

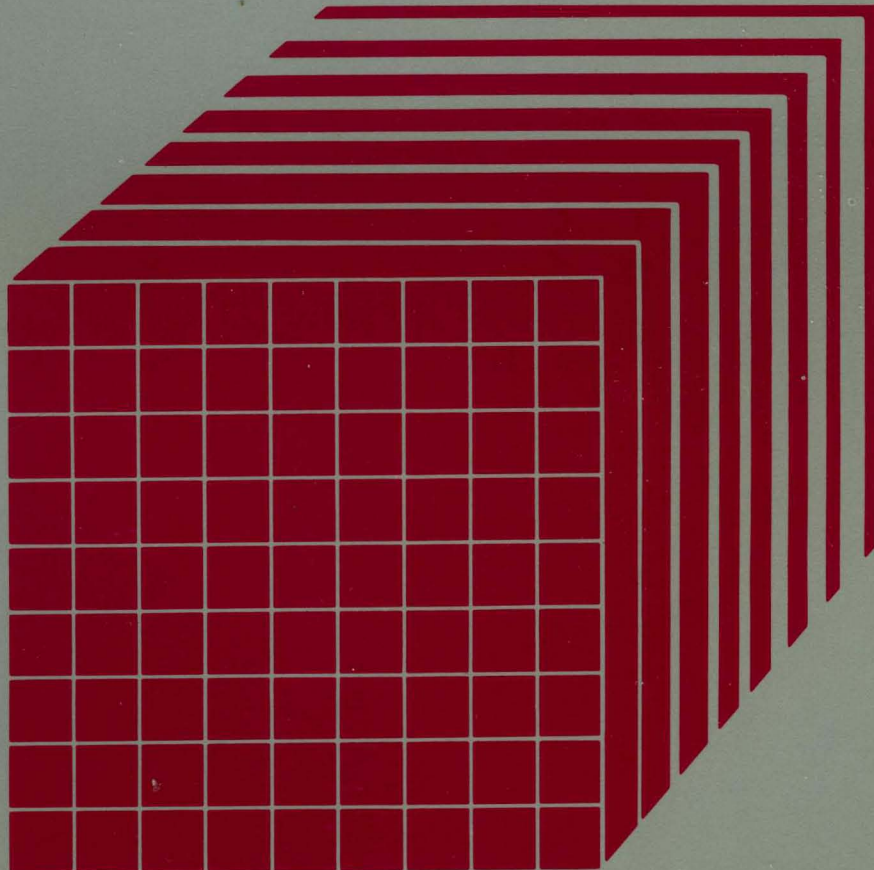


Virtual Machine/
System Product
High Performance Option

**Library Guide, Glossary,
and Master Index**

Release 5

GC23-0187-3



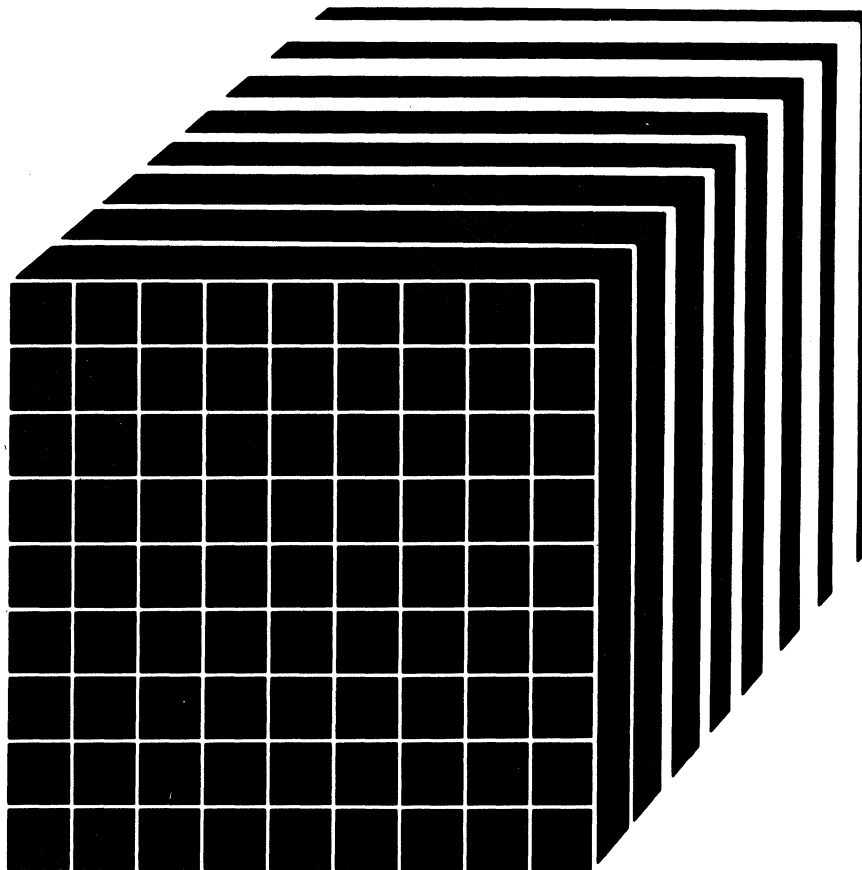


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The term "VM/SP High Performance Option" applies to the VM/SP High Performance Option Licensed Program when used in conjunction with the VM/System Product Licensed Program.

Fourth Edition (August 1987)

This is a major revision of GC23-0187-2. Technical changes or additions made to the text and illustrations for this release are indicated by a vertical line to the left of the change.

This edition applies to Release 5 of IBM Virtual Machine/System Product High Performance Option (program number 5664-173), and to later releases and modifications until otherwise indicated in new editions or Technical Newsletters. This (fourth) edition is a revision of the third edition (Release 4.2). To order the previous edition that still applies to Release 4.2, use the following temporary order number:

Release 4.2 Third Edition GT00-1914

Changes are made periodically to the information herein; before using this publication to operate IBM systems, consult the latest *IBM System/370, 30xx, and 4300 Processors Bibliography*, GC20-0001, for the editions that are applicable and current.

References in this publication to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM licensed program in this publication is not intended to state or imply that only IBM's licensed programs may be used. Any functionally equivalent program may be used instead.

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Summary of Changes

**Summary of Changes
for GC23-0187-3
as updated February 15, 1987
for VM/SP HPO Release 5**

This summary describes the major changes that have been made to this publication for Release 5. The major changes are:

- The transparent services access facility (TSAF) component of VM is added to the technical discussions.
- A section is added to Chapter 1 that details the changes to the library for Release 5.
- Pseudonumbers for the VM/SP HPO Release 4.2 and VM/SP Release 5 manuals are provided.
- Abstracts of the manuals that make up the VM/SP HPO library are added and changed as necessary.
- The glossary is updated.
- Master index (Chapter 3) is replaced by the new index entries compiled from the VM/SP and VM/SP HPO Release 5 manuals.



Preface

VM/SP High Performance Option (VM/SP HPO)

VM/SP HPO is a separately orderable licensed program that can be installed and executed in conjunction with VM/SP. When you install and use VM/SP HPO in conjunction with the prerequisite VM/SP release, you obtain an operating system that extends the capabilities of VM/SP.

VM/SP HPO offers enhancements for large system environments. These enhancements include system management performance improvements, additional processor and I/O support, and enhanced MVS/SP support.

The VM/SP High Performance Option Library

The VM/SP HPO library provides information about VM/SP HPO when used with VM/SP. To obtain the entire VM/SP HPO library, combine the applicable VM/SP books with the VM/SP HPO books.

VM/SP HPO does not change the conversational monitor system (CMS), group control system (GCS), or transparent services access facility (TSAF) components of VM/SP. Therefore, refer to the appropriate VM/SP publication for information about these functions. VM/SP HPO, on the other hand, does enhance the control program (CP) and interactive problem control system (IPCS) components of VM. As a result, you must refer to the appropriate VM/SP HPO book to find out about these functions (IPCS is documented in *VM/SP HPO Installation Guide*, *VM/SP HPO Planning Guide*, and *Virtual Machine Diagnosis Guide*).

Note: The VM/SP HPO manuals do not attempt to separate VM/SP HPO control program function from VM/SP control program function. Rather, they build the new VM/SP HPO function on the VM/SP base. To find out about specific CP functions in VM/SP, you must refer to the appropriate VM/SP publication.

This manual explains the organization of the VM/SP HPO library and provides a master index to the contents of the library. It also provides a glossary of VM/SP HPO terms.

For Whom this Book is Written

The audience for this manual consists of anyone who uses manuals in the VM/SP HPO library.

How this Book is Organized

“Chapter 1. The VM/SP HPO Library ” describes how the library is organized and which manual to read first. It explains the tasks, cover design, and the relationships between the tasks and the colors of the covers. It also describes the changes to the library for Release 5, discusses the publications that are shipped with the product tape, and tells how to order additional copies of publications. This chapter also contains abstracts of the manuals in the VM/SP HPO library.

“Chapter 2. VM/SP HPO Glossary” defines terms used by VM/SP HPO that may not appear in the *IBM Vocabulary for Data Processing, Telecommunications, and Office Systems*, GC20-1699. The *IBM Vocabulary for Data Processing, Telecommunications, and Office Systems* is considered a corequisite publication.

“Chapter 3. Master Index” is a guide to the VM/SP HPO library. It directs you to the publications that contain the specific information you are seeking. The entries are extracted from the indexes of the VM/SP HPO publications listed at the beginning of the chapter.

“Master Index Table” lists the abbreviations and order numbers for each of the VM/SP HPO publications. This table is repeated on a foldout sheet at the end of the manual.

How To Use This Publication

When using this publication, you should:

- Refer to Chapter 1 to learn about the organization of the VM/SP HPO library, the related VM/SP library, and the contents of the individual manuals in the library. Use Chapter 1 to determine whether a manual is really the correct one for your needs.
- Refer to Chapter 2 for definitions of VM/SP HPO terms.
- Refer to Chapter 3 for a specific item of VM/SP HPO information; this section points you to the publication(s) containing information about a particular subject. Use this chapter to determine the appropriate manual, by topic.

Information Not Included in This Publication

This publication does not contain line entries derived from VM/SP HPO logic publications or the Licensed Program Specification (LPS).

Contents

Chapter 1. The VM/SP HPO Library	1
What Manual Should I Read First?	1
How Do I Use an Individual Manual?	1
What are the Tasks that the VM Library Supports?	2
Binders Are Available	3
What Does the Cover Design Mean?	3
Manual Organization	6
Titles	6
Order Numbers, File Numbers, and Subject Codes	6
What Are Some of the Changes in the Release 5 Library?	8
What Publications Are Eliminated?	8
What Publications Are Reorganized?	8
What Publications Are New?	8
What Publications Will I Receive with the Product Tape?	15
Using SLSS to Order Additional Copies of Manuals	16
Ordering the VM/SP HPO Library as a Set	16
Ordering the Combined VM/SP HPO and VM/SP Libraries as a Set	18
Ordering Individual VM/SP or VM/SP HPO Publications	20
Ordering Publications for VM/SP HPO Releases 4.2 and 5	21
Ordering Publications for VM/SP Releases 4 and 5	22
Supplementary Publications	23
System Center Bulletins	23
Between-Release Publications for PTFs	23
Abstracts of Manuals	24
VM/SP HPO Publications	25
Announcing VM/SP HPO Release 5	25
What's in VM/SP HPO Release 5?	25
Release 5 Guide	25
Library Guide, Glossary, and Master Index	25
Planning Guide and Reference	25
Installation Guide	26
CP for System Programming	26
CP Command Reference	26
Operator's Guide	26
System Messages and Codes	27
Running Guest Operating Systems	27
VM/SP Publications	27
Application Development Guide	27
CMS Command Reference	27
CMS Macros and Functions Reference	27
CMS for System Programming	28
CMS Primer	28
CMS Primer for Line-Oriented Terminals	28
CMS User's Guide	28

EXEC 2 Reference	28
System Facilities for Programming	29
Group Control System Command and Macro Reference	29
Introduction	29
Programmer's Guide to the Server-Requester Programming Interface for VM/SP	29
Problem Reporting Guide	29
System Product Editor Command and Macro Reference	30
System Product Editor User's Guide	30
System Product Interpreter Reference	30
System Product Interpreter User's Guide	30
Terminal Reference	30
Transparent Services Access Facility (TSAF) Reference	31
Supplementary Publications	31
Input/Output Configuration Program User's Guide and Reference	31
Input/Output Configuration Program User's Guide and Reference—3090 Processor Complex	31
VM/Directory Maintenance General Information Manual	31
VM/Directory Maintenance Program Logic Manual	31
VM/Directory Maintenance Guide for General Users	31
VM/Directory Maintenance Installation and System Administrator's Guide	32
Device Support Facilities User's Guide and Reference	32
VM/SNA Problem Source Identification (PSI) Guide: Methods and Components	32
VM/SNA Problem Source Identification (PSI) Guide: Use of Tools	32
Online HELP Facility	32
Chapter 2. VM/SP HPO Glossary	33
Chapter 3. The VM/SP HPO Master Index	77

Figures

1. Cover Design 3
2. The VM/SP HPO Library 4
3. Ordering and Organizing the VM/SP HPO Library 17
4. Ordering and Organizing the Combined VM/SP HPO and VM/SP Libraries 19
5. Pseudonumbers and Order Numbers for VM/SP HPO Manuals 21
6. Pseudonumbers for VM/SP Manuals 22
7. Order Numbers for Supplementary Publications 23
8. Temporary Booklets That Are Now Obsolete 24



Chapter 1. The VM/SP HPO Library

In this chapter you can learn about the organization of the entire library as well as the contents of the individual manuals. This information will help you determine the proper VM/SP HPO manual for your needs. This chapter also discusses the publications that you receive with the product tape and how to order additional copies.

What Manual Should I Read First?

Each VM/SP HPO manual focuses on one task (like installation). In it are smaller subtasks (like installing hardware or installing an optional program). We suggest that you read the *VM/SP HPO Release 5 Guide* first. It provides current users with a synopsis of the functional enhancements offered by Release 5. It describes functional enhancements, defines the related user interfaces, and gives examples of their use. Once you have read this manual, you can more easily decide what other manuals you will want to use. Remember, any manual you choose depends on the task you want to do.

How Do I Use an Individual Manual?

The first time you use a manual, start with its **Preface**. This will introduce you to the manual's:

- Purpose
- Audience
- Main subject.

Next, look at the **Bibliography**. This gives you:

- Prerequisite level of knowledge for the reader
- List of related and prerequisite publications.

If you want to locate a subtask in a manual:

- Look at the **Table of Contents** in the front. In it you will see what each chapter and appendix contains.
- Look at the **Index** in the back. Its pages contain detailed references to the manual's contents.

If you want to know what has changed in a manual:

- Look at the **Summary of Changes**. It describes the support that was added since the previous release.
- Look at the **revision bars** to the left of the text. They highlight the lines that have been added or changed since the previous release. Revision bars appear to the left of the changed text, and provide a quick way to find the new or changed information. Look to the left of this sentence to see a revision bar.

If you want to comment about the manual or suggest improvements to it, fill out the postpaid reader's comment form included at the back. Users in countries other than the United States can submit their comments free by giving them to their IBM representative.

What are the Tasks that the VM Library Supports?

The VM/SP HPO library is organized according to eight major tasks that VM computer users do. The tasks are:

Evaluation	Judging the applicability of this release to your installation.
Planning	Making fundamental decisions about the options of this release. Planning is an iterative task—many of the decisions are made before installation, continually evaluated after installation, and revised as appropriate.
Installation	Making this release ready to do useful work.
Administration	Managing your data processing resources. The resources may be data files, data bases, programs, users, etc.
Operation	Running your VM system.
Application Programming	Writing programs to solve your own needs.
End Use	Using the commands and macros provided by VM and finding information throughout the library.
Diagnosis	Identifying problems.

Binders Are Available

Binders, made to coordinate with the manuals, are available. Binders and labels of manual titles that suggest a library organization can be ordered separately.

What Does the Cover Design Mean?

The cover design of each manual is a graphic that is printed in a color that identifies the major task associated with the particular manual.

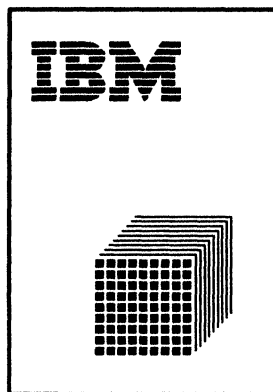


Figure 1. Cover Design

The graphic design on the covers and binders represents the system image of VM. The grid represents multiple virtual machines within a real machine. The radiating lines symbolize VM as an expanding system that offers virtually unlimited resources and uses.

The cover design is printed in different colors on the covers of the manuals. The color represents the major task associated with the publication. The colors and tasks are as follows:

Blue	Evaluation
Green	Planning
Red	Installation
Purple	Diagnosis
Yellow	Operation
Cranberry	End Use
Turquoise	Administration
Pink	Application Programming

The library chart that follows shows you the task-oriented design of the VM/SP HPO library.

The VM/SP HPO Library

Evaluation

VM/SP Introduction GT19-1977	What's In VM/SP HPO Release 5 GC23-0384	Announcing VM/SP HPO Release 5 GC19-6221	VM/SP General Information GT00-1976	VM/SP HPO Library Guide, Glossary, and Master Index GC23-0187
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Index

Planning

VM/SP HPO Planning Guide and Reference SC19-6223	Virtual Machine Running Guest Operating Systems GC19-6212	VM/SP Distributed Data Processing Guide SQ24-5241	VM/SP HPO Release 5 Guide SC23-0189	Input/Output Configuration Program User's Guide and Reference GC28-1027	3090 Processor Complex Input/Output Configuration Program User's Guide and Reference SC38-0038	VM/SP HPO Operator's Guide SC19-6225
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Operation

Installation

VM/SP HPO Installation Guide SC38-0107	VM/SP HPO CP for System Programming SC19-6224	Virtual Machine System Facilities for Programming ST24-5288	VM/SP CMS for System Programming ST24-5286	VM/SP GCS Macro Reference SQ24-5250	VM/SP TSAF Reference ST24-5287
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Administration

End Use

VM/SP Terminal Reference GT00-1979	VM/SP CMS Primer ST00-1992	VM/SP CMS Primer For Line-Oriented Terminals ST00-1993	VM/SP CMS User's Guide ST00-1980	VM/SP Macros and Functions Reference ST24-5284	VM/SP CMS Command Reference ST00-1981
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VM/SP SP Editor User's Guide ST00-1985	VM/SP SP Editor Command and Macro Reference ST00-1986	VM/SP HPO CP Command Reference SC19-6227	VM/SP SP Interpreter User's Guide ST00-1987	VM/SP SP Interpreter Reference ST00-1988	VM/SP EXEC-2 Reference ST00-1984
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Reference Summaries

VM/SP HPO Commands (General User) SX22-0003	VM/SP HPO Commands (Other Than General User) SX22-0004	Virtual Machine Problem Determination Reference Information LX23-0347	VM/SP SP Editor Command Reference Summary ST00-1997	VM/SP SP Interpreter Reference Summary ST00-1999	VM/SP IPCS Reference Summary ST00-1601	VM/SP EXEC-2 Reference Summary ST00-1372
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Figure 2 (Part 1 of 2). The VM/SP HPO Library

Reference Summaries

VM/SP HPO Quick Reference SX22-0005

Networking

VM/SNA PSI Guide Methods and Components GG24-3059

VM/SNA PSI Guide Use of Tools GG24-3060

Applications

VM/SP Application Development Guide ST24-5247

Programmer's Guide to the Server-Requester Programming Interface for VM/SP ST24-5291

Diagnosis

VM/SP HPO System Messages and Codes SC19-6226

Virtual Machine Diagnosis Guide LT00-2010

VM/SP GCS Diagnosis Reference LT00-2012

VM/SP Problem Reporting Guide SC24-5282

VM/SP HPO Service Routines Program Logic LY20-0898

VM/SP Data Areas and Control Blocks Volume 2 (CMS) LT00-2009

Auxiliary Service Support

VM/SP HPO System Logic and Problem Determination Guide-CP LY20-0897

VM/SP System Logic and Problem Determination Guide Volume 2 (CMS) LT00-2007

VM/SP HPO Data Areas and Control Blocks-CP LY20-0896

Device Support User's Guide and Reference GC35-0033

Device Support Facilities 5748XX9

EREP User's Guide and Reference GC28-1378

Environmental Record Editing and Printing (EREP)

Auxiliary Communication Support

RSCS Networking Version 2 General Information GH24-5055

RSCS Networking Version 2 Planning and Installation SH24-5057

RSCS Networking Version 2 Operation and Use SH24-5058

RSCS Networking Version 2 Exit Customization LY24-5240

RSCS Networking Version 2 Diagnosis Reference LY24-5228

RSCS Networking Version 2 Reference Summary SX24-5135

RSCS Networking Version 2 5664-188

VTAM Operation SGC23-0113

VTAM Customization SC23-0112

VTAM Messages and Codes SC23-0114

VTAM Data Areas (VM) LY30-5583

VTAM Diagnosis Guide LY23-0116

VTAM Diagnosis Reference LY30-5582

Advanced Communications Function for VTAM (ACF/VTAM) 5664-280

VTAM Programming SC23-0115

VTAM Installation and Resource Definition SC23-0111

VTAM Reference Summary SC23-0135

VM/Pass-Through Facility General Information GC24-5206

VM/Pass-Through Facility Guide and Reference SC24-5208

VM/Pass-Through Facility Logic LY24-5208

VM/Pass-Through Facility 5748-RC1

Figure 2 (Part 2 of 2). The VM/SP HPO Library

Manual Organization

Titles

The first part of the title of a manual identifies the licensed program that is the subject of the manual; the subsequent parts more specifically identify the subject. For example, the first part of the title *Virtual Machine/System Product High Performance Option Planning Guide and Reference* identifies the product as a Virtual Machine/System Product High Performance Option, and the second part identifies the task that the manual describes, namely: planning for a system.

Certain words in the title indicate the level or kind of information that the manual contains. *Introduction* and *general information* indicate general and conceptual material, especially for licensed program manuals. These introductory manuals contain basic information on their subjects and develop the vocabulary used by more detailed manuals.

A *guide* generally contains procedural information or step-by-step instructions on how to do something; for example, the *Virtual Machine/System Product High Performance Option Installation Guide*.

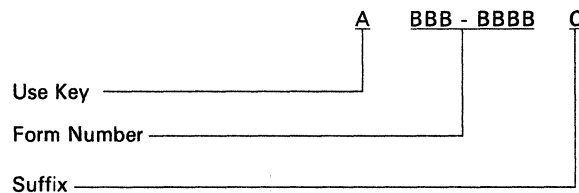
A *reference* manual is a source of information usually arranged alphabetically, such as the *Virtual Machine/System Product High Performance Option CP Command Reference*.

A *logic* manual is a kind of reference manual that describes the internal structure of a product, for example, *Virtual Machine/System Product High Performance Option Service Routines and Program Logic*.

A *messages* manual is a kind of reference manual that lists and explains the communications that the system makes to the user and suggests appropriate responses or actions. *Virtual Machine/System Product High Performance Option System Messages and Codes* is an example of a title for a messages manual.

Order Numbers, File Numbers, and Subject Codes

Each VM/SP HPO manual is identified by a unique order number. To order a particular manual, you should use this number. It consists of three parts: the use key, the form number, and the suffix.



The use key (A) is a letter that indicates the availability of the manual.

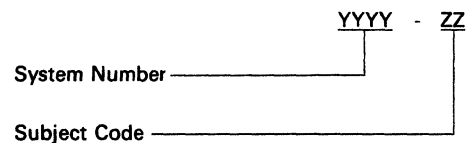
G, for *general*, means that the manual is available without charge to users of IBM systems.

S means that the manual is for *sale*.

L means that the manual is available only to *licensed* users of a particular licensed program.

The form number (B) uniquely identifies the manual. The suffix (C) helps to identify the revision version of the manual. The first edition of a manual has a suffix of 0.

File numbers appear on the back covers of the VM/SP HPO system manuals. These numbers are designed to aid filing in customer libraries and to provide an easy reference into the system bibliography. The file number consists of two parts: the system number and the subject code.



The system number for the VM/SP HPO library is S370.

The following list includes subject codes used in the VM/SP HPO library.

- 20** General Information: Evaluation, Flyers
- 34** System Planning, Installation, Generation, Administration, Performance, Resource Definition, SMF
- 36** Control Program (e.g. Supervisor, JCL, IPL, Job Management, Data Areas, Checkpoint/Restart)
- 37** Diagnosis, Problem Determination, Auditing, Service Aids
- 39** Time Sharing, Interactive System
- 40** Operations (e.g. messages, codes, application development)
- 50** DB/DC (CICS, IMS, ACF, GIS, DL/I,...)

For a complete list of subject codes, refer to the *IBM System/370, 30xx, and 4300 Processor Bibliography*, GC20-0001.

What Are Some of the Changes in the Release 5 Library?

The structure of the VM Library is changed for VM/SP Release 5 and VM/SP HPO Release 5. The information is reorganized so that each book relates more closely to a specific task. Some publications have been eliminated, and the information is provided in new or reorganized publications. In addition, information is added for the new support in Release 5.

What Publications Are Eliminated?

The following publications are eliminated from the VM/SP and VM/SP HPO Release 5 Libraries:

- *System Programmer's Guide* (split into four new publications)
- *Group Control System Guide*
- *Interactive Problem Control System Guide*
- *System Definition Files*
- *OLTSEP and Error Recording Guide*.

What Publications Are Reorganized?

The following publications are reorganized:

- *Operator's Guide*
- *CMS User's Guide*
- *CMS Command and Macro Reference*.

What Publications Are New?

In the restructuring of the library, the *System Programmer's Guide* was split into four new publications, other publications were reorganized, and several new publications were added. Some new titles that you will notice in this release are:

- *CP for System Programming*
- *CMS for System Programming*
- *System Facilities for Programming*
- *Diagnosis Guide*
- *GCS Macro Reference*
- *CP Command Reference*
- *CMS Macros and Functions Reference*
- *TSAF Reference*
- *Programmer's Guide to the Server-Requester Programming Interface for VM/SP*

Refer to the following pages to find out how these publications fit into the structure of the library and to the "Abstracts of Manuals" on page 24 for descriptions of their contents.

The numbers shown in the following illustrations are the publication numbers, which are not, in all cases, the order numbers. When ordering, use the numbers that appear in Figure 5 on page 21 and in Figure 6 on page 22.

System Programmer's Guide Is Split

You can now find the information that was in the *System Programmer's Guide* in the following publications:

VM/SP HPO
Release
4.2

VM/SP and
VM/SP HPO
Release
5

VM/SP HPO
Operator's
Guide
SC19-6225-6

DDR
Format/
Allocate

VM/SP HPO
CP for
System
Programming
SC19-6224-7

VM/SP HPO
System
Programmer's
Guide
SC19-6224-6

VM/SP
CMS For
System
Programming
SC24-5286-0

VM/SP
Release 4

VM/SP
GCS Guide
SC24-5249-0

Virtual
Machine
System
Facilities for
Programming
SC24-5288-0

VM/SP
IPCS Guide
SC24-5260-0

Virtual
Machine
Diagnosis
Guide
LY24-5241-0

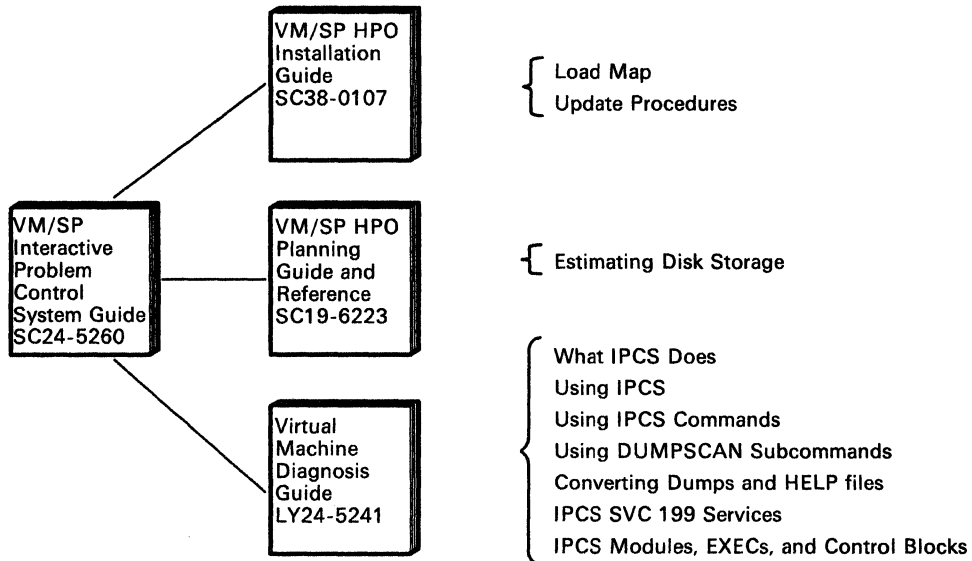
- Introduction to CP
- Storage Protection
- Virtual Storage Preservation
- Alternate Nucleus Support
- Changing Commands and Privilege Classes
- Interrupt Handling
- Accounting Records
- Saved System, DCSSs, Shared Segs
- Security Measures
- Directory, Time, and Storage Management
- Performance Observation and Guidelines
- 3880-11, 21, 13, 23
- CP in AP/MP Mode
- Print Buffers and Forms Control
- 3800 Printing Subsystem
- I/O Management
- CP Conventions
- Paging Storage
- DASD Operations
- Vector Facility
- 3850 MSS
- Timers
- 3088 MCU

- Introduction to CMS
- Interrupt Handling in CMS
- Developing Programs
- Updating Source Programs
- Developing Commands and Message Files
- Assembler Virtual Storage Requirements
- Developing OS and VSE Programs
- Using AMS and VSAM
- Auxiliary Directories
- CMS Batch Facility
- CMS Macro Library
- Tailoring CMS
- Using Storage
- Abend Processing

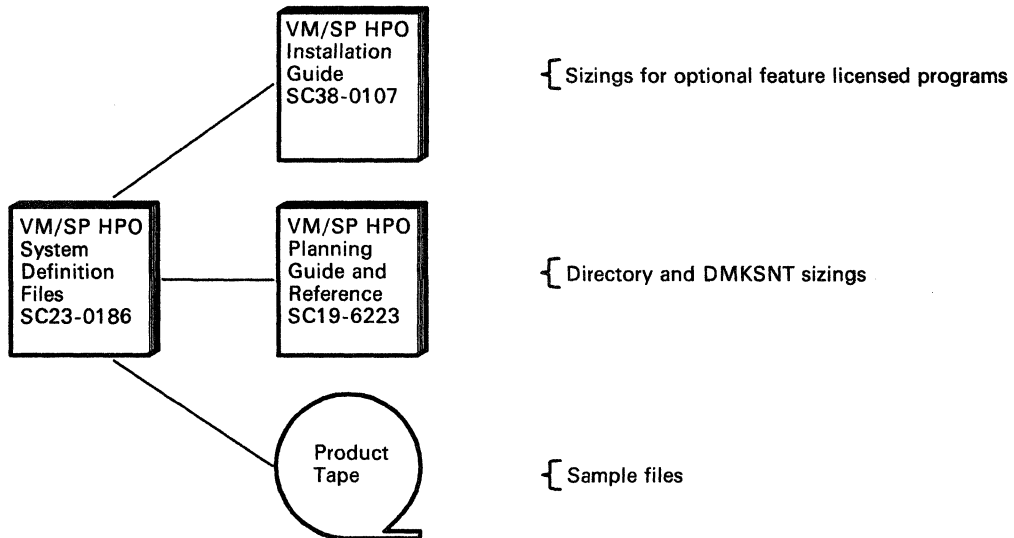
- DIAGNOSE Instruction
- Error Logging
- Special Message Facility
- Single Console Image Facility
- Logical Device Support Facility
- Programmable Operator
- IUCV
- CMS IUCV
- SNA CCS
- VMCF
- NLS
- *MSG
- *MSG ALL
- *BLOCKIO
- *SIGNAL
- *SPOOL

- Introduction to Debugging
- Debugging with VM
- Debugging Using CP, CMS, GCS, IPCS

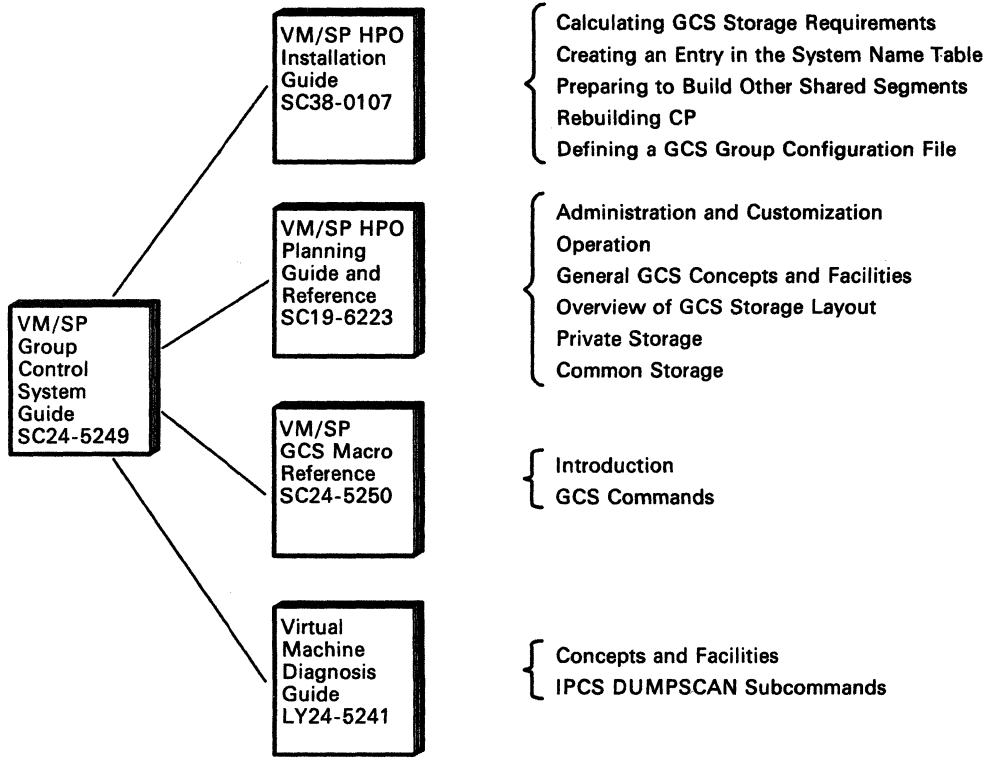
Interactive Problem Control System Guide Is Eliminated



System Definition Files Is Eliminated



Group Control System Guide Is Eliminated

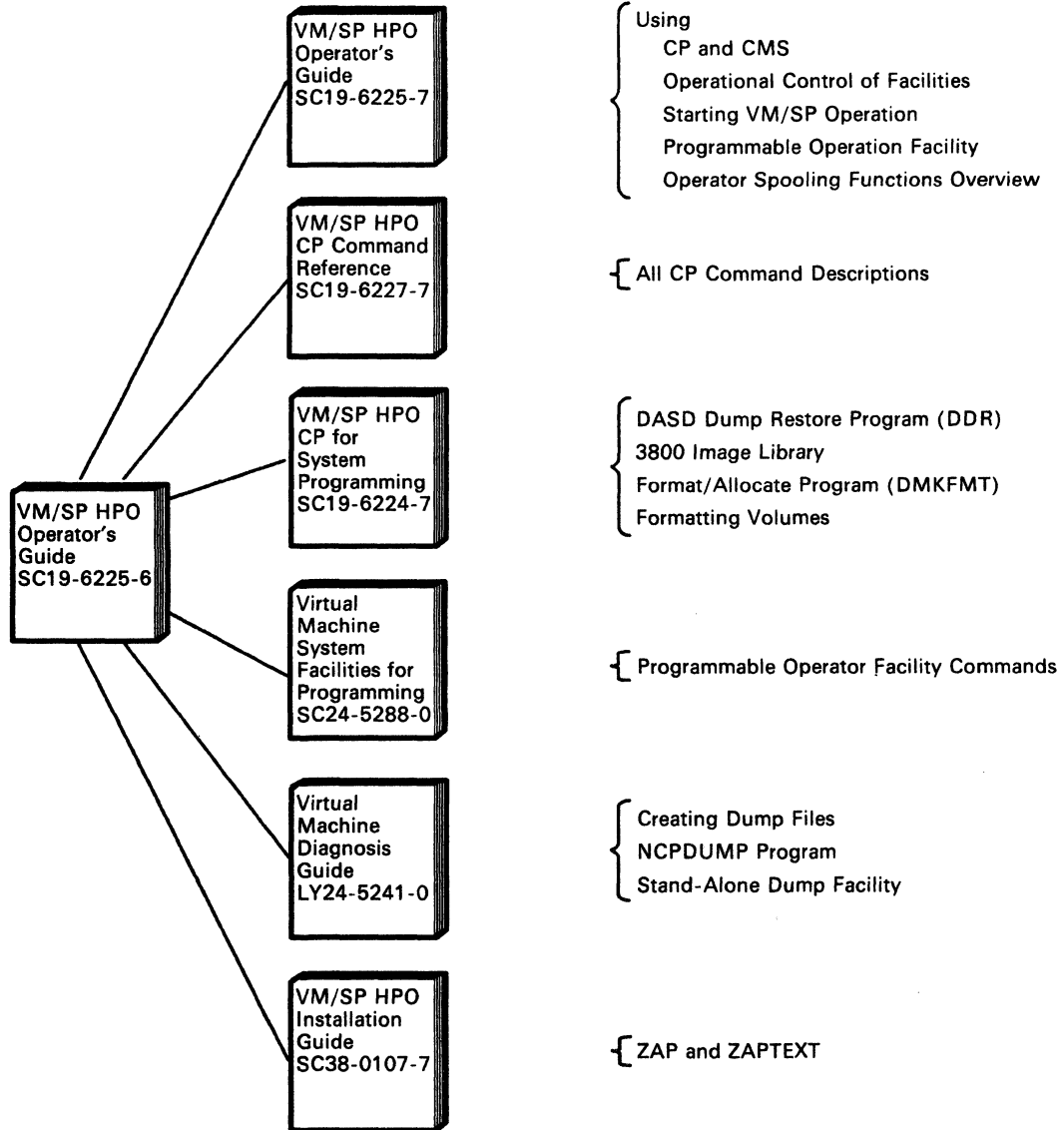


OLTSEP and Error Recording Guide Is Eliminated

Order the *VM/SP HPO Release 4.2 OLTSEP and Error Recording Guide*, ST00-1901.

