* (1)
  - system services, *SSR* (4)
- creation, *SSR* (4)
  - commands for, *DCL* (2A)
  - in real-time programming, *REAL* (9)
- definition of, *SSR* (4)
- deletion, *SSR* (4)
- detached, *SSR* (4)
  - command for, *DCL* (2A)
  - command procedures for, *GCP* (2A)
  - definition of, *SUM* (1)
  - in real-time programming, *REAL* (9)
- fork (*See* Fork process)
- information
  - displaying, *SDA* (9)
- mapping, *SSR* (4)
  - summary, *SUM* (1)
- permanent files, *RMSR* (6), *RMSU* (6)
- introduction to, *SUM* (1)
- priority (*See* Priority, process)
- scheduling, *SSR* (4)
  - summary, *SUM* (1)
- virtual address space, *SSR* (4)
  - summary, *SUM* (1)

## Processing

- batch jobs, *DCL* (2A)
- records
  - relatively, *IRMS* (6)
  - sequentially, *IRMS* (6)

## Processing levels, *IRMS* (6)

## Processor modes, *SMGR* (10)

## Processor status longword (PSL)

- accessing in debugger, *DEBUG* (3B)

## Process-wide resource allocation

- allocation of virtual memory, *RTL* (5)
- dynamic strings, *RTL* (5)
- event flags, *RTL* (5)
- logical unit numbers, *RTL* (5)

## Program libraries, *DCL* (2A)

Programming  
   command procedures, *DCL (2A)*  
   in EDT, *EDT (3A)*  
   introduction to, *PRM (1)*  
   modular, *MACU (3B)*  
   VAX-11 MACRO, *MACU (3B)*  
 Program(s)  
   assembling, *PRM (1)*  
   Fillcommands to control, *DCL (2A)*  
   compiling, *PRM (1)*  
   creating, *DCL (2A)*  
   in EDT, *EDT (3A)*  
   updating, *MACU (3B)*  
 Program section  
   attributes, *LINK (3B)*, *MACR (3B)*  
   names, *LINK (3B)*  
   in PATCH, *PTCH (9)*  
 Prompting for command input, *DCL (2A)*  
   introduction to, *PRM (1)*  
 Protection  
   of data structures, *SMGR (10)*  
   of devices, *SMGR (10)*  
   operator's command for, *OPG (10)*  
   of disk volume, *DCL (2A)*  
   of files, *IRMS (6)*  
   volume, *IOG (4)*  
   disk, *DCL (2A)*  
   tape, *DCL (2A)*  
 PSECT (program section) attributes,  
   *LINK (3B)*, *MACR (3B)*  
 PSL (Processor status longword)  
   accessing in debugger, *DEBUG (3B)*  
 Public volumes (*See Volumes, public*)  
 PURGE command, *DCL (2A)*

## Q

QIO (*See Queue I/O*)  
 \$QIO macroinstruction, *IOG (4)*  
   format for, *SSR (4)*  
 \$QIOW macroinstruction, *IOG (4)*  
   format for, *SSR (4)*  
 Qualifiers  
   in EDT, *EDT (3A)*  
 Queue(s)  
   batch job, *SMGR (10)*  
   commands for, *DCL (2A)*  
   operator's commands for, *OPG (10)*  
   command procedures for, *GCP (2A)*  
   controlling, *OPG (10)*, *SMGR (10)*  
   deleting jobs in, *DCL (2A)*  
   submitting jobs in, *DCL (2A)*  
   operator's commands for, *OPG (10)*

Queue(s), (Cont.)  
   print, *SMGR (10)*  
   controlling, *OPG (10)*  
   terminal, *SMGR (10)*  
   wait, *WDD (9)*  
 Queue I/O (QIO)  
   functions  
     ancillary control process (ACP),  
       *IOG (4)*  
     disk, *IOG (4)*  
     magnetic tape, *IOG (4)*  
     interface to file ancillary control process,  
       *IOG (4)*  
     operations, *IOG (4)*  
 Quota(s)  
   asynchronous system trap (AST), *IOG (4)*  
   buffered I/O, *IOG (4)*  
   byte count, *IOG (4)*  
   direct I/O, *IOG (4)*  
   disk, *SMGR (10)*  
   displaying, *DCL (2A)*  
   establishing, *SMGR (10)*  
   introduction to, *DCL (2A)*  
   I/O functions, *IOG (4)*  
   overriding, *DCL (2A)*  
   resource, *SMGR (10)*  
   in process creation, *SSR (4)*  
   summary table of, *DCL (2A)*  
 Quota file transfer block, *IOG (4)*

