May 1981

This document provides an introduction to the software document 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. An index to the key information in the document set is provided.

VAX–11
Information Directory
and Index
Order No. AA-D016D-TE

READ THIS FIRST

SUPERSESSION/UPDATE INFORMATION: This revised document supersedes the VAX–11 Information Directory (Order No. AA-D016C-TE)

OPERATING SYSTEM AND VERSION: VAX/VMS V2.3

SOFTWARE VERSION: Not applicable

digital equipment corporation · maynard, massachusetts
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 be used or copied only 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.

All Rights Reserved.

Printed in U.S.A.

The postage-paid 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:

<table>
<thead>
<tr>
<th>DEC</th>
<th>DECUS</th>
<th>DIGITAL</th>
<th>PDP</th>
<th>UNIBUS</th>
<th>VAX</th>
<th>DECnet</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECSYSTEM-10</td>
<td>DECSYSTEM-20</td>
<td>DECwriter</td>
<td>DIBOL</td>
<td>Edusystem</td>
<td>IAS</td>
<td>MASSBUS</td>
</tr>
<tr>
<td>PDT</td>
<td>RSTS</td>
<td>RSX</td>
<td>VMS</td>
<td>VT</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

digital

ZKA99-81
# Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface</td>
<td>vii</td>
</tr>
<tr>
<td>System Installation</td>
<td>1</td>
</tr>
<tr>
<td><strong>VAX/VMS Document Descriptions</strong></td>
<td>1</td>
</tr>
<tr>
<td>Volume 1. General Information</td>
<td>6</td>
</tr>
<tr>
<td>VAX-11 Information Directory and Index</td>
<td>6</td>
</tr>
<tr>
<td>VAX/VMS Summary Description and Glossary</td>
<td>6</td>
</tr>
<tr>
<td>VAX/VMS Primer</td>
<td>6</td>
</tr>
<tr>
<td>VAX/VMS Release Notes</td>
<td>6</td>
</tr>
<tr>
<td>VAX-11/750 User's Notes</td>
<td>6</td>
</tr>
<tr>
<td>Volume 2 (A and B). Command Language and System Messages</td>
<td>6</td>
</tr>
<tr>
<td>VAX/VMS Command Language User's Guide and Update Notice No. 1</td>
<td>7</td>
</tr>
<tr>
<td>VAX/VMS Guide to Using Command Procedures</td>
<td>7</td>
</tr>
<tr>
<td>VAX/VMS System Messages and Recovery Procedures Manual</td>
<td>7</td>
</tr>
<tr>
<td>Volume 3 (A and B). Program Development Tools</td>
<td>7</td>
</tr>
<tr>
<td>VAX-11 Text Editing Reference Manual</td>
<td>7</td>
</tr>
<tr>
<td>EDT Editor Manual</td>
<td>7</td>
</tr>
<tr>
<td>VAX-11 Utilities Reference Manual and Update Notice No. 1</td>
<td>7</td>
</tr>
<tr>
<td>VAX-11 SORT/MERGE User's Guide</td>
<td>8</td>
</tr>
<tr>
<td>PDP-11 SORT Reference Manual</td>
<td>8</td>
</tr>
<tr>
<td>VAX-11 MACRO User's Guide and Update Notice No. 1</td>
<td>8</td>
</tr>
<tr>
<td>VAX-11 MACRO Language Reference Manual</td>
<td>8</td>
</tr>
<tr>
<td>VAX-11 Linker Reference Manual</td>
<td>8</td>
</tr>
<tr>
<td>VAX-11 Symbolic Debugger Reference Manual</td>
<td>9</td>
</tr>
<tr>
<td>Volume 4. System Services and I/O</td>
<td>9</td>
</tr>
<tr>
<td>VAX/VMS System Services Reference Manual</td>
<td>9</td>
</tr>
<tr>
<td>VAX/VMS I/O User's Guide and Update Notices No. 1 and No. 2</td>
<td>9</td>
</tr>
<tr>
<td>Volume 5. Run-Time Library</td>
<td>9</td>
</tr>
<tr>
<td>VAX-11 Run-Time Library Reference Manual</td>
<td>9</td>
</tr>
<tr>
<td>VAX-11 Guide to Creating Modular Library Procedures</td>
<td>10</td>
</tr>
<tr>
<td>Volume 6. VAX-11 Record Management Services.</td>
<td>10</td>
</tr>
<tr>
<td>Introduction to VAX-11 Record Management Services</td>
<td>10</td>
</tr>
<tr>
<td>VAX-11 Record Management Services User's Guide</td>
<td>10</td>
</tr>
<tr>
<td>VAX-11 Record Management Services Reference Manual</td>
<td>10</td>
</tr>
<tr>
<td>Volume 7. RMS-11 Record Management Services</td>
<td>10</td>
</tr>
<tr>
<td>RMS-11 User's Guide</td>
<td>11</td>
</tr>
<tr>
<td>Volume 8. Compatibility Mode (RSX-11M)</td>
<td>11</td>
</tr>
</tbody>
</table>
Volume 9. System Programming .................................................. 12
  VAX/VMS Real-Time User's Guide ........................................... 12
  VAX/VMS Guide to Writing a Device Driver and Update Notice No. 1 . 12
  VAX/VMS System Dump Analyzer Reference Manual .................... 12
  VAX-11 PATCH Utility Reference Manual ................................ 12
Volume 10. System Management and Operation ............................... 12
  VAX-11 Software Installation Guide ....................................... 12
  VAX-11/750 Software Installation Guide .................................. 13
  VAX/VMS System Manager's Guide ......................................... 13
  VAX/VMS Operator's Guide .................................................. 13
  VAX/VMS UETP User's Guide ............................................... 13
Other Relevant Documents ...................................................... 13
  EDT Editor Reference Card .................................................. 13
  Introduction to the EDT Editor: A CAI Minicourse ..................... 13
  Course Administrator Guide ................................................ 13
  Introduction to the EDT Editor: A CAI Minicourse ..................... 13
  Student Guide ........................................................................ 14
  VAX/VMS Internals and Data Structures ................................... 14
  VAX-11 Programming Card .................................................... 14

VAX/VMS Optional Document Descriptions .................................. 15

BASIC ....................................................................................... 19
  VMS BASIC-PLUS-2 Version 1.6 Release Notes ............................ 19
  VAX-11 BASIC Installation Guide and Release Notes .................... 19
  VAX-11 BASIC Language Reference Manual and Update Notices No. 1 and No. 2 ................................. 19
  VAX-11 BASIC User's Guide and Update Notices No. 1 and No. 2 .... 19

BLISS ....................................................................................... 20
  BLISS Language Guide .......................................................... 20
  BLISS Pocket Guide .............................................................. 20
  VAX-11 BLISS-32 User's Guide .............................................. 20

COBOL ...................................................................................... 20
  VAX-11 COBOL Installation Guide/Release Notes ....................... 20
  VAX-11 COBOL Language Reference Manual and Update Notice No. 1 .................................................. 20
  VAX-11 COBOL Pocket Guide .................................................. 20
  VAX-11 COBOL-74 Translator Utility and Update Notice No. 1 ........ 21
  VAX-11 COBOL User's Guide and Update Notice No. 1 ................ 21
  VAX-11 COBOL-74 Installation Guide/Release Notes .................. 21
  VAX-11 COBOL-74 Language Reference Manual and Update Notice No. 1 .................................................. 21
  VAX-11 COBOL-74 User's Guide and Update Notice No. 1 ............ 21

CORAL ...................................................................................... 21
  CORAL 66 Language Reference Manual .................................... 21
  IAS/RSX/VMS CORAL 66 User's Guide .................................... 21
DATATRIEVE

DATATRIEVE-11 Installation Guide ........................................ 22
DATATRIEVE Primer ...................................................... 22
DATATRIEVE-11 Version 2.0 Release Notes .................................. 22
User’s Guide to DATATRIEVE-11 ........................................... 22