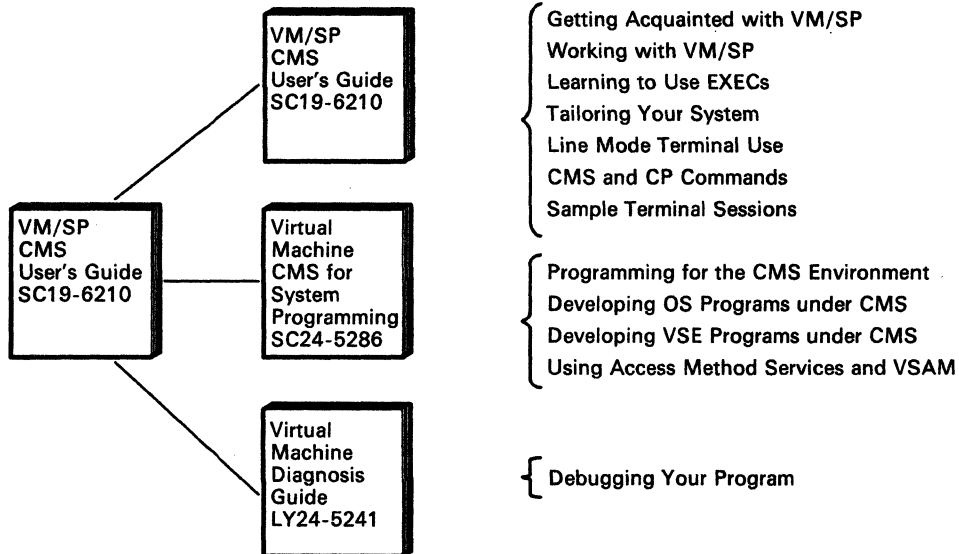
Operator's Guide Is Reorganized

You can now find the information that was in the *Operator's Guide* in the following publications:



***CMS User's Guide* Is Reorganized**

You can now find the information that was in the *CMS User's Guide* in the following publications:



***CMS Command and Macro Reference* Is Renamed**

You can now find the information that was in the *CMS Command and Macro Reference* in the *CMS Macros and Functions Reference*.

What Publications Will I Receive with the Product Tape?

For VM/SP HPO Release 5, you will receive the following publications with the product tape:

VM/SP HPO Licensed Program Specifications

VM/SP HPO Release 5 Guide

VM/SP HPO Library Guide, Glossary, and Master Index

VM/SP HPO Planning Guide and Reference

VM/SP HPO Installation Guide

VM/SP HPO CP for System Programming

VM/SP HPO Operator's Guide

VM/SP HPO CP Command Reference

VM/SP HPO System Messages and Codes

VM/SP HPO Service Routines Program Logic

VM/SP HPO System Logic and Problem Determination Guide

VM/SP HPO Data Areas and Control Block Logic—CP.

You will not receive the binders or labels. You must order them separately.

Using SLSS to Order Additional Copies of Manuals

You may order additional copies of VM/SP HPO manuals individually using the individual order numbers. Or, you may use bill of form numbers (BOFs) to order kits of additional copies. Three BOFs exist so you can easily order:

- The VM/SP HPO library as a set
- The combined VM/SP HPO and VM/SP libraries as a set
- The VM/SP library as a set.

Note: For Release 5, the VM/SP HPO BOFs do not include binders. You must order them separately.

Ordering the VM/SP HPO Library as a Set

To order the VM/SP HPO library as a set, use bill of form number SBOF-0003. You receive labels and 9 publications:

VM/SP HPO Library Guide, Glossary, and Master Index

VM/SP HPO Release 5 Guide

VM/SP HPO Planning Guide and Reference

VM/SP HPO CP Command Reference

VM/SP HPO Installation Guide

VM/SP HPO CP for System Programming

VM/SP HPO Operator's Guide

VM/SP HPO System Messages and Codes

VM/SP HPO Quick Reference.

Binders do not come with SBOF-0003. You must order them separately. The order number for one binder is SX24-5129. Order six binders for the unlicensed publications and an additional two binders for the licensed publications. In addition, you may want to order an extra binder to hold manuals that IBM issues between releases.

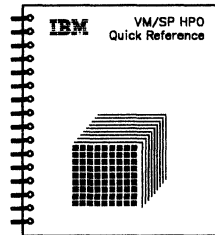
Figure 3 on page 17 shows the arrangement of the VM/SP HPO manuals in binders with labels.

VM/SP HPO Volume 1	VM/SP HPO Volume 2	VM/SP HPO Volume 3	VM/SP HPO Volume 4	VM/SP HPO Volume 5	VM/SP HPO Volume 6
Library Guide, Glossary, and Master Index	Release 5 Guide Planning Guide and Reference	CP Command Reference Operator's Guide	Installation Guide	CP for System Programming	System Messages and Codes

VM/SP HPO Volume 7	VM/SP HPO Volume 8
Service Routines Program Logic Diagnosis Guide	CP Logic and Problem Determination Guide CP Data Areas and Control Block Logic

Licensed manuals must be ordered separately from ISD.

Plus



SBOF-0003
9 Manuals

Note: The Bill of Form for Release 5 does not include binders. You must order them separately. Order six binders for the unlicensed publications and two binders for the licensed publications. The order number for one binder is SX24-5129.

Figure 3. Ordering and Organizing the VM/SP HPO Library

Ordering the Combined VM/SP HPO and VM/SP Libraries as a Set

To order the combined VM/SP HPO and VM/SP libraries as a set, use bill of form number SBOF-0002. You receive the labels and 31 publications:

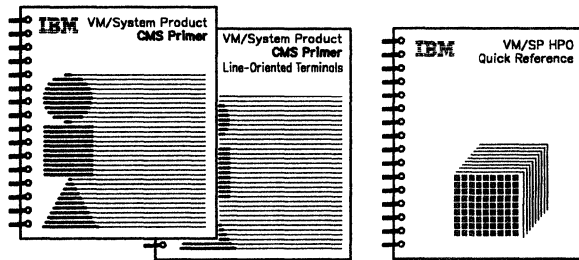
VM/SP HPO Library Guide, Glossary, and Master Index
VM/SP General Information
VM/SP Introduction
VM/SP Terminal Reference
VM/SP CMS Command Reference
VM/SP CMS User's Guide
VM/SP HPO CP Command Reference
VM/SP System Product Editor Command and Macro Reference
VM/SP System Product Editor User's Guide
VM/SP System Product Interpreter Reference
VM/SP System Product Interpreter User's Guide
VM/SP EXEC 2 Reference
VM/SP Application Development Guide
VM/SP CMS Macros and Functions Reference
Programmer's Guide to the Server-Requester Programming Interface for VM/SP
VM/SP HPO Operator's Guide
VM/SP HPO Installation Guide
VM/SP CMS for System Programming
VM/SP HPO CP for System Programming
VM/SP TSAF Reference
VM/SP Group Control System Macro Reference
Virtual Machine System Facilities for Programming
VM/SP HPO Release 5 Guide
VM/SP HPO Planning Guide and Reference
Virtual Machine Running Guest Operating Systems
VM/SP Distributed Data Processing Guide
VM/SP HPO System Messages and Codes
VM/SP Problem Solving and Reporting Guide
VM/SP HPO Quick Reference
VM/SP CMS Primer
VM/SP CMS Primer for Line-Oriented Terminals.

Binders do not come with SBOF-0002. You must order them separately. The order number for one binder is SX24-5129. Order 10 binders for the unlicensed publications and an additional two binders for the licensed publications. In addition, you may want to order an extra binder to hold manuals that IBM issues between releases.

Figure 4 on page 19 shows the arrangement of the VM/SP HPO and VM/SP manuals in binders with labels.

VM/SP and VM/SP HPO Volume 1	VM/SP and VM/SP HPO Volume 2	VM/SP and VM/SP HPO Volume 3	VM/SP and VM/SP HPO Volume 4	VM/SP and VM/SP HPO Volume 5	VM/SP and VM/SP HPO Volume 6	VM/SP and VM/SP HPO Volume 7	VM/SP and VM/SP HPO Volume 8	VM/SP and VM/SP HPO Volume 9	VM/SP and VM/SP HPO Volume 10	VM/SP and VM/SP HPO Volume 11	VM/SP and VM/SP HPO Volume 12
Library Guide, Glossary, and Master Index General Information Introduction Terminal Reference	CMS Command Reference	CP Command Reference CMS User's Guide	Editor User's Guide Editor Command and Macro Reference	Interpreter User's Guide Interpreter Reference EXEC2 Reference	Application Development Guide Macros and Functions Reference Programmer's Guide to the Server-Requester Programming Interface for VM/SP Operator's Guide Installation Guide	CMS for System Programming CP for System Programming TSAF Reference	Group Control System Macro Reference System Facilities for Programming	Release 5 Guide Planning Guide and Reference Running Guest Operating Systems Distributed Data Processing Guide	System Messages and Codes Problem Reporting Guide	CP Logic and Problem Determination Guide CP Data Areas and Control Block Logic Diagnosis Guide	CMS Logic and Problem Determination Guide CMS Data Areas and Control Block Logic Service Routines Program Logic GCS Diagnosis Guide

Plus



Licensed manuals must be ordered separately from ISD.

SBOF-0002
31 Manuals

Note: The Bill of Form for Release 5 does not include binders. You must order them separately. Order 10 binders for the unlicensed publications and two for the licensed publications. The order number for one binder is SX24-5129.

Figure 4. Ordering and Organizing the Combined VM/SP HPO and VM/SP Libraries

Ordering the VM/SP Library

You can order the VM/SP library as a set using SBOF-3241 (this includes binders, labels, and manuals) or order the binders, labels, and VM/SP manuals separately. For this ordering information, refer to *VM/SP Release 5 Library Guide, Glossary, and Master Index*, GC19-6207.

Ordering Individual VM/SP or VM/SP HPO Publications

You can order individual VM/SP or VM/SP HPO publications. The order numbers (for the latest release) and pseudonumbers (for previous but still current releases) appear in Figure 5 on page 21 and Figure 6 on page 22.

Ordering Publications for VM/SP HPO Releases 4.2 and 5

Figure 5 lists the VM/SP HPO publications and order numbers.

VM/SP HPO Publication	Release 4.2 Pseudonumber	Release 5 Order Number
Labels for VM/SP HPO Library	ST00-1909	SX23-0289
Labels for Combined VM/SP HPO and VM/SP Libraries	ST00-1908	SX23-0282
Announcement Brochure	GT00-1895	GC19-6221
What's In VM/SP HPO Release 5?	NA	GC23-0384
Release Guide	ST00-1903	SC23-0189
Library Guide, Glossary, and Master Index	GT00-1914	GC23-0187
Licensed Program Specifications	GT00-1902	GC20-1844
Planning Guide and Reference	ST00-1896	SC19-6223
Installation Guide	ST00-1904	SC38-0107
System Definition Files	SC23-0186	NA
Service Routines Program Logic	LT00-1913	LY20-0898
System Programmer's Guide (see Note below)	ST00-1897	NA
CP for System Programming	NA	SC19-6224
Problem Determination Reference Information	LT00-1910	LX23-0347
Operator's Guide	ST00-1898	SC19-6225
System Messages and Codes	ST00-1899	SC19-6226
System Messages Cross-Reference	SQ23-0190	SC23-0190
CP Command Reference	ST00-1900	SC19-6227
Virtual Machine Running Guest Operating Systems	GT00-1894	GC19-6212
OLTSEP and Error Recording Guide	ST00-1901	NA
Data Areas and Control Block Logic - CP	LT00-1911	LY20-0896
System Logic and Problem Determination Guide - CP	LT00-1912	LY20-0897
Command Summary (General Users)	ST00-1905	SX22-0003
Command Summary (Other than General Users)	ST00-1906	SX22-0004
Quick Reference	ST00-1907	SX22-0005
<p><i>Note:</i> System Programmer's Guide was split into four publications for Release 5. Order VM/SP HPO CP for System Programming (in this chart), VM/SP CMS for System Programming, Virtual Machine System Facilities for Programming, and Virtual Machine Diagnosis Guide (in Figure 6 on the following page).</p>		

Figure 5. Pseudonumbers and Order Numbers for VM/SP HPO Manuals

Ordering Publications for VM/SP Releases 4 and 5

VM/SP HPO Release 4.2 operates in conjunction with VM/SP Release 4.
 VM/SP HPO Release 5 operates in conjunction with VM/SP Release 5.
 Figure 6 lists pseudonumbers for applicable VM/SP Release 4 and 5 publications.

VM/SP Publication	Release 4 Pseudonumber	Release 5 Pseudonumber
Introduction	GT00-1575	GT00-1977
Terminal Reference	GT00-1581	GT00-1979
CMS Command Reference	ST00-1583	ST00-1981
CMS User's Guide	ST00-1584	ST00-1980
System Product Editor User's Guide	ST00-1589	ST00-1985
System Product Editor Command and Macro Reference	ST00-1590	ST00-1986
System Product Interpreter User's Guide	ST00-1593	ST00-1987
System Product Interpreter Reference	SQ24-5239	ST00-1988
EXEC 2 Reference	ST00-1368	ST00-1984
Application Development Guide	SQ24-5247	SQ24-5247
CMS Macros and Functions Reference	NA	ST24-5284
Programmer's Guide to the Server-Requester Programming Interface for VM/SP	NA	ST24-5291
CMS for System Programming	NA	ST24-5286
TSAF Reference	NA	ST24-5287
Group Control System Command and Macro Reference	ST24-5250	SQ24-5250
Virtual Machine System Facilities for Programming	NA	ST24-5288
Distributed Data Processing Guide	ST24-5241	ST24-5241
System Logic and Problem Determination Guide Volume 2 (CMS)	LT00-1820	LT00-2007
Data Areas and Control Block Logic-CMS	LQ64-5221	LT00-2009
Virtual Machine Diagnosis Guide	NA	LT00-2010
Group Control System Diagnosis Guide	LT24-5249	LT00-2012
CMS Primer	ST00-1591	ST00-1992
CMS Primer for Line-Oriented Terminals	SQ24-5242	ST00-1993

Figure 6. Pseudonumbers for VM/SP Manuals

Supplementary Publications

The publications listed in Figure 6 apply to VM/SP HPO and, therefore, may be helpful to you.

Supplementary Publications	Order Number
Device Support Facilities User's Guide and Reference	GC35-0033
Input/Output Configuration Program User's Guide and Reference	GC28-1027
Input/Output Configuration Program User's Guide and Reference—3090 Processor Complex	SC38-0038
VM/Directory Maintenance General Information Manual	GC20-1836
VM/Directory Maintenance Program Logic Manual	LY20-0889
VM/Directory Maintenance Guide for General Users	SC20-1839
VM/Directory Maintenance Installation and System Administrator's Guide	SC20-1840
VM/SNA Problem Source Identification (PSI) Guide: Methods and Components	GG24-3059
VM/SNA Problem Source Identification (PSI) Guide: Use of Tools	GG24-3060

Figure 7. Order Numbers for Supplementary Publications

System Center Bulletins

From time to time, the IBM System Centers issue bulletins that apply to VM systems. To automatically receive these bulletins, include GBOF-2201 on your SLSS form.

Between-Release Publications for PTFs

From time to time, IBM provides new VM/SP HPO support that is announced between releases. Such support is available as program temporary fixes (PTFs) on a Program Update Tape (PUT) and is documented by a separate publication.

These publications describe the new support, hardware device, new or changed commands and messages, system generation considerations, and new and changed modules. The publication contains only new information, so you should use it along with the regular library.

We suggest that you order a binder, SX24-5139, to hold the publications. We are providing a label that you can use to keep track of the books in the binder.

The booklets listed in Figure 7 have been issued for PTFs on Release 4.2. Because the information is included in the Release 5 manuals, these booklets are no longer necessary.

Title	Order Number
Directory Maintenance Enhancements	SC23-0339
CMS Vector Processing Support and TXTLIB Enhancement	SC24-5332
Logical Device Host Limit Relief	SC24-5327
3480 Volume Serial Error Recording	SC24-5329
CMS Console Facility	SC24-5333
Enhancements to Paging Storage	GC23-0382
Support of ASCII	GC24-5328
3422 Magnetic Tape Subsystem	GC24-5336
Error Recording Enhancements	GC23-0395
Directory Option for Restricting Vector Use and Monitor Enhancements	GC23-0396

Figure 8. Temporary Booklets That Are Now Obsolete

Abstracts of Manuals

The following *abstracts* present a description of each manual and, consequently, a better idea about which manual is best suited for your task. The VM/SP HPO manuals are listed first, followed by the VM/SP manuals and applicable supplementary manuals.

VM/SP HPO Publications

Announcing VM/SP HPO Release 5

This brochure, *Announcing VM/SP HPO Release 5*, introduces the new release for people who are unfamiliar with VM/SP HPO.

What's in VM/SP HPO Release 5?

This brochure, entitled *What's in VM/SP HPO Release 5: A System Programmer's Perspective*, discusses the technical enhancements to release 5 from a system programmer's perspective. It includes an overview of the new support, the migration and coexistence requirements, and planning information.

Release 5 Guide

This manual provides **current** users of VM/SP HPO Release 4.2 with a synopsis of the functional enhancements offered by the new release. It will improve the installation time of Release 5 and improve customer productivity by describing new functional enhancements, defining the related user interfaces, and giving examples of their use. It includes details for migrating from VM/SP HPO Release 4.2 to VM/SP HPO Release 5 and identifies new and changed modules.

Library Guide, Glossary, and Master Index

This manual describes the documentation available for VM/SP HPO, defines terms used throughout the manuals, and includes a compilation of all the index entries for the library. The master index section is particularly helpful if you are not familiar with the VM/SP HPO library as it directs you to the correct manual for a particular topic.

Planning Guide and Reference

This book is a reference manual for all VM/SP HPO Release 5 users. It describes the enhanced functions and capabilities that improve VM/SP HPO's performance and make it a more versatile product for a wide range of applications.

This publication includes information about:

- Planning for system generation
- Defining your operating system
- Generating a 3704/3705/3725 control program that runs with VM/SP HPO
- Updating VM/SP HPO.

The intended audience is system programmers and anyone responsible for the planning, installation, and updating of a VM/SP HPO system. The reader is expected to have a general understanding of data processing and teleprocessing techniques.

Installation Guide

This book is for system programmers and administrators who install or apply service changes. It contains step-by-step procedures for installing VM/SP HPO. In addition, there are procedures for applying preventive and corrective service.

CP for System Programming

This manual is a reference for system programmers, system analysts, and others who implement and extend the functions of the Control Program (CP) of VM/SP HPO. It assumes some experience with programming concepts and techniques and consists mostly of material extracted from the Release 4.2 *System Programmer's Guide*, in addition to material transferred from the *VM/SP Operator's Guide* for Release 4.2. The book has three parts:

- Part 1 describes the functions of CP and provides guidance in using some CP features.
- Part 2 describes options available in VM to analyze and improve the performance of virtual machines and operating systems.
- Part 3 is a reference for dealing with processor features and real peripheral devices.

CP Command Reference

This publication is a reference manual for all privilege classes of users that are running systems such as OS, OS/VS, DOS, DOS/VS, VSE, CMS, and networking systems in a virtual machine under VM/SP HPO. Control Program (CP) commands available to all privilege classes are listed alphabetically. Each command description contains general usage information, the command line format, descriptions of all allowable operands, and default values for operands. Also included are tables showing the relationship of the general class of CP commands to the complete set of VM/SP HPO CP commands.

Operator's Guide

This book is for those responsible for the operation and administration of a VM/SP HPO system. This book describes the recovery features and how to initialize and terminate the system. It briefly introduces the various commands, CP and CMS, that an operator may find useful. It also includes some information about hardware considerations and spooling and Batch commands.

System Messages and Codes

This manual contains messages and codes, as well as restrictions, that the user may encounter when using CMS, CP, IPCS, GCS, and TSAF. Conditions that generate these messages and codes are explained, the resulting action is described, and appropriate responses are suggested.

Running Guest Operating Systems

This manual was previously titled *Operating Systems in a Virtual Machine*. It has been restructured to include updated and practical examples. This publication is for people who are interested in running their operating system (VSE, MVS, and VM) under the VM host system. The book presents the basic processes so that the working system can be set up quickly. Experienced persons can improve the efficiency of their installation, running a guest system under VM, with the included recommendations. The book assumes the audience is knowledgeable about their own system but new to VM.

VM/SP Publications

Application Development Guide

The *Application Development Guide* tells FORTRAN and COBOL application programmers how to compile, link, load, run, test, and debug programs using CMS. It also contains information on using the Interactive System Productivity Facility (ISPF) for dialog management and the Structured Query Language/Data System (SQL/DS) for data base management.

CMS Command Reference

This publication provides users of the CMS component of VM with detailed reference information about command syntax and usage for CMS commands; EDIT subcommands; HELP format words; DEBUG commands; and EXEC control statements, special variables, and built-in functions.

CMS Macros and Functions Reference

For Release 5, the information pertaining to CMS macros and functions from the *CMS Command and Macro Reference* and the *CMS User's Guide* has been removed to create a separate manual. New CMS macros and functions are also incorporated.

This manual provides application programmers, system programmers, and IBM system support personnel with detailed reference information about CMS assembler language macro instructions and CMS functions.

CMS for System Programming

The *VM/SP CMS for System Programming* provides a system programmer with information about CMS. This information includes details on interrupt handling, CMS storage maps, updating source programs, assembling and executing programs, creating commands and message files, CMS external macros, programming support for OS and VSE, access method support, CMS support of OS and DOS VSAM functions, and the CMS Batch Facility.

CMS Primer

This manual teaches you, as a new user, how to do your work using VM and a video display terminal. The primer presents only a subset of all the functions and commands available. The material is presented in an interesting manner with suggested exercises included in the text.

CMS Primer for Line-Oriented Terminals

This manual is an interactive tutorial for VM users of line-oriented (line mode) video display terminals. The manual, which is similar in scope and content to the *CMS Primer*, is designed to quickly give the reader a working knowledge of VM. Topics include logging on; editing, managing, and printing files; using the Document Composition Facility (SCRIPT/VS) to format files; and writing EXECs.

CMS User's Guide

This manual contains general information on the CMS component of VM. It provides information and examples regarding the CMS file system, the CMS batch facility, the HELP facility, and windowing support. Also included are examples on using the System Product Editor to create and edit CMS files and using the System Product Interpreter to create and use EXECs.

EXEC 2 Reference

This is a reference manual that defines the EXEC 2 language. It contains all the formats, syntax rules, and descriptions of the arguments for EXEC 2 statements. An EXEC 2 primer for new users is included. It summarizes the language and what it is capable of. A detailed discussion of the different types of EXEC 2 statements is followed by examples. It lists the error messages and return codes issued by the EXEC 2 interpreter.

System Facilities for Programming

This manual provides a system programmer with detailed information on facilities available in VM. These facilities include the DIAGNOSE instruction, the Inter-User Communications Vehicle (IUCV) for CP and CMS, CP System Services, the Virtual Machine Communication Facility (VMCF), the programmable operator facility, and information on getting national languages on your system. Information was extracted from the *System Programmer's Guide*.

Group Control System Command and Macro Reference

This manual provides detailed reference material that describes the functions and use of all macros supported in the Group Control System. Each macro description contains information on general usage, format, all available parameters, messages, and return codes. The manual is intended for personnel who are developing application programs to run on the Group Control System.

Introduction

This manual is an extension to the *VM/SP General Information* manual. It describes, at an introductory level, what VM is and what it can do for you. It is intended for anyone who wants basic information about VM facilities and capabilities. This manual is useful for those who plan a VM installation, use licensed programs with VM, or migrate to VM from another operating system. Topics are discussed only to a depth needed to introduce VM. This manual is suggested as a prerequisite before reading the more detailed reference manuals in the library.

Programmer's Guide to the Server-Requester Programming Interface for VM/SP

This manual provides an application programmer with information on how to write and install IBM Enhanced Connectivity Facilities servers in a VM system. For the work station (for example, IBM Personal Computer) user, the manual also gives information on how to start IBM Enhanced Connectivity Facilities communications on VM.

Problem Reporting Guide

This manual serves as a guide to help customers identify problems when they occur, gather information that describes the problem, and report this data in a complete, organized, and useful form.

The manual also includes the *VM/SP Problem Reporting Summary*, SX24-5171-0, a quick reference wall poster summarizing the *Guide*. You can order additional copies of the *Summary* separately.

System Product Editor Command and Macro Reference

This publication is a reference manual that contains all the command formats, syntax rules, and operand and option descriptions for the XEDIT subcommands and macros. It tells how to enter XEDIT commands, subcommands, and macros. It contains the format description, and operand and option list for the XEDIT command, which is used to invoke the editor. It lists EDIT subcommands and their XEDIT counterparts. It tells how to define windows and virtual screens used with the CMS Session Services. You should be familiar with the information in the *System Product Editor User's Guide* before attempting to use this manual.

System Product Editor User's Guide

This manual is intended for the individual who has limited data processing experience. It is designed to give the user a working knowledge of the System Product Editor (invoked by the XEDIT command). XEDIT provides a wide range of functions for text processing and programming development. Both a full screen and a line mode editor, it can be used on display and typewriter terminals.

System Product Interpreter Reference

This manual provides reference information about System Product Interpreter statements and their use. It is suitable for experienced programmers, particularly those who have used another high-level language (for example, PL/I, Algol, or Pascal). It includes error messages and describes syntax, instructions, functions, debugging aids, and parsing.

System Product Interpreter User's Guide

This manual is a step-by-step guide to using the System Product Interpreter, the new and powerful interpretive command and macro language. It is intended for a user with some knowledge of terminals, editors, and VM, but the user need not have any previous programming experience.

The novice should read the System Product Interpreter chapter in the *VM/SP CMS Primer* for prerequisite knowledge.

Terminal Reference

This manual is intended for those users who plan to use terminals with VM in their operations. It discusses the characteristics of terminals in general and the physical characteristics of some terminals and consoles. It contains a typical session that gives working examples from logon to logoff.

Transparent Services Access Facility (TSAF) Reference

This manual contains all the reference material required to use the transparent services access facility (TSAF). It includes information for the system administrator to run the TSAF virtual machine, and the service tools provided with it. For the application programmer, it includes a complete description of the Advanced Program-to-Program Communication (APPC/VM) protocol, new with TSAF, and the system services associated with TSAF.

Supplementary Publications

Input/Output Configuration Program User's Guide and Reference

This publication describes the VM/SP and stand-alone versions of IOCP. It is intended for system programmers and customer engineers who are responsible for defining, installing, and configuring the channels, control units, and I/O devices for a 308x Processor Complex.

Input/Output Configuration Program User's Guide and Reference—3090 Processor Complex

This publication is intended for system programmers and customer engineers who are responsible for defining, installing, and configuring the channels, control units, and I/O devices for a 3090 processor complex.

VM/Directory Maintenance General Information Manual

This publication is for planning purposes and contains information about the VM/Directory Maintenance licensed program, program number 5748-XE4.

VM/Directory Maintenance Program Logic Manual

This publication is intended for use by system programmers who are responsible for the maintenance of the CP directory. It provides a description of the program logic, module descriptions, and cross references.

VM/Directory Maintenance Guide for General Users

This publication is intended for the user who needs to modify control statements in his own directory entry. The general user cannot make changes that involve system resources.

VM/Directory Maintenance Installation and System Administrator's Guide

This publication is intended for system programmers responsible for installing and maintaining the directory maintenance licensed program, and for system administrators responsible for maintaining the system's user directory. The publication provides system installation information and describes the directory maintenance commands.

Device Support Facilities User's Guide and Reference

This publication describes the Device Support Facilities processor and commands. It also discusses hardware considerations, operating system considerations, planning, and installation. It is intended for installation managers, system programmers, system operators, and other data processing personnel who manage or use direct access storage devices.

VM/SNA Problem Source Identification (PSI) Guide: Methods and Components

This book is written for system programmers and others involved in problem determination in a VM/SNA environment. The information enables the reader to identify a problem when it occurs in a VM/SNA system, gather information that describes the problem, and report the problem to IBM in a complete, organized, and useful form.

VM/SNA Problem Source Identification (PSI) Guide: Use of Tools

This document discusses tools that can be used to perform problem determination in a VM/SNA environment. It is written for system programmers and others involved in problem determination. It presumes that the user has experience in installing and using VM systems.

Online HELP Facility

Online HELP, intended for both naive and experienced users, contains information about commands, instructions, and messages. Online HELP provides menus of commands and tasks, as well as several ways to display this information. HELP information is available for CMS and IPCS commands; for EDIT, XEDIT, and DEBUG subcommands; for EXEC and EXEC2 control statements; for Restructured Extended Executor (REXX) language instructions; and for CP and CMS messages. The novice user should read the HELP chapter in the *VM/SP Primer* for introductory information.

Chapter 2. VM/SP HPO Glossary

This glossary defines terms that have special meaning in VM/SP HPO publications. Use it to find the definition of a term you do not know. It includes terms and definitions from the *IBM Vocabulary for Data Processing, Telecommunications, and Office Systems*, GC20-1699.

A

A-disk. In CMS, the primary user disk that is allocated to a CMS user. This read/write disk is used to store files created under CMS; such files are retained until deleted by the user. Synonymous with *primary user disk*. See also *D-disk*, *CMS system disk*, *virtual disk*, *S-disk*, and *Y-disk*, which have special uses; all other disks (B,C, E-R, T-X, and Z) are optional user disks.

A-type address constant. In assembler language, an address constant used for branching within a module or for retrieving data.

abbreviation, command. See *command abbreviation*.

abend dump. The contents of main storage, or of part of main storage, written to an external medium for the purpose of debugging an error condition that resulted in the termination of a task prior to its normal completion.

absolute address. The address assigned to a main storage location. An absolute address is used for a storage access without any transformations performed on it.

access mode. A method used by VM to control user access to data files. Access modes allow users to read and write data to a file, or only read data from a file. See also *filemode*.

active disk table (ADT). A table residing in the user's copy of the CMS nucleus that contains an entry for each valid filemode letter; that is, for each disk that has been accessed.

active file table (AFT). A table residing in the user's copy of the CMS nucleus that contains an entry for each disk file that is currently open.

active link. In RSCS, a teleprocessing link for which a line driver has been initiated; the RSCS operator uses the RSCS START command to initiate a line driver. The link is active until the line driver is terminated by another operator command.

active record. A record that has been added or appended to a file currently in use.

active wait. A process in which an idle processor in an AP or MP system scans the dispatch request queues and dispatch lists looking for work.

adcon. An A-type address constant used in calculating storage addresses.

address stop. See *breakpoint*, *instruction address stop*.

address translation. In VM/SP HPO, the process of changing the address of an item of data or an instruction from its virtual storage address to its real storage address. See also *dynamic address translation*.

Advanced Program-to-Program Communication/VM (APPC/VM). An application program interface (API) for communicating between two virtual machines that is mappable to the SNA LU 6.2 APPC interface and is based on IUCV functions. Along with the TSAF virtual machine, APPC/VM provides this communication within a single system and throughout a collection of systems.

all-points addressability. The ability to refer to any pixel on the printable area of the screen. (Pixel is a dot that forms part of an image on the screen.)

alternate path support. In VM, the selection of a path to a device from any of the available paths, even though the primary path is busy. The selection is made in response to an I/O request for a device, through use of the two-channel switch, the two-channel switch additional features, the four-channel switch, and the string switch hardware feature.

alternating operating systems. In VM, multiple operating systems that are loaded consecutively into a virtual machine. Information is passed between the operating systems via CP spooling facilities. Synonymous with *flip-flop*.

APA. See *all-points addressability*.

APAR. See *authorized program analysis report*.

application program interface (API). The formally defined programming language interface between an IBM system control program or licensed program and its user.

For VM, the term API is interpreted to mean the boundary between an external licensed program and VM itself. API specifically does not include any exclusive component-to-component interfaces that may exist within VM; for example, between the control program (CP) component and the transparent services access facility (TSAF) component.

apply. In reference to installation and service, to load down program temporary fix (PTF) files

from the tape, reassemble or rename as needed, and produce runnable (executable) code. The PTF may have been loaded down in a previous step. If that is the case, apply means to reassemble or rename if needed and place the files on the right staging disk for the build step to use, then produce the runnable code.

AP/MP mode. A mode of VM/SP HPO used when running in an attached processor or multiprocessor system. VM/SP HPO controls the execution of virtual machines on both processors.

area. This term is acceptable for storage space when there is no need to differentiate between DASD space on count-key-data devices and FB-512 devices. See also *DASD space*.

assembler language. A source language that includes symbolic machine language statements in which there is a one-to-one correspondence with instruction formats and data formats of the computer.

asynchronous exit. In RSCS, a program call to a task subroutine directly from the RSCS supervisor, not as a result of dispatching.

attached processor. A processor that has no I/O capability. An attached processor is always linked to the processor initialized for I/O handling. Note that VM/SP High Performance Option also supports real multiprocessor (MP) configurations.

attached processor operation. In this mode, VM executes tasks on two processors, only one of which has attached channels; however, the tasks come from a common dispatch queue and share common storage.

attention interrupt. An input/output interrupt caused by a terminal user pressing the attention key (or equivalent). See also *signaling attention*, *attention key*.

attention key. A key on some terminals that, when pressed, causes an I/O interrupt in the main processing unit. Also referred to as the ATTN key. See also *signaling attention*.

attention symbol (!). Under CP, for printing terminals only, the character (always the

exclamation point (!) character) that can be used to indicate each time the attention key is pressed.