## R

RAB (Record access block), *RMSR (6)*  
 \$RAB macroinstruction, *RMSR (6)*  
 READ command, *DCL (2A)*  
 \$READ macroinstruction, *RMSR (6)*  
 Real-time programming, *REAL (9)*  
 Rebooting the system, *OPG (10)*  
 Record access  
   block (RAB), *RMSR (6)*  
   mode, *RMSR (6)*, *RMSU (6)*  
   introduction to, *IRMS (6)*  
   RMS-11 file, *RMS11U (7)*  
 Record management services (RMS)  
   RMS-11  
     block I/O, *RMS11R (7)*, *RMS11U (7)*  
     files, *RMS11R (7)*, *RMS11U (7)*  
     introduction to, *IRMS (6)*  
     I/O operations, *RMS11U (7)*  
     MACRO-11 interface, *RMS11R (7)*  
     utilities, *RMS11U (7)*  
   VAX-11, *RMSR (6)*, *RMSU (6)*  
   introduction to, *IRMS (6)*

- Record management services, VAX-11, (Cont.)
  - macroinstructions for, *RMSR* (6),  
*RMSU* (6)
  - SHARE Utility, *SMGR* (10)
- Record(s)
  - buckets, *IRMS* (6)
  - buffering, *IRMS* (6)
  - characteristics, *IRMS* (6)
  - deleting, *RMSR* (6)
  - fixed-length, *RMSR* (6)
    - introduction to, *IRMS* (6)
  - formats, *IRMS* (6)
  - locating, *RMSR* (6)
  - locking, *IRMS* (6)
  - positioning to, *RMSR* (6)
  - processing, *IRMS* (6)
    - asynchronous, *IRMS* (6)
    - macro calls (RMS-11M), *RMS11R* (7)
    - macroinstructions for, *RMSR* (6)
    - performance, *RMSR* (6)
    - synchronous, *IRMS* (6)
  - retrieving, *RMSR* (6)
    - RMS-11, *RMS11U* (7)
  - sorting
    - with PDP-11 SORT Utility, *SORT11* (3A)
    - with VAX-11 SORT Utility, *SORT* (3A)
  - storage structures (buckets), *IRMS* (6)
  - stream
    - establishing, *RMSR* (6)
    - terminating, *RMSR* (6)
  - unlocking, *RMSR* (6)
  - updating, *RMSR* (6)
- Record Sort
  - on PDP-11, *SORT11* (3A)
  - on VAX-11, *SORT* (3A)
- Registers
  - base, *WDD* (9)
  - control/status, *WDD* (9)
  - device, *WDD* (9)
  - digital I/O, *IOG* (4)
  - I/O, *IOG* (4)
  - map, *WDD* (9)
- Remote command terminals, *DCL* (2A),  
*SUM* (1)
- \$REMOVE macroinstruction, *RMSR* (6)
- Removing a file name, *RMSR* (6)
- RENAME command, *DCL* (2A)
- \$RENAME macroinstruction, *RMSR* (6)
- Renaming files (See Files, renaming)
- REPLY operator's command, *OPG* (10)
- REQUEST command, *DCL* (2A)
- Resource
  - allocation
    - in modular procedures, *MOD* (5)
- Resource, allocation, (Cont.)
  - process-wide, *RTL* (5)
  - limits (See Quota, resource)
  - locking, *REAL* (9)
  - quota, *SMGR* (10)
    - in process creation, *SSR* (4)
    - summary table, *DCL* (2A)
- Restarting the system, *OPG* (10)
  - automatically, *SIG* (10)
- Restoring disk volumes, *UTIL* (3A)
- RMS (See Record management services)
- RMS-11 (See Record management services,  
RMS-11)
- RMS SHARE Utility, *SMGR* (10)
- Routine names, *PTCH* (9)
- RSX-11M, *RSXR* (8), *RSXU* (8)
  - compatibility mode, *RSXR* (8)
  - device assignment, *RSXR* (8)
  - device mapping to VAX/VMS,  
*RSXU* (8)
  - device names, *RSXR* (8), *RSXU* (8)
  - directives, *RSXR* (8)
  - emulation, *RSXR* (8)
  - Executive Directives Test, *UETP* (10)
  - images, *RSXR* (8), *RSXU* (8)
  - indirect command files, *RSXU* (8)
  - I/O function codes, *RSXR* (8)
  - libraries, *RSXR* (8)
  - shareable areas, *RSXR* (8)
  - task, *RSXU* (8)
    - execution, *RSXR* (8)
    - Task Builder (TKB), *RSXU* (8)
- RSX-11M Executive Directives Test,  
*UETP* (10)
- RT-11 volumes, *UTIL* (3A)
- RUN command, *DCL* (2A)
- RUNOFF command, *DCL* (2A)
- Run-time control block
  - initialization, *RMSR* (6)
- Run-time library
  - capabilities of, *RTL* (5)
  - condition-handling procedures, *RTL* (5)
  - cross reference procedures, *RTL* (5)
  - entry points, *RTL* (5)
  - general-purpose procedures, *RTL* (5)
  - general utility procedures, *RTL* (5)
  - mathematical procedures, *RTL* (5)
  - naming conventions, *RTL* (5)
  - organization of, *RTL* (5)
  - performance-measurement procedures,  
*RTL* (5)
  - resource allocation procedures, *RTL* (5)
  - syntax analysis procedures, *RTL* (5)
- Run-time processing interface, *RMSR* (6)