DECnet-VAX ................................................................. 22

DECnet-VAX Network Installation Procedures .............................. 22
DECnet-VAX Release Notes ................................................. 22
DECnet-VAX System Manager’s Guide ...................................... 23
DECnet-VAX User’s Guide .................................................. 23

DIGITAL Standard MUMPS .................................................. 23

VAX-11 DSM Summary ........................................................ 23
VAX-11 DSM User’s Guide ................................................... 23

Forms Management System .................................................. 23

VAX-11 FMS Mini-Reference ................................................. 23
VAX-11 FMS Release Notes .................................................. 23
VAX-11 FMS Software Reference Manual .................................. 24

FORTRAN .................................................................. 24

IAS/RSX, VAX/VMS FORTRAN IV Installation Guide/Release Notes ....... 24
IAS/RSX, VAX/VMS FORTRAN IV User’s Guide ............................ 24
PDP-11 FORTRAN Language Reference Manual ............................ 24
VAX-11 FORTRAN Installation Guide/Release Notes ................. 24
VAX-11 FORTRAN Language Reference Manual ...................... 25
VAX-11 FORTRAN User’s Guide ............................................. 25

MUX200 ........................................................................ 25

MUX200/VAX Emulator Release Notes ...................................... 25
MUX200/VAX Emulator System Manager’s Guide ......................... 25
MUX200/VAX Version 1.1 Emulator User’s Guide ....................... 25

PASCAL ........................................................................ 26

VAX-11 PASCAL Installation Guide/Release Notes ....................... 26
VAX-11 PASCAL Language Reference Manual ............................ 26
VAX-11 PASCAL Primer ....................................................... 26
VAX-11 PASCAL User’s Guide ................................................. 26

PL/I ............................................................................ 26

Introduction to VAX-11 PL/I .................................................... 26
VAX-11 PL/I Encyclopedic Reference ........................................ 26
VAX-11 PL/I Guide to Program Debugging ................................. 26
VAX-11 PL/I Installation and System Management Guide ............. 27
VAX-11 PL/I Language Summary .......................................... 27
VAX-11 PL/I User’s Guide ................................................... 27

Protocol Emulators ............................................................. 27

VAX-11 3271 Protocol Emulator User’s Guide ............................ 27

Index ........................................................................ 29
**Tables**

1. VAX/VMS Software Document Set ......................................................... 2
2. Other Relevant Documents ................................................................. 5
3. Optional VAX/VMS Software Documents ............................................. 15
Preface

The VAX-11 Information Directory and Index provides a brief description of each manual in the VAX/VMS document set and an index of major topics covered by the set. The purpose of this manual is to guide users to the manuals most suited to their needs.

This manual is divided into three sections:

• A note on system installation

• Synopses of all documents in the VAX/VMS document set and of VAX/VMS optional documents (as well as tables listing the title, order number, and suggested audience for each document)

• An index of major topics covered by the VAX/VMS document set
System Installation

As shipped, the VAX/VMS operating system is ready to run on your VAX-11 processor. You should install the system according to the procedure described in the software installation guide specific to your processor.

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. If you have a VAX-11/750, you should also read the VAX-11/750 User’s Notes, which provide information about the VAX-11/750 that is not contained elsewhere in the document set.

To produce a system tailored to the particular hardware and software requirements of your facility, follow the guidelines described in the VAX/VMS System Manager’s Guide.

VAX/VMS Document Descriptions

The VAX/VMS software distribution kit includes a software document set that provides programming and operation information for the VAX/VMS operating system. DIGITAL ships the complete software document set listed in Table 1 with each software system. Some of the documents listed in Table 2 are packaged with the document set; others must be ordered separately. Customers receive the optional documents listed in Table 3 when they purchase separate licenses for optional software products. All of the documents and document sets listed in this directory are available through separate order.

The manuals in the VAX/VMS software document 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 one or more ring binders containing several manuals. Table 1 lists all the manuals contained in each volume as well as the order number and suggested audience for each. Table 2 lists the order number and suggested audience for other relevant documents not included in the ring binder set. Brief descriptions of the manuals follow the tables. 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 Document Set

<table>
<thead>
<tr>
<th>Volume</th>
<th>Title (Order Number)</th>
<th>Suggested Audience$^1$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General Information</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VAX-11 Information Directory and Index (AA-D016D-TE)</td>
<td>X X X X X</td>
</tr>
<tr>
<td></td>
<td>VAX/VMS Summary Description and Glossary (AA-D022B-TE)</td>
<td>X X X X</td>
</tr>
<tr>
<td></td>
<td>VAX/VMS Primer (AA-D030B-TE)</td>
<td>X X X X</td>
</tr>
<tr>
<td></td>
<td>VAX/VMS Release Notes, Version 2.0 (AA-D015C-TE)</td>
<td>X X X X</td>
</tr>
<tr>
<td></td>
<td>VAX/VMS Release Notes, Version 2.2 (AA-K760A-TE)</td>
<td>X X X X</td>
</tr>
<tr>
<td></td>
<td>VAX/VMS Release Notes, Version 2.3 (AA-L286A-TE)</td>
<td>X X X X</td>
</tr>
<tr>
<td></td>
<td>VAX-11/750 User's Notes$^2$ (AA-K435A-TE)</td>
<td>X X X X</td>
</tr>
</tbody>
</table>

(continued on next page)

1. 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 systems 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>
<thead>
<tr>
<th>Volume</th>
<th>Title (Order Number)</th>
<th>Suggested Audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>2A</td>
<td><strong>Command Language and System Messages</strong>&lt;br&gt;VAX/VMS Command Language User's Guide (AA-D023B-TE) and Update Notice No. 1 (AD-D023B-T1)&lt;br&gt;VAX/VMS Guide to Using Command Procedures (AA-H782A-TE)</td>
<td>X X X X X</td>
</tr>
<tr>
<td>2B</td>
<td><strong>Command Language and System Messages</strong>&lt;br&gt;VAX/VMS System Messages and Recovery Procedures Manual (AA-D017B-TE)</td>
<td>X X X X X</td>
</tr>
<tr>
<td>4</td>
<td><strong>System Services and I/O</strong>&lt;br&gt;VAX/VMS System Services Reference Manual (AA-D018B-TE)&lt;br&gt;VAX/VMS I/O User's Guide (AA-D028B-TE) and Update Notice No. 1 (AD-D028B-T1)&lt;br&gt;VAX/VMS Command Language User's Guide (AA-D023B-TE) and Update Notice No. 1 (AD-D023B-T1) and Update Notice No. 2 (AD-D023B-T2)</td>
<td>X X X X X</td>
</tr>
</tbody>
</table>

(continued on next page)
<table>
<thead>
<tr>
<th>Volume</th>
<th>Title (Order Number)</th>
<th>Suggested Audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Run-Time Library</td>
<td>OP AP SP SM</td>
</tr>
<tr>
<td></td>
<td>VAX-11 Run-Time Library Reference Manual (AA-D006B-TE)</td>
<td>X X</td>
</tr>
<tr>
<td></td>
<td>VAX-11 Guide to Creating Modular Library Procedures (AA-H500B-TE)</td>
<td>X X</td>
</tr>
<tr>
<td>6</td>
<td>VAX-11 Record Management Services</td>
<td>OP AP SP SM</td>
</tr>
<tr>
<td></td>
<td>Introduction to VAX-11 Record Management Services (AA-D024C-TE)</td>
<td>X X</td>
</tr>
<tr>
<td></td>
<td>VAX-11 Record Management Services User's Guide (AA-D781C-TE)</td>
<td>X X</td>
</tr>
<tr>
<td></td>
<td>VAX-11 Record Management Services Reference Manual (AA-D031C-TE)</td>
<td>X X</td>
</tr>
<tr>
<td>7</td>
<td>RMS-11 Record Management Services</td>
<td>OP AP SP SM</td>
</tr>
<tr>
<td>8</td>
<td>Compatibility Mode (RSX-11M)</td>
<td>OP AP SP SM</td>
</tr>
<tr>
<td>9</td>
<td>System Programming</td>
<td>OP AP SP SM</td>
</tr>
<tr>
<td></td>
<td>VAX/VMS Guide to Writing a Device Driver (AA-H499B-TE) and Update Notice No. 1 (AD-H449B-T1)</td>
<td>X</td>
</tr>
</tbody>
</table>