ATTN key. See *attention key*.

authorized application. A GCS application, started with the OSRUN command, that operates in supervisor state, and is allowed to use privileged functions. Contrast with *ordinary application*.

authorized program. Synonym for *privileged program*.

authorized program analysis report (APAR). An official request to the responsible IBM Change Team to look into a suspected problem with IBM code. APARs describe a problem giving conditions of failure, error messages, ABEND codes, or other identifiers. They also contain a problem summary and resolution when applicable. See also *program temporary fix (PTF)*.

authorized virtual machine. A group control system virtual machine identified by USERID.

automatic logon. A process by which an operator's or user's virtual machine is initiated by other than the user of that virtual machine. For example, the primary system operator's virtual machine is activated automatically during initialization. A user can issue the AUTOLOG command to activate some other (disconnected) virtual machine.

auxiliary directory. In CMS, an extension of the CMS file directory, which contains the names and locations of certain CMS modules that are not included in the CMS file directory.

auxiliary file. In CMS, a file that contains a list of filetypes of update files to be applied to a particular source file. See also *control file*, *preferred auxiliary file*.

auxiliary storage. Data storage other than main storage; in VM/SP HPO, auxiliary storage may be a DASD or Paging Storage.

B

basic control (BC) mode. A mode which the features of System/360 computing system and additional System/370 features, such as new machine instructions, are operational on a System/370 computing system. See also *extended control (EC) mode*.

batch facility. See *CMS Batch Facility*.

blip facility, CMS. An indication to the user at a terminal, via a tilt/rotate of the Selectric type ball (if using a printing terminal), or the displaying of some specified character(s), every two seconds of either real or virtual execution time that has elapsed for the user's CMS virtual machine. Whether the time shown is real or virtual depends on the current setting of the REALTIMER option.

block extent. A continuous space on a direct access storage volume that does not have to be stored contiguously with a block (4096) of pages.

border. A boundary around a window. A user can enter one-letter window manager commands from the corners of the border. For example, the letter P entered from a border corner pops a window. The border corners are indicated by a "+" (plus) sign.

bpi. Bits per inch.

BPI. Bytes per inch.

BPT. See *build process table (BPT)*.

breakpoint. An instruction address stop that can be established via a CMS DEBUG subcommand. See *instruction address stop*.

broadcast message. In VM, information that can be sent by the system operator to all terminal users that are enabled to receive messages. The three major classes of messages are: (1) log (LOGMSG) messages that are automatically displayed at the user's terminal when he logs on, (2) optional lower priority log messages, (3) informational warning messages that alert users to some imminent event or action.

buffer. An area of storage, temporarily reserved for performing input or output, into which data is read, or from which data is written.

build. In reference to installation and service, to perform the steps necessary to take derived files and produce runnable code or systems. This is often referred to as the build process.

build process table (BPT). A table containing a sequential list of build process steps. The steps defined in the BPT may require certain variable information. This variable information is defined in the variable definition table (VDT).

built-in function, REXX/CMS EXEC. A specialized function, invoked by a keyword, that has been built into the system program code because it is commonly required by many users; same as EXEC 2 predefined function.

C

#CP:. Synonym for *escape to CP*.

cache. (1.) In a processing unit, a high-speed buffer that is continually updated to contain recently accessed contents of main storage. Its purpose is to reduce access time.

(2.) In the 3880 Storage Control Models 11, 13, 21, and 23, a high-performance, random-access, electronic storage device. The cache is one level of the two-level storage arrangement of the 3880 Models 11, 13, 21, and 23; the second level is the DASDs.

cache block. A cache-line that is resident in the processor cache.

cache directory. A directory in a cached device that contains entries that identify the address of the DASD track combined with the address of associated DASD as seen by the storage director.

cache-line. A block of bytes of central storage that maps to a specific area in the cache or high-speed-buffer. See also *high-speed-buffer*.

cache owner. A virtual machine that has been given cache control capability of the 3880 Model 13 or 23 subsystem via the CACHE OWN command.

caching function. The function that allows the cache of a cache device to be used.

CAI. Channel available interrupt.

CCS. See *console communication services*.

CE. (1) Channel end. (2) Customer Engineer.

central site/system. The main installation with skilled system support personnel such as system programmers and operations staff.

chain link record. In CMS, a record that contains a series of pointers to the physical blocks, normally discontinuous, that are currently assigned to a CMS disk file.

changes. In reference to installation and service, IBM and original equipment manufacturer (OEM) supplied service for their programs (PTFs, APARs, etc.) and user modifications to those programs.

channel-set switching. A facility used in some attached processor environments to allow processing to continue in uniprocessor mode on the attached processor after the main processor enters a disabled wait state following an uncorrectable error (a hard machine or channel check), or after the system operator varies the main processor offline. CP switches all active channels on the main processor to the attached processor, and processing continues in uniprocessor mode.

channel-to-channel adapter (CTCA). A hardware device that connects two channels on the same computing system or on different systems.

channel-to-channel (CTC) device. A hardware device used to connect two channels on the same computing system or on different systems. CTC devices include both channel-to-channel adapters (CTCAs) and 3088 Multisystem Communications Units (MCU).

character delete symbol. Synonym for *logical character delete symbol*.

checkpoint start. A system restart that attempts to recover information about closed spool files that was previously stored on the checkpoint cylinders. The spool file chains are reconstructed, but the original sequence of spool files is lost. Unlike warm start, CP accounting and system message information is also lost. Contrast with *warm start*, *cold start*, *force start*.

CKPT. See *checkpoint start*.

class A user. See *primary system operator privilege class*.

class Any user. A subset of CP commands used to: log on to VM/SP HPO, have the terminal logically connected to a multiple-access virtual machine, or send messages to the operator or another user.

class authority. Privilege assigned to a virtual machine user in the user's directory entry; each class specified allows access to a subset of all the CP commands. See also *privilege class* and *user class restructure*.

class B user. See *system resource operator privilege class*.

class C user. See *system programmer privilege class*.

class D user. See *spooling operator privilege class*.

class E user. See *system analyst privilege class*.

class F user. See *service representative privilege class*.

class G user. See *general user privilege class*.

class override file. A file containing control statements defining changes in the privilege classes of CP commands and/or diagnose codes. The file is used by the override program, DMKOVN, to establish a new class structure of commands under user class restructure (UCR).

clock comparator. A hardware feature (required by VM) that causes an interruption when the time-of-day clock has equaled or exceeded the value specified by a program or virtual machine.

CMS. See *conversational monitor system*.

CMS Batch Facility. A facility that allows a user to run time-consuming or noninteractive CMS jobs in another CMS virtual machine dedicated to that purpose, thus freeing this user's terminal and virtual machine for other work.

CMSDOS. The standard name of the CMS/DOS discontinuous saved segment. See also *discontinuous segment*.

CMS/DOS. Refers to the functions of CMS that become available when you issue the command: set dos on. CMS/DOS is a part of the normal CMS system and is not a separate system. Users who do not use CMS/DOS are sometimes referred to as OS users, since they use the OS simulation functions of CMS.

CMS/DOS phase library. See *DOSLIB library*.

CMS Editor. A CMS facility that allows the user to create, modify, insert, delete, or rearrange lines of data in a CMS file. See also *input mode*, *edit mode*.

CMS EXEC language. A general purpose, high-level programming language, particularly suitable for EXEC procedures and edit macros. (The language is documented in the *VM/SP CMS Command and Macro Reference*, SC24-6209.) Procedures and macros (programs) written in this language are executed by the CMS EXEC processor.

CMS EXEC processor. The component of the VM operating system that interprets and executes procedures and edit macros written in the CMS EXEC language.

CMS EXEC/program. An EXEC procedure or edit macro written in the CMS EXEC language and processed by the CMS EXEC processor.

CMS file directory. A directory on each CMS disk that contains the name, format, size, and location of each of the CMS files on that disk. When a disk is accessed via the ACCESS command, its directory is read into virtual storage and identified with any letter from A through Z. Synonymous with *master file directory block*.

CMS files. This term refers exclusively to files that are in the fixed-block format used by CMS file system commands. VSAM and OS data sets and DOS files are not compatible with the CMS file format and cannot be manipulated using CMS file system commands. Note that "disk", "minidisk", and "virtual disk" are used interchangeably to indicate disks that are in your CMS virtual machine configuration. Where necessary, a distinction is made between CMS-formatted disks and disks that are in OS or DOS format.

CMS-formatted disk. Is one that is formatted to be used specifically with the CMS file system macros. It does not contain a VTOC and is incompatible with OS and DOS formatted disks. OS and DOS access methods cannot be used directly with CMS formatted disks.

CMS nucleus. The portion of CMS that is resident in the user's virtual storage whenever CMS is executing. Each CMS user receives a copy of the CMS nucleus when he initial program loads (IPLs) CMS. See also *saved system, shared segment*.

CMS primary disk. Synonym for *A-disk*.

CMS service minidisk. The minidisk located at virtual address 190. It contains the system commands for which the user has read-only access.

CMS system disk. The virtual disk (S-disk) that contains the CMS nucleus and the disk-resident CMS commands. The CMS system disk can have extensions, usually the Y-disk.

CMS system file. Any file residing on the CMS system disk instead of on a user's disk.

CMS user disk. One or more virtual disks that contain CMS or read-only DOS or OS files that may be accessed by the user. If the user

has read/write access to a disk, he can create programs and data files on the disk. Files are retained until the user deletes them. The user may also link to and access other users' disks, usually on a read-only basis.

CMSSERV. The command that starts a CMS router in the Enhanced Connectivity Facilities environment of VM.

CNTRL file. See *control file*.

cold start. A system restart that ignores previous data areas and accounting information in main storage, and the contents of paging and spool files on CP-owned disks. Contrast with *warm start, checkpoint start, force start*.

collection. A group of up to 8 VM operating systems that can share resources. Each system within the collection must have the transparent services access facilities (TSAF) virtual machine installed and running.

command. A request from a user at a terminal for the execution of a particular CP, CMS, RSCS, or IPCS function. A CMS command may also be the name of a CMS file with a filetype of EXEC or MODULE. See also *subcommand, user-written CMS command*.

command abbreviation. A short form of the command name, operand, or option that is not a truncation of the word. For example, MSG instead of MESSAGE, RDR instead of READER. Contrast with *truncation*.

command privilege class. See *privilege class*.

command scan. In CMS, a routine that scans the command line entered and converts it to a standard CMS parameter list. See also *parameter list*.

communication link. See *data link*.

compile. To translate a program written in a high-level programming language into a machine language program.

component. A collection of elements that together form a separate functional unit. A product may contain many components (VM/SP HPO for example has components of CP, CMS,

GCS, TSAF, and IPCS). A component may be part of many products (CP spans both the VM/SP and VM/SP HPO products).

concurrently. Pertaining to a mode of operation that includes the performance of two or more operations within a given interval of time.

connectivity program request block (CPRB). An interface control block used by requesters and servers to communicate information.

console communication services. A group of CP modules that interfaces with the VTAM service machine, providing full VM/SP or VM/SP HPO console capabilities for SNA terminal users.

console function. That subset of CP commands that allows the user to simulate almost all of the functions available to an operator at a real system console. Contrast with *CP command*.

console spooling. See *virtual console spooling*.

console stack. A two-part storage area. Console stack is a general term used to refer collectively to the program stack and the terminal input buffer. The term console stack is used when there is no need to distinguish between the two areas. See also *program stack*, *terminal input buffer*.

context editing. A method of editing a file without using line numbers. To refer to or change a particular line or a group of lines, all or part of the contents of that line are specified.

control file. (1) In CMS, the file that contains records that identify the updates to be applied and the macro libraries, if any, that are needed to assemble that source program. See also *auxiliary file*. (2) A CMS file that is interpreted and used to direct the flow of a certain process through a series of specific steps. For example, the control file could contain installation steps, default addresses, and PTF prerequisite lists as well as many other items that are necessary.

control program (CP). The component of VM/SP HPO that manages the resources of a single computer such that multiple computing

systems appear to exist. Each virtual machine is the functional equivalent of an operating system.

control program assist. See *CP assist*.

control statement. A statement that controls or affects the execution of a program in a data processing system.

control statements, REXX/EXEC 2/CMS EXEC. Special statements of the REXX, EXEC 2, or CMS EXEC language that determine what is to be done within an EXEC procedure, edit macro or XEDIT macro. The statements can be used to control processing within the file; to manipulate variables; to communicate with a terminal user or with the VM system; or to create output files via the user's virtual punch.

control terminal. Any terminal currently controlling system resources and that is being used by the primary system operator (privilege class A), the resource operator (privilege class B) or the spooling operator (privilege class D).

control unit. A device that controls input/output operations at one or more devices.

control unit terminal (CUT). An operational mode that allows one logical terminal session. Contrast with *distributed functional terminal*.

count-key-data device (CKD). A disk storage device that stores data in the format: count field, usually followed by a key field, followed by the actual data of a record.

conversational monitor system (CMS). A component of VM that is a conversational operating system. CMS provides general interactive time-sharing, problem solving, and program development capabilities. It operates only under the control of the VM/SP or VM/SP HPO control program (CP).

copy function. In VM, the function initiated via a Program Function key to copy the contents of a display screen onto an associated hard copy printer. A remote display terminal copies the entire contents of the screen onto a printer attached to the same control unit. A local display terminal copies all information from the screen, except the screen status

information, onto any printer attached to any local display control unit.

corequisite change. A change that must be applied to your product along with another change. For example, If you need to apply change1 to the system and change1 has a corequisite of change2, then you must apply both change1 and change2 to the system at the same time but not in a specific order. A corequisite change is used to correct a problem that requires simultaneous changes to one or more elements of a product or component.

corrective service. The process of loading changes from tape to minidisks and then applying the requested changes. The last step of corrective service is to do the build process (see *build*).

corrective service table. A table that identifies all corrective service and user modifications a user installed. This table is used for regression checking.

CP. See *control program*.

CP assist. A hardware function available only on a processor that has Extended Control-Program Support (ECPS), that reduces CP overhead by performing the most frequently used tasks of CP routines.

CP command. A request from the terminal user for the execution of programming that controls the user's virtual machine. The VM control program commands are called CP commands. The subset of CP commands that perform console simulation are called console functions.

CP-owned disk. Any disk that has been formatted by the CP Format/Allocate program and designated as owned during system generation; for example, the CP system residence volume, or any disk that contains CP paging, spooling, or temporary disk space.

CP privilege class. See *privilege class*.

CPRB. See *connectivity program request block*.

CP read. The situation in which the control program (CP) is waiting for a response or

request for work from the user. On a typewriter terminal, the keyboard is unlocked; on a display terminal, the screen status area indicates CP READ.

CP READ screen status. For a display terminal used as a virtual console under VM, an indicator located in the lower right of the screen, that displays that CP is waiting for a response or request for work from the user.

CP system disks. Any disk space used by CP, other than the CP paging, spooling, and temporary disk space, for example, virtual disks.

CP trace table. A table used for debugging VM; its size is a multiple of 4096 bytes and is dependent on the size of real storage. This table contains the chronological occurrences of events that take place in the real machine, recorded in a wraparound fashion within the trace table.

CPU timer. A hardware feature that measures elapsed processor time and causes an interruption when a previously specified amount of time has elapsed. The CPU timer is decremented when the processor is executing instructions, is in a wait state, and is executing program loading instructions, but not when the processor is in a stopped state. A virtual machine that uses the CPU timer must have the ECMODE and REALTIMER options active.

cross memory service. This MVS/SP facility is a standard hardware feature on the IBM 3081 processor complex. It increases communication efficiency between address spaces. To implement cross memory services on the IBM 3033 processor, the processor must have virtual machine assist with the 3033 extension feature (#6850) as well as the virtual machine assist RPQ. Synonymous with *dual address space assist*.

CTC. See *channel-to-channel (CTC) device*.

CTCA. See *channel-to-channel adapter (CTCA)*.

current line pointer. A pointer that indicates the line of a CMS file on which the CMS Editor and/or the System Product Editor (XEDIT) is currently working.

CUT. See *control unit terminal*.

cylinder. A term used to describe specific space on count-key-data direct access storage devices.

D

D-disk. In CMS, the disk that becomes a user disk with a mode letter of D if the user logs on and a virtual disk at address 192 is defined in the virtual machine configuration.

DASD. See *direct access storage device*.

DASD Dump Restore (DDR) program. In VM, a service program used to copy all or part of a minidisk onto tape, or to load the contents of a tape onto a minidisk.

DASD skew. An uneven distribution of accesses across a DASD string.

DASD space. (1) Area allocated to DASD units on count-key-data devices. (2) Area allocated to DASD units on FB-512 devices. Note that "DASD space" is synonymous with "cylinder" when there is no need to differentiate between count-key-data devices and FB-512 devices. This term applies to VM/370, as well as to the VM/SP and VM/SP HPO licensed programs.

DAT. See *dynamic address translation*.

data link. The equipment and rules (protocols) used for sending and receiving data.

DBCS. See *double-byte character set*.

DCSS. See *discontiguous saved segment*.

DDP logical operator. The person who handles nonroutine (nonprogrammed) messages forwarded from the local systems' programmable operator; the person who is "logically" responsible for distributed data processing system operations. See also *Distributed Data Processing*.

DDP operator. The person who handles nonroutine (nonprogrammed) messages

forwarded from distributed systems' programmable operators; the person who is "logically" responsible for distributed data processing network. See also *Distributed Data Processing*.

DDR program. In VM, refers to the DASD Dump Restore program.

deadline priority. A value that the scheduler (DMKSCH) uses to determine when the user gets his next time slice. This value is calculated each time a user is dropped from a queue and is based on paging activity, processor usage, and the load on the system as well as on user priority.

dedicated channel. A channel that is attached to a virtual machine, for its sole use, so that CP can bypass translating the addresses of virtual devices.

dedicated device. An I/O device or line that is not being shared among users. The facility may be permanently assigned to a particular virtual machine via a VM directory entry, or temporarily attached by the resource operator to the user's virtual machine.

default file attributes. In CMS, certain reserved filetype names that cause the CMS editors (EDIT and XEDIT) to assume certain values for record length, tab settings, uppercase or lowercase setting, record sequence numbering, verification mode, fixed- or variable-length record type, truncation column, and other related record characteristics.

default operand. An operand that has a preset value if a value is not specified in the CP or CMS command line.

delimiter. (1) A flag that separates and organizes items of data. Synonymous with *separator*. (2) A character that groups or separates words or values in a line of input. In VM, normally one or more blank characters are used to separate the command name and each operand or option in the command line. In certain cases, a tab, left parenthesis, or backspace character can also act as a delimiter.

derived file. A CMS file created from selected versions of elements. A derived file is created

by the build process. Some derived files may be provided by IBM on the PUT tapes. The customer installation may also create them.

device support facilities. A virtual disk initialization program operating under MVS, VSE, and as a stand-alone program under a native or virtual machine environment. It can initialize a direct-access storage volume so that it can inspect a volume for defective tracks, reformat the volume label and IPL bootstrap and program records, and examine a device with a nonremovable storage mechanism to determine if there are problems with the drive or with reading and writing data stored on the volume.

DFT. See *distributed function terminal*.

DIAGNOSE interface. Under VM, a programming mechanism that allows any virtual machine, including CMS, to communicate directly with CP via the DIAGNOSE instruction. Specific interface codes allow a virtual machine to more efficiently request specific CP services.

direct access storage device (DASD). A storage device in which the access time is effectively independent of the location of the data.

directory. See *auxiliary directory, CMS file directory, or VM directory*.

disconnect mode. The mode of operation in which a virtual machine is executing without a physical line or terminal connected as an operator console. Any attempt to issue a read to the console causes the virtual machine to be logged off after 15 minutes have elapsed, unless the user logs on again within the 15-minute interval. Note that with the single console image facility (SCIF), a user can be disconnected from a primary virtual console but still have console communications via the console of the secondary user.

discontiguous file. A CMS file with missing records. The user may write records 1, 3, and 5 into a CMS file. Records 2 and 4 are missing. This results in a discontiguous file.

discontiguous saved segment. An area of storage beyond the address of your virtual machine address space (not contiguous with your virtual storage) where segments are loaded as needed.

discontiguous segment. A 64K segment of storage that was previously loaded and saved and assigned a unique name. The segment(s) can be shared among virtual machines if the segment(s) contains reentrant code. Discontiguous segments used with CMS must be loaded into storage at locations above the address of a user's CMS virtual machine address. They are attached when needed and detached when no longer needed.

disk. Refers to a disk that is in your CMS virtual machine configuration. Also referred to as a virtual disk.

dispatcher. The program in CP that places jobs or tasks into execution. The dispatcher selects the next virtual machine to run and prepares the virtual machine for problem state execution.

dispatch list. In VM, a list of those virtual machines that are executable and currently competing for a time slice of processor resources. The virtual machine currently executing is called the runuser. When virtual machines are dropped from the dispatch list, replacement is made from the eligible list. See also *eligible list*.

dispatching. The starting of virtual machine execution.

dispatch request queue. A queue of executable CP tasks, I/O tasks, and timer requests that are ready to be dispatched.

dispatcher/scheduler favoring scheme. A set of criteria used by the dispatcher and scheduler to create a bias in favor of queue 1 (Q1) users. Q1 users are usually highly interactive users.

display mode. A type of editing at a display terminal in which an entire screen of data is displayed at once and in which the user can access data through commands or by using a cursor. Contrast with *line mode*.

display paging. A technique used for scanning through a CMS file on a display terminal in display mode. When using the CMS Editor, scanning can include up to 20 lines at a time. When using the System Product Editor (XEDIT), use the BACKWARD or FORWARD subcommands; if a number is not given with either subcommand, only one screen is shown.

Distributed Data Processing (DDP). The operation of a network of interconnected processors/systems each capable of independent operation. These processors/systems are linked so it is not necessary to store all data and programs at every site. Authorized users of such a network can use the facilities of any part of this network. Such use can either be intentional or transparent to the user; that is, the user might intentionally request service from a remote system or a user's request for data or a program might automatically be routed to the appropriate part of the network by that system.

distributed function terminal (DFT). An operational mode that allows multiple concurrent logical terminal sessions. Contrast with *control unit terminal (CUT)*

distributed logical operator. A virtual machine at the distributed system to which machine intervention requests are sent. There is a machine attendant who mounts forms and tapes, and turns the power on/off for that site.

distribution code. In the VM directory, a 1- to 8-character identification word that is printed or punched with the userid in the separator page (or punched card) to further identify the location or department of the user.

Document Composition Facility (DCF). A text processing program; its main component is the text formatter, called SCRIPT/VS. See *SCRIPT/VS*.

dormant state. A state in which the active pages of a virtual machine have been paged out.

DOS simulation under CMS. Synonym for *CMS/DOS*.

DOSLIB library. A CMS library that contains the executable phases produced by the DOS

Linkage Editor under CMS. These phases are equivalent to, but not usable in the DOS/VS core image library. These phases can be fetched and executed only under CMS/DOS. See also *CMS/DOS*.

double-byte character set (DBCS). A character set for languages, such as Kanji, that require two bytes to uniquely define each character.

double key protection. This program support associates each 2K block of real storage with two storage protect keys. Two keys are needed to protect a 4K frame.

DPA. See *dynamic paging area*.

draining a unit record device. In VM, the stopping of spooling operations on a real unit record device after the current spool file has completed, or the immediate stopping of spooling operations if no spool file is being processed.

driverid. In RSCS, a 1- to 8-character alphameric filename of the CMS TEXT file that controls a communications line for a specific type of remote station.

dual address space assist. Synonym for *cross memory service*.

dual processor. A processor complex comprising two processors in one unit. Both processors share central storage, are controlled by a single operating system and communicate directly with each other. A dual configuration differs from a dyadic configuration because the channels in the dual configuration are attached directly to each processor and channel set switching is not provided. Contrast with *dyadic processor*.

dyadic processor. A processor complex comprising two processors in one unit. Both processors share central storage, are controlled by a single operating system, communicate directly with each other, execute I/O operations through a common element, and can run with one central processor if the other is removed from the configuration because of an error. A dyadic processor cannot be configured into two independent uniprocessor units. Note that each

processor has access to its own assigned channel set. Contrast with *dual processor*.

dynamic address translation. In System/370 virtual storage systems, the change of a virtual address to a real storage address during execution of an instruction.

dynamically modified channel program. A channel program that is altered by the program or by data being read in from a channel during the interval between the execution of the START I/O (SIO) instruction and the channel end interruption.

dynamic paging area (DPA). The area of real storage that is used by CP for the temporary storage of pages when paging occurs.

E

Early Warning System (EWS). An information system for getting information pertaining to programming problems to the field. The information includes :

- Programming symptom index (PSI)
- Authorized program analysis report (APAR) list
- Programming symptom index text
- Miscellaneous program support information such as program temporary fix (PTF) application charts, PTF-to-APAR cross-reference list, etc.

EBCDIC (v_h). See *extended binary-coded decimal interchange code*.

EBT. See *element build table*.

ECB. Event Control Block.

ECMODE. A mode in which all of the features of a System/370 computing system, including dynamic address translation, are operational.

ECPS:VM/370. See *Extended Control-Program Support*.

edit. To make changes, additions, or deletions to a file that is on a disk, and to make these

changes interactively. The edit function is also used to generate information in a file that did not previously exist.

edit macro. (1) A procedure defined by a frequently used command sequence to perform a commonly required editing function. A user creates the macro to save repetitious re-keying of the sequence, and invokes the entire procedure by issuing a command (that is, the macro file's filename). The procedure may consist of a long sequence of edit, CMS, and/or CP commands, along with EXEC 2 or CMS EXEC control statements to control processing within the procedure. (2) A CMS file whose filename starts with a dollar sign (\$) character and whose filetype is "EXEC".

edit mode. The environment in which use of CMS EDIT subcommands and/or System Product Editor (XEDIT) subcommands can be issued by the user to insert, change, delete, or rearrange the contents of a CMS file. Contrast with *input mode*.

element. (1) In reference to installation and service of a product, a file provided on a program update tape (PUT) as input to the build process (see build). An element is the smallest serviceable unit of a component. There may be several files associated with a given element and each file has the same filename. (2) In a vector, a 32-bit value.

element build table (EBT). A table that contains a list of all the elements in a loadable unit. The table identifies the build process steps for each element. These build process steps are defined in the build process table (BPT).

element level table. A table that lists all the changes that affect each element in the loadable unit.

eligible list. In VM/SP HPO, a list of virtual machines that are potentially executable, but are not placed on the dispatch list to compete for processor resources because of the current load on the system. See also *dispatch list*.

enhanced connectivity. The strategy for sharing services and resources in a heterogeneous network.

entry point. An address or label of an instruction performed upon entering a computer program, a routine, or a subroutine. A program may have several different entry points, each corresponding to a different function or purpose.

EREP file. A collection of error records produced by the malfunctioning of hardware components on a computer and stored for processing by the Environmental Recording, Editing, and Printing (EREP) Program.

error recording area. This term refers to the DASD space that the system programmer defines during system generation on the system residence volume that CP uses to record formatted outboard error recordings, machine check records, and channel check records. For count-key-data devices, this area is between 2 and 9 contiguous cylinders in size; for FB-512 devices, the size of this area can be any number of contiguous pages.

escape symbol. Synonym for *logical escape symbol*.

escape to CP. Under VM, a transfer of control to CP when either the terminal user or the machine stops virtual machine operation. This can be accomplished by a CP command (such as #CP), by invoking a DIAGNOSE function, or by signaling attention. Synonymous with #CP. See also *DIAGNOSE interface, signaling attention, attention interrupt*.

EWS. See *Early Warning System*.

EXEC/EXEC procedure. (1) A procedure defined by a frequently used sequence of CMS and/or CP commands to perform a commonly required function. A user creates the procedure to save repetitious re-keying of the sequence, and invokes the entire procedure by issuing a command (that is, the EXEC file's filename). The procedure may consist of a long sequence of CMS and/or CP commands, along with REXX, EXEC 2, or CMS EXEC control statements to control processing within the procedure. (2) A CMS file with a filetype of "EXEC".

EXEC 2 EXEC/program. An EXEC procedure, edit macro, or XEDIT macro written in the

EXEC 2 language and processed by the EXEC 2 processor.

EXEC 2 language. A general purpose, high-level programming language, particularly suitable for EXEC procedures and XEDIT macros. (The language is documented in the *VM/SP EXEC 2 Reference*, SC24-5219.) Procedures and XEDIT macros (programs) written in this language are executed by the EXEC 2 processor.

EXEC 2 processor. The component of the VM operating system that interprets and executes procedures, edit macros, and XEDIT macros written in the EXEC 2 language.

executable phase library. See *DOSLIB library*.

executable statement. In an EXEC procedure, edit macro, or XEDIT macro, any statement that is processed by the System Product Interpreter, the EXEC 2 processor, or CMS EXEC processor. This may be a control statement or assignment, a CMS or CP command, or a null line.

Expanded Storage. An optional paging assist of the 3090 processor that provides additional storage for paging or swapping. See also *Paging Storage*.

expanded virtual machine assist. A hardware assist function, available only on a processor that has Extended Control-Program Support (ECPS), that handles many privileged instructions not handled by virtual machine assist, and extends the level of support of certain privileged instructions beyond that provided by virtual machine assist.

extended binary-coded decimal interchange code (EBCDIC). A set of 256 characters, each represented by 8 bits.

extended channel support. Support for a one byte channel address. This allows a device address range of 0 through 1FFF.

extended control (EC) mode. A mode in which all the features of a System/370 computing system, including dynamic address translation, are operational. See also basic control (BC) mode.

Extended Control-Program Support (ECPS:VM/370). A hardware assist feature, available on certain processors, that improves the performance of CP by reducing CP overhead. ECPS:VM/370 consists of CP assist, expanded virtual machine assist, and virtual interval timer assist.

extended PLIST (untokenized parameter list). This is an untokenized parameter list. It consists of four addresses that indicate the extended form of a command as it was entered at a terminal.

Extended Count-Key-Data. Those DASD devices that have a faster data transfer rate than some processors can utilize and that are connected to the processor through the use of a "speed matching buffer." You must use slightly different channel programs to communicate with such devices.

extended storage. Storage above the 16 megabyte line.

external page storage. The portion of auxiliary storage that is used to contain 4K byte pages.

external page storage management. A set of routines in the paging supervisor that control the transfer of data between real storage and external page storage.

F

favored execution performance option. A virtual machine performance option that allows an installation to force the system to allocate more of its resource to a given virtual machine than would normally be the case.

FB-512. Refers to the IBM 3370 and 3310 Direct Access Storage Device.

FBA. See fixed block architecture.

FCB. Forms control buffer.

FDP. Field Developed Program.

fetch protection. A storage protection feature that determines right-of-access to main storage by matching the protection key associated with a main storage fetch reference with the storage keys associated with those frames of main storage.

file access mode. A filemode number that designates whether the file can be used as a read-only or read/write file by a user. See also *filemode*. The following are the filemode numbers available to the VM/SP HPO user:

- 0 Limits access to a file to only those other users who have read/write access to the disk. Files having filemode 0 are not listed for another user who links to a disk in read-only mode and requests a list of files on the disk.
- 1 Allows general read/write use of the file; this is the default.
- 2 Allows general read/write use of the file. Filemode 2 is usually used to group together files on a common disk, such as the system disk.
- 3 Causes the file to be erased after it is read.
- 4 Causes the file to be written in OS simulated data set format.
- 5 Allows general read/write use of the file. Filemode 5 is used to group together files so they can be manipulated as a group.
- 6 Causes existing records of a file to be written back to their previous location on the disk rather than to a new location. Filemode 6 eliminates the need for the dual directory scheme of block location on a disk, and reduces the possibilities of errors when one user links to another user's virtual disk.

file definition. (1) Equating a CMS file identifier (filename, filetype, filemode) with an OS data set name via the FILEDEF command; or equating a DOS file-id with a CMS file identifier via the DLBL command. (2) Identifying the input or output files to be used during execution of a program (via either the FILEDEF or DLBL commands).

file status table (FST). A table that describes the attributes of a file on a CMS disk, including filename, filetype, filemode, date last written, and other status information.

file system command. A CMS command that creates or manipulates CMS disk files.

file system control block (FSCB). A collection of information about a CMS file, used by CMS OS simulation commands and user programs. A file system control block is established for a file by the FILEDEF command or the FSCB macro instruction.

file tag. A character string associated with a VM spool file that contains information pertaining to that spool file. In RSCS, the file tag contains the destination linkid and transmission priority of the file.

fileid. A CMS file identifier that consists of a filename, filetype, and filemode. The fileid is associated with a particular file when the file is created, defined, or renamed under CMS. See also *filename, filetype, filemode*.

filemode. A 2-character CMS file identifier field comprising the filemode letter (A through Z) followed by the filemode number (0 through 6). The filemode letter indicates the CMS file directory on which the file resides and whether or not the disk is a user virtual disk or a CMS system disk. The filemode number indicates the access mode of the disk. See also *file access mode*.

filename. A 1- to 8-character alphameric field, comprised of A-Z, 0-9, and special characters \$ # @ + - (hyphen) : (colon) _ (underscore), that is part of the CMS file identifier and serves to identify the file for the user.

filetype. A 1- to 8-character alphameric field, comprised of A-Z, 0-9, and special characters \$ # @ + - (hyphen) : (colon) _ (underscore), that is used as a descriptor or as a qualifier of the filename field in the CMS file identifier. See also *reserved filetypes*.

first-level storage. Refers to real main storage. See also *second-level storage, third-level storage*.

Fixed-Block Architecture (FBA). Those DASD devices whose architecture uses fixed blocks or records of 512 bytes.

flat file. A file that consists of a set of records ordered by record number or as sequentially entered into the file; a two dimensional file.

flip-flop. A VM synonym for *alternating operating system*.

flush list. A set of pages available to replenish the free list.

force start. A VM system restart that attempts to recover information about closed spool files that was previously stored on the checkpoint cylinders. All unreadable or invalid spool file information is ignored. Contrast with *checkpoint start, warm start, cold start*.

format program. (1) In CMS, the service program that creates 800-byte blocks on a minidisk, counts or redefines the number of cylinders on a virtual disk, or creates a DASD label for the virtual disk. (2) In CP, the service program that formats (in 4096-byte blocks), allocates, and creates DASD labels for CP-owned disks for paging, spooling, and CP system residence. Contrast with *virtual disk initialization program*.

free list. A list maintained by CP that points to a set of pages above or below the 16 Mb line that can be allocated to satisfy both virtual machine and system page requests. To satisfy system requests, pages below the 16 Mb line must be used.

FSCB. See *file system control block*.

FST. See *file status table*.

full recording mode. The mode of operation where transient processor and/or main storage errors that are corrected or circumvented by hardware retry or error correction code logic are recorded on the VM error recording cylinders.

full-screen CMS. In VM, when a user issues the command SET FULLSCREEN ON, CMS is in full-screen mode. Various classes of output are routed to a set of predefined windows. CMS

is in a window and can take advantage of 3270-type architecture and window support. Also, users can type commands anywhere on the physical screen. For more information, see window.

G

GCS. See *group control system*.

general user privilege class. The subset of CP commands that allows the Class G user to manipulate and control his virtual machine.

generic fileid. A file identifier that allows the use of asterisks. The asterisk replaces any string of characters when the system is searching for a match on the rest of the file identifier

global system lock. A defer lock that provides system integrity for AP and MP support of command processing and code executed via IOBLOK, TRQBLOK, or CPEXBLOK.

group. Synonym for *virtual machine group*.

group control system (GCS). An operating environment that provides a problem state OS subtasking environment with common storage access for members of a virtual machine group.

guest virtual machine. A virtual machine in which an operating system is running.