## S

- SBI (Synchronous backplane interconnect),  
*WDD (9)*
- Scheduler states, *SMGR (10)*
- Scope, *DEBUG (3B)*
- \$SEARCH macroinstruction, *RMSR (6)*
- Section
  - disk, *SSR (4)*
  - global (See Global section)
  - image, *LINK (3B)*
  - page frame, *SSR (4)*
  - private, *SSR (4)*
  - program (See Program section)
- Semaphore, *REAL (9)*
- Sequential files
  - command procedures for, *GCP (2A)*
  - truncating, *RMSR (6)*
- Service routines
  - for interrupts, *WDD (9)*
- SET ACCOUNTING operator's command,  
*OPG (10)*
- SET CARD\_READER command, *DCL (2A)*
- SET command, *DCL (2A)*
- SET CONTROL\_Y command, *DCL (2A)*
- SET DEFAULT command, *DCL (2A)*
- SET DEVICE operator's command, *OPG (10)*
- SET HOST command, *DCL (2A)*
- SET LOGINS operator's command, *OPG (10)*
- SET MAGTAPE command, *DCL (2A)*
- SET MESSAGE command, *DCL (2A)*
- SET ON command, *DCL (2A)*
- SET PASSWORD command, *DCL (2A)*
- SET PRINTER operator's command,  
*OPG (10)*
- SET PROCESS command, *DCL (2A)*
- SET PROTECTION command, *DCL (2A)*
- SET PROTECTION/DEFAULT command,  
*DCL (2A)*
- SET PROTECTION/DEVICE operator's  
command, *OPG (10)*
- SET QUEUE/ENTRY command, *DCL (2A)*
- SET RMS\_DEFAULT command,  
*DCL (2A)*
- SET TERMINAL command, *DCL (2A)*
- SET TERMINAL/PERMANENT operator's  
command, *OPG (10)*
- SET TIME operator's command, *OPG (10)*
- SET UIC operator's command, *OPG (10)*
- SET VERIFY command, *DCL (2A)*
- SET WORKING\_SET, *DCL (2A)*
- \$SEVERITY global symbol, *GCP (2A)*
- Severity levels
  - of error messages, *MSG (2B)*
- Shareable areas
  - RSX-11M, *RSXR (8)*
- Shareable images, *LINK (3B)*
  - installing, *SMGR (10)*
  - patching, *PTCH (9)*
  - privileged, *REAL (9)*
  - VAX-11 MACRO, *MACU (3B)*
- Shared (multiport) memory
  - common event flag clusters in, *SSR (4)*
  - global sections in, *SSR (4)*
  - locating software facilities in, *REAL (9),  
SSR (4)*
  - logical name translation for software,  
*REAL (9), SSR (4)*
  - mailboxes in, *SSR (4)*
- Sharing, *SUM (1)*
- Shorthand characters
  - EDT, *EDT (3A)*
  - SOS, *SOS (3A)*
- SHOW command, *DCL (2A)*
- SHOW DAYTIME command, *DCL (2A)*
- SHOW DEFAULT command, *DCL (2A)*
- SHOW DEVICES command, *DCL (2A)*
- Showing calls, *DEBUG (3B)*
- SHOW LOGICAL command, *DCL (2A)*
- SHOW MAGTAPE, *DCL (2A)*
- SHOW NETWORK command, *DCL (2A)*
- SHOW PRINTER command, *DCL (2A)*
- SHOW PROCESS command, *DCL (2A)*
- SHOW PROTECTION command, *DCL (2A)*
- SHOW QUEUE command, *DCL (2A)*
- SHOW QUOTA command, *DCL (2A)*
- SHOW RMS\_DEFAULT command,  
*DCL (2A)*
- SHOW STATUS command, *DCL (2A)*
- SHOW SYMBOL command, *DCL (2A)*
- SHOW SYSTEM command, *DCL (2A)*
- SHOW TERMINAL command, *DCL (2A)*
- SHOW TERMINAL operator's command,  
*OPG (10)*
- SHOW TRANSLATION command, *DCL (2A)*
- SHOW WORKING\_SET command,  
*DCL (2A)*
- Shut-down of VAX/VMS system, *SIG (10)*
  - emergency, *OPG (10)*
  - orderly, *OPG (10)*
- Signaling procedures, *RTL (5)*
- Site-independent start-up command  
procedure, *SMGR (10)*
- Site-specific start-up command procedure,  
*SMGR (10)*
- SLP batch editor
  - detailed description, *UTIL (3A)*
  - invoking, *DCL (2A)*