(continued on next page)
Table 1 (Cont.): VAX/VMS Software Document Set

<table>
<thead>
<tr>
<th>Volume</th>
<th>Title (Order Number)</th>
<th>Suggested Audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td><strong>System Management and Operation</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VAX-11 Software Installation Guide (AA-D021C-TE)</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>VAX-11/750 Software Installation Guide¹ (AA-K410A-TE)</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>VAX/VMS System Manager's Guide (AA-D027B-TE)</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>VAX/VMS Operator's Guide (AA-D025B-TE)</td>
<td>X X X X</td>
</tr>
<tr>
<td></td>
<td>VAX/VMS UE/TP User's Guide (AA-D643B-TE)</td>
<td>X X</td>
</tr>
</tbody>
</table>

1. In the document set for the VAX-11/750, the VAX-11/750 Software Installation Guide replaces the VAX-11 Software Installation Guide.

Table 2: Other Relevant Documents

<table>
<thead>
<tr>
<th>Title (Order Number)</th>
<th>Suggested Audience¹</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OP</td>
</tr>
<tr>
<td>EDT Editor Reference Card (AV-J756A-TC)</td>
<td>X X X X</td>
</tr>
<tr>
<td>Introduction to the EDT Editor: A CAI Minicourse Course Administrator Guide (AA-J823A-TE)</td>
<td>X</td>
</tr>
<tr>
<td>Introduction to the EDT Editor: A CAI Minicourse Student Guide (AA-J824A-TE)</td>
<td>X X</td>
</tr>
<tr>
<td>VAX/VMS Internals and Data Structures² (AA-K785A-TE)</td>
<td>X</td>
</tr>
<tr>
<td>VAX-11 Programming Card (AV-D827A-TE)</td>
<td>X X</td>
</tr>
</tbody>
</table>

1. OP – operator; AP – application programmer; SP – system programmer; SM – system manager. For full explanation, see note 1, page 2.

2. The VAX/VMS Internals and Data Structures manual is not packaged with the VAX/VMS document set, but is available through separate order.
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 basic document set and a glossary of terms used throughout.

VAX-11 Information Directory and Index

This document introduces the software document 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 user to the manual or manuals in which each entry is discussed. It also provides information about optional VAX/VMS software documentation.

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), its use in file manipulation and program development, and to 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 the current version of VAX/VMS and the previous version, and notes to published documentation. Read this document before installing a VAX/VMS system.

VAX-11/750 User's Notes

This document contains information specific to the VAX-11/750 processor that is not contained elsewhere in the document set. It is shipped as part of the document set for the VAX-11/750 processor.

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

This volume provides a detailed description of the VAX/VMS DIGITAL Command Language (DCL). Included are a command language reference manual, a guide to developing command procedures, and a list of system messages and recovery procedures.
VAX/VMS Command Language User’s Guide and Update Notice No. 1

This document describes the DIGITAL Command Language (DCL). It provides detailed reference information and examples of all VAX/VMS DCL commands.

VAX/VMS Guide to Using Command Procedures

This document presents key concepts and techniques for developing command procedures using the VAX/VMS 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, message descriptions, and suggested recovery procedures. 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 and MERGE routines.


This document describes the features and use of SOS, an interactive text editor. It is intended as a reference manual for users who are familiar with text editors and who want to use SOS on the VAX/VMS operating system.

EDT Editor Manual

This document describes how to use the EDT interactive text editor and serves as a reference source. The manual is intended for users of all operating systems that support the EDT editor.

VAX-11 Utilities Reference Manual and Update Notice No. 1

This document 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

• Backup Utility (BACKUP), a program used to back up, restore, or copy files, directories, and Files–11 disk volumes

**VAX–11 SORT/MERGE User’s Guide**

This document describes how to use the VAX–11 native mode SORT/MERGE utility.

**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 and Update Notice No. 1**

This document contains the information required by an assembly language programmer to assemble and debug VAX–11 MACRO programs 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 describes the features and operations of the VAX–11 linker, a program that translates the object modules produced by an assembler or compiler into an image capable of running on VAX/VMS. Linking is a required step in program development.

This document explains and illustrates the features of the VAX-11 symbolic debugger, a program development tool that assists the programmer in locating and correcting errors. The manual is designed especially for high-level language programmers, though assembly language programmers may use it effectively.

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

VAX/VMS I/O User's Guide and Update Notices No. 1 and No. 2

This document 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.


This document 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 an introductory description of the native-mode VAX–11 Record Management Services (VAX–11 RMS) of the VAX/VMS operating system. 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 document contains detailed information on using the capabilities of VAX–11 Record Management Services (VAX–11 RMS) efficiently. It 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 document 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 – Creates files
- RMSCNV – Moves data from one file to another
- RMSBCK – Creates back-up copies of files
- RMSDSP – Lists attributes of RMS–11 files and names of back-up files
- RMSRST – Restores back-up files to their original state
- RMSIFL – Loads, 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)**

This volume contains information about compatibility mode, a processor state that allows PDP–11 programs to execute under the VAX/VMS operating system.


This document 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.


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 and Update Notice No. 1

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.


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 operating system on the VAX–11/780 processor.
VAX–11/750 Software Installation Guide
This document contains instructions for installing the VAX/VMS operating system on the VAX–11/750 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 UE TP User's Guide
This document provides the information needed to run the User Environment Test Package (UETP). The UE TP is used by customers and DIGITAL personnel, especially at the time of system installation, to verify that hardware and software system components are functioning correctly.

Other Relevant Documents
Some of these items are packaged with the VAX/VMS document set. All can be ordered separately.

EDT Editor Reference Card
This card summarizes EDT's keypad editing features on VT52 and VT100 terminals. The last page is a tear-off card of key diagrams that can be taped to the terminal for easy reference.

Introduction to the EDT Editor: A CAI Minicourse Course Administrator Guide
This guide explains the tasks to be performed by the administrator of the EDT Computer-Assisted Instruction minicourse: building the CAI software on the students' computer system, logging in the students, backing up the CAI software, and solving problems that might occur as the CAI programs run.
Introduction to the EDT Editor: A CAI Minicourse
Student Guide
This student guide is designed to be used in conjunction with the EDT Computer-Assisted Instruction minicourse. It provides an overall introduction to the course, including its objectives and sub-objectives.

VAX/VMS Internals and Data Structures
This manual explains the internal control paths and data structures used by the VAX/VMS operating system.

This manual describes the language support procedures for VAX-11 BASIC, VAX-11 COBOL, VAX-11 FORTRAN, and VAX-11 PL/I.

VAX-11 Programming Card
This document is a reference guide to the VAX-11 instruction set and other information relevant to VAX-11 programming.
Optional documents are shipped to customers who have purchased separate licenses for software components. Table 3 lists the optional manuals currently available and the suggested audience for each. Brief descriptions of the manuals follow Table 3.