H

handshaking feature. See *VM/VS handshaking feature*.

HELP. An online tool for supplying reference information on commands and messages for VM components.

high-speed-buffer. A set of logically partitioned blocks that provides significantly faster access to instructions and data than central storage.

high-water mark. The highest contiguous address, starting from location zero, where the virtual system's real addresses equal the virtual system's virtual addresses.

history files. One or more CMS files that describe the changes (with a date and tie stamp) made to the VM system and its installed software products.

HOLDING screen status. For a display terminal used as a virtual console under VM, an indicator located in the lower right of the screen that displays that the current contents of the screen remain on the screen until the user requests that the screen be erased. This status occurs either by pressing the Enter key, or it is triggered by a message or warning being displayed on the screen.

I

IBM System/370 to IBM Personal Computer Enhanced Connectivity Facilities for VM.

1. A program that provides the server-requester programming interface (SRPI) and a communications manager on an IBM System/370 using VM/CMS.
2. The implementation of enhanced connectivity on a VM system with CMS installed.

IBM Virtual Machine/System Product (VM/SP). A licensed program that manages the resources of a single computing system so that multiple computing systems (virtual machines) appear to exist. VM/SP consists of a control program (CP), a conversational monitor system (CMS), a group control system (GCS), an interactive problem control system (IPCS), and a transparent services access facility (TSAF). Note that former VM/370 users continue to have a remote spooling communications subsystem (RSCS), which spools files to and from remote work stations.

IBM Virtual Machine/System Product High Performance Option (VM/SP HPO). VM/SP HPO is a separately orderable licensed program

that can be installed and executed in conjunction with VM/SP. When you install and use VM/SP HPO in conjunction with the prerequisite VM/SP release, you obtain an operating system that extends the capabilities of VM/SP. VM/SP HPO offers enhancements for large system environments. These enhancements include system management performance improvements, additional processor and I/O support, and enhanced MVS/SP support.

ID card. Under VM, the identification card used to indicate the destination userid of a deck of real cards to be read into the system card reader or into the card reader of an RSCS remote station.

immediate command (CMS). A CMS command which, when issued after an attention interruption, causes program execution, tracing, or terminal display to stop. Another immediate command may be issued to resume tracing or terminal display. The immediate commands are HB (halt batch execution), HI (halt all System Product Interpreter or EXEC 2 programs or macros), HO (halt tracing), HT (halt typing), HX (halt execution), RO (resume tracing), RT (resume typing), SO (suspend tracing), TE (trace end), and TS (trace start). They are called immediate commands because they are executed as soon as they are entered; they are not stacked in the console stack. Within an EXEC, immediate commands may be established or cancelled by the CMS command IMMCMD.

implied affinity. Affinity for a particular processor in a dyadic, dual, or multiprocessor system when the affinity is not specifically specified but is assumed by CP. (For example, a virtual machine that uses a Vector Facility configured when the other processor does not have Vector Facility configured.)

implied CP command. In CMS, a CP command that is invoked without preceding the command line with "CP".

implied EXEC. An EXEC procedure that is invoked without identifying it as such; that is, the word "EXEC" is not used for the invocation. Only the filename is used, as if issuing a CMS command.

improved spool file recovery. The process of recovering from the disk the checkpoint data that was previously recorded for closed spool files. (sio) if warm start is not possible, the VM/SP HPO system operator may attempt a checkpoint start or force start. See also *checkpoint start, force start*.

inactive page. A page in real storage that has not been referenced during a predetermined period of time.

initial program load (IPL). The initialization procedure that causes an operating system to begin operation. A virtual machine user must IPL the specific operating system into the virtual machine that will be used to control his work. Each virtual machine may be loaded with a different operating system.

initialize. To set counters, switches, addresses, or contents of storage to starting values.

in-memory file. An EXEC 2 term for a file that is resident in storage, similar in concept to a file on disk.

input line. For typewriter terminals, information keyed in by a user between the time the typing element of his terminal comes to rest following a carriage return until another carriage return is typed. For display terminals, the data keyed into the user input area of the screen. See also *user input area*.

input mode. In the CMS Editor or System Product Editor (XEDIT), the environment that allows the user to key in new lines of data. Contrast with *edit mode*.

in-queue virtual machines. A virtual machine on the run list waiting to be dispatched. The virtual machine may be runnable or nonrunnable. An interactive virtual machine is added to the run list if its projected working set fits into the main storage set aside for interactive users and if there is sufficient processor time. Likewise, A noninteractive virtual machine is added to the run list if its projected working set fits into the main storage set aside for noninteractive users and if there is sufficient processor time.

installation verification procedure (IVP). A procedure distributed with the VM/SP HPO system that exercises the newly generated VM/SP HPO system to verify that the basic facilities are functioning correctly.

installed user program (IUP). A licensed program produced by or for an individual IBM system user (customer or IBM internal). This kind of program may interface with licensed programs, system control programming, currently available Type I, II, or III programs, or it may be a stand-alone program.

instruction address stop. An instruction address specified via a CP or CMS command, which, when fetched, causes the virtual machine to stop.

instruction simulation wait. The virtual machine is in a wait state awaiting the completion of instruction simulation.

intensive recording mode. A special error recording mode that can be invoked by an IBM Customer Engineer (CE) for only one I/O device at a time. On the first through tenth unit checks or other error conditions specified by the CE, an I/O error record is constructed, formatted, and written to the VM/SP HPO I/O error recording cylinder, after which no further errors are recorded.

Inter-User Communication Vehicle (IUCV). A VM generalized CP interface that facilitates the transfer of messages either among virtual machines or between CP and a virtual machine.

interaction. A basic unit used to record system activity, consisting of acceptance of a line of terminal input, processing of the line, and a response, if any.

interactive. (1) An application where each user entry calls forth a response from a system or program. (2) The classification given to a virtual machine or its storage pages based on this virtual machine's processing characteristics. When a virtual machine uses less than its allocated time slice, for example, because of terminal I/O, the virtual machine is classified as being interactive.

interactive problem control system (IPCS). A component of VM that permits online problem management, interactive problem diagnosis, online debugging for disk-related CP abend dumps, problem tracking, and problem reporting.

interactive user. A user whose virtual machine is dispatched for the first time, or whose virtual machine had an I/O interrupt from the terminal before the previous time slice had ended. See also noninteractive user.

interface. A shared boundary between two or more entities. An interface might be a hardware or software component that links two devices or programs together.

internal trace table. See *CP trace table*.

invoke. To start a command, procedure, or program.

IPCS. See *interactive problem control system*.

IPL. See *initial program load*.

IPL processor. In an attached processor (AP) or multiprocessor (MP) system, the processor on which the control program was first initialized during system generation. Note that both the IPL and the non-IPL processors in a real MP configuration have I/O capabilities.

IUCV. See *Inter-User Communication Vehicle*.

IUCV/APPC. Inter-User Communication Vehicle/Advanced Program-to-Program Communication. A modified subset of IUCV whose function can be mapped to the base set of the SNA Advanced Program-to-Program Communication protocol.

IVP. See *installation verification procedure*.

J

JiB. In CMS/DOS, job information block.

L

line-deletion or line delete symbol.

Synonymous with *logical line delete symbol*.

line driver. An RSCS task (program) that permits communication between RSCS and a specific type of remote station.

line end symbol. Synonymous with *logical line end symbol*.

line mode. The mode of operation of a display terminal that is equivalent to using a typewriter-like terminal. When the CMS editor is used, the terminal displays a chronological log of the CMS EDIT subcommands entered, the lines affected by the editing (unless that is suppressed), and the system responses. When the System Product Editor (XEDIT) is used, full screen editing is the norm but line mode can be used instead. Contrast with *display mode*.

line number. A number located at either the beginning or the end of a record (line) that can be used during editing to refer to that line. See also *prompting*.

line-number editing. A reference to new or existing lines in a CMS file by line number.

link attribute. In RSCS, a characteristic of a link, such as its line address, its linkid, or the line driver type it requires.

linkid. In RSCS, a 1- to 8-character alphameric name that identifies a telecommunications link.

linking to a disk. In VM, sharing a disk owned by another user. A user can share the disk on a temporary or permanent basis. The sharing is normally read-only and may require a password to access the data.

load. In reference to installation and service, to move files from tape to disk.

load map. A map containing the storage addresses of control sections and entry points of a program loaded into storage.

loadable unit. A separately installable and serviceable subset of a product. A product must

contain at least one loadable unit. It may contain more than one. Two loadable units may provide different versions of the same element.

loader. A routine, commonly a computer program, that reads data into main storage.

local. Two entities (for example, a user and a server) are said to be local to each other if they belong to the same system within a collection or to the same node within a SNA system.

locationid. In RSCS, a 1- to 8-character alphameric name that identifies an RSCS remote work station.

locked page. A page that is not to be paged out.

logical character delete symbol. a special editing symbol, normally the "at" (@) sign, that causes CP to delete it and the immediately preceding character from the input line. If a number of delete symbols are keyed in consecutively, that same number of preceding characters are deleted from the input line. The value may be redefined or unassigned by the installation or the user. Synonymous with *character delete symbol*.

logical editing symbols. Symbols that allow the user to correct keying errors, combine multiple lines of input on one physical line, and key in logical editing symbols as data. The logical editing symbols may be defined, reassigned, or unassigned by the user. See also *logical character delete symbol*, *logical escape symbol*, *logical line delete symbol*, *logical line end symbol*.

logical escape symbol. A special editing symbol, normally the double quotation (") symbol, that causes CP to consider the immediately following character as a data character instead of as a logical editing symbol.

logical line. A command or data line that can be separated from one or more additional command or data lines on the same input line by a logical line end symbol.

logical line delete symbol. A special editing symbol, normally the cent (¢) sign, that causes

CP to delete the previous logical line in the input line back to and including the previous logical line end symbol. Synonymous with *line delete symbol*. See also *logical line*.

logical line end symbol. A special editing symbol, normally the pound (#) sign, that allows the user to key in several command and/or data lines in the same physical line; that is, each logical line except the last line is terminated with the logical line end symbol. Synonymous with *line end symbol*.

logical operator. The name given to the virtual machine from which OPERATOR functions requested by the Programmable Operator Facility virtual machine are performed. This name also may describe the person who normally operates the Logical Operator virtual machine. In a mixed environment, an NCCF operator can be assigned as the logical operator to control a VM distributed system.

logically connected terminal. A terminal that is connected via leased or switched telecommunications or by local attachment to a multiple-access virtual machine via the CP DIAL command. See also *multiple-access virtual machine*.

logical swapping. The process of invalidating virtual machine page table entries and chaining the corresponding CORTABLE entries. The pages are not moved to paging media but remain grouped until they are moved. See also *physical swapping*.

logon. The procedure by which a user begins a terminal session.

logoff. The procedure by which a user ends a terminal session.

look-aside entry. A routine that is resident in the nucleus becomes a look-aside entry after it has been executed.

M

machine. A synonym for a virtual machine running under the control of VM/370 or VM/SP HPO.

machine ID. A 2-byte field that uniquely defines a virtual machine within a virtual machine group. Machine ID is sometimes combined with task ID to uniquely identify a task within the virtual machine group.

MACLIB library. A library that contains macros, copy files, or source program statements for use under CMS.

map. In CMS, the file that contains a CMS output listing, such as (1) a list of macros in the MACLIB library, including macro size and location within the library. (2) a listing of the directory entries for the DOS/VS system or private source, relocatable, and/or core image libraries. (3) a linkage editor map for CMS/DOS programs. (4) a module map containing entry point locations.

master file directory. A directory on each CMS disk that contains the name, format, size, and location of all the CMS files on the disk. When a disk is accessed via the ACCESS command, the directory is read into main storage and identified with one of the 26 disk mode letters (A-Z).

master file directory block. Synonym for *CMS file directory*.

MCU. See *Multisystem Communications Unit (MCU)*.

MDISK. Another name for minidisk. It is also the user directory used to describe a user's storage space.

merged product tape. The tape that contains all current VM code. It is "merged" because it includes both VM/SP HPO and VM/370 Release 6 modules and macros.

MIH. See missing interrupt handler.

minidisk. Synonym for *virtual disk*.

minidisk directory. Synonym for *CMS file directory*.

minidisk table. The section of the history control file (HCF) containing the virtual addresses and the ownerids of all the minidisks associated with a loadable unit.

minimum truncation. The shortest form of a command name, operand, or option that can be keyed in and still be recognized by VM. For example, AC is the minimum truncation for the ACCESS command. However, note that the letter A is the minimum truncation for ASSEMBLE. See also *truncation*.

missing interrupt handler. A component of VM that detects incomplete I/O conditions by monitoring I/O activity. It also tries to correct incomplete I/O conditions without operator intervention.

A unit of a software product that is discretely and separately identifiable with respect to modifying, compiling, merging, with other units, and/or loading and execution. For example, the input to, or output from, a compiler, the assembler, the linkage editor, or executive routine.

module. (1) A file whose external references have been resolved.

MORE screen status. For a display terminal used as a virtual console under VM, an indicator located in the lower right of the screen that displays that the user's display screen is full, but that there is more data to be displayed. After 60 seconds, the screen is automatically erased and the next screen is displayed. To clear the screen immediately, press the Clear, Cancel, or PA2 key. To hold the data on the screen longer than 60 seconds, press the Enter key to enter HOLDING status. See also *HOLDING screen status*.

moving cursor. A DASD cylinder selection algorithm that selects the next nonfull cylinder when the cylinder currently being used for page-slot allocation is fully allocated.

MSSF. Monitoring and service support facility.

multiple-access virtual machine. A virtual machine running under VM/SP HPO that supports teleprocessing terminals.

Multisystem Communications Unit (MCU). An input/output device; e.g. the 3088 Multisystem Communications Unit, that interconnects up to eight systems using block multiplexer channels.

MVS page fault assist. This is a standard hardware feature on certain processors that reduces the time needed by the MVS/SP virtual machine to handle page translation exception interruptions. The MVS/SP V=R guest gets these interruptions the first time certain tasks access storage using the GETMAIN macro instruction.

N

named system. A system that has an entry in the CP system name table (DMKSNTBL). The entry in the system name table includes the system name and other pertinent data so that the system can later be saved. See also *saved system*.

native mode. Refers to running an operating system standalone on the real machine instead of under VM.

native SNA. SNA operating without a separate guest (VSI or VSE) operating system.

NCCF. See *Network Communication Control Facility (NCCF)*

netdata. The name of the format used to send a file when the NEW option of the CMS SENDFILE command is specified.

Network Communication Control Facility (NCCF). An IBM product that can control a VM/SP HPO system through the Programmable Operator Facility in a mixed environment.

node. A single processor or a group of processors in a teleprocessing network.

nondisruptive transition. A facility that enables an installation to transfer control of an

operating system from VM/SP HPO virtual machine mode to native mode (and vice versa) without having to shut down and reinitialize the operating system.

noninteractive user. A user whose virtual machine completed its previous time slice interval without having an I/O interrupt from the terminal.

non-IPL processor. In an AP or a MP system, the attached or second processor initialized at system generation time. Note that both the IPL processor and the non-IPL processor in a real MP configuration have I/O capabilities.

nonpaging application. All application data on a DASD not defined as a paging, swapping, spooling, or dump area.

nonpaging mode. See *OS/VS1 nonpaging mode*.

nonprivileged program. A program, called by a group control system application, that operates in problem state. Contrast with *privileged program*.

nonprogrammable terminal. In RSCS, a device such as an IBM 2770, 2780, 3770, or 3780 that performs a hardware-defined fixed set of functions; such as printing, reading, and punching data. See also *Remote Spooling Communications Subsystem (RSCS)*.

nonprogrammable terminal line driver. An RSCS line driver that exchanges data with a nonprogrammable terminal.

nonresident pages. Pages whose contents are on paging media but not in real storage. A page is considered nonresident when an attempt to load its real address returns a nonzero condition code (except for pages above the 16Mb line). A page may be also considered nonresident even though CC=0 if CP is referencing the page.

nonrunnable virtual machine. A virtual machine that is in a wait state. Contrast this with a runnable virtual machine which is one that is ready to use the processor.

NOT ACCEPTED screen status. For a display terminal used as a virtual console under VM, an indicator in the lower right of the screen that displays that the user is: (1) trying to enter another command line, but the terminal buffer still contains a previous command line; (2) using the copy function to copy the contents of the screen onto an associated hardcopy printer, however, the printer is busy, nonexistent, or otherwise unavailable.

NPT. Nonprogrammable terminal.

N-select. A DASD page-slot selection algorithm that allocates a selected number of consecutive requests to the same allocation area of the same DASD.

nucleus. That part of the CP or CMS that is resident in main storage.

NUCON. The nucleus constant area of CMS which is invoked via the NUCON macro.

null line. A logical line with a length of zero; usually used to signal the CMS editor to terminate input mode and enter edit mode. In VM, a null line for typewriter terminals is a terminal input line consisting of a return character as the first and only information, or a logical line end symbol as the last character in the data line. For display devices, a null line is indicated by the cursor positioned at the beginning of the user input area or the data in the user input area ending with a logical line end symbol.

O

object code. Compiler or assembler output that is itself executable machine code or is suitable for further processing to produce executable machine code.

object maintained. Serviced through replacement of an element.

OLTS. On Line Test Sections. A program used by IBM customer engineers (CE) for I/O maintenance.

OLTSEP. On Line Test Standalone Executive Program. A program used by IBM customer engineers (CE) for I/O maintenance.

ordered seek queuing. A technique used by the CP I/O supervisor to schedule DASD I/O operations for nondedicated disks in an orderly progression from lower to higher cylinder numbers so that I/O operations for cylinders that are located at or near the present cylinder are handled before DASD accesses located at more distant higher cylinders are handled. When the highest cylinder is reached, the progression is reversed from high to low. This tends to minimize average seek times and to allow a greater level of I/O activity than initiating DASD seeks on an arbitrary "first come, first served" basis.

ordinary application. A group control system application, started with the OSRUN command, that operates in problem state. Contrast with *authorized application*.

OS simulation under CMS. The environment of CMS that permits the simulation of OS functions. Contrast with *CMS/DOS*.

OS/VS1 nonpaging mode. If OS/VS1 executes under the control of a VM/SP HPO system that supports the VM/VS Handshaking feature and if the OS/VS1 address space is equal to the size of its VM/SP HPO virtual machine, OS/VS1 executes in nonpaging mode. When OS/VS1 executes in nonpaging mode, it uses fewer privileged instructions and avoids duplicate paging since paging is done only by CP.

output display area. For display devices, the upper portion of the display screen that contains an historical log of the most recent lines of console input to and output from the virtual machine and CP. On the 3270, this area is protected, that is, the user is unable to key information into the output display area. This display format is not used by the CMS Editor.

overhead. The additional processor time charged to each virtual machine for the CP functions needed to simulate the virtual machine environment and for paging and scheduling time.

override file. See *class override file*.

P

page frame. A block of 4096 bytes of real storage that holds a page of virtual storage.

page frame table. A table (called the CORTABLE) that contains an entry for each frame. Each frame table entry describes how the frame is being used.

page locking. Marking a page as nonpageable so that it remains in real storage until released.

page migration. Movement of inactive pages from paging areas higher in the paging hierarchy to paging areas lower in the paging hierarchy. Also movement of swap sets from SW paging storage areas to SW DASD areas.

page reclamation. The process of making available and addressable the contents of a page in real storage that is waiting to be (or already has been) paged out. Page reclamation can occur after a page fault or after a request to fix or load a page, as long as no page-in operation has been scheduled for that particular page frame.

page table. A table (labeled PAGTABLE) that indicates whether or not a page is in real storage and that correlates virtual addresses with real storage addresses.

page zero. Storage locations 0 to 4095.

pageable nucleus. Less frequently used portions of the CP nucleus that are not normally resident in real main storage.

paging activity indexes. Values that affect the algorithm used by CP in controlling the dispatching and scheduling of all active logged-on virtual machines.

paging area. An area of direct access storage (and an associated area of real storage) that is used by CP for the temporary storage of pages when paging occurs.

paging media. Media used for paging or swapping of virtual storage pages to and from

real storage. This could be a DASD, Paging Storage, or a drum.

Paging Storage. The VM/SP HPO name used in reference to the hardware Expanded Storage assist. See also *Expanded Storage*.

paging supervisor. A part of the CP nucleus that allocates and releases real storage page frames for pages, selects the appropriate paging device, and initiates page-in and page-out operations based on ordered seek queuing and slot sorting techniques. See also *ordered seek queuing, slot sorting*.

parameter list (PLIST). In CMS, a string of 8-byte arguments that are used to call a CMS command or function. The first argument must be the name of the command or function to be called. General register 1 points to the beginning of the parameter list.

parent directory. The directory for a CMS disk that has a disk extension defined for it via the ACCESS command.

partitioned processing mode. A mode in which a multiprocessor is reconfigured into two separate and independent dyadic processors, each capable of executing an operating system of unique type or version.

password. In VM, a 1- to 8-character symbol that the user is required to supply at the time he logs on to identify himself. The password is normally protected from inadvertent disclosure to unauthorized personnel by not displaying the password or by masking the password as it is keyed in. A password may also be assigned to a virtual disk to control or limit access to that disk.

performance option. One or more functions that can be assigned to a virtual machine to improve its performance, response time (if terminal-oriented) and/or throughput under VM/SP HPO.

personal computer (PC). A properly configured IBM Personal Computer or 3270 Personal Computer that allows communication between enhanced connectivity programs. These communicating programs reside on both a personal computer and host system.

PFnn keys. Special keys available on display terminals that can be defined as elementary cataloged procedures equivalent to one or more CP or CMS command lines, or input data for a virtual machine. A Program Function key can also be assigned a tabbing function for such terminals. When the PFnn key is pressed, the function or functions are performed, and the full command line can be displayed on the screen. Synonymous with *program function (PFnn) keys*.

physical swapping. The process of moving groups of a virtual machine's pages (swap sets) to (physical swap-out) or from (physical swap-in) specifically defined areas on paging media.

physical unit block (PUB). In a VSE system, an entry in a table containing the channel and device address of a device. There is a physical unit block for each and every physical device available in the system.

PLIST. See *parameter list*.

predefined function, EXEC 2. A specialized function, invoked by a keyword, that has been built into the system program code because it is commonly required by many users; same as REXX/CMS EXEC built-in function.

preferred auxiliary file. In CMS, an auxiliary file that applies to a particular version of a source module to be updated, if multiple versions of the module exist.

preferred machine assist. A hardware feature available on certain processors and with certain releases of MVS/SP that improves MVS/SP V=R virtual machine performance. The MVS/SP guest virtual machine operates in supervisor state with direct control of its own I/O operations under VM/SP High Performance Option. Note that preferred machine assist, is an extension of virtual machine assist, which eliminates CP simulation of certain instructions and interruptions.

preferred machine assist guest. A virtual machine running in the V=R area of real storage with the preferred machine assist hardware feature enabled.

preferred virtual machine. A particular virtual machine that has one or more of the performance options assigned to it.

prefix area. The five left-most positions on the System Product Editor's full screen display, in which prefix subcommands or prefix macros may be entered. See *prefix subcommands* and *prefix macros*.

prefix macros. System Product Editor macros that are entered in the prefix area of any line on a full screen display. See *prefix area*.

prefix storage area (PSA). A storage area where the normal low core IPL, logout, PSW information, the processor model, type, and features, BALR and FREE areas, monitor and trace data, and the needed linkage to virtual machines, real devices, and spool files are stored.

prefix subcommands. System Product Editor subcommands that are entered in the prefix area of any line on a full screen display. See *prefix area*.

prefixing. A hardware function that causes real addresses in the range of 0-4095 to correspond to the block of 4K addresses identified by the prefix register for the processor and the block of real addresses starting with the prefix value to correspond to absolute addresses 0-4095. The remaining real addresses are the same as the corresponding absolute addresses.

prepaging. An algorithm that tries to reduce the number of page faults after a virtual machine has been added to queue by foreseeing and doing in advance some paging that might be required.

prerequisite change. In reference to installation and service, a change that must be applied to the system before another change can be applied. For example, change2 lists change1 as a prerequisite. This indicates that you must apply change1 before you apply change2.

preventive service. The process of loading the contents of a program update tape (PUT) to minidisks, and applying all changes. The last step of preventive service is to perform the build process (see build).

primary paging area. An area of paging media allocated as PP by the SYSPAG or SYSXSTOR macro where frequently used pages are paged out. It provides high speed paging.

primary paging device. The storage device with the highest effective data rate available for use by CP. CP always attempts to store pages on this paging device instead of on slower paging devices as long as space on the primary paging device is available.

primary system operator. The first CP privilege class A user that is logged on to VM after system initialization. Although class A may be assigned to more than one user, only one user at a time can use class A privileges.

primary system operator privilege class. The CP privilege class A user; this operator has primary control over the VM system, and can enable and disable teleprocessing lines, lock and unlock pages, force users off the VM system, issue warning messages, query, set (and reset) performance options for selected virtual machines, and invoke VM accounting. If the current primary system operator logs off, the next class A user to log on becomes the primary system operator.

primary user disk. Synonym for *A-disk*.

prime subpool. Storage for certain cache-aligned control blocks.

print inhibit. A hardware feature available on some typewriter terminals, such as the 2741, which permits the user to key in information via the keyboard without causing the data to be typed on the terminal's typewriter.

priority performance option. A virtual machine parameter that influences the internal scheduling algorithm of the VM/SP HPO control program. The lower the priority value specified, the higher the priority of the virtual machine.

privilege class. One or more classes assigned to a virtual machine user in the directory entry; each privilege class specified allows a user to access a logical subset of the CP commands. There are eight IBM-defined privilege classes

that correspond to specific administrative functions. They are:

- Class A - operations
- Class B - resource
- Class C - programmer
- Class D - spooling
- Class E - analyst
- Class F - service
- Class G - general
- Class H - reserved for IBM use

The privilege classes can be changed to meet an installation's needs. See also *class authority and user class restructure*.

privileged instruction simulation. The CP-incurred overhead to handle privileged instructions for virtual machine operating systems that execute as if they were in supervisor state but which are executing in problem state. See also *virtual machine assist*.

privileged program. A program, called by a group control system application, that operates in supervisor state and can use privileged functions. A privileged program is one that meets either of the following requirements:

- It runs in an authorized virtual machine.
- It is called through the AUTHCALL facility.

problem state. A state during which the central processing unit cannot execute I/O and other privileged instructions. VM/SP HPO runs all virtual machines in problem state. See also *privileged instruction simulation*. Contrast with *supervisor state*.

process. A systematic sequence of operations to produce a specified result. A process is usually logical, not physical.

product. Any separately installable software program, whether supplied by IBM or otherwise, that is distinct from others and is recognizable by a unique identification code. Common examples of software products include:

5664-173 - Virtual Machine/System Product
High Performance Option

5748-F03 - VS/FORTRAN Licensed Program

5748-RC1 - VM/Pass-through Product

The product identification code is unique to a given product, but does not identify the release level of that product.

processor-local queues. Those queues that are owned primarily by one processor.

PROFILE EXEC. A special EXEC procedure with a filename of PROFILE which can be created by a user. The procedure is normally executed immediately after CMS is loaded into a virtual machine.

program function (PFnn) keys. Synonym for *PFnn keys*.

program stack. Part of the console stack; it is a storage area used for temporary storage of lines or files being exchanged by programs executing under CMS. See also *console stack*.

program temporary fix (PTF). Code changes needed to correct a problem reported in an APAR. The corrected code is included in later releases. It includes element replacements (for object code) or element updates (for source code) for elements changed by the fix. It also defines limitations on which the PTF can be included. Each PTF is unique to a given release of a product. If the same problem occurs in multiple releases of a product, a separate PTF is defined for each release. A PTF defines only one replacement or update for each element, regardless of how many APARs are fixed.

program update tape (PUT). A tape containing a customized collection of service tapes to match the products listed in a customer's ISD (IBM Software Distribution) profile. Each service tape contains cumulative service for the customer's products back to earlier release levels of the product still supported. The tape is distributed to authorized customers of the products at scheduled intervals.

Programmable Operator Facility. This facility enables automatic filtering and routing of messages from a specified virtual machine (for example the operator) to a logical operator

virtual machine in a local distributed or mixed environment. The Programmable Operator Facility also permits installation defined actions to be performed automatically.

programmable station. An I/O configuration that must be programmed before it can communicate with other remote stations that adhere to a compatible protocol.

programmed symbols. A feature that allows definition of user-indicated shapes and/or symbols.

projected working set. The number of pages that the virtual machine is expected to reference in its next queue stay.

prompting. An interactive technique that allows the program to guide the user in supplying information to a program. The program types or displays a request, question, message, or number, and the user enters the desired response. The process is repeated until all the necessary information is supplied.

protocol. A set of rules for communication that are mutually understood and followed by two communicating stations or processes. The protocol specifies actions that can be taken by a station when it receives a transmission or detects an error condition.

PSA. See *prefix storage area*.

pseudocylinder. A CKD representation of an FBA DASD address. A pseudocylinder is defined as pages per access position. It allows the same control block structure to be used for FBA and CKD devices.

pseudonumber. A special order number assigned to a current or back-level edition of a publication so that it can continue to be ordered after a new edition is available.

pseudo page fault. A facility available with VM/VS Handshaking that allows the VS1 virtual machine to dispatch another task while waiting for a page-in request to be completed for some other task. Without this facility, the whole virtual machine would wait until the page request was satisfied, even if higher priority tasks were ready to execute.

pseudotimer. A special timing facility that provides date, time, virtual processor and total processor time information to a virtual machine.

PTF. See *program temporary fix (PTF)*.

PUB. See *physical unit block*.

PUT. See *program update tape*.

Q

quantum. An eighth of a queue 1 slice.

queue-add. The action by the system scheduler, DMKSCH, of placing a runnable virtual machine on the run list.

queue-drop. The action by the system scheduler, DMKSCH, or removing a runnable virtual machine from the run list.

queue classification. A virtual machine is classified as belonging to one of three queues: queue 1 (Q1), queue 2 (Q2), or queue 3 (Q3). The difference between Q1, Q2, and Q3 virtual machines is not the amount of processor time that they receive, but how often they access the processor and how long they execute during each access.

queue drop elimination. A performance option that eliminates the dropping of a virtual machine from the active queue if the virtual machine is determined to be idle.

queue slice. The amount of processor time that a virtual machine is allowed to remain in-queue. This time depends on the queue (queue 1, queue 2). the virtual machine is added to. A Q1 slice is further divided into eight equal slices, called quanta.

queue 1 (Q1). A queue of interactive users from which the dispatcher selects users for the dispatch list. The virtual machines may or may not be immediately runnable. The size of queue 1 is dependent upon the system's multiprogramming level. The time slice given to a Q1 user is significantly shorter than that given to a Q2 or Q3 user, but the Q1 user's

virtual machine is dispatched more frequently. Queue 1 is filled from the eligible list. See also *interactive user, noninteractive user, queue 2*.

queue 2 (Q2). A queue of interactive or noninteractive users from which the dispatcher selects users for the dispatch list. The virtual machines may or may not be runnable. The time slice given to a Q2 user is significantly longer than that given to a Q1 user, but the Q2 user is dispatched less often since runnable users in Q1 are selected first. See also *interactive user, noninteractive user, queue 1*.

queue 3 (Q3). A queue of noninteractive users that have cycled through at least eight consecutive Q2 processor time slices without a Q1 interaction before they are dropped from the queue. Q3 users receive eight times as much processor time each time in queue as Q2 users, but receive only one-eighth as often. The differences between Q2 and Q3 users are reflected in their deadline priority calculations. See also *deadline priority, interactive user, noninteractive user, queue 1, queue 2*.

quiet recording mode. The mode of operation where transient processor and/or main storage errors that are corrected or circumvented by hardware RETRY or error correction code logic are not recorded on the VM error recording cylinders. This mode is entered via the SET MODE RETRY QUIET command or after 12 transient machine checks have occurred while in full recording mode.

Q1. See *queue 1*.

Q2. See *queue 2*.

Q3. See *queue 3*.

R

raddr. The real device address of an I/O device.

read. See *CP read, VM read*.

read-only access. An access mode associated with a virtual disk that allows a user to read, but not write or update, any file on the disk.

read-only system residence disk. See *shared read-only system residence disk*.

read/write access. An access mode associated with a virtual disk that allows a user to read and write any file on the disk.

real address. A main storage address that identifies a location in real storage. When a real address is used for an access to main storage, it is converted, by means of prefixing, to an absolute address.

real machine. The actual processor, channels, storage, and input/output devices required for operation of VM/SP HPO.

real storage. Synonymous with *absolute storage* except for the effects of prefixing. Prefixing converts real storage addresses to absolute storage addresses.

recording mode, full. See *full recording mode*.

recording mode, intensive. See *intensive recording mode*.

recording mode, quiet. See *quiet recording mode*.

regression. The act of causing elements to go back to earlier levels. This may occur when applying changes from a program update tape (PUT) to elements updated by corrective service or user modifications.

remote. Two entities (for example, a user and a server) are said to be remote to each other if they belong to different systems within a collection, or to different nodes within a SNA network.

remote batch system. An operating system that provides for job input from and job output to remote work stations. A spool MULTI-LEAVING (SML) line driver executing in remote job entry (RJE) mode under RSCS in a virtual machine can act as a remote work station to such a system.

remote operator console facility. A 4300 Series Processor Support Processor microcode

function that permits communication from a remote console for functions like initial microcode load (IML) or IPL using a switched line. The VM/Pass-Through Facility program provides a communication vehicle which allows any of its supported display stations to serve as this remote console.

Remote Spooling Communications Subsystem (RSCS). A virtual machine subsystem of VM that provides for the transfer of spool files between VM users, remote stations, and remote and local batch systems in SNA, non-SNA mixed networks.

reply. The answer to a service request that came from the server.

requester. The program that relays a request to another computer through the server-requester programming interface (SRPI). Contrast with *server*.

reserved filetypes. (1) Filetypes recognized by the CMS editors (EDIT and XEDIT) as having specific default attributes that include: record size, tab settings, truncation column, and uppercase or lowercase characters associated with that particular filetype. The CMS Editor creates a file according to these attributes. (2) Filetypes recognized by CMS commands; that is, commands that only search for and use particular filetypes, or create one or more files with a particular filetype.

reserved page frame performance option. A virtual machine option that reserves a specific number of page frames for use by one virtual machine. Generally, this option allows the most recently active pages of a virtual machine's storage to remain allocated in real storage.

resource allocation. The distribution of system resources (devices, storage, and processor accessibility) to system users.

resource. A program, a data file, a specific set of files, a device or any other entity or a set of entities that you might want to uniquely identify for purposes of application program processing in a VM system. A resource can be identified by up to eight characters.

resource id. A one-to-eight character name used to identify a resource.

response time. (1) The time between the submission of an item of work to a computing system and the return of results. (2) In systems with time sharing, the time between the end of a block or line-end character of terminal input and the display of the first character of system response at the terminal.

Restructured Extended Executor (REXX) Language. A general purpose, high-level programming language, particularly suitable for EXEC procedures, XEDIT macros, or programs for personal computing. (The language is documented in the *VM/SP System Product Interpreter Reference*, SC24-5239.) Procedures, XEDIT macros, and programs written in this language are interpreted and executed by the System Product Interpreter.

reverse video. Color display terminal highlight feature.

REXX EXEC/program. An EXEC procedure or XEDIT macro written in the Restructured Extended Executor (REXX) Language and processed by the System Product Interpreter.