Software interfaces  
   design of, *MOD* (5)  
 Software interrupt priority level (IPL),  
   *WDD* (9)  
 Software performance report (SPR),  
   *SMGR* (10)  
 SORT command, *DCL* (2A)  
 Sorting records (*See also* SORT utilities)  
   batch mode  
     PDP-11, *SORT11* (3A)  
     VAX-11, *SORT* (3A)  
   interactive mode  
     PDP-11, *SORT11* (3A)  
     VAX-11, *SORT* (3A)  
 SORT/RSX11 command, *DCL* (2A)  
 SORT utilities  
   PDP-11  
     address routing, *SORT11* (3A)  
     index, *SORT11* (3A)  
     record, *SORT11* (3A)  
     tag, *SORT11* (3A)  
   VAX-11  
     address, *SORT* (3A)  
     index, *SORT* (3A)  
     record, *SORT* (3A)  
     tag, *SORT* (3A)  
 SOS text editor  
   detailed description, *SOS* (3A)  
   invoking, *DCL* (2A)  
 \$SPACE macroinstruction, *RMSR* (6)  
 Spooling, *SMGR* (10)  
 SPR (Software performance report),  
   *SMGR* (10)  
 Stacks  
   displaying, *SDA* (9)  
 Stalling for I/O completion, *RMSR* (6)  
 Standard system generation parameter files,  
   *SMGR* (10)  
 Starting up a VAX/VMS system, *SIG* (10)  
 START/QUEUE operator's command,  
   *OPG* (10)  
 Start-up command procedures  
   site-independent, *SMGR* (10)  
   site-specific, *SMGR* (10)  
 \$STATUS global symbol, *GCP* (2A)  
 Status return  
   command procedures for, *GCP* (2A)  
   I/O functions, *IOG* (4)  
   system error messages, *MSG* (2B)  
   for system services, *SSR* (4)  
 STEP command, *DEBUG* (3B)  
 Stepping through an image, *DEBUG* (3B)  
 STOP/ABORT command, *DCL* (2A)  
 STOP/ABORT operator's command, *OPG* (10)  
 STOP command, *DCL* (2A)  
 STOP/ENTRY command, *DCL* (2A)  
 STOP/ENTRY operator's command, *OPG* (10)  
 STOP/QUEUE operator's command, *OPG* (10)  
 STOP/REQUEUE command, *DCL* (2A)  
 STOP/REQUEUE operator's command,  
   *OPG* (10)  
 Storage  
   of files, *IRMS* (6)  
   of records, *IRMS* (6)  
 \$STORE macroinstruction, *RMSR* (6)  
 SUBMIT command, *DCL* (2A)  
 Subprocesses, *REAL* (9)  
   command procedures for, *GCP* (2A)  
   summary of, *SUM* (1)  
   system services for, *SSR* (4)  
 Substitution operators  
   ampersand (&), *GCP* (2A)  
   apostrophe ('), *GCP* (2A)  
   in command procedures, *GCP* (2A)  
 SUMSLP batch editor  
   detailed description, *UTIL* (3A)  
   invoking, *DCL* (2A)  
 Supervisor mode, *SSR* (4)  
   definition of, *SUM* (1)  
 Swapping  
   into the balance set, *SUM* (1)  
   out of the balance set, *SUM* (1)  
 Switches  
   RSX-11M indirect command file, *RSXU*  
     (8)  
   SOS, *SOS* (3A)  
 SYE Utility, *SMGR* (10)  
 Symbolic debugger (*See* Debugger (symbolic))  
 Symbolic instruction labels, *PTCH* (9)  
 Symbolic reference, *DEBUG* (3B)  
 Symbol(s), *LINK* (3B)  
   in command procedures, *GCP* (2A)  
   equating to character strings, *GCP* (2A)  
   MACRO, *MACR* (3B)  
   table  
     command procedure, *GCP* (2A)  
     debugger, *DEBUG* (3B), *LINK* (3B)  
     global, *LINK* (3B)  
     PATCH, *PTCH* (9)  
   types (*See* Symbol types)  
   use in RSX-11M indirect command files,  
     *DCL* (2A)  
 Symbol types  
   global, *LINK* (3B)  
   PATCH, *PTCH* (9)  
   VAX-11 MACRO, *MACR* (3B)  
   \$SEVERITY, *GCP* (2A)  
   \$STATUS, *GCP* (2A)