Table 3: Optional\(^1\) VAX/VMS Software Documents

<table>
<thead>
<tr>
<th>Title (Order Number)</th>
<th>Suggested Audience(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BASIC</strong></td>
<td></td>
</tr>
<tr>
<td>VAX-11 BASIC Language Reference Manual (AA-H867A-TE) and Update Notice No. 1 (AD-H867A-T1) and Update Notice No. 2 (AD-H867A-T2)</td>
<td>X</td>
</tr>
</tbody>
</table>

(continued on next page)

1. Optional documents accompany software components for which you must purchase a special license.

2. 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 3.
<table>
<thead>
<tr>
<th>Title (Order Number)</th>
<th>Suggested Audience</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BASIC (Cont.)</strong></td>
<td></td>
</tr>
<tr>
<td>and Update Notice No. 1 (AD-H869A-T1)</td>
<td></td>
</tr>
<tr>
<td>and Update Notice No. 2 (AD-H869A-T2)</td>
<td></td>
</tr>
<tr>
<td><strong>BLISS</strong></td>
<td></td>
</tr>
<tr>
<td>BLISS Language Guide (AA-H275B-TK)</td>
<td>X</td>
</tr>
<tr>
<td>BLISS Pocket Guide (AV-H289B-TK)</td>
<td>X</td>
</tr>
<tr>
<td><strong>COBOL</strong></td>
<td></td>
</tr>
<tr>
<td>and Update Notice No. 1 (AD-H631A-T1)</td>
<td></td>
</tr>
<tr>
<td>VAX-11 COBOL Pocket Guide (AV-H633A-TE)</td>
<td>X</td>
</tr>
<tr>
<td>VAX-11 COBOL-74 Translator Utility (AA-H822A-TE)</td>
<td>X</td>
</tr>
<tr>
<td>and Update Notice No. 1 (AD-H822A-T1)</td>
<td></td>
</tr>
<tr>
<td>and Update Notice No. 1 (AD-H632A-T1)</td>
<td></td>
</tr>
<tr>
<td>and Update Notice No. 1 (AD-C985A-T1)</td>
<td></td>
</tr>
<tr>
<td>and Update Notice No. 1 (AD-C986A-T1)</td>
<td></td>
</tr>
<tr>
<td><strong>CORAL</strong></td>
<td></td>
</tr>
<tr>
<td>CORAL 66 Language Reference Manual (AA-D111B-TC)</td>
<td>X  X</td>
</tr>
</tbody>
</table>

(continued on next page)
Table 3 (Cont.): Optional VAX/VMS Software Documents

<table>
<thead>
<tr>
<th>Title (Order Number)</th>
<th>Suggested Audience</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DATATRIEVE</strong></td>
<td></td>
</tr>
<tr>
<td>DATATRIEVE–11 Installation Guide (AA-H169B-TC)</td>
<td>X</td>
</tr>
<tr>
<td>DATATRIEVE Primer (AA-J106A-TC)</td>
<td>X X X X X</td>
</tr>
<tr>
<td>DATATRIEVE–11 Version 2.0 Release Notes (AA-D110C-TC)</td>
<td>X X X X X</td>
</tr>
<tr>
<td><strong>DECnet–VAX</strong></td>
<td></td>
</tr>
<tr>
<td>DECnet–VAX Release Notes (AA-J681A-TE)</td>
<td>X X</td>
</tr>
<tr>
<td><strong>DIGITAL Standard MUMPS</strong></td>
<td></td>
</tr>
<tr>
<td>VAX–11 DSM Summary (AV-J416A-TE)</td>
<td>X X</td>
</tr>
<tr>
<td><strong>Forms Management System</strong></td>
<td></td>
</tr>
<tr>
<td>VAX–11 FMS Mini–Reference (AV-J262A-TE)</td>
<td>X</td>
</tr>
<tr>
<td>VAX–11 FMS Release Notes (AA-J261A-TE)</td>
<td>X X</td>
</tr>
<tr>
<td><strong>FORTRAN</strong></td>
<td></td>
</tr>
</tbody>
</table>

(continued on next page)
<table>
<thead>
<tr>
<th>Title</th>
<th>Suggested Audience</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FORTRAN (Cont.)</strong></td>
<td></td>
</tr>
<tr>
<td>VAX-11 FORTRAN Language Reference Manual (AA-D034B-TE)</td>
<td>X</td>
</tr>
<tr>
<td>VAX-11 FORTRAN User's Guide (AA-D035B-TE)</td>
<td>X</td>
</tr>
<tr>
<td><strong>MUX200</strong></td>
<td></td>
</tr>
<tr>
<td>MUX200/VAX Emulator Release Notes (AA-H956C-TC)</td>
<td>X X X</td>
</tr>
<tr>
<td><strong>PASCAL</strong></td>
<td></td>
</tr>
<tr>
<td>VAX-11 PASCAL Primer (AA-J180A-TE)</td>
<td>X</td>
</tr>
<tr>
<td><strong>PL/I</strong></td>
<td></td>
</tr>
<tr>
<td>Introduction to VAX-11 PL/I (AA-H950A-TE)</td>
<td>X</td>
</tr>
<tr>
<td>VAX-11 PL/I Encyclopedic Reference (AA-H952A-TE)</td>
<td>X</td>
</tr>
<tr>
<td>VAX-11 PL/I Guide to Program Debugging (AA-K221A-TE)</td>
<td>X</td>
</tr>
<tr>
<td>VAX-11 PL/I Language Summary (AV-J757A-TE)</td>
<td>X</td>
</tr>
<tr>
<td><strong>Protocol Emulators</strong></td>
<td></td>
</tr>
</tbody>
</table>

18  VAX/VMS Optional Document Descriptions
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.

This document 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.

VMS BASIC–PLUS–2 Version 1.6 Release Notes
This document contains additional information about BASIC–PLUS–2 Version 1.6 on VAX–11 computers using the VMS (Compatibility Mode) operating system.

VAX–11 BASIC Installation Guide and Release Notes
This document describes the procedures for installing and verifying VAX–11 BASIC Version 1.2 on VAX/VMS. It also contains a list of problems fixed in the Version 1.2 release and additional information about the VAX–11 BASIC compiler.

VAX–11 BASIC Language Reference Manual and Update Notices No. 1 and No. 2
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 and Update Notices No. 1 and No. 2
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.
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 document 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

VAX–11 COBOL Installation Guide/Release Notes
This document describes the installation and verification procedures for installing VAX–11 COBOL Version 1.0 on VAX/VMS Version 2.0. It also contains information about the VAX–11 COBOL compiler that could not be included in the VAX–11 COBOL User’s Guide or the VAX–11 COBOL Language Reference Manual.

VAX–11 COBOL Language Reference Manual and Update Notice No. 1
This document describes the VAX–11 COBOL Version 1.0 programming language, including its organization, syntax, and semantics. For system-dependent information, see the VAX–11 COBOL User’s Guide.

VAX–11 COBOL Pocket Guide
This document contains the COBOL metalanguage elements and the formats for the VAX–11 COBOL statements; it also includes other frequently needed information, such as reserved words, file status key values, and character sets, in a convenient form.
VAX-11 COBOL-74 Translator Utility and Update Notice No. 1

This document describes how to translate VAX-11 COBOL-74 and PDP-11 COBOL programs to VAX-11 COBOL. It is part of the VAX-11 COBOL document set.

VAX-11 COBOL User's Guide and Update Notice No. 1

This document describes the VAX-11 COBOL Version 1.0 compiler. It discusses the relationships between the COBOL language, the compiler, object modules and executable images, and VAX/VMS and its utilities. The User's Guide supplements the description of the COBOL programming language in the VAX-11 COBOL Language Reference Manual.

VAX-11 COBOL-74 Installation Guide/Release Notes

This document describes the installation and verification procedures for installing VAX-11 COBOL-74 Version 4.2 on VAX/VMS.

VAX-11 COBOL-74 Language Reference Manual and Update Notice No. 1

This document describes the VAX-11 COBOL-74 Version 4.0 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 and Update Notice No. 1

This document describes the use of VAX-11 COBOL-74 Version 4.0. 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


This document 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 document 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 Library 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-11 Installation Guide
This document describes how to install DATATRIEVE on a VAX/VMS system.