REXX language. See *Restructured Extended Executor (REXX) Language*.

ring of files. The arrangement of files in virtual storage when multiple files are being edited by the System Product Editor.

rotational position sensing (RPS). A standard or optional feature of most IBM disk storage devices that permits these devices to disconnect from a block multiplexer channel (or its equivalent on Model 3115/3125 processing units) during rotational positioning operations, thereby allowing the channel to service other devices.

route. A connection to another system via a logical link and a number of intermediate systems. In TSAF, a number of links and possible intermediate systems that allow the connection of one system to another.

router. An enhanced connectivity program which interprets requests for services and

directs them to the applicable server. See also *SRPI*.

RPS. See *rotational position sensing*.

RSCS. See *Remote Spooling Communications Subsystem*.

run list. A physical list in storage that is sorted by deadline priority. It contains interactive and noninteractive virtual machines who are competing for processor resources and whose storage and processor requirements can be accommodated. These virtual machines are considered in-queue and are either runnable or nonrunnable.

runnable virtual machine. A runnable virtual machine is one that is ready to use the processor. Contrast this with a nonrunnable virtual machine which is one that is in a wait state.

RUNNING screen status. For a display terminal used as a virtual console, an indicator located in the lower right of the screen that displays that the user's virtual machine is in control (but not necessarily executing a program or command) and that the terminal is able to receive messages.

runuser. The virtual machine in the dispatch list that is currently executing.

S

SCBLOK. See *swap control block*.

S-disk. See *CMS system disk*.

SSBLOK. See *swap set block*.

S-STAT. This is a block of storage that contains the file status tables (FSTs) associated with the S-disk. The FSTs are sorted so that a binary search can be used to search for files. The S-STAT usually resides in the CMS nucleus so it can be shared. Only files with filemode of 2 will have their associated FSTs in the S-STAT.

saved system. A special nonrelocatable copy of a virtual machine's virtual storage and associated registers that is kept on a CP-owned disk and that can be loaded by name instead of by I/O device address. Loading a saved system by name substantially reduces the time it takes to IPL the system in a virtual machine. In addition, a saved system such as CMS can also share one or more 64K segments of reenterable code in real storage between virtual machines. This reduces the cumulative real main storage requirements and paging demands of such virtual machines.

scale. A line on the System Product editor's (XEDIT) full screen display, used for column reference.

SCIF. See *single console image facility*.

screen. An illuminated display surface; for example, the display surface of a cathode ray tube (CRT).

screen attribute byte. A character position on the screen of a display terminal that defines the characteristics of the next field displayed on the screen, such as protected, not protected, displayable or nondisplayable. The user is not allowed to set or change the screen attribute byte if the display terminal is used as the virtual console of a virtual machine.

screen status area. For a display terminal used as a virtual console, an indicator of the current status of the display screen. This indicator is located in the lower right of the display screen. See also *CP READ screen status*, *HOLDING screen status*, *MORE screen status*, *NOT ACCEPTED screen status*, *RUNNING screen status*, and *VM READ screen status*.

SCRIPT. See *SCRIPT/VS*.

SCRIPT/VS. A component of the IBM Document Composition Facility licensed program (available from IBM for a license fee). For additional information on SCRIPT/VS usage, see *Document Composition Facility: User's Guide*, SH20-9161.

scrolling. In the CMS Editor and the System Product Editor (XEDIT), a technique used with

display terminals in display mode to scan in a forward or backward direction.

second-level storage. The storage that appears to be real to a virtual machine. See also *first-level storage, third-level storage*.

secondary console image facility. A VM facility that allows console messages and replies to be handled by another virtual machine whenever the originating virtual machine is disconnected.

secondary user. When a user is disconnected — that is, has no virtual console on line — a secondary user may be designated to receive the disconnected user's console messages and to issue commands to the disconnected user's console.

segment. (1) A contiguous 64Kb area of virtual storage (not necessarily contiguous in real storage) that is allocated to a job or system task.

segment number. The part of a virtual storage address needed to refer to a segment.

segment protect. A hardware feature, available on certain processors, that provides protection for shared segments at the hardware level.

segment table. A table used in dynamic address translation to control user access to virtual storage segments. Each entry shows the length, location, and availability of a corresponding page table.

selective line editing. This is a feature of XEDIT that allows editing of a specified collection of lines while excluding other lines from the screen.

separator. Synonymous with *delimiter*.

server. A program or set of programs executing in a virtual machine and managing access to one or more VM resources; also called a resource manager.

server system. A data processing system containing one or more servers providing services in response to a request from another computer.

server-requester programming interface (SRPI).

1. A protocol between requesters and servers in an enhanced connectivity network. Includes the protocol to define cooperative processing subsystem.
2. The interface that enables enhanced connectivity between requesters and servers in a network.

service delta file. A tape containing the most recent individual PTF's incorporated into the files on the service merge file. There may be more than one service delta file.

service level table. A table that tracks the service applied to a loadable unit. This service is identified by a PTF number if one has been assigned; otherwise an APAR number is used. For user modifications, the user assigns a number.

service machine. A virtual machine running a program that provides system-wide services.

service merge file. A tape containing one or more IBM-supplied derived files associated with a product or component. A service merge file may also contain the versions of the elements used to build the derived files. There may be more than one service merge file.

service representative privilege class. The CP privilege class F user, normally an IBM Field Engineer, is permitted to set or change the level of detail of I/O device error recording to the level desired. See also *full recording mode, intensive recording mode, quiet recording mode*.

service routines. CP or CMS routines used for addressing and updating directories; formatting or initializing disks; or performing disk, tape, or terminal input/output functions.

service tape. The service for individual products. The tape, which is distributed at scheduled intervals, contains a collection of PTF's, for selected licensed programs. The tape contains service for those IBM-supplied software products for which the customer is

licensed. The service tape is cumulative back to the earliest release level still available from IBM Software Distribution (ISD).

shadow page table. A table that maps real storage allocations (first-level storage) to a virtual machine's virtual storage (third-level storage) for use by the real machine in its paging operations.

shared read-only system residence disk. A system residence disk that is tailored so that most of the system residence information is read-only and accessible to all relevant virtual machines, leaving a relatively smaller private read/write system disk that must be dedicated to each virtual machine. This technique can substantially reduce the disk requirements of an installation by avoiding needless duplication of disk packs by virtual machines that use the same operating system. See also *saved system*.

shared segment. A feature of a saved system that allows one or more segments of reentrant code in real storage to be shared among many virtual machines. For example, if a saved CMS system was generated, segment 1 of the CMS nucleus is shared in real storage among all CMS virtual machines loaded by name; that is, every CMS machine's segment of virtual storage maps to the same 64K of real storage. See also *saved system, discontinuous segment*.

shared system. See *saved system, shared read-only system residence disk*.

SID code. Support Identification code.

signaling attention. Pressing a key or keying in a CP command to present an attention interruption to CP or to a user's virtual machine.

single console image facility (SCIF).

(1) Enables a user, who is disconnected from a primary virtual console, to continue to have console communications via the console of the secondary user. See also *secondary user*.

(2) Enables a virtual machine operator to control multiple virtual machines from one physical terminal.

single key protection. This program support associates each 4K block of real storage with

one storage key. Only one key is needed to protect a 4K frame.

single key storage. Real storage composed of storage frames that are protected by one storage key per 4K frame rather than two storage keys per 4K frame.

single processor mode. In tightly coupled multiprocessing (MP) or attached processor (AP) systems, single processor mode allows an installation to dedicate a processor to an MVS V=R virtual machine. In single processor mode, VM/SP HPO runs in uniprocessor mode in the main processor, and the MVS V=R virtual machine runs under VM/SP HPO in the main processor and has the exclusive use of the other processor for MP or AP operations. However, other virtual machines can operate under VM/SP HPO concurrently with the MVS V=R virtual machine in single processor mode. With certain releases of MVS/SP, the single processor user must also be the preferred guest. Single processor mode should not be confused with VM/SP HPO uniprocessor mode.

sink virtual machine. In Virtual Machine Communication Facility (VMCF), the virtual machine that receives messages or data from a source virtual machine. Contrast with *source virtual machine*.

sleep mode. An environment where the virtual machine is in a dormant state; that is, the virtual machine is not running, but connect time still accumulates, and messages may be displayed at the terminal. The virtual machine is reactivated either at the end of a specified time interval or when the user signals attention to CP. See also *signaling attention*.

slot sorting. A technique used by the CP paging supervisor to reduce the number of separate channel programs needed to read pages from or write pages on a paging device. This is accomplished by grouping, in the same channel program, the reading or writing of pages which occur in different relative record positions on the same track or within the same cylinder. See also *ordered seek queuing*.

smoothed data. Statistical data (as in a curve or graph) freed from irregularities by ignoring

random occurrences or by a process of continual averaging.

software product. Any IBM or original equipment manufacturer (OEM) supplied software or user written programs. The term includes program offerings and licensed programs.

software vendor. A variety of application developers that includes, but is not limited to, Value-Added Dealers (VADs), Value-Added Remarketers (VARs), and Third Party Programmers (TPPs).

source code. A program that has not yet been compiled or assembled to produce the corresponding object code.

source maintained. Service through the update of an element.

source virtual machine. In Virtual Machine Communication Facility (VMCF), the virtual machine that initiates the sending of messages or data to another virtual machine. Contrast with *sink virtual machine*.

special variable. A reserved variable name that is assigned a value during processing by the System Product Interpreter, the EXEC 2 processor or CMS EXEC processor. These variables can be tested within an EXEC procedure, edit macro, or XEDIT macro.

spool, spooled, spooling. Relates to the reading of input data streams and the writing of output data streams on auxiliary storage devices.

spool file class. A 1-character class associated with each virtual unit record device. For input spool files, the spool file class allows the user to control which input spool files are read next; and, for output spool files, it allows the spooling operator to better control or reorder the printing or punching of spool files having similar characteristics or priorities. The spool file class value can be A-Z, 0-9, or an asterisk (*).

spool file tag. A 136-character data field that is associated with each output spool file generated. The use, content, and format of this

field is a bilateral decision between the originator and receiver of the file. In RSCS, the spool file tag contains the location identifier of the link on which the file is to be transmitted, the userid of the virtual machine that is to receive the file, and a transmission priority value.

spool MULTI-LEAVING line driver. In RSCS, the line driver that exchanges data with a programmable terminal.

spoolid. A spool file identification number that is assigned to each user's spool files. Each virtual machine user may have up to 9900 spool files, with the spoolid numbers ranging from 0001 to 9900.

spooling. The processing of files created by or intended for virtual readers, punches, and printers. The spool files can be sent from one virtual device to another, from one virtual machine to another, and to real devices. See also *virtual console spooling*.

spooling area. Any direct access storage area temporarily used by VM/SP HPO to store input for a virtual card reader, output for a virtual printer or punch, or a console log of input/output for a virtual console.

spooling devices. Input/output devices (card readers, punches, printers, DASD) used for reading input and writing output.

spooling operator privilege class. The CP privilege class D user who controls the real unit record equipment and all closed spool files.

spooling unit record I/O. See *virtual spooling device, spooling*.

SRF (IBM 7443 Service Record File) device. A diskette used in error recording procedures in either 303x uniprocessor environments or in 303x attached processor environments. The SRF device includes frames that contain information to format machine check and channel check records. CP accesses the SRF device at system initialization, retrieves the frames, and records them at the beginning of the error recording area. The CMS CPEREPC command makes use of the information to interpret inboard errors for hardcopy output.

SRPI. See *server-requester programming interface*.

stack. See *console stack*; *program stack*.

standalone dump. A program used to print the contents of storage that runs in a virtual machine not under control of an operating system such as CMS. One such program is HMDDMPRS which dumps storage to tape or printer and runs in a virtual machine or on the real machine.

starter system tape. The tape used to start when installing a system "from scratch." Starter system tapes are DASD-type specific; for instance, a 3350 starter system cannot be used on any DASD type other than a 3350. Once stored, the starter system is a very basic VM system that can be used to build a production system.

static CP area. Those portions of storage that are allocated to CP during system generation and IPL.

storage key. A four-bit control field associated with either 2K or 4K blocks of real storage.

storage levels. Three levels are available: first-level storage, which is real main storage; second-level storage, which is the storage that appears to be real to a virtual machine; and third-level storage, which is the virtual storage created and controlled by a virtual machine.

subcommand. The commands of processors such as EDIT or System Product Editor (XEDIT) and DEBUG that run under CMS.

supersede change. In reference to installation and service, a change that makes all the changes made by the change being superseded. A supersede change is used only for object-maintained elements.

supervisor state. A state during which the central processing unit can execute input/output and other privileged instructions. In VM/SP HPO, MVS/SP with preferred machine assist and CP can execute in the supervisor state; all virtual machine operating

systems execute in problem state. Contrast with *problem state*.

support programmer. A data processing oriented user who may do some of the work of a system programmer. This includes installation of a new product or release of a product, and application of service to a product. The work could also include isolating the source of problems (identifying whether the problem is a user, vendor, program, or hardware error).

SVC. Supervisor call instruction.

SVC 76 error recording interface. A means for VM/SP HPO to record the error incidents encountered by certain operating systems running in a virtual machine under VM/SP HPO. When the virtual operating system issues SVC 76, VM/SP HPO translates the virtual storage and I/O device addresses to the real ones, records the information on the VM/SP HPO error recording cylinder, and returns control to the virtual machine; thus bypassing the virtual machine's own error recording routine, and avoiding duplicate recording of the same errors.

swap area. An area on a paging media allocated for swapping by the SW option on the SYSPAG and SYSXSTOR macros.

swap control block (SCBLOK). A control block used to control the logical and physical swapping of a virtual machine. There is one SCBLOK per virtual machine and it contains queuing, VMBLOK, and swap list pointers.

swap fault. An address translation exception that occurs when reference is made to a page physically swapped to a swap area.

swap list. The chain of pointers to a virtual machine's pages that have been logically swapped out at queue-drop time. The head of each queue is in the swap control block.

swapping. The process of moving swap set pages to and from a swap area.

swap set. A group of pages belonging to a specific virtual machine to be written/read to and from a paging media as a group. The

number of pages contained in a swap-set is a system generation variable.

swap set block (SSBLOK). The control block that describes each swap set of a virtual machine. It contains information about each page in the swap set, and queuing and indirectly (through SCBLOK) VMBLOK pointers.

swap set migration. Migration of a swap set from a higher area in the page migration hierarchy to a lower area in the page migration hierarchy. Swap sets are only migrated as a whole when they are in Paging Storage, and there is space on DASD allocated for swap sets.

synonym. In CMS, an alternative command name defined by the user as equivalent to an existing CMS command name. Synonyms are entries in a CMS file with a filetype of SYNONYM. Issuing the SYNONYM command allows use of those synonyms until that terminal session ends or until the use of synonyms is revoked by issuing the SYNONYM command with no operands.

syntax. The rules for the construction of a command or program.

SYSPAG macro. A macro in DMKSYS used to define how the CP-owned volumes and Paging Storage are to be allocated for swapping, paging, spooling, page migration, and dump. Using this macro, you define Paging Storage in terms of increments.

SYSPLIST. A control block generated by the SYSPAG and SYSXSTOR macros. A SYSPLIST control block is created for every SYSPAG and SYSXSTOR macro specified in DMKSYS.

system analyst privilege class. The CP privilege class E user, normally the VM system analyst, who can query, examine, and print or display, but not modify, certain areas of the CP nucleus, and can create saved systems. See also *saved system*.

system administrator. The person responsible for maintaining a computer system.

system control file. In CP, the file that consists of macro instructions that describe the CP system residence disk, the real main storage

size, the CP-owned DASD volumes, the system operator's userid, and the system timer value.

system integrity. The property of a system that is designed, implemented, and maintained to protect itself from unauthorized access.

system load. The combination of active devices, programs, and users that use the system resources of the processor and storage.

system name table. In CP, the table that contains the name and location of saved systems, including discontinuous shared and nonshared segments.

System Product Editor. The CMS facility, comprising the XEDIT command and XEDIT subcommands and macros, that allows a user to create, modify, and manipulate CMS disk files.

System Product Interpreter. The component of the VM/SP HPO operating system that processes procedures, XEDIT macros, and programs written in the Restructured Extended Executor (REXX) Language.

system programmer privilege class. The CP privilege class C user; normally, the system programmer, who can alter the contents of any real storage locations in the machine.

system resource operator privilege class. The CP privilege class B user, who controls all the real resources of the machine, such as real storage, disk drives, and tape drives, that are not controlled by the primary system or spooling operators.

system restart. The restart that allows reuse of previously initialized areas. System restart usually requires less time than IPL. See also *warm start*.

systems network architecture (SNA). The description of the logical structure, formats, protocols, and operational sequences for transmitting information units through and controlling the configuration and operation of networks.

SYSXSTOR macro. A macro in DMKSYS used to define how Paging Storage is to be allocated for swapping and paging. Using this

macro, you define Paging Storage in terms of megabytes.

T

T-disk. See *temporary disk*.

tag slot. In RSCS, the area in task storage that contains status and attribute information pertaining to a spool file that has been accepted and enqueued for transmission by RSCS.

tag, spool file. See *spool file tag*.

target. One of several ways to identify a line to be searched for by the System Product Editor. A target may be specified as an absolute line number, a relative displacement from the current line, a line name, or a string expression.

task ID. A 2-byte field that uniquely defines a task within a group control system virtual machine. Task ID is sometimes combined with machine ID to uniquely identify a task within a virtual machine group.

task name. A 1- to 4-character alphanumeric string used by the RSCS operator to identify a task when he communicates with RSCS about that task.

temporary disk. In VM, an area on a direct access storage device available to the user for his newly created or stored files until he logs off, at which time the area is released. Temporary disk space is allocated to the user when he logs on or when he issues the CP DEFINE command.

terminal. A device, usually equipped with a keyboard and a display, capable of sending and receiving information over a communications channel. With VM, the terminal is used to communicate with the system.

terminal input buffer. Part of the console stack; this buffer holds lines entered at your terminal until CMS processes them.

terminal session. The period of time from logon to logoff when a user (logged onto a

virtual machine) can utilize the facilities of VM/SP HPO or the applicable operating system. This also includes any period of time that the virtual machine is running in disconnect mode. See also *disconnect mode*.

terminal user. Anyone who uses a terminal to log on to VM/SP HPO.

text library. A CMS file that contains relocatable object modules and a directory that indicates the location of each of these modules within the library.

third-level storage. The virtual storage created and controlled by a VSE, OS/VS, or VM/SP HPO virtual machine. See also *first-level storage*, *second-level storage*.

time-of-day (TOD) clock. A hardware feature that is required by VM/SP HPO. The TOD clock is incremented once every microsecond, and provides a consistent measure of elapsed time suitable for the indication of date and time; it runs regardless of the processor state (running, wait, or stopped).

time share. To use a device or system for two or more interleaved purposes.

time sharing. A method of using a computing system that allows a number of users to execute programs concurrently and to interact with the programs during execution.

time slice. (1) Synonymous with *quantum*.
(2) An entire queue slice.

timeout, logon. For a terminal that is attempting to log on via a switched line, the Line Timeout hardware feature of a telecommunications control unit that logs off the user if he does not key in any character for a specified period of time, normally 28 seconds. If logged off, the user must dial the VM/SP HPO computer again.

token. An 8-character symbol created by the CMS EXEC processor when it scans an EXEC procedure or edit macro statements. Symbols longer than 8 characters are truncated to 8 characters.

tokenized parameter list (PLIST). A parameter list in which each item in the list is tokenized; that is, each item is truncated or padded on the right with blanks to fit into an eight-character token. See also *token*, *untokenized parameter list*.

total CPU time. The virtual processor time plus the CP overhead to service the virtual machine.

trace table. See *CP trace table*.

track slot. A data unit of fixed size in a cache allocated to user data. Each track slot is large enough to contain a full track of data from the DASD.

transient program area. In CMS, the virtual storage area occupying locations X'E000' to X'10000'. Some CMS commands and user programs may execute in this area of CMS storage.

translate mode. The operating mode of a virtual machine when virtual addresses are converted to real addresses via segment and page tables.

transparency mode. A binary synchronous communications (BSC) mode that permits transmission of any data, bypassing normal BSC control character scanning.

transparent. An application-to-server interface is said to be transparent if it is identical for local and remote servers.

transparent services access facility (TSAF). A facility that lets users connect to and communicate with local or remote virtual machines within a group of systems. With TSAF, a user can connect to a program by specifying a name that the program has made known, instead of specifying a userid and nodeid.

truncation. A valid shortened form of CP, CMS, IPCS, and RSCS command names, operands, and options that can be keyed in. When the shortened form is used, the number of key strokes is reduced. For example, the ACCESS command has a minimum allowable truncation of two, so AC, ACC, ACCE, ACCES, and ACCESS are all recognized by CMS as the

ACCESS command. Contrast with *command abbreviation*.

truncation setting. In the CMS Editor, the value that determines the maximum length of input lines.

TSAF. See *transparent services access facility*.

TSAF virtual machine component. A component in VM that handles communication between systems by letting APPC/VM paths span more than one system.

typewriter terminal. This term refers to printer-keyboard devices that produce hard-copy output only, such as: the IBM 2741 Communication Terminal; the IBM 3215 Console Printer-KeyBoard; the IBM 3767 Communication Terminal, Model 1 or 2, operating as a 2741. This term also refers to the IBM 3101 Display Terminal operating as a 2741.

U

UCR. See *user class restructure*

uniprocessor mode. This term indicates that there is only one processor in the physical configuration, or that VM/SP HPO uses the facilities of one processor in an attached processor or multiprocessor system. The system operator can alter the VM/SP HPO mode of operation, from attached processor or multiprocessor operation (using more than one processor), to a one-processor operation (and vice versa). The term uniprocessor mode identifies the one-processor operation. Contrast with *single processor mode*.

universal class card reader. A virtual card reader with a spool file class of * (asterisk) that can read any class of reader, printer, or punch files that have been spooled or transferred to it.

untokenized parameter list. A parameter list in which no restrictions are placed on the structure of the items in the list. See also *token*, *tokenized parameter list*.

update file. The actual changed code to be used by the assembler or compiler to produce

the object code. This file exists only in source-maintained products.

update number. A number assigned by service organizations and uniquely associated with a PTF. The PTF number and update number may be the same. If they are different, there is a one-to-one correspondence between the PTF number and the update number. With VM source-maintained products, only one APAR is fixed in each PTF, and the PTF number is not the same as the update number. The update number format is *raaaaacc*, where *r* identifies the product and release, *aaaaa* is the APAR number, and *cc* defines the component.

user. A program accessing one or more resources. In a VM system, a user executes in a virtual machine and is identified by a userid.

user class restructure. The extension of the class structure of Control Program instructions from 8 classes to 32 classes for each user, command, and diagnose code within the system. This extension allows the installation greater flexibility in authorizing the use of Control Program instructions.

user-defined CMS command. See *user-written CMS command*.

user disk. See *CMS user disk*.

user identification card. See *ID card*.

userid (user identification). A 1- to 8-character alphanumeric symbol identifying each terminal user.

user input area. For a display terminal, the bottom two lines of the screen where the user is allowed to key in command or data lines. This screen format is used with the CMS Editor only when line mode is in effect. See also *line mode*, *display mode*.

user profile table. A table of user attributes (called the VMBLOK) built for each active user from information gathered during logon. See also *virtual machine control block*, *user-written CMS command*.

user program area. In CMS, the virtual storage area occupying location X'20000' to the

end of the user's virtual machine. The beginning of the user program area is the default loading point for user programs and for many CMS commands.

User Program Switch Indicator (UPSI).

UPSI is an operand of the CMS SET command. The user can set the switches (one byte) to a desired value, which can be tested by a program in CMS/DOS.

user-written CMS command. Any CMS file created by a user that has a filetype of "MODULE" or "EXEC.". Such a file can be executed as if it were a CMS command by issuing its filename, followed by any operands or options expected by the program or EXEC procedure.

userid/vmid. A unique identifier assigned to a user (virtual machine) in the VM directory. *userid* refers to a human user's identifier. *vmid* refers to an abstract user's identifier (the RSCS service machine, for example).



V = R. Synonym for *virtual = real*.

V = R guest. A virtual machine running with the virtual = real (V = R) option.

vaddr. Virtual device address.

variable definition table. A table which defines variables that are used during build processing. Some of these variables are passed from the element build table (EBT). The user is prompted to enter the values for the other variables. Depending on the variable, the prompt may be issued: once when the product is installed, once each time the build function is invoked, or each time the variable is referenced by the build process table (BPT).

variable symbol. In an EXEC procedure, a symbol beginning with an ampersand (&) character, the value of which is assigned by the user, or in some cases by the System Product Interpreter, the EXEC 2 processor or CMS EXEC processor. The value of a variable

symbol may be tested and changed using control statements. See also *special variable*.

vector. A quantity that has magnitude, direction, and sense, and that is commonly represented by a directed line segment whose length represents the magnitude and whose orientation in space represents the direction. When used with the Vector Facility, a vector consists of a $n \times 1$ element array, each element of which contains 32 bits.

verification setting. When using the CMS Editor or XEDIT, the verification setting determines whether or not new lines keyed in or the results of editing changes keyed in by the user are displayed at the user's terminal.

virtual address. An address that refers to virtual storage or a virtual I/O device address, and that must, therefore, be translated into a real storage or I/O device address when it is used.

virtual block multiplexer mode. A virtual machine option that allows the interleaving of data to different virtual devices on the same virtual channel path.

virtual card reader. CP's simulation on disk of a real card reader. A virtual card reader can read card, punch, or print records of up to 151 characters in length. The virtual device type and I/O device address are normally defined in the VM directory. See also *spool file class*, *universal class card reader*.

virtual console. A 3210, 3215, 1052, or 3270 system console simulated on a communications terminal (such as a 2741 or 3278) by CP. The virtual device type and I/O address are defined in the VM directory entry for that virtual machine.

virtual console function. A CP command that is executed via the Diagnose Interface.

virtual console spooling. The writing of console input/output on disk as a printer spool file instead of, or in addition to, having it typed or displayed at the virtual machine console. The console data includes messages, responses, commands, and data from or to CP and the virtual machine operating system. The user can invoke or terminate console spooling at any

time and as often as he likes. When the console spool file is closed, it becomes a printer spool file.

virtual CPU time. The time required to execute the instructions of the virtual machine.

virtual disk. A logical subdivision (or all) of a physical disk pack that has its own virtual device address, consecutive virtual cylinders (starting with virtual cylinder zero), and a volume table of contents (VTOC) or disk label identifier. Each user virtual disk is preallocated and defined via a VM directory entry as belonging to some user. Synonymous with *minidisk*.

virtual disk initialization program. See *device support facilities (DSF)*.

virtual file.

1. A file or data set residing at a remote computer being used as though it were residing at the local computer (for example, an IBM host computer file being used from a Personal Computer as though it were a personal computer file).
2. An agent that transforms a request for a DOS file to a request for a VM or MVS System/370 file and allows the user to access the file as if it were a Personal Computer file.

virtual interval timer assist. A hardware assist function, available only on a processor that has Extended Control-Program Support, that provides, if desired, a hardware updating of each virtual machine's interval timer at location X'50'.

virtual machine. A functional equivalent of a real machine.

virtual machine assist (VMA). A hardware feature available on certain VM/SP HPO-supported System/370 models, that causes a significant reduction in the real supervisor state time used by VM/SP HPO to control the operation of virtual storage systems such as VSE, DOS/VS and OS/VS and, to a lesser extent, CMS, DOS, and OS when executing under VM. VM/SP HPO supervisor state time

is reduced because the virtual machine assist feature, instead of VM/SP HPO, intercepts and handles interruptions caused by supervisor call instructions (SVCs), other than SVC 76, and certain privileged instructions. See also *Extended Control-Program Support, CP assist, expanded virtual machine assist, virtual interval timer assist*.

virtual machine communication facility (VMCF). A CP function that provides a method of communication and data transfer between virtual machines operating under the same VM/SP HPO system.

virtual machine control block (VMBLOK). The CP control block that contains, for each virtual machine, the following types of information: the dispatch and priority level of the virtual machine, the virtual machine's processor registers, preferred virtual machine options currently in effect, and information concerning all other significant activities.

virtual machine group. The concept in the group control system of two or more virtual machines associated with each other through the same named system (e.g. IPL GCS1). Virtual machines in a group share common read/write storage and can communicate with one another through facilities provided by the group control system. Synonymous with *group*.

Virtual Machine/System Product. A licensed program that controls virtual machines. See also *IBM Virtual Machine/System Product*.

Virtual Machine/System Product High Performance Option (VM/SP HPO). A licensed program that enhances VM/SP for large system environments. See also *IBM Virtual Machine/System Product High Performance Option*.

virtual machine/VTAM communications network application (VM/VCNA). A program that runs in the VTAM service machine. VM/VCNA controls the physical appearance of the screen when displaying output on a VM terminal attached to a SNA network.

virtual print.

1. An agent that allows the user to define and use a printer that is not connected to the Personal Computer being used.
2. The service that provides virtual print for the PC.

virtual printer (or punch). A printer (or card punch) simulated on disk by CP for a virtual machine. The virtual device type and I/O address are normally defined in the VM directory entry for that virtual machine.

virtual = real area. In VM, that part of real storage, starting with real page 1, where a virtual = real machine can execute. CP maintains control of real page zero; only page 0 (zero) of the virtual = real machine is relocated. Only one virtual machine at a time can occupy the virtual = real area. The area must be defined during VM system generation to contain the largest virtual = real machine that is likely to run. See also *virtual = real option*.

virtual = real option. A VM performance option that allows a virtual machine to run in VM's virtual = real area. This option eliminates CP paging and, optionally, CCW translation for this virtual machine.

virtual reserve/release. A function that allows several operating systems such as MVS, VSE, and VM itself to all run as virtual machines under the same VM operating system and have data protection on a minidisk. It prevents several users of the same data file from simultaneously accessing the same data, particularly when that data is being updated.

virtual screen. A functional simulation of a physical screen. A virtual screen is a "presentation space" where data is maintained. The user can view pieces of the virtual screen through a window on the physical screen.

virtual spooling device. Unit record devices simulated on disk by CP. The virtual device type and I/O addresses are defined in the VM/SP HPO directory or via the CP DEFINE command. CP's spooling facilities allow multiple virtual machines to share the real unit record devices. In addition, VM/SP HPO has

extended the concept of spooling to include the logging of all I/O to and from the virtual machine system console. See also *virtual card reader, virtual printer (or punch), virtual console spooling*.

virtual storage. Storage space that can be regarded as addressable main storage by the user of a computer system in which virtual addresses are mapped into real addresses. The size of virtual storage is limited by the addressing scheme of the computing system and by the amount of auxiliary storage available, and not by the actual number of main storage locations.

virtual storage access method (VSAM). An access method for direct or sequential processing of fixed and variable-length records on direct access devices. The records in a VSAM data set or file can be organized in logical sequence by a key field (key sequence), in the physical sequence in which they are written on the data set or file (entry-sequence), or by relative-record number.

VM directory. A CP disk file that defines each virtual machine's normal configuration; the userid, password, normal and maximum allowable virtual storage, CP command privilege class or classes allowed, dispatching priority, logical editing symbols to be used, account number, and CP options desired.

VM read. The situation in which the user's virtual machine is not executing, but is waiting for a response or a request for work from the user. On a typewriter terminal, the keyboard is unlocked; on a display terminal, the screen status area indicates VM READ.

VM READ screen status. For a display terminal used as a virtual console, an indicator located in the lower right of the screen that displays that the user's virtual machine is not executing, but is waiting for a response or a request for work from the user.

VMBLOK. See *virtual machine control block*.

VMCF. See *Virtual Machine Communication Facility*.

VM/SP. See *IBM Virtual Machine/System Product*.

VM/SP HPO. See *IBM Virtual Machine/System Product High Performance Option*.

VM/SP HPO product tape. A tape that contains only those modules and macros added or altered since VM/370 Release 6.

VM/VCNA. See *virtual machine/VTAM communications network application*.

VM/VS handshaking feature. A communication interface between VM/SP HPO and other operating systems that are running a virtual machine under VM/SP HPO. These operating systems and CP make each other aware of mutual capabilities and requirements.

valid. The volume identification label for a disk.

VSAM. See *virtual storage access method*.

vscreen. See *virtual screen*.

VSE. The generalized term used to indicate the combination of the DOS/VSE system control program and the VSE/Advanced Functions licensed program. Note that in certain cases, the term DOS is still used as a generic term; for example, disk packs initialized for use with VSE or any predecessor DOS or DOS/VS system may be called DOS disks. Also note that the DOS-like simulation environment provided under the VM/SP CMS component and CMS/DOS exists on VM/SP and VM/SP High Performance Option licensed program and continues to be referred to as CMS/DOS.

VSM. This term refers to the VTAM Service Machine which is a virtual machine. See *VTAM service machine*.

VTAM service machine (VSM). A virtual machine that contains an operating system (OS/VS1 or DOS/VSE), an access method (ACF/VTAM or ACF/VTAME), and VM/VCNA. VSM forms the interface for SNA communication in VM/SP HPO.

W

warm start. (1) The result of an IPL that does not erase previous system data. (2) The automatic reinitialization of the VM/SP HPO control program that occurs if the control program cannot continue processing. Closed spool files and the VM/SP HPO accounting information are not lost. Contrast with *cold start*, *checkpoint start*, *force start*.

wild card character. A symbol used in a command to represent one or more characters. In VM, the wild card characters are the asterisk (*) and the percent symbol (%).

1. The asterisk (*) in a filename or filetype indicates that any character can occupy that position and all remaining positions in the filename or filetype. For example, if you enter:

```
listfile ABC*
```

you would get a list of all files on your A-disk that begin with ABC.

2. The percent symbol in a filename or filetype is a place-holding character that means a single character. As many percent symbols as necessary may appear anywhere in a filename or filetype. For example, if you enter:

```
listfile %%CD%
```

you would get a list of all files on your A-disk that contain 'CD' in positions four and five and are five characters long.

window. In VM, an area on the physical screen where virtual screen data can be displayed.

windowing. In VM, a set of functions which allow the user to view and manipulate data in user-defined areas of the physical screen called "windows." Windowing support allows the user to define, position, and overlay windows; scroll backward and forward through data; and write data into virtual screens.

working set. (1) The set of user's pages that must be active in order to avoid excessive paging.

work station. See *personal computer*.

wrap spool file. A wrap spool file is established when the CPTRAP invoker issues CPTRAP START with the WRAP option. The size of the wrap spool file is determined by the file size information provided with the CPTRAP START WRAP nnnnn command. (nnnnn is the number of 4K blocks of records.) Records will be added to the spool file until the specified SPOOL size limit is reached. Then, newer records will replace older records in the spool file thereby using the same spool area over again.

X

XEDIT. See *System Product Editor*.

XEDIT macro. (1) A procedure defined by a frequently used command sequence to perform a commonly required editing function. A user creates the macro to save repetitious re-keying of the sequence, and invokes the entire procedure by issuing a command (that is, the macro file's filename). The procedure may consist of a long sequence of System Product Editor (XEDIT) commands and/or subcommands, CMS and/or CP commands, along with REXX or EXEC 2 control statements to control processing within the procedure. (2) A CMS file with a filetype of "XEDIT".

XEDIT profile macro. A special XEDIT macro with a filename of PROFILE and a filetype of XEDIT that can be created by a user. It is executed automatically when an XEDIT command (or subcommand) is issued.

XMEM. This option enables MVS cross memory services for the MVS/SP virtual machine. When specified, the MVS/SP V=R user can use the System/370 extended facility enhancements and cross memory services implemented in Release 3 and all subsequent releases of MVS/SP. Cross memory is initiated when it is present on either or both processors

of an attached processor or multiprocessor system. The MVS/SP guest virtual machine thus operates in supervisor state with direct control of its own I/O operations under VM/SP High Performance Option.

Y

Y-disk. An extension of the CMS system disk.

Y-STAT. This is a block of storage that contains the file status tables (FSTs) associated with the Y-disk. The FSTs are sorted so that a binary search can be used to search for files. The Y-STAT usually resides in the CMS nucleus so it can be shared. Only files with

filemode of 2 will have their associated FSTs in the Y-STAT.