- Symbol types, (Cont.)
  - local, *LINK (3B)*
  - PATCH, *PTCH (9)*
  - VAX-11 MACRO, *MACR (3B)*
  - module names, *PTCH (9)*
  - program section names, *PTCH (9)*
  - routine names, *PTCH (9)*
  - strong, *LINK (3B)*
  - symbolic instruction labels, *PTCH (9)*
  - universal, *LINK (3B)*
  - PATCH, *PTCH (9)*
  - weak, *LINK (3B)*
- SYNCHRONIZE command, *DCL (2A)*
- Synchronous backplane interconnect (SBI)
  - addresses, *WDD (9)*
- Syntax
  - analysis procedures, *RTL (5)*
  - command (*See* Command syntax)
- SYSBOOT (system bootstrap) program,
  - SIG (10)*
- SYSGEN (system generation) Utility,
  - SMGR (10)*
  - commands for loading device drivers, *WDD (9)*
  - overview, *SIG (10)*
- System bootstrap (SYSBOOT) program,
  - SIG (10)*
- System Dump Analyzer (SDA) Utility
  - command syntax, *SDA (9)*
  - error messages, *SDA (9)*
  - operations, *SDA (9)*
  - sample analysis, *SDA (9)*
- System dump file
  - analyzing, *SDA (9)*
  - reading, *SDA (9)*
  - saving, *SDA (9)*
- System generation, *SMGR (10)*
  - parameter files, *SMGR (10)*
  - parameters, *SMGR (10)*
  - RSX-11M indirect command file, *RSXU (8)*
  - utility (SYSGEN), *SIG (10)*
- System images, *LINK (3B)*
- System Load Test, *UETP (10)*
- System manager, *SMGR (10)*
- System manager utilities, *SMGR (10)*
- System messages
  - format for, *MSG (2B)*
- System page table
  - displaying, *SDA (9)*
- System services
  - asynchronous system trap (AST), *SSR (4)*
  - calling, *SSR (4)*
  - change-mode, *SSR (4)*
- System services, (Cont.)
  - condition-handling, *SSR (4)*
  - descriptions of, *SSR (4)*
  - for device allocation, *SSR (4)*
  - event flag, *SSR (4)*
  - how to use, *SSR (4)*
  - I/O
    - \$QIO*, *SSR (4)*
    - \$QIOW*, *SSR (4)*
  - logical name, *SSR (4)*
  - memory management, *SSR (4)*
  - page frame number mapping, *SSR (4)*
  - process control, *SSR (4)*
  - timer and time conversion, *SSR (4)*
  - use by library procedures, *MOD (5)*
  - using, *SSR (4)*
- System traps
  - asynchronous (*See* Asynchronous system trap)
  - synchronous
    - emulation of RSX-11M, *RSXR (8)*
- System (VAX/VMS)
  - accessing, *PRM (1)*
  - commands for, *DCL (2A)*
  - in EDT, *EDT (3A)*
  - back-up of, *OPG (10)*, *SIG (10)*
  - booting, *SIG (10)*
  - building, *SIG (10)*
  - crash
    - analyzing, *SDA (9)*
    - sample, *SDA (9)*
  - default logical names
    - definition, *SUM (1)*
    - introduction tok *PRM (1)*
    - summary table, *DCL (2A)*
  - hardware requirements, *SMGR (10)*
  - images, *LINK (3B)*
  - initializing, *SIG (10)*
  - I/O, *REAL (9)*
  - installing, *SIG (10)*
    - release notes for, *REL (1)*
  - load test, *UETP (10)*
  - messages, *DCL (2A)*
  - rebooting, *OPG (10)*
  - restarting, *OPG (10)*
    - automatically, *SIG (10)*
  - shutting down, *OPG (10)*, *SIG (10)*
  - start-up, *SIG (10)*
  - tests
    - Compatibility Mode, *UETP (10)*
    - Device, *UETP (10)*
    - File Transfer Utility (FLX), *UETP (10)*
    - Native Mode, *UETP (10)*
    - RSX-11M Executive Directive, *UETP (10)*