DATATRIEVE Primer
This document is a tutorial introduction to DATATRIEVE concepts and use. The examples in the manual are drawn from sample data included in the DATATRIEVE installation software.

DATATRIEVE-11 Version 2.0 Release Notes
This document describes differences between Version 2.0 and the previous versions of DATATRIEVE.

User's Guide to DATATRIEVE-11
This document describes the elements of the DATATRIEVE language. Half the text is user, or task, oriented; the other half describes the entire language in reference format.

DECnet-VAX

DECnet-VAX Network Installation Procedures
This document describes how to install and test DECnet-VAX software. The procedures described in this manual allow you to verify that the network is up and running correctly.

DECnet-VAX Release Notes
This document contains information not included elsewhere in the DECnet-VAX documentation concerning changes in software and/or documentation that were made late in the development cycle.
DECnet-VAX System Manager's Guide
This document tells the DECnet system manager how to control, monitor, and test a DECnet-VAX system and how to downline load a DECnet-11S node.

DECnet-VAX User's Guide
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 programs that use 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.

DIGITAL Standard MUMPS

This document describes the syntax and elements of the DIGITAL Standard MUMPS programming language running in the VAX/VMS environment.

VAX-11 DSM Summary
This document is a pocket summary of the VAX-11 DSM language, features of the VAX-11 DSM system, and other information relevant to VAX-11 DSM programming.

VAX-11 DSM User's Guide
This document describes how to install, operate, and use DIGITAL Standard MUMPS on VAX/VMS. It provides detailed reference information about the VAX-11 DSM system for application and system programmers and for the VAX/VMS system manager and/or operator. This manual includes a detailed description of the VAX-11 DSM data base, its architecture and optimization.

Forms Management System

VAX-11 FMS Mini-Reference
This document summarizes the features of the Forms Management System (FMS). It is a quick reference guide to FMS components and application information.

VAX-11 FMS Release Notes
This document describes the procedure for installing VAX-11 FMS on the VAX/VMS operating system. It provides the User Environment Test Package (UETP) documentation to check the installation. Additional VAX-11 FMS demonstration programs are described.

This document describes the Forms Management System for VAX/VMS Version 2.0. It provides the information required to design forms for display on the VT100 video terminal and to develop VAX–11 BASIC, VAX–11 COBOL, VAX–11 FORTRAN, and VAX–11 PL/I application programs that use FMS forms for gathering and displaying data.

FORTRAN

IAS/RSX, VAX/VMS FORTRAN IV Installation Guide/Release Notes

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

IAS/RSX, VAX/VMS FORTRAN IV User’s Guide

This document 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.


This document describes the elements of PDP–11 FORTRAN and is designed as a reference, rather than tutorial, manual. This document serves as the FORTRAN language reference manual for several operating systems that run on the PDP–11 family of computers. Therefore, no information specific to an operating system is presented here. For that information, refer to the user’s guide for each system.

Two levels of FORTRAN are described: FORTRAN IV and FORTRAN IV–PLUS. FORTRAN IV–PLUS is a compatible superset of FORTRAN IV.

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 document 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 Emulator Release Notes

This document contains information not included elsewhere in MUX200/VAX documentation concerning changes in software and/or documentation that were made late in the development cycle. This information should be read before the MUX200/VAX Version 1.1 Emulator is installed or used.

MUX200/VAX Emulator System Manager’s Guide

This document is intended for the system manager or whoever installs and controls the MUX200/VAX Version 1.1 Emulator. Users should first read the MUX200/VAX Version 1.1 Emulator User’s Guide and should possess knowledge of the VAX/VMS operating system. The manual covers subsystem control using privileged commands and installation and trouble-shooting procedures.

MUX200/VAX Version 1.1 Emulator User’s Guide

This document describes how to start and operate the MUX200/VAX Version 1.1 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 document.
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 document 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.

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.

PL/I

Introduction to VAX–11 PL/I
This document provides an overview of the PL/I language, summarizing the VAX–11 extensions, and introduces the tools for PL/I program development on VAX/VMS.

VAX–11 PL/I Encyclopedic Reference
This document contains a complete definition of the VAX–11 PL/I language. It lists the semantics and syntax rules for all standard PL/I language elements.

VAX–11 PL/I Guide to Program Debugging
This document explains the use of the VAX–11 Symbolic Debugger with VAX–11 PL/I programs.
VAX-11 PL/I Installation and System Management Guide

This document gives step-by-step instructions for installing the VAX-11 PL/I compiler. It also describes how to diagnose and report problems with the compiler.

VAX-11 PL/I Language Summary

This document gives a concise summary of VAX-11 PL/I attributes, statements, built-in functions, and conversion rules. It also provides quick reference for ENVIRONMENT options, the ASCII character set, and PL/I command qualifiers and options.

VAX-11 PL/I User's Guide

This document describes how to compile, link, and execute PL/I programs on the VAX/VMS operating system. It also contains information on input/output processing, and explains extensions to VAX-11 PL/I to support procedure calling and condition handling.

Protocol Emulators


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 an IBM 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.


This document describes how interprogram communication between a VAX/VMS system and an IBM System/370 running under the CICS/VS or IMS/VS DB/DC systems can be achieved. This manual describes the user interface to the VAX-11 3271 Protocol Emulator for the programmer on a VAX/VMS system and also provides instructions for the system manager to generate and maintain the emulator on the VAX/VMS system. It is assumed that users of the VAX-11 3271 Protocol Emulator have a working knowledge of the VAX/VMS and IBM systems they will be using.
Index

The following general index contains entries for major topics covered in the basic VAX/VMS document set. No entries are listed for optional manuals, that is, documents for software products purchased by separate license. The index is not exhaustive, nor is it intended to replace the indexes of the individual manuals. Rather, its purpose is to guide the user to primary sources of information on the wide variety of topics covered by the document set.

Most index entries refer to one manual only, the primary source of information on that topic. When two or more manuals are listed, those sources contain closely related information.

Each manual is identified by a 3- to 6-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 the manuals in the VAX/VMS document 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) – EDT Editor Manual
UTIL (3A) – VAX-11 Utilities Reference Manual
SM (3A) – VAX-11 SORT/MERGE User's Guide
SORTII (3A) – PDP-11 SORT Reference Manual

Volume 3B. Program Development Tools

MACU (3B) – VAX-11 MACRO User's Guide
LINK (3B) – VAX-11 Linker Reference Manual

Volume 4. System Services and I/O

SSR (4) – VAX/VMS System Services Reference Manual
I0G (4) – VAX/VMS I/O User's Guide

Volume 5. Run-Time Library

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

Volume 7. RMS–11 Record Management Services

RMS11U (7) – RMS–11 User’s Guide

Volume 8. Compatibility Mode (RSX–11M)


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

Volume 10. System Management and Operation

SIG (10) – VAX–11 Software Installation Guide
SIG750 (10) – VAX–11/750 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),
DCL (2A)
in EDT, EDT (3A)
Accessing

devices
in batch jobs, DCL (2A)
files
RMS-11, RMS11U (7)
processor status longword (PSL)
in debugger, DBUG (3B)
records
RMS-11, RMS11U (7)
the system, PRM (1)
commands for, DCL (2A)
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)
Address expression, DBUG (3B)
Addressing modes, MACR (3B)
Address Routing Sort
PDP-11, SORT11 (3A)
Address sort
PDP-11, SORT11 (3A)
VAX-11, SM (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, DCL (2A), LINK (3B)
Analyzing
object modules, LINK (3B)
a VAX/VMS system failure, 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),
SIG750 (10)