Z

ZAP. A CMS command that changes or dumps MODULE, LOADLIB, or TXTLIB files. It may be used to change either fixed or variable length MODULE files. It is for use by system support personnel only.

zone-setting. In the CMS Editor, a number range that specifies the positions within each data line that can be scanned and edited. In the System Product Editor, the starting position and ending position (columns) of each record within which the editor searches for targets.



Chapter 3. The VM/SP HPO Master Index

Master Index Table

This index is a compilation of the indexes of all of the manuals in the VM/SP HPO library. Each entry in this index is followed by one or more codes that identifies the manual(s) in which the entry appears. The codes are defined in the following table. For easy reference, this table is also provided as a foldout at the back of the book.

Code	Title
APGDE	<i>Application Development Guide</i>
CMSLOT	<i>CMS Primer for Line-Oriented Terminals</i>
CMSPROG	<i>CMS for System Programming</i>
CMSREF	<i>CMS Command Reference</i>
CMSUG	<i>CMS User's Guide</i>
CPPROG	<i>CP for System Programming</i>
CPREF	<i>CP Command Reference</i>
DIAG	<i>Diagnosis Guide</i>
EXEC2	<i>EXEC 2 Reference</i>
SFPROG	<i>System Facilities for Programming</i>
GCSREF	<i>Group Control System Command and Macro Reference</i>
INST	<i>Installation Guide</i>
INTRO	<i>Introduction</i>
MACREF	<i>CMS Macros and Functions Reference</i>
OPGDE	<i>Operator's Guide</i>
PLNGDE	<i>Planning Guide and Reference</i>
PRIMER	<i>CMS Primer</i>
PRGDE	<i>Problem Reporting Guide</i>
REL5GDE	<i>Release 5 Guide</i>
RGOS	<i>Running Guest Operating Systems</i>
SPIREF	<i>System Product Interpreter Reference</i>
SPIUG	<i>System Product Interpreter User's Guide</i>
SRPI	<i>Programmer's Guide to the Server-Requester Programming Interface for VM/SP</i>

Code	Title
SYSMMSG	<i>System Messages and Codes</i>
TERMREF	<i>Terminal Reference</i>
TSAFREF	<i>Transparent Services Access Facility Reference</i>
XEDIT	<i>System Product Editor Command and Macro Reference</i>
XEDITUG	<i>System Product Editor User's Guide</i>

How to Use This Master Index

To aid you in finding items in this index, the entries have been grouped together under first-level entries such as control program (CP). Some of the entries in such a major grouping may be listed in the individual manuals under their abbreviation, for example, CP.

1. Think of a subject or topic you want to look up. For example, suppose you want to find out about how to manage page migration, therefore, your topic is "page migration."
2. Look up your topic in the index, which is arranged alphabetically. (After Z are several numerical entries, such as 3 for 3851 and 9 for 9TRACK option.) You might not find your topic, though, in the first place you look. If that happens, think of another way to word your topic and look again. Let's say you looked under *P* for "page migration." You would find this entry:

```

page migration CPPROG
activity, displaying CPPROG
demand CPPROG
description PLNGDE
detecting and correcting problems
related to CPPROG
managing CPPROG
operation CPPROG
paging hierarchy PLNGDE
selecting the next virtual machine
for page migration CPPROG
setting options and parameters CPPROG

```

3. The abbreviation to the right of the topic tells you what book to look in. Each abbreviation corresponds to a specific reference manual, as designated on the foldout page at the back of this book.

For our sample topic, the abbreviations and books are:

Abbreviation Book

CPPROG *VM/SP HPO CP for System Programming*

PLNGDE *VM/SP HPO Planning Guide and Reference*

4. You can look in *VM/SP HPO CP for System Programming* to find out how to manage page migration or in *VM/SP HPO Planning Guide and Reference* for more information about page migration. Then use the table of contents or the index in the book to find the specific chapter or page for your topic.



Special Characters

+ and - subcommands of DUMPSCAN command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
 sample output **DIAG**
 usage **DIAG**

¢ logical line delete symbol **CMSUG**
 . (as a placeholder) **SPIUG**
 . (in compound symbols) **SPIUG**
 . (period)
 as placeholder in parsing **SPIREF**
 causing substitution in variable names **SPIREF**
 in numbers **SPIREF**

.BX (BOX) format word **CMSUG**
.CM (COMMENT) format word **CMSUG**
.CS (CONDITIONAL SECTION) format word **CMSUG**
.FO (FORMAT MODE) format word **CMSUG**
.IL (INDENT LINE) format word **CMSUG**
.IN (INDENT) format word **CMSUG**
.MT (MENU TYPE) format word **CMSUG**
.OF (OFFSET) format word **CMSUG**
.SP (SPACE LINES) format word **CMSUG**
.TR (TRANSLATE CHARACTER) format word **CMSUG**
 .wait state in virtual machine **DIAG**
 .xxxx prefix subcommand **XEDIT, XEDITUG**
 < (less than operator) **SPIREF, SPIUG**
 < prefix macro **XEDIT**
 < prefix subcommand of **XEDIT** command **APGDE**
 < SHIFT LEFT MACRO **XEDITUG**
 < > (less than or greater than operator) **SPIREF**
 < = (less than or equal operator) **SPIREF**
 + (addition operator) **SPIREF, SPIUG**
 + (prefix operator) **SPIUG**
 + + + tracing flag **SPIREF**
 | (inclusive OR operator) **SPIREF, SPIUG**
 || (concatenation operator) **SPIREF, SPIUG**
 | used in string targets **XEDIT**
& EXEX2
& (AND operator) **SPIREF, SPIUG**
& subcommand **XEDIT**
& used in string targets **XEDIT**
 0187ab special variable
&ERROR statement **APGDE**
&name subcommand of DUMPSCAN command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
 sample output **DIAG**
 usage **DIAG**

&READ **APGDE**
&READ command (for EXEC or EXEC2) **APGDE**
&STACK FIFO **APGDE**
&STACK FIFO command **APGDE**
&STACK LIFO **APGDE**

&STACK LIFO command **APGDE**
 0 **EXEX2**
&& (exclusive OR operator) **SPIREF, SPIUG**
&ARGS EXEC2 control statements **EXEX2**
 embedded blanks **EXEX2**
&ARGSTRING EXEC2 control statement **EXEX2**
 embedded blanks **EXEX2**
&BEGEMSG EXEC control statement
&BEGPRINT EXEC2 control statement **EXEX2**
 truncation column **EXEX2**
&BEGPUNCH EXEC control statement
&BEGSTACK EXEC control statement
&BEGSTACK EXEC2 control statement **EXEX2**
 first-in/first-out (FIFO) **EXEX2**
 last-in/first-out (LIFO) **EXEX2**
 truncation column **EXEX2**
&BEGTYPE EXEC control statement
&BEGTYPE EXEC2 control statement **EXEX2**
 truncation column **EXEX2**
&BLANK EXEC2 control statement **EXEX2**
 embedded blanks **EXEX2**
&BUFFER EXEC2 control statement **EXEX2**
&CALL EXEC2 control statement **EXEX2**
 label search **EXEX2**
&CASE EXEC2 control statement **EXEX2**
&CMDSTRING **EXEX2**
&COMLINE **EXEX2**
&COMMAND EXEC2 control statement **EXEX2**
 &PRESUME **EXEX2**
&CONCAT OF **EXEX2**
&CONCATENATION OF **EXEX2**
&CONTINUE EXEC control statement
&CONTROL EXEC control statement
&CRASH **EXEX2**
&DATATYPE OF **EXEX2**
&DATE **EXEX2**
 evaluation **EXEX2**
 Greenwich Mean Time (GMT) **EXEX2**
&DEPTH **EXEX2**
&DIV OF **EXEX2**
&DIVISION OF **EXEX2**
&DUMP EXEC2 control statement **EXEX2**
&END EXEC control statement
&ERROR **EXEX2**
&EXIT **EXEX2**
&FILEMODE **EXEX2**
&FILENAME **EXEX2**
&FILETYPE **EXEX2**
&FROM **EXEX2**
&GOTO **EXEX2**
 label search **EXEX2**
&GOTO EXEC control statement
&HEX EXEC control statement
&IF **EXEX2**
 comparands **EXEX2**
 comparatives **EXEX2**
 conditional statements **EXEX2**
&INDEX **EXEX2**
&INDEX special variable
&LEFT OF **EXEX2**
 embedded blanks **EXEX2**
&LENGTH OF **EXEX2**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

Special Characters

&LINE EXEX2
&LINENUM EXEX2
&LINK EXEX2
&LITERAL OF EXEX2
 embedded blanks EXEX2
&LOCATION OF EXEX2
&LOOP EXEX2
 closing EXEX2
 label search EXEX2
&MULT OF EXEX2
&MULTIPLICATION OF EXEX2
&N EXEX2
&PIECE OF EXEX2
&POSITION OF EXEX2
&PRESUME EXEX2
 &COMMAND EXEX2
 &SUBCOMMAND EXEX2
&PRINT EXEX2
&PUNCH control statement
 punching jobs to CMS batch facility CMSUG
&RANGE OF EXEX2
 embedded blanks EXEX2
&RC EXEX2
&READ EXEX2
 &TRUNC EXEX2
 ARGS EXEX2
 embedded blanks EXEX2
 examples EXEX2
 n,1,* EXEX2
 STRING EXEX2
 VARS EXEX2
&READ EXEC control statement
&READFLAG special variable
&RETCODE EXEX2
&RETURN EXEX2
&RIGHT OF EXEX2
 embedded blanks EXEX2
&SKIP EXEX2
&STACK EXEX2
 first-in/first-out (FIFO) EXEX2
 last-in/first-out (LIFO) EXEX2
&STACK EXEC control statement
&STRING OF EXEX2
 embedded blanks EXEX2
&SUBCOMMAND EXEX2
 &PRESUME EXEX2
&SUBSTR OF EXEX2
&TIME EXEX2
 evaluation EXEX2
 Greenwich Mean Time (GMT) EXEX2
&TIME EXEC control statement
&TRACE EXEX2
 * EXEX2
 ALL EXEX2
 ERR EXEX2
 example EXEX2
 OFF EXEX2
 ON EXEX2
 output-action EXEX2
&TRACE statement in EXEC 2 CMSUG
&TRANS OF EXEX2
 embedded blanks EXEX2
 rules for modification EXEX2
&TRANSLATION OF EXEX2
 embedded blanks EXEX2
 rules for modification EXEX2
&TRIM OF EXEX2

&TRUNC EXEX2
 truncation column EXEX2
&TYPE EXEX2
&TYPE OF EXEX2
&UPPER EXEX2
&WORD OF EXEX2
&1 &2 ... EXEX2
 &ARGS EXEX2
 &READ ARGS EXEX2
 arguments EXEX2
 embedded blanks EXEX2
! prefix on TRACE instruction SPIREF
\$ (as arbitrary character) XEDIT, XEDITUG
\$\$A\$SUPV
 VSE supervisor for MODE = VM RGOS
\$\$A\$SUP3
 VSE supervisor for MODE = 370 RGOS
\$\$BCLOSE transient CMSPROG
\$\$BDUMP transient CMSPROG
\$\$BOPEN transient CMSPROG
\$\$BOPENR transient CMSPROG
\$\$BOPENLB transient CMSPROG
\$\$BOPNR2 transient CMSPROG
\$\$BOPNR3 transient CMSPROG
\$\$BOSVLT transient CMSPROG
\$ALLOC\$ system area
 description PLNGDE
\$ASIPROC
 changes in RGOS
 example RGOS
\$CPNUC\$ system area
 description PLNGDE
\$DIRECT\$ system area
 description PLNGDE
\$HLPABBR filetype usage in CMS CMSUG
\$H LPCMS filetype usage in CMS CMSUG
\$H LPCMSQ filetype usage in CMS CMSUG
\$H LPCMSS filetype usage in CMS CMSUG
\$H LPCP filetype usage in CMS CMSUG
\$H LPCPQU filetype usage in CMS CMSUG
\$H LPCPSE filetype usage in CMS CMSUG
\$H LPDEBU filetype usage in CMS CMSUG
\$H LPEDIT filetype usage in CMS CMSUG
\$H LPXC2 filetype usage in CMS CMSUG
\$H LPEXEC filetype usage in CMS CMSUG
\$H LPGROU filetype usage in CMS CMSUG
\$H LPHelp filetype usage in CMS CMSUG
\$H LPIPCS filetype usage in CMS CMSUG
\$H LPMENU filetype usage in CMS CMSUG
\$H LPMMSG filetype usage in CMS CMSUG
\$H LPPREF filetype usage in CMS CMSUG
\$H LPQUER filetype usage in CMS CMSUG
\$H LPREXX filetype usage in CMS CMSUG
\$H LPSET filetype usage in CMS CMSUG
\$H LPSQLD filetype usage in CMS CMSUG
\$H LPTASK filetype usage in CMS CMSUG
\$H LPTSFAF filetype usage in CMS CMSUG
\$H LPXEDI filetype usage in CMS CMSUG
\$IPLxxx, changes RGOS
\$LISTIO EXEC file CMSPROG
 appending information to CMSREF
 creating CMSREF
 format CMSREF
\$MDISK\$ system area
 description PLNGDE
\$MOVE edit macro
\$SAVSYS\$ system area
 description PLNGDE

\$Second draft inspection item 11/24/86 CPREF

\$SYSCKP\$ system area
description PLNGDE

\$SYSERR\$ system area
description PLNGDE

\$SYSWRM\$ system area
description PLNGDE

\$TDISK\$ system area
description PLNGDE

\$TEMP\$ system area
description PLNGDE

* (asterisk)

See also asterisk (*)

as fileids on command lines CMSUG
entered in fileid CMSREF

in ACCESS command CMSREF

in COPYFILE command CMSREF

in DLBL command CMSREF

in DSERV command CMSREF

in EDIT command CMSREF

in ERASE command CMSREF

in EXECDROP command CMSREF

in EXECIO command CMSREF

in EXECLOAD command CMSREF

in EXECMAP command CMSREF

in EXECSTAT command CMSREF

in FILEDEF command CMSREF

in FILELIST command CMSREF, CMSUG

in filemode field CMSUG

in FINIS command CMSREF

in INCLUDE command CMSREF

in LABELDEF command CMSREF

in LISTDS command CMSREF

in LISTFILE command CMSREF, CMSUG

in LOAD command CMSREF

in NAMEFIND command CMSREF

in NUCXDROP command CMSREF

in PEEK command CMSREF

in PRINT command CMSREF

in PUNCH command CMSREF

in READCARD command CMSREF

in RENAME command CMSREF

with DISK option, of CMS QUERY command CMSREF

with RESET option

of INCLUDE command CMSREF

of LOAD command CMSREF

with ROUTE option, of CMS QUERY command CMSREF

* (multiplication operator) SPIREF, SPIUG

* command CPREF

described CPREF

responses CPREF

usage notes CPREF

* operand

of ATTACH command CPREF

of CHANGE command CPREF

of CPTRAP command CPREF

of DETACH command CPREF

of INDICATE command CPREF

of MESSAGE command CPREF

of MIGRATE command CPREF

of MSGNOH command CPREF

of ORDER command CPREF

of PURGE command CPREF

of QUERY command CPREF

of SPOOL command CPREF

of SPTAPE command CPREF

of START command CPREF

of TRANSFER command CPREF

of VMDUMP command CPREF

** (exponentiation operator) SPIREF, SPIUG

** tracing flag SPIREF

*/ comment delimiter SPIUG

*/ (end of a REXX comment statement) CMSUG

*BLOCKIO (DASD BLOCKIO System Service) SFPROG

*CCS (SNA Console Communication Services) SFPROG

*CCS operand

of IUCV directory control statement PLNGDE

*COPY statement CMSREF

*CRM

*IDENT's use of the *CRM path TSAFREF

authorizing a virtual machine to connect to TSAFREF

communications TSAFREF

connecting to TSAFREF

path TSAFREF

request resource table information TSAFREF

responsibilities TSAFREF

revoking a resource TSAFREF

send format TSAFREF

SEVER reason codes TSAFREF

severing connection to TSAFREF

*CRM operand

of IUCV directory control statement PLNGDE

*dumpid

described CPREF

*dumpid operand

of DUMP command CPREF

of VMDUMP command CPREF

*IDENT

answer data

answer area TSAFREF

connecting to *IDENT TSAFREF

severing the *IDENT connection TSAFREF

authorizing virtual machine to connect to TSAFREF

connect format TSAFREF

connecting to

*IDENT TSAFREF

do a revoke TSAFREF

resource manager TSAFREF

local system resource table TSAFREF

multiple connections to TSAFREF

passing requests to TSAF TSAFREF

processing requests to manage a resource TSAFREF

responsibilities TSAFREF

revoking

requests to TSAF TSAFREF

resource TSAFREF

resources in merging collections TSAFREF

your own resources TSAFREF

SEND format TSAFREF

sever reason codes TSAFREF

severing connection to TSAFREF

using the *CRM path TSAFREF

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

Special Characters

***LOGREC** (Error Logging System Service) **SFPROG**
***LOGREC** directory option **PLNGDE**
***LOGREC** operand
 of IUCV directory control statement **PLNGDE**
***MSG** (Message System Service) **SFPROG**
***MSGALL** (Message All System Service) **SFPROG**
***NCCF** **SFPROG**
***SIGNAL** (Signal System Service) **SFPROG**
***SIGNAL** operand
 of IUCV directory control statement **PLNGDE**
***SPL** (Spool System Service) **SFPROG**
***SPL** directory option **PLNGDE**
***SPL** operand
 of IUCV directory control statement **PLNGDE**
 ¬ (NOT operator) **SPIREF, SPIUG**
 ¬ < (not less than operator) **SPIREF**
 ¬ > (not greater than operator) **SPIREF, SPIUG**
 ¬ = (not equal operator) **SPIREF, SPIUG**
 ¬ = = (not exactly equal operator) **SPIREF, SPIUG**
 - (prefix operator) **SPIUG**
 - (subtraction operator) **SPIREF, SPIUG**
 / (diagonal)
 used in **ACCESS** command **CMSREF**
 used in **EXECUTE** command **CMSREF**
 / (division operator) **SPIREF, SPIUG**
 / prefix command **PRIMER**
 / prefix subcommand **XEDIT, XEDITUG**
 / prefix subcommand of **XEDIT** command **APGDE**
 /* comment delimiter **SPIUG**
 /* (slash asterisk)
 CMS batch facility control card
 used to signal end of job **CMSUG**
 end-of-file indicator in batch job **CMSUG**
 in **REXX** language interpreted as comment **CMSUG**
 // (remainder operator) **SPIREF, SPIUG**
 // record **CMSPROG**
 /= (not equal operator) **SPIREF, SPIUG**
 /= = (not exactly equal operator) **SPIREF, SPIUG**
 /JOB control card description **CMSUG**
 /JOB control cards **CMSPROG**
 /SET control card description **CMSUG**
 , operand
 of **STORE** command **CPREF**
 % (integer division operator) **SPIREF, SPIUG**
 > (greater than operator) **SPIREF, SPIUG**
 > prefix macro **XEDIT**
 > prefix subcommand of **XEDIT** command **APGDE**
 > **SHIFT RIGHT MACRO** **XEDITUG**
 > .> tracing flag **SPIREF**
 > < (greater than or less than operator) **SPIREF**
 > > > tracing flag **SPIREF**
 > = (greater than or equal operator) **SPIREF**
 > C > tracing flag **SPIREF**
 > F > tracing flag **SPIREF**
 > L > tracing flag **SPIREF**
 > O > tracing flag **SPIREF**
 > P > tracing flag **SPIREF**
 > V > tracing flag **SPIREF**
 ? prefix on **TRACE** instruction **SPIREF**
 ? (question mark)
 used with **DISK** option of **FILEDEF** command **CMSREF**
 used with **DSN** option of **DLBL** command **CMSREF**
 ? operand of **PRINT** subcommand **DIAG**
 ? subcommand **XEDIT, XEDITUG**
 ? subcommand of **DUMPSCAN** command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
 sample output **DIAG**
 usage **DIAG**
 # (as default line end character) **XEDIT, XEDITUG**
 # (logical line end character)
 description **CMSUG**
 using when setting **PF** (program function) keys **CMSUG**
 #CP command **CMSUG, CPREF**
 described **CPREF**
 operand
 commandline **CPREF**
 responses **CPREF**
 usage notes **CPREF**
 #CP function
 used when setting **PFnn** **RETRIEVE** **CMSUG**
 using on display terminals **CMSUG**
 #CP I **CMS SPIUG**
 @ (logical character delete character) **CMSUG**
 using when setting **PF** (program function) keys **CMSUG**
 '.....' pending... **XEDIT, XEDITUG**
 example of **XEDIT**
 '< <' pending... **XEDIT**
 '> >' pending... **XEDIT**
 '""' pending **XEDIT, XEDITUG**
 'C' or 'CC' pending... **XEDIT**
 'D' or 'DD' pending... **XEDIT**
 'DD' pending **XEDITUG**
 'F' pending... **XEDIT**
 'P' pending... **XEDIT**
 'XX' pending... **XEDIT**
 = (equal operator) **SPIUG**
 = (equal sign)
 assignment indicator **SPIREF**
 entered in fileids on command lines **CMSUG**
 equal operator **SPIREF**
 immediate debug command **SPIREF**
 in **COPYFILE** command **CMSREF**
 in **DO** instruction **SPIREF**
 in **RDR** command **CMSREF**
 in **RENAME** command **CMSREF**
 = command
 using in **XEDIT** **PRIMER**
 using on **FILELIST** screen **PRIMER**
 = command used in **XEDIT** **CMSLOT**
 = option
 of **EXTRACT** **XEDIT**
 of **QUERY** **XEDIT**
 of **SET** **XEDIT**
 of **TRANSFER** **XEDIT**
 = subcommand **XEDIT, XEDITUG**
 = subcommand of **XEDIT** command **APGDE**
 = = (exactly equal operator) **SPIREF, SPIUG**
 " (logical escape character) **CMSUG**
 " prefix command **PRIMER**
 " prefix subcommand **XEDIT, XEDITUG**
 " prefix subcommand of **XEDIT** command **APGDE**
 "HT" flag
 cleared before error messages **SPIREF**
 "in memory files" **EXEX2**
 C or CC pending **XEDITUG**
 F pending **XEDITUG**
 M or MM pending **XEDITUG**
 P pending **XEDITUG**

A

a

system services **SFPROG**
 DASD block I/O **SFPROG**
 error logging **SFPROG**
 message **SFPROG**
 message all **SFPROG**
 signal **SFPROG**
 SNA console communication services **SFPROG**
 spool **SFPROG**

A option of LISTIO command **CMSREF**
 A prefix command **PRIMER**
 A prefix subcommand **APGDE, XEDIT, XEDITUG**
 example of **XEDIT**
 practice exercise using **XEDITUG**
 of **XEDIT** command **APGDE**

A-disk **CMSLOT, CMSUG, PRIMER**
 accessed after IPLing CMS **CMSREF**
 CMS primary user disk **PLNGDE**
 accessing **PLNGDE**
 space, displaying **PRIMER**

ABBREV function **SPIUG**
 description **SPIREF**
 using to select a default **SPIREF**

ABBREV option
 of CMS QUERY command **CMSREF**
 of CMS SET command **CMSREF**

abbreviation
 of commands **CMSLOT, PRIMER**
 of information **SPIUG**
 of subcommand name **XEDIT**
 of subcommand operand **XEDIT**
 of synonym defined **XEDIT**
 use of **CPREF**

abbreviations **DIAG, TSAFREF**
 command names **CMSREF, CMSLOT, PRIMER**
 querying acceptability of **CMSREF**
 setting acceptability of **CMSREF**
 looking for one in a string **SPIREF**
 message **SYSMSG**
 testing with **ABBREV** function **SPIREF**

ABEND APGDE
 spooling considerations **CPREF**

abend (abnormal termination) **DIAG, PLNGDE, SFPROG**
 clearing file definitions **CMSPROG**

CMS
 exit routine processing, CMS **CMSPROG**
 processing **CMSPROG**
 recovery **CMSPROG**

code **CPPROG**
 codes **SYSMSG**
 see CMS abend codes
 see CP abend codes
 see GCS abend codes
 see TSAF abend codes

conditions
ALLOCATE (APPC) TSAFREF
CONFIRM (APPC) TSAFREF

CONFIRMED (APPC) TSAFREF
DEALLOCATE (APPC) TSAFREF
RECEIVE_AND_WAIT (APPC) TSAFREF
REQUEST_TO_SEND (APPC) TSAFREF
 responding to TSAF abends **TSAFREF**
SEND_DATA (APPC) TSAFREF
SEND_ERROR (APPC) TSAFREF

dealing with in CMS **PRGDE**
 checklist for reporting **PRGDE**

dealing with in CP **PRGDE**
 checklist for reporting **PRGDE**

dealing with in GCS **PRGDE**
 checklist for reporting **PRGDE**

dealing with in RSCS **PRGDE**
 checklist for reporting **PRGDE**

DMSABW CSECT CMSPROG
 dumps
 CP
 See CP abend dump
 system **CPREF, OPGDE**

effect on DLBL definitions **CMSREF**
 effect on FILEDEF definitions **CMSREF**
 encountered by CMSBATCH command **CMSREF**
 information available **CMSPROG**
 messages **DIAG**
 programmable operator facility **SFPROG**
 reason for **DIAG**
 recovery process **CMSPROG**
 releasing storage **CMSPROG**
TSAF TSAFREF
 where in VM they occur **PRGDE**
CMS PRGDE
CP PRGDE
GCS PRGDE
 in a virtual machine running in VM **PRGDE**

ABEND macro **DIAG, GCSREF**
 completion code parameter **GCSREF**
 description **GCSREF**
 dump parameter **GCSREF**
 exit routines, clearing or setting **MACREF**
 step parameter **GCSREF**
 system parameter **GCSREF**
 user parameter **GCSREF**

ABEND macro (SVC 13) **CMSPROG**
ABEND operand of STAT command **DIAG**
ABENDaaaaaa FAILURE code (keyword definition) **DIAG**
ABNEXT macro **CMSPROG**
 See also **MACREF**
CLR operand **MACREF**
 complex list format **MACREF**
ERROR = operand **MACREF**
 execute format **MACREF**
EXIT = operand **MACREF**
 list format **MACREF**
RESET operand **MACREF**
SET operand **MACREF**
 standard format **MACREF**
UWORD = operand **MACREF**

abnormal change in flow of control **SPIREF**
 abnormal termination
 See abend (abnormal termination)

ABS function **SPIREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- absolute address **CPPROG**
- absolute column number **XEDIT, XEDITUG**
 - automatic line wrapping
 - line wrapping, automatic
 - specifying column-target as **XEDIT**
- absolute line number as target **XEDIT, XEDITUG**
 - example of **XEDITUG**
- absolute value
 - finding using ABS function **SPIREF**
 - used with exponentiation **SPIREF**
- abstracts of VM/SP manuals
 - Application Development Guide **INTRO**
 - CMS Command Reference **INTRO**
 - CMS Primer **INTRO**
 - CMS Primer for Line-Oriented Terminals **INTRO**
 - CMS User's Guide **INTRO**
 - CP Command Reference **INTRO**
 - Distributed Data Processing Guide **INTRO**
 - EXEC 2 Reference **INTRO**
 - General Information **INTRO**
 - group control system Macro Reference **INTRO**
 - Installation Guide **INTRO**
 - Macros and Functions **INTRO**
 - Operator's Guide **INTRO**
 - Planning Guide and Reference **INTRO**
 - Release 5 Guide **INTRO**
 - RSCS Networking Version 2
 - General Information **INTRO**
 - Running Guest Operating Systems **INTRO**
 - Server-Requester Programming **INTRO**
 - System Facilities for Programming **INTRO**
 - System Messages and Codes **INTRO**
 - System Messages Cross-Reference **INTRO**
 - System Product Editor Command and Macro Reference **INTRO**
 - System Product Editor User's Guide **INTRO**
 - System Product Interpreter Reference **INTRO**
 - System Product Interpreter User's Guide **INTRO**
 - System Programming **INTRO**
 - Terminal Reference **INTRO**
 - TSAF Reference **INTRO**
- abuttal **SPIUG**
- ACB (access control block) **PLNGDE**
- ACB macro (VSAM) **GCSREF**
 - bufnd parameter **GCSREF**
 - bufni parameter **GCSREF**
 - bufsp parameter **GCSREF**
 - ddname parameter **GCSREF**
 - description **GCSREF**
 - exlst parameter **GCSREF**
 - macrf parameter **GCSREF**
 - marea parameter **GCSREF**
 - mten parameter **GCSREF**
 - passwd parameter **GCSREF**
 - strno parameter **GCSREF**
- ACCEPT**
 - logical device support facility **SFPROG**
- ACCEPT** function of IUCV **TSAFREF, SFPROG**
 - completion **TSAFREF**
 - condition codes **TSAFREF**
 - mapped with APPC **TSAFREF**
 - overview **TSAFREF**
 - parameter list **TSAFREF, SFPROG**
 - parameters
 - MF=L parameter **TSAFREF**
 - PATHID parameter **TSAFREF**
 - PRMLIST parameter **TSAFREF**
- program exceptions **TSAFREF**
- return codes **TSAFREF**
- scenario **TSAFREF**
- trace table entry format **SFPROG**
- state changes **TSAFREF**
- use in sample resource program **TSAFREF**
 - using **SFPROG**
- accepting a connection **TSAFREF**
- access
 - command (CMS)
 - use in file sharing **PLNGDE**
 - access diagnostic information saved for protected application facility users **SFPROG**
 - filemodes
 - CMS files **PLNGDE**
 - modes
 - defining for minidisks **PLNGDE**
 - of shared storage **REL5GDE**
 - to the mass storage control
 - MSSVS1 **CPPROG**
 - MSSVS2 **CPPROG**
 - verification routines **CPPROG**
- ACCESS** command **APGDE, CMSLOT, GCSREF, PRIMER**
 - accessing CMS disks **CMSUG**
 - accessing OS data sets **CMSPROG**
 - batch job statement **INTRO**
 - cuu operand **GCSREF**
 - description **CMSREF, GCSREF**
 - enhancement **REL5GDE**
 - ERASE option **CMSREF**
 - examples **CMSREF, INTRO**
 - ext operand **GCSREF**
 - first command after IPL **CMSREF**
 - fn ft fm operand **GCSREF**
 - format of **CMSPROG**
 - mode operand **GCSREF**
 - modules included in resident directory **CMSPROG**
 - NODISK option **CMSREF**
 - NOPROF option **CMSREF**
 - NOSAVE option **CMSREF**
 - read/only access **CMSREF**
 - response when you access VSAM disks **CMSPROG**
 - SAVEONLY option **CMSREF**
 - usage with DEFINE command **CMSREF**
 - used with OS disks **CMSPROG**
- access control block (ACB) **PLNGDE**
- access control groups **PLNGDE**
 - defining **PLNGDE**
- access method services (AMS)
 - See AMS (Access Method Services)
- access method supported by OS **CMSPROG**
- access mode password **CPREF**
- access modes **CPREF**
- accessing
 - access method services **CMSPROG**
 - directories of VSE libraries **CMSPROG**
 - disks
 - as read-only extensions **CMSUG**
 - in CMS **CMSUG**
 - DOS disks **CMSPROG**
 - file directories **CMSUG**
 - OS disks **CMSPROG**
 - in CMS batch virtual machine **CMSUG**
 - messages **REL5GDE**
 - using the APPLMSG macro **REL5GDE**
 - using the XMITMSG command **REL5GDE**
 - update disks **INST**
 - VSE system residence volume **CMSPROG**

ACCOUNT control statement
 MVS guest **RGOS**
 VM/VSE **RGOS**

ACCOUNT directory control statement **PLNGDE**

account number **TERMREF**
 replacing directory entry **SFPROG**

accounting
 ACCTOFF routine **CPPROG**
 ACCTON routine **CPPROG**
 activating the TOD-clock interface **SFPROG**
 data
 closing spool files **CPREF**
 creating records **CPREF**
 processing **CPREF**
 resetting accumulated data **CPREF**
 information, displaying **CPREF**
 number
 defining in directory **PLNGDE**

records **SFPROG**
 created by user **CPPROG**
 for AUTOLOG, LOGON, and LINK
 journaling **CPPROG**
 for the Vector Facility **CPPROG**
 format for dedicated devices **CPPROG**
 format for virtual machines **CPPROG**
 generating **SFPROG**
 initialization **TSAFREF**
 link **TSAFREF**
 session **TSAFREF**
 SYSACNT macro **TSAFREF**
 termination **TSAFREF**
 VM/SP SNA support **SFPROG**
 when to punch **CPPROG**
 statistics, generating **TSAFREF**
 user options **CPPROG**

ACCT directory option **TSAFREF**

ACCT operand of OPTION directory control
 statement **PLNGDE**

ACCT option, defining in directory **PLNGDE**

accuracy in calculations, changing **SPIUG**

ACF/NCP (Advanced Communications Function/Network
 Control Program) **INST, INTRO**

ACF/SSP (Advanced Communications Function/System
 Support Programs) **INST, INTRO**

ACF/VTAM (Advanced Communications Function for VTAM)
 See VTAM (Virtual Telecommunications Access Method)
INST

ACIGROUP control statement **CPPROG**

ACIGROUP directory control statement **PLNGDE**

ACK option
 of NOTE command **CMSREF**
 of SENDFILE command **CMSREF**

acknowledgement **CMSLOT, PRIMER**

ACNT command **CMSUG, CPPROG, CPREF**
 described **CPREF**
 operands
 ALL **CPREF**
 CLOSE **CPREF**
 userid **CPREF**
 responses **CPREF**

ACNT operand of SET command **CPREF**

ACRITH **INST**

acoustic coupler **TERMREF**

ACTION, VSE linkage editor
 control statement **CMSPROG**

ACTION option
 of EXTRACT **XEDIT**
 of QUERY **XEDIT**

action routines **SFPROG**
 See also programmable operator facility **SFPROG**
 call interface **SFPROG**
DMSPOL SFPROG
DMSPOR SFPROG
GET SFPROG
LGLOPR SFPROG
QUERY SFPROG
SET SFPROG
STOP SFPROG
TOFB SFPROG
TOVM SFPROG
DMSPOS SFPROG
 error message and response handling **SFPROG**
EXEC SFPROG
 handling console I/O **SFPROG**
 interface **SFPROG**
 parameter interface
 supplied **SFPROG**
 writing **SFPROG**

activating the TOD-clock accounting interface **SFPROG**

active disk table (ADT) **CMSPROG, DIAG**
 signalling preferred filetypes **CMSPROG**

active file table (AFT) **DIAG**

active loops **SPIREF**

ACTIVE operand
 of NETWORK command **CPREF**
 of QUERY command **CPREF**

active wait **CPPROG**

activity
 display page migration **CPPROG**

ADAPTER operand
 of RDEVICE macro **PLNGDE**

ADCON-free module, installing as nucleus extension
CMSREF

ADD command of DMS/CMS **APGDE**

ADD function of MACLIB command **APGDE**

ADD function of TXTLIB command **APGDE**

ADD LINK command **TSAFREF**

ADD option
 of MACLIB command **CMSREF**
 of NOTE command **CMSREF**

ADD subcommand **XEDIT**
 example of **XEDIT**
 of **XEDIT** command **APGDE**

ADDEENTRY macro **CMSPROG, SRPI**
 assembly message (MNOTE) **MACREF, SRPI**
 Communications Module termination notification
 list **MACREF**
 entry-name placed on Communications Module
 termination notification list **MACREF**
 syntax **SRPI**

ADDEENTRY subcommand
 description **SRPI**
 syntax **SRPI**

Refer to the foldout page at the back of this book for a chart
 of abbreviations and their corresponding manuals.