System (VAX/VMS), tests, (Cont.)  
System Load, *UETP* (10)  
VAX-11 Record Management Services,  
*UETP* (10)  
tuning, *SMGR* (10)  
updating, *SIG* (10)  
upgrading, *SIG* (10)

## T

Table  
device, *WDD* (9)  
driver, *WDD* (9)  
driver prologue (DPT), *WDD* (9)  
logical name, *DCL* (2A), *SSR* (4)  
symbol (*See* Symbol table)  
system page, *SDA* (9)

Tag Sort  
PDP-11, *SORT11* (3A)  
VAX-11, *SORT* (3A)

Tapes, magnetic  
basic concepts, *IRMS* (6)  
copying files to/from, *DCL* (2A)  
driver, *IOG* (4)  
function codes, *IOG* (4)  
initializing, *DCL* (2A)  
QIO (queue I/O) functions, *IOG* (4)  
reading, *DCL* (2A)  
volumes, *DCL* (2A)  
writing, *DCL* (2A)

Task Builder (TKB)  
RSX-11M, *RSXU* (8)

Temporary files  
in EDT, *EDT* (3A)  
in SOS, *SOS* (3A)

Terminal  
characteristics, *DCL* (2A)  
operator's commands for, *OPG* (10)  
driver, *IOG* (4)  
escape sequences, *IOG* (4)  
function codes, *IOG* (4)  
function keys, *DCL* (2A)  
in EDT, *EDT* (3A)  
line terminators, *IOG* (4)  
local, *DCL* (2A)  
/mailbox interaction, *IOG* (4)  
operator's, *OPG* (10)  
queues, *SMGR* (10)  
remote, *DCL* (2A)  
remote command, *SUM* (1)

Terminating  
batch jobs, *OPG* (10)  
debugger, *DBUG* (3B)  
EDT, *EDT* (3A)

Terminating, (Cont.)  
file processing, *RMSR* (6)  
print jobs, *OPG* (10)  
commands for, *DCL* (2A)  
record stream, *RMSR* (6)  
SOS, *SOS* (3A)