B

BACKUP command, DCL (2A)
Backup Utility, UTIL (3A)
Backing up
directories, UTIL (3A)
Backing up, (Cont.)
files
RMS–11, RMSiiU (7)
using Backup Utility, UTIL (3A)
using DSC Utility, UTIL (3A), OPG (10)
the system, OPG (10), SIG (10), SIG750 (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/RSX11 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, SORTii (3A)
VAX–11, SM (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)

Block, (Cont.)
channel request (CRB), WDD (9)
control (See Control block)
data, WDD (9)
homes, RMSR (6)
introduction to, IRMS (6)

I/O
introduction to, IRMS (6)
microinstructions for, RMSR (6)
performing, RMSR (6)
RMS–11, RMSiiR (7), RMSiiU (7)
name, RMSR (6)
types
formatting, SDA (9)
mode, DR–11W, IOG (4)

Blocking interrupts, WDD (9)

BOOT58 (TU58 bootstrap) program, SIG750 (10)

Booting the system, SIG (10), SIG750 (10)

Bootstrap
block, IRMS (6)
console command files, SIG (10), SIG750 (10)
conversational, SIG (10), SIG750 (10)
nonstop, SIG (10), SIG750 (10)
system bootstrap (SYSBOOT) program, SIG (10), SIG750 (10)
TU58 bootstrap (BOOT58) program, SIG780 (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), SIG750 (10)
Bus adapters, WDD (9)

C

Calling
routines
in debugger, DBUG (3B)

Index 33
Calling, (Cont.)
Run-Time Library procedures, RTL (5)
system services
   with high-level language coding, SSR (4)
   with MACRO coding, SSR (4)
Calls, showing, DEBUG (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)
   shorthand, SOS, SOS (3A)
   strings
   equating symbols to, GCP (2A)
      in EDT, EDT (3A)
      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/RSX11 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),
      SIG750 (10)
   for TU58 bootstrap, SIG750 (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)
debugging, GCP (2A)
deleting symbols from, GCP (2A)
detached process, GCP (2A)
developing a, GCP (2A)
documenting a, GCP (2A)
ded 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)
exit 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)
   introduction to, PRM (1)
reading, DCL (2A)
sequential file, GCP (2A)
$SEVERITY global symbol, GCP (2A)
start-up, SMGR (10)
Command procedure(s), (Cont.)
$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), SIG750 (10)
verification, GCP (2A)
writing files using, DCL (2A)
Command(s)(See also individual listings)
   abbreviating, PRM (1)
   for accessing the system, DCL (2A)
   batch job, DCL (2A)
   bootstrap, SIG (10), SIG750 (10)
   command procedure, DCL (2A)
   debugger, DBG (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)
   introduction to, PRM (1)
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)
Compatibility mode, (Cont.)
      instruction set, RSXR (8)
      with RSX-11M, RSXR (8)
      test, UETP (10)
Compatibility Mode Test, UETP (10)
Compiling a program, PRM (1)
   commands for, DCL (2A)
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),
      SIG750 (10)
   subsystem, SIG (10), SIG750 (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, PRM (1), 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),
   SIG750 (10)
COPY command, DCL (2A)
Copying
   files
      commands for, DCL (2A)
      introduction to, PRM (1)
      using BACKUP, UTIL (3A)
   a system, SIG (10), SIG750 (10)
CORAL command, DCL (2A)
CPU users
  top (TOPUSERS), SMGR (10)
Crash, see Failure, VAX/VMS
CRB (Channel request block), WDD (9)
CREATE command, DCL (2A)
CREATE/DIRECTORY command, DCL (2A)
$CREATE macroinstruction, RMSR (6)
Creating
  a file
    introduction to, PRM (1)
    with EDT, EDT (3A)
    with SOS, SOS (3A)
    with 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
  introduction to, PRM (1)
  with EDT, EDT (3A)
  with SOS, SOS (3A)
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, DBUG (3B)
Data-acquisition device (LPA11–K), IOG (4)
Date/time
  Run-Time Library procedure, RTL (5)
  SHOW DAYTIME command, DCL (2A)
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), DBUG (3B)
  Debugger (symbolic), DBUG (3B)
    command procedures, DBUG (3B)
    commands, DBUG (3B)
    data types, DBUG (3B)
    description, SUM (1)
    error messages, DBUG (3B)
    facilities, DBUG (3B)
    interfacing, DCL (2A)
    interrupting, DBUG (3B)
    invoking, DCL (2A)
    log files, DBUG (3B)
    modes, DBUG (3B)
    starting, DBUG (3B)
    terminating, DBUG (3B)
Debugging
  command procedures, GCP (2A)
  device drivers
    DELTA Utility, WDD (9)
    XDELTA Utility, WDD (9)
  executable images, DBUG (3B)
  MACRO programs, MACU (3B)
  PATCH, PITCH (9)
  programs, DBUG (3B)
VAX/VMS operating system, SDA (9)
DECK command, DCL (2A)
DECnet–VAX
  description, SUM (1)
Decoding instructions
  with debugger, DBUG (3B)
Default(s)
  directory, DCL (2A)
    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)
  session, parameters, DBUG (3B)
  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)
    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), DBUG (3B)
Depositing data
  with debugger, DBUG (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)
  characteristics, IOG (4)
  data-acquisition, IOG (4)
  data block (DDB), WDD (9)
driver, WDD (9)
  -driver image
  -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
    commands for setting, DCL (2A)
    control routines, RMSR (6)
DIGITAL-supplied, SIG (10), SIG750 (10)
in file specification
  for VAX–11 RMS files, RMSR (6),
    RMSU (6)
  hierarchy, DCL (2A)
  listing, PRM (1)
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),
      SIG750 (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)
Displaying, (Cont.)

- page frame number (PFN) data base, SD (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), SIG750 (10)
- DMA (Direct memory access), WDD (9)
- DMC11 interface driver
  function codes, IOG (4)
- Documentation notes for VAX/VMS, REL (1)

Document set
- description of, IDJ (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)

Dumpfile, system, SDA (9)

DUP11 interface driver

binary mode transfer, IOG (4)

BSC mode transfer, IOG (4)

E

EDIT/EDT command, DCL (2A)

Editing a file

- introduction to, PRM (1)
- with EDT, EDT (3A)
- with SOS, SOS (3A)

Editors (text)

- batch-oriented
  - introduction to, PRM (1)
  - invoking, DCL (2A)
  - SLP, UTIL (3A)
  - 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, DBUG (3B)

- End-of-file condition
  - command procedures for, GCP (2A)

- $ENTER macroinstruction, RMSR (6), RMSU (6)

- 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)

- Entity, DBUG (3B)

Entry modes

- 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, DBUG (3B)
message(s), MSG (2B)
constructing, UTIL (3A)
debugger, DBUG (3B)
in EDT, EDT (3A)
in SOS, SOS (3A)
recovery procedures, MSG (2B)
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, DBUG (3B)

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

EXAMINE command, DCL (2A), DBUG (3B)

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

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

Executable images, LINK (3B)
analyzing, LINK (3B)
debugging, DBUG (3B)
installing, SMGR (10)
linking, LINK (3B)
patching, PTCCH (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), DBUG (3B)
Exit handlers, SSR (4)
debugging, DBUG (3B)
interfacing with, DCL (2A)

Exponentiation
Run-Time Library procedure for, RTL (5)

Expression, DBUG (3B)

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)

Failure, VAX/VMS
 analyzing, SDA (9)
 initiating system, SDA (9)
 sample, SDA (9)