adding

BRIEF section to HELP files **CMSUG**
 console function **CPPROG**
 data from another file **PRIMER**
 dedicated channels **CPREF**
 dedicated devices **CPREF**
 DESCRIPT section to HELP files **CMSUG**
 DETAIL section to HELP files **CMSUG**
 ERRORS section to HELP files **CMSUG**
 FORMAT section to HELP files **CMSUG**
 HELP components **CMSUG**
 lines
 continuously **XEDIT, XEDITUG**
 of indented text **XEDIT, XEDITUG**
 subcommands **XEDITUG**
 text to a line from edit mode **CMSLOT**
 text to a line from input mode **CMSLOT**
 text to end of line **XEDITUG**
 text to end of line in typewriter
 mode **XEDITUG**
 to a file **PRIMER**
 using A (prefix subcommand) **XEDIT, XEDITUG**
 using I (prefix subcommand) **XEDIT**
 using SI **XEDIT, XEDITUG**
 member to MACLIBs **CMSPROG**
 national language information
 for an application **SFPROG**
 NOTES section to HELP files **CMSUG**
 OPTIONS section to HELP files **CMSUG**
 PARMs section to HELP files **CMSUG**
 RELATED section to HELP files **CMSUG**
 task **PLNGDE**
 text to end of line **XEDIT**

addition **SPIUG**

definition **SPIREF**
 operator **SPIREF**

addition operator **SPIUG**

additions to VM/SP

alternate tape drive support **REL5GDE**
 alternate userid support **REL5GDE**
 central message facility **REL5GDE**
 CMS session services **REL5GDE**
 CMSDEV macro **REL5GDE**
 DIAGNOSE code X'BC' **REL5GDE**
 Enhanced Connectivity Facilities
 on VM **REL5GDE**
 Error Logging System Service **REL5GDE**
 IBM Extended Data Stream Support
 for VM/Pass-Through Facility **REL5GDE**
 IBM 3422 magnetic tape subsystem **REL5GDE**
 National Language Support (NLS) **REL5GDE**
 OS Simulation Standard Label Tape
 Processing Exits **REL5GDE**
 parsing facility **REL5GDE**
 shared storage access **REL5GDE**
 SPOOL System Service **REL5GDE**
 system profile, SYSPROF EXEC **REL5GDE**
 TSAF **REL5GDE**
 VALIDATE command **REL5GDE**
 3480 Volume Serial Error Recording **REL5GDE**

address

function **SPIREF**
 instruction **SPIREF**
 settings saved during subroutine calls **SPIREF**
 stops **DIAG**
 to enter CP environment **CMSUG**
 virtual for unit record devices **CMSUG**
 Address entry in a names file **CMSLOT**

ADDRESS GCS **PLNGDE**

ADDRESS instruction **SPIUG**
 address lists **TSAFREF**
 address of disk, displaying **PRIMER**
 ADDRESS operand
 of RCHANNEL macro **PLNGDE**
 of RCTLUNIT macro **PLNGDE**
 of RDEVICE macro **PLNGDE**
 address rules for preferred MVS guests **RGOS**
 address space **INTRO**
 address translation **CPPROG, INTRO**
 addressability, parameter **TSAFREF**
 addressing

 remote bisync terminals and printers **PLNGDE**
 virtual 3880 Storage Control **CPPROG**

addressing exception

ACCEPT TSAFREF
CONNECT TSAFREF
DCLBFR TSAFREF
DESCRIBE TSAFREF
RECEIVE TSAFREF
SENDCNF TSAFREF
SENDCNFD TSAFREF
SENDDATA TSAFREF
SENDERR TSAFREF
SENDREQ TSAFREF
SETCMASK TSAFREF
SETMASK TSAFREF
SEVER TSAFREF
TESTCMPL TSAFREF

adjacent subcommands

 separated by line end characters **XEDIT**

ADMIN **INST**ADRP (Auto-Deactivation of Restricted Passwords) **INST**ADSTOP command **CMSUG, CPPROG, CPREF, DIAG**

 debugging aid **INTRO**
 described **CPREF**
 how to set address stops **DIAG**
 operands

 hexloc **CPREF**
 OFF CPREF
 preparing to use **CPREF**
 responses **CPREF**
 segment protection **CPPROG**
 turning off **CPREF**
 usage notes **CPREF**

ADT (active disk table) **CMSPROG, DIAG**

 signalling preferred filetypes **CMSPROG**

advanced application, COBOL **INTRO**

Advanced Communications Function

 for VTAM (ACF/VTAM)

 See VTAM (Virtual Communications Access Method

Advanced Communications Function/Network Control Program (ACF/NCP) **INTRO**Advanced Communications Function/System Support Programs (ACF/SSP) **INTRO**

Advanced Program-to-Program Communication (APPC)

 See APPC (Advanced Program-to-Program Communication)

Advanced Program-to-Program Communication/VM

 See APPC/VM (Advanced Program-to-Program Communication/VM)

advancing the line pointer

 using a target **XEDIT**
 using **DOWN XEDIT**
 using **NEXT XEDIT**

affinity

 automatic reset **OPGDE**

- how to set **CPPROG**
 implied **CPPROG**
 in AP or MP mode **CPPROG**
 set for specified user **CPREF**
 usage with attached processor **OPGDE**
- AFFINITY** operand
 of **OPTION** directory control statement **PLNGDE**
 of **QUERY** command **CPREF**
 of **SET** command **CPREF, OPGDE, CPPROG**
- AFFINITY** option for system generation **INTRO**
 affinity setting
 for AP/MP installations **CPREF**
 relation to the logon process **CPREF**
- AFT** (active file table) **DIAG**
 register use **DIAG**
- aid
 PL/I debugging **INTRO**
 program development, COBOL **INTRO**
- ALARM** command **CMSUG**
- ALARM VSCREEN** command
 description **CMSREF**
 format **CMSREF**
 messages **CMSREF**
 operands
 vname **CMSREF**
 responses **CMSREF**
 summary **CMSREF**
- alarm, sounding **XEDIT, XEDITUG**
- algebraic precedence **SPIREF**
- algorithms, prototyping **APGDE**
- alias entry point **DIAG**
- ALIGN** option of **ASSEMBLE** command **CMSREF**
 alignment of boundaries
 in assembler program statements **CMSREF**
- ALIGN2** option of **LKED** command **CMSREF**
- ALL XEDITUG**
 operand
 option
 of **GENMOD** command **CMSREF**
 of **LISTIO** command **CMSREF**
- ALL NOTEBOOK** file **CMSLOT, PRIMER**
- ALL** operand
 of **ACNT** command **CPREF**
 of **CHANGE** command **CPREF**
 of **CPTRAP** command **CPREF**
 of **DISABLE** command **CPREF**
 of **DRAIN** command **CPREF**
 of **ENABLE** command **CPREF**
 of **FDISPLAY** subcommand **DIAG**
 of **FLUSH** command **CPREF**
 of **FREE** command **CPREF**
 of **HOLD** command **CPREF**
 of **INDICATE** command **CPREF**
 of **MESSAGE** command **CPREF**
 of **MONITOR** command **CPREF**
 of **MSGNOH** command **CPREF**
 of **NETWORK** command **CPREF**
 of **PURGE** command **CPREF**
 of **QUERY** command **CPREF**
 of **QUERY** command. **CPREF**
 of **QUERY VIRTUAL** command **CPREF**
 of **SCREEN** command **CPREF**
 of **SCREEN** directory control statement **PLNGDE**
 of **SET** command **CPREF**
 of **SPTAPE** command **CPREF**
 of **STAT** command **DIAG**
 of **START** command **CPREF**
 of **TACTIVE** subcommand **DIAG**
 of **TLOADL** subcommand **DIAG**
 of **TSAB** subcommand **DIAG**
 of **TRACE** command **CPREF**
 of **TRANSFER** command **CPREF**
 of **WARNING** command **CPREF**
- ALL** option of **DETAIL HELP** **CMSUG**
ALL subcommand **XEDIT**
 example of **XEDIT**
ALL subcommand of **TRAPRED** command **DIAG**
- ALLOC** option of **LISTFILE** command **CMSREF**
- ALLOCATE** control statement **CPPROG**
- ALLOCATE, APPC** verb
 abend conditions **TSAFREF**
 mapped with **APPC/VM TSAFREF**
 parameters **TSAFREF**
 state changes **TSAFREF**
- allocating **CMSPROG**
 blocks of formatted minidisk to CMS file using
DASD Space for CP Language Files **PLNGDE**
DASD space for CP use **CPPROG**
DASD space for the directory **PLNGDE**
DASD space for the override file **PLNGDE**
DASD space on CP-owned volumes **PLNGDE**
- Expanded Storage
SYSPAG macro **PLNGDE**
SYSXSTOR macro **PLNGDE**
- extents on OS disks **CMSPROG**
- Paging Storage
SYSPAG macro **PLNGDE**
SYSXSTOR macro **PLNGDE**
- processor time **INTRO**
- real storage **RGOS**
 space for VSAM files (CMS/DOS) **CMSPROG**
 space for VSAM files (OS) **CMSPROG**
 storage **CMSPROG**
 VSAM extents on OS disks and minidisks **CMSPROG**
RESERVE command **CMSREF**
- allocation
 of processor resources **CPPROG**
 rates
 overflow **CPPROG**
- ALOCBLOK**
 chain
 automatic reordering of **CPPROG**
 chaining structure **CPPROG**
- ALLOW** operand of **IUCV** directory control
 statement **PLNGDE**
- ALLOWID** operand of **CPTRAP** command **CPREF**
- ALOGIC** option of **ASSEMBLE** command **CMSREF**
- alphabetical order sorting **CMSLOT, XEDIT**
- alphabetics
 checking with **DATATYPE SPIREF**
 used as symbols **SPIREF**
- ALPHANUM** command of **DMS/CMS** **APGDE**
 alphanumeric checking with **DATATYPE SPIREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- ALT (alternative function) key **TERMREF**
 ALT option
 in SET **XEDIT**
 of EXTRACT **XEDIT**
 Alt = **XEDIT, XEDITUG**
 ALT = n, meaning of **PRIMER**
 ALTN operand of RCTLUNIT macro **PLNGDE**
 ALTCONS operand of RIOGEN macro **PLNGDE**
 ALTCU operand of RDEVICE macro **PLNGDE**
 ALTER **XEDITUG**
 in typewriter mode **XEDITUG**
 ALTER macro **XEDIT**
 example of **XEDIT**
 alter contents of storage **DIAG**
 ALTER subcommand of XEDIT command **APGDE**
 ALTER TABLE command of SQL **APGDE**
 alteration count **CMSLOT, PRIMER, XEDIT, XEDITUG**
 altering
 a character **XEDIT, XEDITUG**
 characteristics of spool files **CMSUG**
 contents of real storage **CPREF**
 existing HELP files **CMSUG**
 external attributes of files
 closed spool **CPREF**
 input **CPREF**
 output **CPREF**
 reader **CPREF**
 flow within a repetitive DO loop **SPIREF**
 logical editing symbols **CPREF**
 REXX variables **SPIREF**
 spool file attributes **CPREF**
 spooled device attributes **CPREF**
 storage contents **DIAG**
 virtual machine environment **CPREF**
 virtual printer file attributes **CPREF**
 virtual punch file attributes **CPREF**
 virtual reader file attributes **CPREF**
 virtual storage **CPREF**
 in typewriter mode **XEDITUG**
 alternate blocks
 FB-512 disks **PLNGDE**
 alternate CMS nucleus placement **INST**
 alternate console at system
 generation **OPGDE**
 automatic logon **OPGDE**
 defining in RIOGEN macro **PLNGDE**
 disconnecting **OPGDE**
 multiple **OPGDE**
 restriction **PLNGDE**
 specifying **OPGDE**
 valid terminal designations **OPGDE**
 VM/SP HPO
 selecting **OPGDE**
 alternate CP nucleus **PLNGDE**
 planning **PLNGDE**
 support **OPGDE**
 Alternate CPU Recovery (ACR), when not
 to use **RGOS**
 alternate GCS nucleus placement **INST**
 alternate nucleus **OPGDE**
 alternate nucleus support **CPREF, CPPROG, REL5GDE**
 control blocks, new and changed **REL5GDE**
 described **REL5GDE**
 macros, new and changed **REL5GDE**
 modules, new and changed **REL5GDE**
 alternate path support **CPPROG**
 MVS virtual machine **RGOS**
 restrictions **PLNGDE**
 supported switches **PLNGDE**
 two-channel switch **PLNGDE**
 VM/VSE **RGOS**
 alternate tape drive support **REL5GDE**
 control blocks, new and changed **REL5GDE**
 macros, new and changed **REL5GDE**
 modules, new and changed **REL5GDE**
 alternate tracks
 minidisks **PLNGDE**
 system residence devices **PLNGDE**
 alternate tracks/blocks **PLNGDE**
 alternate userid support
 control blocks, new and changed **REL5GDE**
 DIAGNOSE code X'D4' **SFPROG**
 macros, new and changed **REL5GDE**
 modules, new and changed **REL5GDE**
 overview **REL5GDE**
 references to other publications **REL5GDE**
 alternative function (ALT) key **TERMREF**
 ALTID parameter of CONNECT **TSAFREF**
 access method services (AMS)
 See also AMS (Access Method Services)
 AMS (access method services)
 allocating VSAM space
 for OS VSAM users **CMSREF**
 in CMS/DOS **CMSREF**
 control statements, executing **CMSPROG**
 DASD devices supported **PLNGDE**
 DEFINE CLUSTER statement **CMSPROG**
 DEFINE control statement **CMSPROG**
 DEFINE USERCATALOG **CMSPROG**
 defining a master catalog **CMSPROG**
 defining OS input/output files **CMSPROG**
 DELETE control statement **CMSPROG**
 determine free space extents for **CMSREF**
 executing in CMS, examples **CMSPROG**
 functions
 EXPORT CMSPROG
 IMPORT CMSPROG
 REPRO CMSPROG
 in CMS **CMSPROG**
 in CMS/DOS **CMSPROG**
 invoking in CMS **CMSREF**
 LISTING file created by **CMSREF**
 planning considerations **PLNGDE**
 restrictions on using
 for OS and VSE users **CMSPROG**
 return codes **CMSPROG**
 storage requirements **PLNGDE**
 terminal sessions **CMSPROG**
 update procedures **INST**
 using tape input/output **CMSPROG**
 AMSERV command **CMSUG**
 creating tape files **CMSPROG**
 description **CMSREF**
 files, examples **CMSPROG**
 filetype **CMSPROG**
 format of **CMSPROG**
 functions under CMS **CMSPROG**
 LISTING file **CMSREF**
 output listings **CMSPROG**
 PRINT option **CMSREF**
 TAPIN option **CMSREF**
 TAPOUT option **CMSREF**
 using to read tapes **CMSPROG**
 analyzing
 performance for MVS guest **RGOS**
 system performance **CPPROG**

- AND** operand
of SET command **CPREF**
- AND** operator **SPIREF**, **SPIUG**
- AND** symbol used in string target **XEDIT**, **XEDITUG**
- AND**, logical **SPIREF**
- AND**'ing character strings together **SPIREF**
- annotating your console sheet **CPREF**
- ANSBUF** parameter of **SENDDATA** **TSAFREF**
- ANSLEN** parameter of **SENDDATA** **TSAFREF**
- ANSLIST** parameter of **SENDDATA** **TSAFREF**
- answer area, ***IDENT** **TSAFREF**
- answer data
connecting to ***IDENT** **TSAFREF**
severing the ***IDENT** connection **TSAFREF**
- ANY** operand
of **IUCV** directory control statement **PLNGDE**
- Any user
described **CPREF**, **OPGDE**
- ANY3800** operand
of **START** command **CPREF**
- AP** (attached processor) **CPPROG**, **DIAG**
affinity **CPPROG**
environment **CPPROG**
fetching and storing **CPPROG**
generating **PLNGDE**
generating a false
for the preferred machine assist
guest **CPPROG**
identify processor address **CPPROG**
improving performance of **CPPROG**
locks **CPPROG**
mode **CPPROG**
prefixing **CPPROG**
real I/O interrupts **CPPROG**
serializing of functions **CPPROG**
shared segments **CPPROG**
signaling **CPPROG**
SIGNAL macro **CPPROG**
storage **CPPROG**
synchronous interrupts **CPPROG**
time-of-day clock **CPPROG**
TOD clock **CPPROG**
virtual machine I/O management **CPPROG**
- AP** operand of the **SYSCOR** macro, coding to generate
attached processor **PLNGDE**
- AP**-generated VM/SP HPO systems
using for MVS guest **RGOS**
- AP/MP** (attached processor/multiprocessor)
environment
advantages **CPPROG**
facilitating **CPPROG**
mode **CPPROG**
- APAR** (authorized program analysis
report) **CPPROG**, **DIAG**, **REL5GDE**
definition **INST**, **DIAG**
used as filetype **INST**
used in Service Control File (SCF) **INST**
- APAR** command
customer profile sample **DIAG**
description **DIAG**
error message **DIAG**
format **DIAG**
- response
common **DIAG**
print **DIAG**
tape **DIAG**
sample APAR form **DIAG**
sample execution **DIAG**
submission **DIAG**
usage **DIAG**
- APAR** operand of **PRB** command **DIAG**
- APAR** output field of **STAT** command **DIAG**
- APARED** operand of **STAT** command **DIAG**
- APE V2** **INST**
- APFZAP** used to install **MSS** **PLNGDE**
- APL** **TERMREF**
character conversion **XEDIT**
control of translation tables **CPREF**
keys, allowing the use of **XEDIT**
publications **TERMREF**
- APL** operand of **TERMINAL** command **CPREF**
- APL** option
of **CMS** **QUERY** command **CMSREF**
of **CMS** **SET** command **CMSREF**
of **EXTRACT** **XEDIT**
of **QUERY** **XEDIT**
of **SET** **XEDIT**
of **TRANSFER** **XEDIT**
- APL** used on display terminal **CMSUG**
- APL, VS** **INTRO**
- APL2** **PLNGDE**, **SYMSMSG**
- APL2PP** **INST**
- APPC/VM** (Advanced Program-to-Program
Communication/VM) **CPPROG**, **PLNGDE**, **INTRO**
communications overview **TSAFREF**
control blocks, new and changed **REL5GDE**
conversations in **TSAFREF**
defined **REL5GDE**
differences from **IUCV** **TSAFREF**
error conditions **TSAFREF**
error/SEVER codes **TSAFREF**
functions **TSAFREF**
See also **ACCEPT** function of **IUCV**
See also **CONNECT** function of **APPC/VM**
See also **DCLBFR** function of **IUCV**
See also **DESCRIBE** function of **IUCV**
See also **QUERY** function of **IUCV**
See also **RECEIVE** function of **APPC/VM**
See also **RTRVBFR** function of **IUCV**
See also **SENDCNF** function of **APPC/VM**
See also **SENDCNFD** function of **APPC/VM**
See also **SENDDATA** function of **APPC/VM**
See also **SENDERR** function of **APPC/VM**
See also **SENDREQ** function of **APPC/VM**
See also **SETCMASK** function of **IUCV**
See also **SETMASK** function of **IUCV**
See also **SEVER** function of **APPC/VM**
See also **TESTCmpl** function of **IUCV**
See also **TESTMSG** function of **IUCV**
functions not supported **TSAFREF**
interrupts **TSAFREF**
macros, new and changed **REL5GDE**
migration considerations **REL5GDE**
modules, new and changed **REL5GDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- paths **TSAFREF**
- performance **TSAFREF**
- program interface **REL5GDE**
- return codes **TSAFREF**
- security **TSAFREF**
- services **TSAFREF**
- states **TSAFREF**
- synchronous event (type X'0C') entry **DIAG**
- APPCVM macro **INTRO, TSAFREF**
- APPEND option
 - of COPYFILE command **CMSREF**
 - of FILELIST command **CMSREF**
 - of LISTFILE command **CMSREF**
 - of LISTIO command **CMSREF**
 - of RDRLIST command **CMSREF**
- appending data to existing files **CMSPROG**
- appending text to line **XEDIT, XEDITUG**
 - in typewriter mode **XEDITUG**
- Application Prototype Environment **INST**
- Application System **INST**
- applications
 - advanced, COBOL **INTRO**
 - checking new programs **INTRO**
 - debugging applications **INTRO**
 - developing under CMS **INTRO**
 - executing under CMS **INTRO**
 - facility for debugging **INTRO**
 - IBM Enhanced Connectivity Facilities **INTRO**
 - nonpaging **CPPROG**
 - on GCS **PLNGDE**
 - profile pools of ISPF **APGDE**
 - program products **INTRO**
 - steps in developing **INTRO**
 - VMCF SFPROG**
- Application System (AS) **INTRO**
- APPLMSG macro **CMSPROG, REL5GDE**
 - accessing messages
 - from assembler programs **REL5GDE**
 - APPLID operand **MACREF**
 - BUFFA operand **MACREF**
 - building parameter list **MACREF**
 - COMP operand **MACREF**
 - creating a header for messages **MACREF**
 - CSECT operand **MACREF**
 - DISP operand **MACREF**
 - display format of message **MACREF**
 - execute format **MACREF**
 - FMT operand **MACREF**
 - FMTA operand **MACREF**
 - generating
 - code to fill parameter list **MACREF**
 - storage area for parameter list **MACREF**
 - HEADER operand **MACREF**
 - invoking message facility **MACREF**
 - LET operand **MACREF**
 - LETA operand **MACREF**
 - LINE operand **MACREF**
 - LINEA operand **MACREF**
 - list format **MACREF**
 - MAXSUBS operand **MACREF**
 - message format **MACREF**
 - message line number **MACREF**
 - message number **MACREF**
 - message repository **MACREF**
 - message severity **MACREF**
 - MF operand **MACREF**
 - NUM operand **MACREF**
 - NUMA operand **MACREF**
- processing **MACREF**
- reserving program storage **MACREF**
- retrieving messages from
 - message repository **MACREF**
- specifying buffer address **MACREF**
- specifying call type **MACREF**
- specifying macro format **MACREF**
- specifying message text **MACREF**
- standard format **MACREF**
- SUB operand **MACREF**
- substitutions **MACREF**
- TEXT operand **MACREF**
- TEXTA operand **MACREF**
- TYPICAL operand **MACREF**
- apply
 - corrective service
 - CMS INST**
 - CP INST**
 - GCS INST**
 - SNA products **INST**
 - TSAF INST**
 - emergency fixes using ZAPs **INST**
 - local updates to VM/SP HPO **INST**
 - preventive service
 - CMS INST**
 - CP INST**
 - GCS INST**
 - object code **INST**
 - SNA products **INST**
 - TSAF INST**
 - PTFs to VSE/VSAM **INST**
 - ZAPs **INST**
- Apply List
 - contents **INST**
 - definition **INST**
 - example **INST**
- apply local updates to VM/SP **INTRO**
- APSS support **CPREF**
- AP2SVP **INST**
- ARBCHAR option
 - of EXTRACT **XEDIT**
 - of QUERY **XEDIT**
 - of SET **XEDIT**
 - of TRANSFER **XEDIT**
- arbitrary character **XEDITUG**
- area operand of SCREEN command **CPREF**
- areas
 - SYSPAG, automatic reordering of **CPPROG**
 - of display screen **TERMREF**
- AREGS subcommand of DUMPSCAN command
 - description **DIAG**
 - error message **DIAG**
 - format **DIAG**
 - functional summary **DIAG**
 - response **DIAG**
 - sample output **DIAG**
 - usage **DIAG**
- ARG function **SPIREF, SPIUG**
- ARG instruction **SPIREF, SPIUG**
 - description of **SPIUG**
 - example of **SPIUG**
 - using literal patterns **SPIUG**
- ARG option of PARSE instruction **SPIREF**
- arguments **EXEX2**
 - &1 &2 ... **EXEX2**
 - checking with ARG function **SPIREF**
 - of a CALL instruction **SPIUG**
 - of a function **SPIUG**

- of a subroutine **SPIUG**
- of EXECs **SPIREF**
- of functions **SPIREF**
- of subroutines **SPIREF**
- on RUN command **CMSREF**
- parsing **SPIUG**
- passed to EXEC procedure
 - assigning them to special variables **CMSREF**
- passing to EXECs **SPIREF**
- passing to functions **SPIREF**
- retrieving
 - with ARG function **SPIREF**
 - with ARG instruction **SPIREF**
 - with the PARSE ARG instruction **SPIREF**
- ARIOBLOK** subcommand of **DUMPSCAN** command
 - description **DIAG**
 - error message **DIAG**
 - format **DIAG**
 - functional category **DIAG**
 - response **DIAG**
 - sample output **DIAG**
 - usage **DIAG**
- arithmetic
 - checking data **SPIUG**
 - combination rules **SPIREF**
 - comparisons **SPIREF**
 - description **SPIUG**
 - errors **SPIREF**
 - NUMERIC settings **SPIREF**
 - operators **SPIREF**
 - overflow **SPIREF**
 - precision **SPIREF**
 - underflow **SPIREF**
- ARNGEND EXEC**
 - loading from 3704/3705
 - control program tape **INST**
 - using to build 3705 assembler **INST**
- array
 - description of **SPIUG**
 - initialization of **SPIREF**
 - setting up **SPIREF**
 - using compound symbols **SPIUG**
 - with more than one dimension **SPIUG**
- AS INST**
- AS operand
 - of **NETWORK** command **CPREF**
- ASA carriage control characters **MACREF**
- specified using **PRINTL** macro **MACREF**
- ascending order sorting **CMSLOT, XEDIT**
- ASCII support **REL5GDE, TERMREF**
- control blocks, new and changed **REL5GDE**
- described **REL5GDE**
- devices supported by VM/SP
- line mode support **REL5GDE**
- macros, new and changed **REL5GDE**
- modules, new and changed **REL5GDE**
- new and changed copy files **REL5GDE**
- translate tables **TERMREF**
 - for 2741 APL **TERMREF**
 - for 3270 APL **TERMREF**
 - for 3270 text feature **TERMREF**
- 7171 support **REL5GDE**
- ASCIITBL operand
 - of **TERMINAL** command **CPREF**
- ASI
 - See Automated System Initialization (ASI)
- ASMGEND EXEC**
 - building system assembler **INST**
 - command format **INST**
 - function **INST**
 - messages **INST**
 - usage notes **INST**
- ASM3705** command
 - files created by **INST**
 - format **INST**
 - function **INST**
 - options **INST**
- ASM3705** filetype usage in **CMS/DOS CMSUG**
- ASSEMBLE**
 - assembler input ddname **CMSREF**
 - command
 - ALIGN** option **CMSREF**
 - ALOGIC** option **CMSREF**
 - BUFSIZE** option **CMSREF**
 - DECK** option **CMSREF**
 - definition **INTRO**
 - description **CMSREF**
 - DISK** option **CMSREF**
 - ESD** option **CMSREF**
 - examples of **CMSPROG, INTRO**
 - FLAG** option **CMSREF**
 - LIBMAC** option **CMSREF**
 - LINECOUN** option **CMSREF**
 - LIST** option **CMSREF**
 - listing control options for **CMSREF**
 - MCALL** option **CMSREF**
 - MLOGIC** option **CMSREF**
 - NOALIGN** option **CMSREF**
 - NOALOGIC** option **CMSREF**
 - NODECK** option **CMSREF**
 - NOESD** option **CMSREF**
 - NOLIBMAC** option **CMSREF**
 - NOLIST** option **CMSREF**
 - NOMCALL** option **CMSREF**
 - NOMLOGIC** option **CMSREF**
 - NONUM** option **CMSREF**
 - NOOBJECT** option **CMSREF**
 - NOPRINT** option **CMSREF**
 - NORENT** option **CMSREF**
 - NORLD** option **CMSREF**
 - NOSTMT** option **CMSREF**
 - NOTERM** option **CMSREF**
 - NOTEST** option **CMSREF**
 - NOXREF** option **CMSREF**
 - NOYFLAG** option **CMSREF**
 - NUMBER** option **CMSREF**
 - OBJECT** option **CMSREF**
 - output files produced **CMSPROG**
 - PRINT** option **CMSREF**
 - RENT** option **CMSREF**
 - RLD** option **CMSREF**
 - STMT** option **CMSREF**
 - SYSPARM** option **CMSREF**
 - TERMINAL** option **CMSREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

TEST option CMSREF
 usage in CMS **CMSUG**
WORKSIZE option CMSREF
XREF option CMSREF
YFLAG option CMSREF
 filetype
 used as input to assembler **CMSREF**
 assemble, defined **INTRO**
 assembler
 building system assembler **INST**
 building 3705 assembler **INST**
 conditional assembly statements, listing **CMSREF**
 overriding CMS file defaults **CMSREF**
 programs
 OS programs in CMS **CMSPROG**
 overriding default definitions
 using ddnames **CMSPROG**
 programs in CMS/DOS **CMSPROG**
 source files, from OS disks **CMSPROG**
 VSAM programs in CMS **CMSPROG**
 publications **SRPI**
 using under CMS **CMSREF**
 virtual storage requirements **CMSPROG**
ASSEMBLER H INTRO, REL5GDE
 assembler language **INTRO**
 functions **SPIUG**
 macros supported by VSE **CMSPROG**
 programs **EXEX2**
 SVC 202 calls **EXEX2**
 tokenized plist **EXEX2**
 untokenized plist **EXEX2**
 subroutine **APGDE**
 assembler server (IBMABASE) example **SRPI**
ASSEMBLER XF INTRO
 assembly messages, CPRB macro processing **SRPI**
ASSGN command
 assigning programmer logical unit **CMSPROG**
 DEN option CMSREF
 description **CMSPROG, CMSREF**
 IGN option CMSREF
 LOWCASE option CMSREF
 PRINTER option CMSREF
 PUNCH option CMSREF
 READER option CMSREF
 SYSxxx option CMSREF
 TAPn option CMSREF
 TERMINAL option CMSREF
 TRTCH option CMSREF
 UA option CMSREF
 UPCASE option CMSREF
 using to assign logical units **CMSPROG**
 7TRACK option CMSREF
 9TRACK option CMSREF
 assigning
 a name to a line **XEDITUG**
 arguments **EXEX2**
 data to variables **SPIREF**
 dedicated channels to virtual machine **CPPROG**
 defining **XEDIT**
 disk devices **CMSPROG**
 entering before program execution **CMSPROG**
 extended **XEDIT**
 filemode letters to disks **CMSUG**
 group names to users **CPPROG**
 logical operator **SFPROG**
 LGLOPR action routine SFPROG
 LGLOPR command SFPROG
 more than 8 privilege classes **PLNGDE**
 physical devices **CMSPROG**
 to a virtual device **CMSPROG**
 used in targets **XEDIT**
 used with **CHANGE XEDIT**
 assignments
 description of **SPIREF, SPIUG**
 examples of **SPIUG**
 logical unit, listing **CMSREF**
 of compound variables **SPIREF**
 statements
 description of **EXEX2**
 example **EXEX2**
 system and programmer, unassigning **CMSREF**
 assignment indicator (=) **SPIREF**
ASSIST operand
 of SET command **CPREF, CPPROG**
 assist, virtual machine
 See virtual machines, assist
 associative storage **SPIREF**
 asterisk (*)
 in **FILELIST** display **CMSLOT**
 in **RDRLIST** display **CMSLOT**
 with **CHANGE** command **CMSLOT**
 with **FILELIST** command **CMSLOT**
 with **SORT** command **CMSLOT**
 with **TYPE** command **CMSLOT**
 asymmetric multiprocessor, DASD sharing with
 MVS guest **RGOS**
 asynchronous communication compared with
 synchronous **TSAFREF**
 RECEIVE TSAFREF
 scenario **TSAFREF**
AT command
 of VS FORTRAN interactive debug **APGDE**
AT subcommand
 of **TESTCOB** command **APGDE**
 of **TESTFORT** command **APGDE**
ATTACH command REL5GDE
ATSLINKS FILE TSAFREF
 using **ADD LINK** to manipulate **TSAFREF**
 using **DELETE LINK** to manipulate **TSAFREF**
ATTACH (OS macro) APGDE
ATTACH command CMSUG, CPPROG, CPREF, INTRO
 described **CPREF**
 operands
 * **CPREF**
 CHANNEL CPPROG, CPREF
 PROC CPREF
 R/O operand **CPREF**
 raddr **CPREF**
 SYSTEM CPREF
 TO CPREF
 userid **CPREF**
 vaddr **CPREF**
 valid **CPREF**
 3330V CPREF
 responses **CPREF**
 usage notes **CPREF**
 ATTACH command (CP) TSAFREF, RGOS
ATTACH macro GCSREF, PLNGDE
 de parameter **GCSREF**
 description **GCSREF**
 dpmo parameter **GCSREF**
 ecb parameter **GCSREF**
 ep parameter **GCSREF**
 eploc parameter **GCSREF**
 etxr parameter **GCSREF**
 execute format **GCSREF**