Tests (system)  
Compatibility Mode, *UETP* (10)  
Device, *UETP* (10)  
File Transfer Utility (FLX), *UETP* (10)  
Native Mode, *UETP* (10)  
RSX-11M Executive Directives, *UETP* (10)  
System Load, *UETP* (10)  
VAX-11 Record Management Services,  
*UETP* (10)

Text editor(s)  
batch-oriented  
SLP, *UTIL* (3A)  
SUMSLP, *UTIL* (3A)  
interactive  
EDT, *EDT* (3A)  
SOS, *SOS* (3A)  
invoking, *DCL* (2A)

Text libraries, *DCL* (2A)

Time  
operator's command for, *OPG* (10)  
run-time library procedure for, *RTL* (5)  
in EDT, *EDT* (3A)

Timer and time conversion services, *SSR* (4)

TKB (RSX-11M Task Builder), *RSXU* (8)

TOPUSERS (top CPU users), *SMGR* (10)

Traceback, *DBUG* (3B)

Tracepoints, *DBUG* (3B)

Tracing opcodes, *DBUG* (3B)

Transfer modes  
DR11-W, *IOG* (4)  
DUP11, *IOG* (4)

Transferring files, *UTIL* (3A)

Transfer vectors, *LINK* (3B)

Traps (*See* System traps)

Truncating a sequential file, *RMSR* (6)

Tuning the system, *SMGR* (10)

Type-ahead, *IOG* (4)

Type-ahead buffer, *DCL* (2A)

TYPE command, *DCL* (2A)

## U

UAF (User authorization file), *SMGR* (10)  
definition of, *SUM* (1)

UCB (Unit control block), *WDD* (9)

UETP (User Environment Test Package),  
*UETP* (10)

UIC (*See* User identification code)  
 Unary operators  
     in MACRO programming, *MACR (3B)*  
 Unit control block (UCB), *WDD (9)*  
 Universal symbols, *LINK (3B)*  
     in PATCH, *PTCH (9)*  
 UNLOCK command, *DCL (2A)*  
 Unlocking a record, *RMSR (6)*  
 Updating  
     a file  
         with EDT, *EDT (3A)*  
     a program, *MACU (3B)*  
     a record, *RMSR (6)*  
     the system, *SIG (10)*  
 Upgrading the system, *SIG (10)*  
 User authorization file (UAF), *SMGR (10)*  
     definition of, *SUM (1)*  
 User control block, *RMSR (6)*, *RMSU (6)*  
 User-defined default libraries, *LINK (3B)*  
 User Environment Test Package (UETP),  
     *UETP (10)*  
 User identification code (UIC), *SMGR (10)*  
     definition of, *SUM (1)*  
     in directory names, *DCL (2A)*  
     operator's command for, *OPG (10)*  
 User mode, *SSR (4)*  
     asynchronous system trap (AST),  
         *WDD (9)*  
     definition of, *SUM (1)*  
 User-written system services (*See* Privileged  
     shareable images)  
 Utilities  
     AUTHORIZE, *SMGR (10)*  
     Bad Block Locator (BAD), *UTIL (3A)*  
     Date/time, *RTL (5)*  
     DELTA debugging, *WDD (9)*  
     DISKQUOTA, *SMGR (10)*  
     Disk Save and Compress (DSC),  
         *UTIL (3A)*  
     DISPLAY, *SMGR (10)*  
     DSC1, *UTIL (3A)*  
     DSC2, *UTIL (3A)*  
     DSC-2 (stand-alone), *UTIL (3A)*  
     File Structure Verification (VFY),  
         *UTIL (3A)*  
     File Transfer (FLX), *UTIL (3A)*  
     INSTALL, *SMGR (10)*  
     Librarian, *UTIL (3A)*  
     MAIL, *UTIL (3A)*  
     Message, *UTIL (3A)*  
     PATCH, *PTCH (9)*  
     PDP-11 SORT, *SORT<sub>11</sub> (3A)*  
     Personal Mail, *UTIL (3A)*  
     RMS SHARE, *SMGR (10)*