$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, UTIL (3A), OPG (10)
RMS–11, RMS11U (7)
calling (See Command file)
copying
commands for, DCL (2A)
introduction to, PRM (1)
creating
with EDT, EDT (3A)
with 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)
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)
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), SOS (3A)
input image, PTCH (9)
journal
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)
introduction to, PRM (1)
processing
macroinstructions for, RMSR (6)
process permanent, RMSR (6), RMSU (6)
introduction to, DCL (2A)
protection, DCL (2A)
default, DCL (2A)
summary, SUM (1)
public, SMGR (10)
purging
commands for, DCL (2A)
error log, OPG (10)
introduction to, PRM (1)
operator’s log, OPG (10)
renaming
commands for, DCL (2A)
introduction to, PRM (1)
in VAX–11 RMS, RMSR (6)
restoring, UTIL (3A)
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)
storage media for, IRMS (6)
system dump, SDA (9)
temporary
  in EDT, EDT (3A)
in SOS, SOS (3A)
MAIL, UTIL (3A)
transferring, UTIL (3A)
type(s), DCL (2A)
default, DCL (2A)
introduction to, PRM (1)
updating (See Editors)
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 ($FAC), SSR (4)
Formatted I/O conversion, RTL (5)
FORTRAN command, DCL (2A)
FORTRAN, VAX-11
coding
  for LPA11-K driver, IOG (4)
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, lexical (see Lexical function)
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)
Global section(s), (Cont.)
  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)
  introduction to, PRM (1)
  $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, PRM (1), DCL (2A)
  in EDT, EDT (3A)
  in SOS, SOS (3A)
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)

Image(s), (Cont.)
  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, SORT: (3A)
  VAX–11, SM (3A)

Indirect command files
  MCR (Monitor Console Routine),
    RSXU (8)
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), SIG750 (10)
  a tape, DCL (2A)

Initiating
  debugger, DEBUG (3B)
  EDT, EDT (3A)
  SOS, SOS (3A)
  defaults, SOS (3A)
  system failure, SDA (9)
Input image file, PTCH (9)
$INPUT macroinstruction, IOG (4)
  format for, SSR (4)
INQUIRE command, DCL (2A)

Installing
  known images, SMGR (10)
  VAX/VMS, SIG (10), SIG750 (10),
    SMGR (10)
  release notes for, REL (1)
INSTALL Utility, SMGR (10)
Installation of VAX/VMS, SIG (10),
  SIG750 (10)

Instructions
  depositing, DEBUG (3B)
  examining, DEBUG (3B)
  replacing, DEBUG (3B)
Interactive mode
command procedures for, GCP (2A)
sorting
  PDP-11, SORT (3A)
  VAX-11, SM (3A)
Interactive text editor
  EDT, EDT (3A)
  SOS, SOS (3A)
Interface drivers
  DMC11, IOD (4)
  DR11-W, IOD (4)
  DR32, IOD (4)
  DUP11, IOD (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/X, GCP (2A)
  data block (IDB), WDD (9)
  hardware, WDD (9)
  of debugging session, DBUG (3B)
  priority level (IPL), WDD (9)
  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, RMS (7), RMS (7)
buffered, WDD (9)
  quota, IOD (4)
command procedures for, GCP (2A)
completion, IOD (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, IOD (4)
drivers, IOD (4)
function codes, IOD (4)
  RSX-11M, RSXR (8)
  function encoding, IOD (4)
  function requests, IOD (4)
halt, RMSR (6)
I/O (Input/output), (Cont.)
  issuing I/O requests, IOD (4)
  logical, IOD (4)
  operations, IOD (4)
    RMS-11 file, RMS (7)
    physical, IOD (4)
  postprocessing, WDD (9)
  Queue I/O (QIO) (See Queue I/O)
    register, IOD (4)
  request packet (IRP), WDD (9)
  requests, IOD (4)
  space mapping, REAL (9)
  status block, IOD (4)
  subfunction bits
    RSX-11M, RSXR (8)
  system
    real-time programming, REAL (9)
  system rates, SMGR (10)
  system services, SSR (4)
  virtual, IOD (4)
IORATES, SMGR (10)
IPL (Interrupt priority level), WDD (9)
IRP (I/O request packet), WDD (9)
Issuing I/O requests, IOD (4)

J

JOB command, DCL (2A)
Journal file
  EDT, EDT (3A)
  PATCH, PTC (9)

K

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

L

Label numbers, DBUG (3B)
Laboratory peripheral accelerator (LPA11-K)
  driver, IOD (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 editing
    in EDT, EDT (3A)
    in SOS, SOS (3A)
Line numbers
    in debugging, DBUG (3B)
    in EDT, EDT (3A)
    in SOS, SOS (3A)
Line printer drivers, IOG (4)
Line terminators
    terminal driver, IOG (4)
LINK command, DCL (2A), LINK (3B)
    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, PITCH (9)
    in debugging, DBUG (3B)
    VAX-11 MACRO, MACR (3B)
Local terminals, DCL (2A)
Locking
    a record, IRMS (6)

Locking, (Cont.)
a resource, REAL (9)
Log file(s), GCP (2A)
    accounting, SMGR (10)
    debugger, DBUG (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)
of global section names, SSR (4)
of mailbox names, SSR (4)
for VAX-11 RMS, RMSU (6)
UE$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)
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, RMSR (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)
debugging MACU (3B)
direct assignment statement, MACR (3B)
directives, MACR (3B)
expressions, MACR (3B)
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)
MAIL command, DCL (2A)
MAIL utility, UTIL (3A)
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)
Mailbox(es), name translation, (Cont.)
in shared (multiport) memory, SSR (4)
system services for, SSR (4)
summary of, SUM (1)
/terminal interaction, IOG (4)
Maintenance updates, SIG (10), SIG750 (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)
MERGE command, DCL (2A), SM (3A)
MESSAGE command, DCL (2A)
Message files, UTIL (3A)
Message-issuing facilities, MSG (2B)
Message(s)
debugger, DBUG (3B)
diagnostic
constructing, UTIL (3A)
error (See Error messages)
I/O services, SSR (4)
Mail Utility, UTIL (3A)
Message(s), (Cont.)
esystem, 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, PTC (9)
entry
   PATCH, PTC (9)
executive, SSR (4)
   definition, SUM (1)
in debugging, DBUG (3B)
kernel, SSR (4)
   asynchronous system trap (AST),
      WDD (9)
   definition, SUM (1)
of operation
   SOS, SOS (3A)
   processor, SMGR (10)
   qualifiers
      PATCH, PTC (9)
record access, RMSR (6), RMSU (6)
   introduction to, IRMS (6)
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, DBUG (3B)
   with PATCH, PTC (9)
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)
   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, PTC (9)
   debugger, DBUG (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)
   Nokeypad editing, EDT (3A)
   Non-file-structured operations, RMSR (6)
   Nonpaged pool statistics, SMGR (10)
   Nonstop bootstrap, SIG (10), SIG750 (10)

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, DBUG (3B)
   OPEN command, DCL (2A)
   $OPEN macroinstruction, RMSR (6)
   Opening a file, RMSR (6)
   Operating procedures, OPG (10)
   Operating system (see System, VAX/VMS)
Operator’s
  commands, OPG (10)
duties, OPG (10)
intervention, DCL (2A)
log file, SMGR (10)
  printing, OPG (10)
notes, OPG (10)
procedure, 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
  passing to command procedures, GCP (2A)
  passing strings as, MOD (5)
  session, in debugging, DBUG (3B)
  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
  command syntax, PTCH (9)
  error messages, PTCH (9)
  operation of, PTCH (9)
Pathnames, DBUG (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)
Permanent symbols, in debugging,
  DBUG (3B)
Personal Mail Utility, UTIL (3A)
  invoking, DCL (2A)
PFN (See Page frame number)
Physical I/O, IOG (4)
PL/I command, DCL (2A)
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, PRM (1), DCL (2A)
  error log files, OPG (10)
  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)
  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)
Process, (Cont.)
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, DBUG (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)
introduction to, PRM (1)
modular, MACU (3B)
VAX-11 MACRO, MACU (3B)
Program(s)
assembling, PRM (1)
commands to control, DCL (2A)
compiling, PRM (1)
creating, DCL (2A)
with EDT, EDT (3A)
with SOS, SOS (3A)
debugging DBUG (3B)
Program(s), (Cont.)
updating, MACU (3B)
Program locations in debugging, DBUG (3B)
Program section
attributes, LINK (3B), MACR (3B)
names, LINK (3B)
in PATCH, PTCN (9)
Prompting for command input, PRM (1),
DCL (2A)
Protection
of data structures, SMGR (10)
of devices, SMGR (10)
operator's command for, OPG (10)
of disk volume, DCL (2A)
of files, DCL (2A)
volume, IOG (4)
disk, DCL (2A)
tape, DCL (2A)
PSECT (program section) attributes,
LINK (3B), MACR (3B)
PSL (Processor status longword)
accessing in debugger, DBUG (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 debugger commands, DBUG (3B)
introduction to, PRM (1)
with commands, DCL (2A)
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)
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)
Queue I/O, (Cont.)
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)

Record(s), (Cont.)
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, SM (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, SM (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)
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), SIG750 (10)
Restoring
directories, UTIL 3(A)
disk volumes, UTIL (3A)
files, UTIL (3A)
RMS (See Record management services)
RMS-11 (See Record management services, RMS-11)
RMS SHARE Utility, SMGR (10)
Routine names, DBUG (3B), PTCB (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, RSXR (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)
Run-time control block
initialization, RMSR (6)
Run-Time Library
capabilities of, RTL (5)
condition handling procedures, RTL (5)
cross reference procedures, RTL (5)
ext 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
Save, using Backup Utility, UTIL 3(A)
SBI (Synchronous backplane interconnect),
WDD (9)
Scheduler states, SMGR (10)

Scope, DBUG (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), DBUG (3B)
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 PROCESS/PRIORITY 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)
Shareable images, (Cont.)
patching, PITCH (9)
privileged, REAL (9)
VAX-11 MACRO, MACU (3B)
Shared (multiprot) memory
   common event flag clusters in, SSR (4)
global sections in, SSR (4)
   locating software facilities in, REAL (9),
      SSR (4)
literal name translation for software,
      REAL (9), SSR (4)
mailboxes in, SSR (4)
Sharing, SUM (1)
Shorthand characters in SOS, SOS (3A)
SHOW command, DCL (2A), DBUG (3B)
SHOW DAYTIME command, DCL (2A)
SHOW DEFAULT command, DCL (2A)
SHOW DEVICES command, DCL (2A)
Showing calls, DBUG (3B)
SHOW LOGICAL command, DCL (2A)
SHOW MACTAPE, 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 SYMBOLE 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)
Shutdown 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, SM (3A)
   interactive mode
      PDP-11, SORT11 (3A)
      VAX-11, SM (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, SM (3A)
         index, SM (3A)
         record, SM (3A)
         tag, SM (3A)
SOS text editor
   detailed description, SOS (3A)
   invoking, DCL (2A)
$SPACE macroinstruction, RSMR (6)
Spooling, SMGR (10)
SPR (Software performance report),
      SMGR (10)
Stacks
   displaying, SDA (9)
Stalling for I/O completion, RSMR (6)
Standard system generation parameter files,
      SMGR (10)
Starting up a VAX/VMS system, SIG (10),
      SIG750 (10)
START/QUEUE operator's command,
      OPG (10)
Start-up command procedures
   site-independent, SMGR (10)
   site-specific, SMGR (10)
Start-up command files, EDT (3A)
$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, DBUG (3B)
STOP command, DCL (2A)
STOP/ABORT command, DCL (2A)
STOP/ABORT operator's command, OPG (10)
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, DBUG (3B)
Symbol(s), LINK (3B)
in command procedures, GCP (2A)
in debugging, DBUG (3B)
equating to character strings,
GCP (2A)
MACRO, MACR (3B)
table
command procedure, GCP (2A)
global, LINK (3B)
PATCH, PTCH (9)
run-time, DBUG (3B)
types (See Symbol types)
use in RSX–11M indirect command files,
DCL (2A)
Symbol types
debugger, permanent, DBUG (3B)
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)
source language, DBUG (3B)
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), SIG750 (10)
SYSGEN (system generation) Utility,
SMGR (10)
commands for loading device drivers,
WDD (9)
overview, SIG (10), SIG750 (10)
System bootstrap (SYSBOOT) program,
SIG (10), SIG750 (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), SIG750 (10)
System images, LINK (3B)
System Load Test, UEFP (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)
System services, (Cont.)
  change-mode, SSR (4)
  condition-handling, SSR (4)RFR
  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)
  back-up of, OPG (10), SIG (10), SIG750 (10)
  booting, SIG (10), SIG750 (10)
  building, SIG (10), SIG750 (10)
  crash, see Failure
  default logical names
    definition, SUM (1)
    introduction to PRM (1)
    summary table, DCL (2A)
  failure
    analyzing, SDA (9)
    initiating, SDA (9)
    sample, SDA (9)
  hardware requirements, SMGR (10)
  images, LINK (3B)
  initializing, SIG (10), SIG750 (10)
  I/O, REAL (9)
  installing, SIG (10), SIG750 (10)
    release notes for, REL (1)
  load test, UETP (10)
  messages, DCL (2A)
  rebooting, OPG (10)
  restarting, OPG (10)
    automatically, SIG (10), SIG750 (10)
  shutting down, OPG (10), SIG (10), SIG750 (10)
  start-up, SIG (10), SIG750 (10)
  tests
    Compatibility Mode, UETP (10)
System (VAX/VMS), tests, (Cont.)
  Device, UETP (10)
  File Transfer Utility (FLX), UETP (10)
  Native Mode, UETP (10)
  RSX–11M Executive Directive, UETP (10)
  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, SORT (1) (3A)
  VAX–11, SM (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)
  control characters, IOG (4)
  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)
  operator’s commands for, OPG (10)
  queues, SMGR (10)
Terminal, (Cont.)
remote, DCL (2A)
remote command, SUM (1)

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

Timer and time conversion services, SSR (4)

TKB (RSX–11M Task Builder), RSXU (8)
TOPUSERS (top CPU users), SMGR (10)

Traceback, DBUG (3B)

Traces, 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)

Type, in debugging, DBUG (3B)

U

UAF (User authorization file), SMGR (10)
declaration, 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)
with SOS, SOS (3A)
a program, MACU (3B)
a record, RMSR (6)
the system, SIG (10), SIG750 (10)

Upgrading the system, SIG (10)

User authorization file (UAF), SMGR (10)
declaration, 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)
declaration, SUM (1)
in directory names, DCL (2A)
operator’s command for, OPG (10)

User mode, SSR (4)
asynchronous system trap (AST), WDD (9)
declaration, SUM (1)

User-written system services (See Privileged shareable images)

Utilities

AUTHORIZE, SMGR (10)
BACKUP, UTIL (3A)

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)
Utilities, (Cont.)
   File Transfer (FLX), UTIL (3A)
   INSTALL, SMGR (10)
   Librarian, UTIL (3A)
   MAIL, UTIL (3A)
   Message, UTIL (3A)
   PATCH, PCH (9)
   PDP-11 SORT, SORT II (3A)
   RMS SHARE, SMGR (10)
   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, SM (3A)
   VFY (File Structure Verification),
      UTIL (3A)
   XDELT A 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), SIG750 (10)
VAX/VMS system failure, SDA (9)
Verification
   command procedures for, GCP (2A)
Verify utility, UTIL (3A)
VFY (File Structure Verification Utility),
   UTIL (3A)
Virtual addresses
   debugging with, DBUG (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), UTIL (3A)
   continue processing, RMSR (6)

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

W

WAIT command, DCL (2A)
Wait queues, WDD (9)
Watchpoints, DBG (3B)
Word mode, DR11-W, IOG (4)
Working set, SSR (4)
Wild card characters, PRM (1), DCL (2A)
WRITE command, 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)
XDELT A 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