Utilities, (Cont.)  
     SDA (System Dump Analyzer), *SDA (9)*  
     SLP, *UTIL (3A)*  
     SUMSLP, *UTIL (3A)*  
     SYE, *SMGR (10)*  
     SYSGEN, *SMGR (10)*  
     System Dump Analyzer (SDA), *SDA (9)*  
     VAX-11 SORT, *SORT (3A)*  
     VFY (File Structure Verification),  
         *UTIL (3A)*  
     XDELTA debugging, *WDD (9)*

## V

Variable bit field instructions  
     run-time library procedure for, *RTL (5)*  
 Variable-length records, *IRMS (6)*  
 VAX/VMS processes (USERS), *SMGR (10)*  
 VAX/VMS source kit, *SIG (10)*  
 VAX/VMS system crash, *SDA (9)*  
 Verification  
     command procedures for, *GCP (2A)*  
 Verify utility, *UTIL (3A)*  
 VFY (File Structure Verification Utility),  
     *UTIL (3A)*  
 Virtual addresses  
     debugging with, *DEBUG (3B)*  
 Virtual address space  
     for processes, *SSR (4)*  
     summary of, *SUM (1)*  
 Virtual I/O, *IOG (4)*  
 Virtual memory  
     allocation, *SUM (1)*  
     process-wide, *RTL (5)*  
 Volume(s)  
     backing up, *OPG (10)*  
     continue processing, *RMSR (6)*  
     disk, *DCL (2A)*  
         backing up, *UTIL (3A)*  
         compressing, *UTIL (3A)*  
         protection, *DCL (2A)*  
         readability check, *UTIL (3A)*  
         restoring, *UTIL (3A)*  
         validity check, *UTIL (3A)*  
     handling, *OPG (10)*  
     initialization, *DCL (2A)*  
     protection, *IOG (4)*  
     public, *SMGR (10)*  
         backing up, *OPG (10)*  
         guidelines for using, *SMGR (10)*  
         initializing, *OPG (10)*  
         mounting, *DCL (2A)*, *OPG (10)*,  
             *SMGR (10)*

Volume(s), (Cont.)  
RT-11, *UTIL* (3A)  
sets, *DCL* (2A)  
tape, *DCL* (2A)

## W

WAIT command, *DCL* (2A)  
Wait queues, *WDD* (9)  
Watchpoints, *DEBUG* (3B)  
Working set, *SSR* (4)  
Wild card characters, *DCL* (2A)  
\$WRITE macroinstruction, *RMSR* (6)

Write mailbox, *IOG* (4)  
Writing  
a file onto disk  
command procedures for, *GCP* (2A)  
introduction to, *PRM* (1)  
modified I/O buffers, *RMSR* (6)  
to a disk, *RMSR* (6)  
to a tape, *DCL* (2A)

## X

\$XAB macroinstruction, *RMSR* (6)  
XDELTA debugging utility, *WDD* (9)



READER'S COMMENTS

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

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

---

---

---

---

---

---

---

---

---

---

Did you find errors in this manual? If so, specify the error and the page number.

---

---

---

---

---

---

---

---

---

---

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
- Other (please specify) \_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

Organization \_\_\_\_\_

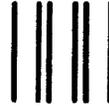
Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

or  
Country

Do Not Tear - Fold Here and Tape

**digital**



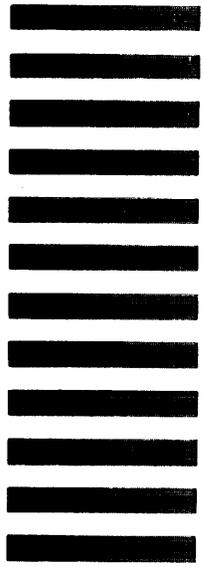
No Postage  
Necessary  
if Mailed in the  
United States

**BUSINESS REPLY MAIL**

FIRST CLASS PERMIT NO.33 MAYNARD MASS.

POSTAGE WILL BE PAID BY ADDRESSEE

BSSG PUBLICATIONS TW/A14  
DIGITAL EQUIPMENT CORPORATION  
1925 ANDOVER STREET  
TEWKSBURY, MASSACHUSETTS 01876



Do Not Tear - Fold Here

Cut Along Dotted Line