- jstcb parameter **GCSREF**
 list format **GCSREF**
 mf parameter **GCSREF**
 param parameter **GCSREF**
 sf parameter **GCSREF**
 shspl parameter **GCSREF**
 shspv parameter **GCSREF**
 sm parameter **GCSREF**
 szero parameter **GCSREF**
 vl parameter **GCSREF**
ATTACH macro (SVC 42) **CMSPROG**
ATTACH operand
 of **NETWORK** command **CPREF**
 of **QUERY** command **CPREF**
 attached processor
 definition **INST**
 displaying load **CPREF**
 attached processor (AP) **CPPROG**
 See also AP (attached processor)
 attached processor application
 use of **SET ASSIST** **CPREF**
 attached processor mode (AP) **DIAG**
 examine real storage **SFPROG**
 attached processor system
 AFFINITY command usage **OPGDE**
 clock synchronization **OPGDE**
 finding value of its
 prefix storage area (PSA) **CPREF**
 generating **PLNGDE**
 initialization **OPGDE**
 load list **PLNGDE**
 locked shared pages
 restriction **OPGDE**
 modules **PLNGDE**
 performance measurement **PLNGDE**
 restarting **OPGDE**
 specifying AP initialization
 SYSCOR macro **PLNGDE**
 specifying one processor **OPGDE**
 system identification
 SYSID macro **PLNGDE**
 System/370 Extended Feature **PLNGDE**
 attached processor system (AP), generating **PLNGDE**
 attached processor/multiprocessor (AP/MP) **CPPROG**
 attaching
 and detaching volumes
 user and system **OPGDE**
 more than 410 devices
 to a virtual machine **CPPROG**
 virtual devices **CPPROG**
 attaching a task **PLNGDE**
 attaching dedicated channels **CPREF**
 attachments, remote 3270s **PLNGDE**
 attention handling, terminal control of **CPREF**
 attention interruptions **TERMREF**
 causing **CMSUG**, **CMSREF**
 pending at virtual console **CPREF**
 signalling **CPREF**
 simulating **CPREF**
 virtual machine **CMSUG**
 attention key **INST**
 definition **INST**
ATTENTION signaling **TERMREF**
ATTN command **CPREF**, **TERMREF**
 described **CPREF**
 responses **CPREF**
 usage notes **CPREF**
ATTN Function
 See also **MACREF**
 stacking an input line **MACREF**
 usage **MACREF**
ATTN key **INST**, **TERMREF**
ATTN operand
 of **IPL** command **CPREF**
 of **TERMINAL** command **CPREF**
ATTR statement in ISPF panels **APGDE**
 attribute, **LRECL** **INTRO**
 attributes
 changing spool file **CPREF**
 modifying for 3800 printer **CPREF**
 modifying virtual device **CPREF**
 audible alarm **TERMREF**
AUTHCALL macro **GCSREF**, **PLNGDE**
 description **GCSREF**
 ep parameter **GCSREF**
 eploc parameter **GCSREF**
 uword parameter **GCSREF**
AUTHNAME macro **GCSREF**, **PLNGDE**
 clr parameter **GCSREF**
 description **GCSREF**
 ep parameter **GCSREF**
 error parameter **GCSREF**
 execute format **GCSREF**
 list address format **GCSREF**
 list format **GCSREF**
 mf parameter **GCSREF**
 name parameter **GCSREF**
 set parameter **GCSREF**
 uword parameter **GCSREF**
 authorization **PLNGDE**
 connect to *CRM **TSAFREF**
 connect to *IDENT **TSAFREF**
 connect to resources **TSAFREF**
 CP command use **PLNGDE**
 entry point **PLNGDE**
 for commands **PLNGDE**
 for real I/O **PLNGDE**
 GCS access **PLNGDE**
 manage resources **TSAFREF**
 revoke a resource **TSAFREF**
 storage access **PLNGDE**
 storage key switching **PLNGDE**
 storage protection **PLNGDE**
 supervisor state **PLNGDE**
 Vector Facility **CPPROG**, **OPGDE**
 authorization to use system **INTRO**
AUTHORIZE command, defined **INTRO**
AUTHORIZE function of **VMCF** **SFPROG**
 authorized application **REL5GDE**
 authorized program **REL5GDE**
 Authorized Program Analysis Report (APAR)
 See APAR (Authorized Program Analysis Report)
 authorized virtual machine **REL5GDE**
 authorizing users **PLNGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- AUTHUSER** macro **GCSREF**
 description **GCSREF**
 end parameter **GCSREF**
 name parameter **GCSREF**
 start parameter **GCSREF**
- AUTO** operand
 of **NETWORK** command **CPREF**
 of **SET** command **CPREF**
 of **START** command **CPREF**
 of **SYSMON** macro **PLNGDE**
- AUTO** option
 of **INCLUDE** command **CMSREF**
 of **LOAD** command **CMSREF**
- auto-deactivation
 of restricted passwords **CPPROG**
- Auto-Deactivation of Restricted Passwords (**ADRP**)
 See **ADRP** (Auto-Deactivation of Restricted Passwords)
- auto-IPL **PLNGDE**
- AUTODISK** operand
 of **MONITOR** command **CPREF**
- AUTOLOG** **PLNGDE**
 facility
 MVS virtual machine **RGOS**
 VM/VSE **RGOS**
 journaling
 accounting records **CPPROG**
- AUTOLOG** command **CMSUG**, **CPPROG**, **CPREF**, **RGOS**
 described **CPREF**
 operands
 password **CPREF**
 userid **CPREF**
 variable data **CPREF**
 responses **CPREF**
 usage notes **CPREF**
- AUTOLOG1** **INST**, **PLNGDE**
- AUTOLOG1**, directory entry
 MVS virtual machine **RGOS**
 VM/VSE **RGOS**
- automated CMS initialization **INTRO**
- automated procedures **INTRO**
- Automated System Initialization (**ASI**)
 interrupting under VM **RGOS**
 unsupported devices **RGOS**
- automatic
 IPL **CMSUG**
 invocation
 of the programmable operator **SFPROG**
 line wrapping **XEDITUG**
 loading, suppressing **CPREF**
 monitoring, overriding **CPREF**
 read function, setting **CMSREF**
 reordering of **SYSPAG** areas **CPPROG**
 save function **XEDITUG**
 for editors **CMSUG**
 in typewriter mode **XEDITUG**
 volume mount and demount 3330V **OPGDE**
- automatic carriage return option on IPL
 command **CPREF**
 causes **OPGDE**
- automatically saving your file **CMSLOT**, **PRIMER**
- AUTOPOLL** operand
 of **SET** command **CPREF**
- AUTOREAD** command **TERMREF**
- AUTOREAD** operand
 of **CMS SET** command for display terminals **CMSUG**
- AUTOREAD** option
 of **CMS QUERY** command **CMSREF**
 of **CMS SET** command **CMSREF**
- AUTOSAVE** **PRIMER**
 option in **QUERY** **CMSLOT**
 option in **SET** **CMSLOT**
- AUTOSAVE** option
 of **EXTRACT** **XEDIT**
 of **QUERY** **CMSLOT**, **XEDIT**
 of **SET** **CMSLOT**, **XEDIT**
 of **TRANSFER** **XEDIT**
- autosave file **CMSLOT**
- AUTOSAVE** function **APGDE**
- AUTOSAVE** option, example of use **INTRO**
- AUTOSAVE** subcommand
- auxiliary
 storage **CPPROG**, **REL5GDE**
- auxiliary directories **INST**
 adding **CMSPROG**
 creating **CMSPROG**, **CMSREF**
DMSLADAD entry point **CMSPROG**
 establishing linkage **CMSPROG**
GENDIRT command **CMSPROG**
 generating **CMSPROG**
 initializing **CMSPROG**
 saving resources **CMSPROG**
 usage **CMSPROG**
- auxiliary files
 definition **INST**
 description of **CMSPROG**
 directories, creating for assembler **INST**
 preferred **CMSPROG**
 updating VM/SP **INST**
- auxiliary processing routine to receive control
 during I/O operation **CMSPROG**
- auxiliary processor, VS APL **INTRO**
- auxiliary storage
 required by **CMS** **PLNGDE**
- AUXPROC** option of **FILEDEF** command **CMSPROG**,
CMSREF
- AUXxxxx** filetype usage in **CMS** **CMSUG**
- available real storage
 calculating **PLNGDE**
 Formula 1 **PLNGDE**
- average queue delay **CPPROG**
- AVG** function of **SQL** **APGDE**
- avoiding **IUCV** external interrupts **SFPROG**

B

- B border command **PRIMER**
back tab key **PRIMER**
backing-up a file **PRIMER**
BACKSPAC command **CMSUG, CPPROG, CPREF**
INTRO
described **CPREF**
operands
EOF **CPREF**
file **CPREF**
lprt **CPREF**
pages **CPREF**
raddr **CPREF**
1 **CPREF**
responses **CPREF**
usage notes **CPREF**
backspace characters in typewriter mode **XEDITUG**
affected by SET IMAGE **XEDIT**
BACKSPACE command **APGDE**
BACKSPACE key **CMSLOT**
backup/restore procedure
VM under VM **RGOS**
VM/VSE **RGOS**
backup directories **CPPROG**
BACKWARD **XEDITUG**
BACKWARD command of DMS/CMS **APGDE**
backward LOCATE **CMSLOT, PRIMER**
backward scrolling in XEDIT **PRIMER**
backward search **XEDIT, XEDITUG**
BACKWARD subcommand **XEDIT**
assigned to a PF key **XEDIT**
of XEDIT command **APGDE**
bad fix, remove **INST**
BALRSAVE **DIAG**
BASE control record, ZAP program
format **INST**
function **INST**
options **INST**
base register **GCSREF**
BASEADD operand
of RDEVICE macro **PLNGDE**
BASEDATE option of DATE function **SPIREF**
BASEFT option
of EXTRACT **XEDIT**
of QUERY **XEDIT**
BASIC command
to compile a program **CMSLOT**
to create a program **CMSLOT**
basic control (BC) mode **CPPROG, REL5GDE**
BASIC, IBM **INTRO, PRIMER**
BASICRUN command **CMSLOT, PRIMER**
batch facility **INST**
/JOB control cards **CMSPROG**
BATEXIT1 routine **CMSPROG**
BATEXIT2 routine **CMSPROG**
BATLIMIT MACRO file **CMSPROG**
controlling **OPGDE**
data security **CMSPROG**
description **CMSPROG**
EXEC procedures **CMSPROG**
installation input **CMSPROG**
installing **CMSPROG**
invoking **OPGDE**
IPL performance **CMSPROG**
resetting system limits **CMSPROG**
system limits **CMSPROG**
user-specified control language **CMSPROG**
using **OPGDE**
batch job statement
ACCESS **INTRO**
LINK **INTRO**
batch jobs
for CMS batch facility **CMSUG**
for Non-CMS users **CMSUG**
purging **CMSUG, OPGDE**
reordering **CMSUG, OPGDE**
restarting **OPGDE**
BATCH option
of PARM operand
for CMS users **CPREF**
batch processing
under CMS **INTRO, CMSUG**
VM Batch Subsystem **INTRO**
Batch Subsystem (VM) **INTRO**
batch virtual machine
starting **OPGDE**
stopping **OPGDE**
BATEXIT1 routine **CMSPROG**
BATEXIT2 routine **CMSPROG**
BATLIMIT macro **CMSPROG**
BC mode **CPPROG**
BCD characters, converting to EBCDIC **CMSREF**
BDAM
restrictions on **CMSPROG**
support of **CMSPROG**
BDAM files, specifying in CMS **CMSREF**
BEGIN command **CMSUG, CPREF, DIAG, PRIMER, TERMREF**
described **CPREF**
operand
hexloc **CPREF**
responses **CPREF**
to return to virtual machine environment **CMSUG**
usage notes **CPREF**
used after disconnecting **CPREF**
BEGIN DECLARE SECTION statement
in COBOL and SQL **APGDE**
BEGIN, CP command **RGOS**
beginning
to use XEDIT **CMSLOT, PRIMER**
virtual machine execution **CMSUG**
your terminal session **CMSUG**
BEG3800 operand of START command **CPREF**
belt print **CPREF**
BETWEEN predicate of SQL **APGDE**
between-release support
CONSOLE macro **REL5GDE**
Enhanced Connectivity Facilities on VM **REL5GDE**
error recording **REL5GDE**
IBM Extended Data Stream Support
for VM/Pass-Through Facility **REL5GDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- IBM 3422 magnetic tape subsystem **REL5GDE**
 logical device host limit relief **REL5GDE**
 OS Simulation Standard Label Tape
 Processing Exits **REL5GDE**
 Paging Storage **REL5GDE**
 support of ASCII **REL5GDE**
 3480 Volume Serial Error Recording **REL5GDE**
 bibliography **APGDE, DIAG, EXEC2, GCSREF, SRPI**
 bill-of-forms number **REL5GDE**
 binary synchronous (BSC) lines
 See BSC (binary synchronous) lines
 bisynchronous drivers (BSC) **DIAG**
 BIT operand of SET command **CPREF**
 BITAND function **SPIREF**
 BITOR function **SPIREF**
 bits checked using DATATYPE **SPIREF**
 bits for licensed program identification **SFPROG**
 BITXOR function **SPIREF**
 blank (concatenation operator) **SPIUG**
 blank characters
 removed by COMPRESS **XEDIT**
 in targets, significance of **XEDITUG**
 to separate file lines
 during string target search **XEDIT**
 blank removal with STRIP function **SPIREF**
 blanks
 adjacent to special character **SPIREF**
 as concatenation operator **SPIREF**
 as delimiters **CMSREF, CPREF**
 between words
 determining significance of **XEDIT**
 removed **SPIUG**
 BLDL macro **GCSREF, PLNGDE**
 description **GCSREF**
 list address parameter **GCSREF**
 0 parameter **GCSREF**
 BLDL macro (SVC 18) **CMSPROG**
 blip **TERMREF**
 characters
 displaying **CMSREF**
 for virtual machine **CMSREF**
 function
 querying setting of **CMSREF**
 setting **CMSREF**
 BLIP character **CMSPROG**
 BLIP option of CMS SET command **CMSREF**
 BLKSIZE (blocksize)
 512, 1024, 2048, 4096 bytes **CMSPROG**
 800 bytes **CMSPROG**
 BLKSIZE option
 of FILEDEF command **CMSREF**
 of FORMAT command **CMSREF**
 block address, used to load a system **CPREF**
 block of lines
 copying **XEDIT, XEDITUG**
 deleting **XEDIT, XEDITUG**
 duplicating **XEDIT, XEDITUG**
 excluding from display **XEDIT**
 moving **XEDIT, XEDITUG**
 shifting left **XEDIT**
 shifting right **XEDIT**
 BLOCK option of FILEDEF command **APGDE, CMSPROG, CMSREF**
 blocks
 FB-512, alternate **PLNGDE**
 minidisks, alternate **PLNGDE**
 minidisks, alternate **PLNGDE**
 blocksize (**BLKSIZE**)
 of FILEDEF command **CMSREF**
 of FORMAT command **CMSREF**
 BLOCKSIZE option of FILEDEF command **APGDE**
 blocksize, specifying with FILEDEF command **CMSREF**
 BLP
 See bypass label processing, tapes
 BLP operand of FILEDEF command **CMSREF**
 BMX directory option **TSAFREF**
 BMX operand
 of DEFINE command **CPREF**
 of OPTION directory control statement **PLNGDE**
 BMX option
 defining in directory **PLNGDE**
 for MVS guest **RGOS**
 for VM under VM **RGOS**
 for VM/VSE **RGOS**
 BNF syntax **EXEX2**
 BODY statement in ISPF panels **APGDE**
 bold type **PRIMER**
 books copied from DOS/VSE source statement
 libraries **CMSPROG**
 boolean operations **SPIREF**
 border commands
 B (backward) **PRIMER**
 D (drop) **PRIMER**
 F (forward) **PRIMER**
 L (left) **PRIMER**
 M (move) **PRIMER**
 P (pop) **PRIMER**
 R (right) **PRIMER**
 scrolling forward and backward **CMSUG**
 scrolling right and left **CMSUG**
 summary **CMSREF**
 BORDER option
 of CMS QUERY command **CMSREF**
 of CMS SET command **CMSREF**
 borrowing another user's file **PRIMER**
 BOTH operand of TRACE command **CPREF**
 BOTH option of PER command **CPREF**
 BOTTOM **XEDITUG**
 in typewriter mode **XEDITUG**
 practice exercise using **XEDITUG**
 BOTTOM command **CMSLOT, PRIMER**
 BOTTOM command of DMS/CMS **APGDE**
 bottom of program reached during execution **SPIREF**
 bottom of range **XEDIT**
 BOTTOM operand of SYSPCLAS macro **PLNGDE**
 BOTTOM subcommand **XEDIT**
 BOTTOM subcommand of TRAPRED command **DIAG**
 boundary alignment of statements in assembler
 program **CMSREF**
 BPAM, support of **CMSPROG**
 braces, use of **CPREF**
 brackets, use of **CPREF**
 branch entry
 Freemain (type X'0B') entry **DIAG**
 Getmain (type X'0A') entry **DIAG**
 BRANCH event type of PER command **CPREF**
 BRANCH operand of TRACE command **CPREF**
 branch prompt **DIAG**
 branch traceback table **DIAG**
 branches, tracing **CPREF**
 BREAK command **APGDE**
 BREAK key **CMSLOT**
 BREAKIN operand of TERMINAL command **CPREF**
 breakpoint setting **DIAG**
 breakpoints **APGDE**

- BRIEF HELP CMSUG
 BRKKEY operand of TERMINAL command CPREF
 BRKKEY option
 of EXTRACT XEDIT
 of QUERY XEDIT
 of SET XEDIT
 BRKKEY, CP command RGOS
 browse option in ISPF APGDE
 BROWSE service of ISPF APGDE
 BSAM PLNGDE
 BSAM/QSAM, support of CMSPROG
 BSC (binary synchronous) lines
 CLUSTER macro PLNGDE
 coding DMKRIO PLNGDE
 3270 support PLNGDE
 BSC (bisynchronous drivers) DIAG
 BSP macro (SVC 69) CMSPROG
 buffer
 font offset CPPROG
 altering PLNGDE
 loading print belt image CPREF
 updating INST
 usage with 3289 model 4 printer CPREF
 forms control (FCB) CPPROG
 supplied with starter system PLNGDE
 used with 3203 printer CPREF
 used with 3211 printer CPREF
 used with 3262 printer CPREF
 images
 for the 3203 Printer, UCC CPPROG
 for the 3211 Printer, UCSB (Universal Character Set Buffer) CPPROG
 interactive
 pageable storage set CPREF
 size
 controlling for assembler CMSREF
 for VSAM programs CMSREF
 UCS (universal character set) CPPROG
 used with 1403 printer CPREF
 used with 3203 printer CPREF
 used with 3211 printer CPREF
 used with 3262 printer CPREF
 universal character set buffer (USCB) CPREF
 BUFFER parameter
 of DCLBFR TSAFREF
 of RECEIVE TSAFREF
 of SENDDATA TSAFREF
 buffer, declaring
 See DCLBFR function of IUCV
 buffer, retrieving
 See RTRVBFR function of IUCV
 buffer, terminal input INTRO
 buffers SPIUG
 application TSAFREF
 control TSAFREF
 forms control CPPROG
 print CPPROG
 spool OPGDE
 buffers used by FSCB CMSPROG
 BUFFS operand
 of MONITOR command CPREF
 of SYSMON macro PLNGDE
 BUFLen parameter
 of RECEIVE TSAFREF
 of SENDDATA TSAFREF
 BUFLIST parameter
 of RECEIVE TSAFREF
 of SENDDATA TSAFREF
 BUFSIZE option of ASSEMBLE command CMSREF
 BUFSP option
 in CMS/DOS CMSPROG
 of the DLBL command CMSPROG
 BUFSP option of DLBL command CMSREF
 BUFTIME operand
 of SET command CPREF
 build
 CMS LOADLIB INST
 CMS module INST
 CMS nucleus
 after loading national language
 files INST
 existing VM system procedure INST
 SPGEN EXEC procedure INST
 Starter System procedure INST
 using SPGEN after applying service INST
 VMFLOAD command procedure INST
 CP nucleus
 after loading national language
 files INST
 existing VM system procedure INST
 SPGEN EXEC procedure INST
 Starter System procedure INST
 using SPGEN after applying service INST
 using VMFLOAD
 after applying service INST
 VMFLOAD command procedure INST
 definition INST
 existing VM system procedure
 GCS nucleus
 after loading national language
 files INST
 existing VM system procedure INST
 SPGEN EXEC procedure INST
 Starter System procedure INST
 VMFLOAD command procedure INST
 process TSAFREF
 RUNTSF module INST
 starter system procedure
 CMS nucleus INST
 CP nucleus INST
 3705 assembler INST
 BUILD macro for 3704/3705 control program INST
 building
 a new nucleus
 for VM under VM RGOS
 for VM/VSE RGOS
 shared segments PLNGDE
 the virtual machine group PLNGDE
 built-in functions SPIUG
 ABBREV SPIREF
 ABS SPIREF
 ADDRESS SPIREF
 ARG SPIREF
 BITAND SPIREF

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

BITOR SPIREF
 BITXOR SPIREF
 CENTER SPIREF
 CENTRE SPIREF
 COMPARE SPIREF
 COPIES SPIREF
 C2D SPIREF
 C2X SPIREF
 DATATYPE SPIREF
 DATE SPIREF
 DELSTR SPIREF
 DELWORD SPIREF
 description of SPIREF
 D2C SPIREF
 D2X SPIREF
 ERRORTXT SPIREF
 EXTERNALS SPIREF
 FIND SPIREF
 FORMAT SPIREF
 INDEX SPIREF
 INSERT SPIREF
 invoking SPIREF
 JUSTIFY SPIREF
 LASTPOS SPIREF
 LEFT SPIREF
 LENGTH SPIREF
 LINESIZE SPIREF
 MAX SPIREF
 MIN SPIREF
 OVERLAY SPIREF
 POS SPIREF
 QUEUED SPIREF
 RANDOM SPIREF
 REVERSE SPIREF
 RIGHT SPIREF
 SIGN SPIREF

SOURCELINE SPIREF
 SPACE SPIREF
 STRIP SPIREF
 SUBSTR SPIREF
 SUBWORD SPIREF
 SYMBOL SPIREF
 TIME SPIREF
 TRACE SPIREF
 TRANSLATE SPIREF
 TRUNC SPIREF
 USERID SPIREF
 VALUE SPIREF
 VERIFY SPIREF
 WORD SPIREF
 WORDINDEX SPIREF
 WORDLENGTH SPIREF
 WORDS SPIREF
 XRANGE SPIREF
 X2C SPIREF
 X2D SPIREF
 business professional product
 SQL/DS with QMF INTRO
 VS APL INTRO
 BY expression SPIUG
 BY phrase of DO instruction SPIREF
 bypass label processing, tapes CMSUG
 bypassing profile macro XEDIT, XEDITUG
 bypassing the system profile REL5GDE
 using the IPL NOSPROF command REL5GDE
 byte alignment on terminal output CPREF, DIAG
 BYTE operand of SET command CPREF
 bytecount operand
 of DCP command CPREF
 of DUMP command CPREF
 of NETWORK command CPREF
 of VMDUMP command CPREF

C

C PLNGDE
 C prefix command **PRIMER**
 C prefix subcommand of **XEDIT XEDIT**
 command **APGDE, XEDITUG**
 C subcommand of **DUMPSCAN** command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
 sample output **DIAG**
 usage **DIAG**
 cache **CPPROG, REL5GDE**
 block **CPPROG**
 line **REL5GDE**
 owner
 establishing **CPPROG**
 3880 Storage Control **CPPROG**
CACHE command **CPPROG, CPREF**
 described **CPREF**
 operands
 OFF CPREF
 ON CPREF
 OWN CPPROG, CPREF
 QUERY CPPROG, CPREF
 raddr CPREF
 SUBSYS CPREF
 userid CPREF
 responses **CPREF**
 usage notes **CPREF**
 cache-line **CPPROG**
 cached, **DASD** (direct access storage
 device) **CPPROG**
 cached devices
 general paging **PLNGDE**
 page migration **PLNGDE**
 primary paging **PLNGDE**
 caching function **CPPROG**
 using the **CACHE** command **CPREF**
CAI (channel available interrupt) **CPPROG**
 calculating feedback variables for paging
 load **CPPROG**
 calculating storage available in your
 virtual machine **CMSPROG**
 calculating storage requirements **PLNGDE**
CALL command **CMSPROG**
CALL instruction **SPIREF, SPIUG**
CALL macro **GCSREF, PLNGDE**
 description **GCSREF**
 entry point name parameter **GCSREF**
 execute format **GCSREF**
 id parameter **GCSREF**
 list format **GCSREF**
 mf parameter **GCSREF**
 parameter address parameter **GCSREF**
 vl parameter **GCSREF**
CALL subcommand of **TESTCOB** command **APGDE**
CALLER (keyword definition) **DIAG**
 caller id in tape label processing **CMSUG**
 calling authorized programs **PLNGDE**
 calling IBM for assistance, data needed **DIAG**
 calling subroutines **EXEX2**
CANCEL XEDITUG
CANCEL command **CMSPROG**
CANCEL function of **VMCF SFPROG**
CANCEL KEY restrictions for 3215
 terminal console **OPGDE**
CANCEL macro **XEDIT**
CANCEL operand of **SPTAPE** command **CPREF**
CANCEL option of **NOTE** command **CMSREF**
CANCEL option of **RETURN** command **APGDE**
CANCEL parameter of **ISPF APGDE**
CANCEL signaling **TERMREF**
CANCEL subcommand of **XEDIT** command **APGDE**
 canceling
 a note **CMSLOT**
 a timer **GCSREF, PLNGDE**
 changes during editing session **CMSUG**
 DLBL definitions **CMSPROG**
 immediate commands **CMSREF**
 programs **PLNGDE**
 terminal output **TERMREF**
 user-written immediate commands **CMSPROG**
 canonical order specified by **SET IMAGE XEDIT**
 capacity of device when formatted **CPPROG**
 capital letters, typing **PRIMER**
CAPPEND XEDITUG
 in typewriter mode **XEDITUG**
 card input
 spooled **OPGDE**
 to **Format/Allocate** program **CPPROG**
CARD option of **EXECIO** command **CMSREF**
 card punch used to send jobs to **CMS**
 batch facility **CMSUG**
 card reader
 restriction on use in job for **CMS** batch
 facility **CMSUG**
 spooling punch or printer files to **CMSUG**
 card separator, spool punch output **OPGDE**
 cardless system, required devices **PLNGDE**
 cards
 /* as end-of-file indicator **CMSUG**
 as input to **CMS** batch facility **CMSUG**
 case **APGDE**
 changing **XEDITUG**
 ignoring difference in **CMSLOT, XEDIT**
 mixed **CMSLOT**
 of **EXEC** files **CMSLOT**
 of **Script** files **CMSLOT**
 respecting difference in target search **XEDIT**
 setting **CMSLOT, PRIMER, XEDIT**
 specifying **XEDITUG**
 translating to lowercase **XEDIT**
 translating to uppercase **XEDIT**
CAPPEND macro **XEDIT**
 example of **XEDIT**
 with **DBCS** strings **XEDIT**
CASE command of **DMS/CMS APGDE**
CASE option
 of **EXTRACT XEDIT**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- of **QUERY XEDIT**
- of **SET CMSLOG, PRIMER, XEDIT**
- of **TRANSFER XEDIT**
- CASE** subcommand
- case translation **EXEX2**
- CAT** option **CMSPROG**
 - of **DLBL** command **CMSREF**
 - example of use **CMSREF**
 - use in **CMS/DOS CMSREF**
 - of the **DLBL** command **CMSPROG**
- catalogs
 - clearing **CMSPROG**
 - defining in **CMS/DOS CMSPROG**
 - identifying in **CMS/DOS CMSPROG**
 - IJSUC** ddname **CMSPROG**
 - job **CMSPROG**
 - master **CMSPROG**
 - passwords **CMSPROG**
 - sharing **CMSPROG**
 - user **CMSPROG**
 - user in **CMS/DOS CMSPROG**
 - verifying a structure **CMSPROG**
 - VSAM CMSPROG**
 - verifying structure of **CMSREF**
- catalogued procedures
 - in OS equivalent in **CMS CMSPROG**
- CATCHECK** command
 - described **CMSREF**
 - verifying a catalog structure **CMSPROG**
- causing breaks in text **CMSUG**
- CAW** (channel address word) **APGDE**
 - definition of **PRGDE**
 - displaying **CPREF**
- CAW** operand of **DISPLAY** command **CPREF**
- CAW** subcommand of **DEBUG** command **APGDE**
- CC** option
 - of **EXECIO** command **CMSREF**
 - of **NOTE** command **CMSREF, CMSLOT, PRIMER**
 - of **PRINT** command **CMSREF**
- CC** prefix command **PRIMER**
- CCH** (channel check handler) **OPGDE**
- CCS** (Console Communication Service) **GCSREF**
- ccuu, described **CPREF**
- CCW** (channel command word) **MACREF**
 - 3880 **CPPROG**
- CCW** operand of **TRACE** command **CPREF**
- CCW**
 - testing, controlling **CPREF**
 - translation, reserve/release **PLNGDE**
- CD** option of **DSERV** command **CMSREF**
- CDELETE XEDITUG**
 - in typewriter mode **XEDITUG**
- CDELETE** command **CMSLOT**
- CDELETE** subcommand **XEDIT**
 - example of **XEDIT**
 - with **DBCS** strings **XEDIT**
- CENTER** command of **DMS/CMS** **APGDE**
- CENTER** function **SPIREF**
- centering a string using **CENTER** function **SPIREF**
- centering a string using **CENTRE** function **SPIREF**
- Central Message Facility
 - control blocks, new and changed **REL5GDE**
 - execs, new and changed **REL5GDE**
 - macros, new and changed **REL5GDE**
 - migration considerations **REL5GDE**
 - modules, new and changed **REL5GDE**
 - overview **REL5GDE**
 - references to other publications **REL5GDE**
- central processing unit **INTRO**
- central site, **DDP** defined **INTRO**
- CENTRE** function **SPIREF**
- CENTURY** option of **DATE** function **SPIREF**
- CFILEFCB** operand of **START** command **CPREF**
- CFIRST XEDITUG**
 - command **CMSLOT**
 - in typewriter mode **XEDITUG**
- CFIRST** subcommand **XEDIT**
 - affected by zone **XEDIT**
 - example of **XEDIT**
 - with **DBCS** strings **XEDIT**
- CFSearch/370 INST**
- chain, print **CPREF**
- CHAIN** subcommand of **DUMPSCAN** command
 - description **DIAG**
 - error message **DIAG**
 - format **DIAG**
 - functional category **DIAG**
 - response **DIAG**
 - sample output **DIAG**
 - usage **DIAG**
- chaining save areas **GCSREF**
- chaining structure
 - ALOCBLOK CPPROG**
 - SYSPLIST CPPROG**
- CHANGE XEDITUG**
 - in typewriter mode **XEDITUG**
 - option
 - of **DLBL** command **CMSREF**
 - of **FILEDEF** command **CMSREF**
 - of **LABELDEF** command **CMSREF**
 - practice exercise using **XEDITUG**
 - subcommand with absolute line number as target **XEDITUG**
- CHANGE** command **CMSLOT, CMSUG, CPPROG, CPREF, INTRO, PRIMER**
 - batch machine output **INTRO**
 - class D **CPREF**
 - class G **CPREF**
 - described **CPREF**
 - example of use **INTRO**
- operands
 - * **CPREF**
 - ALL CPREF**
 - CHARS CPREF**
 - CLASS CPREF**
 - COPY CPREF**
 - COPY###*nnn CPREF**
 - DEST CPREF**
 - dest1 **CPREF**
 - dest2 **CPREF**
 - DIST CPREF**
 - DIST** distcode **CPREF**
 - distcode **CPREF**
 - dsname **CPREF**
 - FCB CPREF**
 - FLASH CPREF**
 - FLASH** name **CPREF**
 - FORM** form **CPREF**
 - HOLD CPREF**
 - MODIFY CPREF**
 - MODIFY** named **CPREF**
 - name **CPREF**
 - NOHOLD CPREF**
 - NOSYS CPREF**
 - PRINTER CPREF**
 - PUNCH CPREF**

- READER CPREF
- spoolid CPREF
- SYSTEM CPREF
- userid CPREF
- responses CPREF
- usage notes CPREF
- used to change hold status on spool files CMSUG
- CHANGE subcommand XEDIT
 - examples of XEDIT
 - used in selective change XEDIT
 - of XEDIT command APGDE
 - with DBCS strings XEDIT
- changes
 - getting rid of PRIMER
 - global CMSLOT
 - state
 - See state changes
 - throughout file CMSLOT
 - summary of APGDE, CMSPROG, DIAG, EXEC2, GCSREF, SFPROG
- changing
 - a character XEDIT
 - example of XEDIT
 - a file PRIMER
 - a file identifier XEDIT
 - a filemode XEDIT
 - a filename XEDIT
 - a filetype XEDIT
 - a logical operator SFPROG
 - LGLOPR action routine SFPROG
 - LGLOPR command SFPROG
 - a membername XEDIT
 - characteristics of spool files CMSUG
 - characteristics of unit record devices CMSUG
 - color settings XEDIT
 - commands CPPROG
 - contents of real storage CPREF
 - control registers CPREF
 - data
 - See changing data
 - data position XEDITUG
 - filemode numbers CMSUG
 - definition of a character XEDITUG
 - in typewriter mode XEDITUG
 - destination of commands SPIREF
 - filename of spool file CPREF
 - floating-point registers CPREF
 - general registers CPREF
 - interval values
 - MIH (missing interrupt handler) CPPROG
 - languages REL5GDE
 - using SET LANGUAGE REL5GDE
 - order of spool files CPREF
 - output representation of a character CMSUG
 - privilege classes CPPROG
 - Program Status Word (PSW) CPREF
 - SET SRM PGFULL parameters CPPROG
 - SET SRM PGMTLIM parameters CPPROG
 - spool file attributes CPREF
 - spool file characteristics CPREF
 - spool file class CPREF
 - spoolid CPREF
 - storage keys CPPROG, PLNGDE
 - tab settings XEDIT, XEDITUG
 - in typewriter mode XEDITUG
 - the HELP facility CMSUG
 - the mode of a member XEDIT
 - the name of a file PRIMER
 - the screen layout XEDITUG
 - time interval in DMKSYS CPREF
 - virtual storage locations CPREF
- changing data CMSLOT
 - globally XEDIT, XEDITUG
 - in typewriter mode XEDITUG
 - selectively XEDIT, XEDITUG
 - in typewriter mode XEDITUG
 - using CHANGE XEDIT, XEDITUG
 - in typewriter mode XEDITUG
 - using COVERLAY XEDIT, XEDITUG
 - using CREPLACE XEDIT, XEDITUG
 - using OVERLAY XEDIT
 - using SCHANG XEDIT
- changing screen layout
 - using SCALE XEDIT
 - using SET CMDLINE XEDIT
 - using SET COLOR XEDIT
 - using SET CURLINE XEDIT
 - using SET MSGLINE XEDIT
 - using SET NUMBER XEDIT
 - using SET PREFIX XEDIT
 - using SET SCALE XEDIT
 - using SET SCREEN XEDIT
 - using SET TABLINE XEDIT
 - using SET TOFEOF XEDIT
 - using TABL XEDIT
- channel program
 - modification SFPROG
 - support, real SFPROG
- channel-to-channel (CTC)
 - adapter REL5GDE
 - device REL5GDE
- channels
 - alternate
 - RCTLUNIT macro PLNGDE
 - attaching CPREF
 - Clear Channel operations (CLRCH)
 - monitored in CP internal trace table CPREF
 - command words
 - 3880 CPPROG
 - dedicated CPPROG
 - detaching CPREF
 - errors
 - RCTLUNIT macro PLNGDE
 - how to improve use CPPROG
 - program
 - terminating CPREF
 - restrictions PLNGDE
 - virtual block multiplexer CPPROG
- channel address word (CAW) APGDE
 - definition of PRGDE
 - displaying CPREF
- CHANNEL c operand of DETACH command CPREF
- channel check DIAG
- channel check handler OPGDE

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- channel command word (CCW) **CPPROG, MACREF**
 - building using **CONSOLE** macro **MACREF**
- channel control program **PLNGDE**
- channel index table, generating **PLNGDE**
- Channel Indirect Data Addressing feature **PLNGDE**
- channel interface
 - Mass Storage Control **PLNGDE**
 - positions for Staging Adapter **PLNGDE**
- channel model dependent functions, restrictions **PLNGDE**
- channel operand
 - dedicated channels **CPREF**
 - of **ATTACH** command **CPREF**
 - of **DETACH** command **CPREF**
- channel operating mode
 - determining current setting **CPREF**
- channel programs **PLNGDE**
 - building **PLNGDE**
 - definition of **PRGDE**
- Channel Set Switching **RGOS**
- channel status word (CSW) **APGDE**
 - displaying **CPREF**
- channel switching
 - between two processors **PLNGDE**
 - on one processor **PLNGDE**
 - system generation requirements **PLNGDE**
 - tape **PLNGDE**
 - two- or four-channel switch feature **PLNGDE**
- channel-to-channel adapters (CTCA) **TSAFREF, CPPROG, DIAG**
 - connecting virtual **CPREF**
 - processor feature **PLNGDE**
 - restrictions **PLNGDE**
- channels
 - attaching **CPREF**
- CHANNELS** operand
 - of **DEFINE** command **CPREF**
 - of **QUERY VIRTUAL** command **CPREF**
- CHAP** macro **GCSREF, PLNGDE**
 - description **GCSREF**
 - priority parameter **GCSREF**
 - s parameter **GCSREF**
 - task id parameter **GCSREF**
- CHAP** macro (SVC 44) **CMSPROG**
- CHAR** data type **EXEX2**
 - in **SQL**
 - COBOL** **APGDE**
 - FORTTRAN** **APGDE**
- character **TERMREF**
 - arrangement tables **CPPROG**
 - 3800 printer **CPPROG**
 - comparing **SPIUG**
 - conversion of **SPIUG**
 - deleting from line **CMSUG**
 - for blip string
 - displaying **CMSREF**
 - setting **CMSREF**
 - logical line editing **TERMREF**
 - modification
 - 3800 printer **CPPROG**
 - nondisplayable, defining character used
 - in place of **XEDIT**
 - priority of **SPIUG**
 - sets used in **CMS** **CMSREF**
 - sorting **SPIUG**
 - special
 - valid in **CMS** file identifiers **CMSUG**
 - specifying in hexadecimal **XEDIT**
 - strings
 - copying **CMSREF**
 - valid in **CMS** command lines **CMSREF**
- character arrangement tables **CPPROG**
- character conversion to **APL** **XEDIT**
- character delete using **CDELETE** **XEDIT, XEDITUG**
- character insert using **CINSERT** **XEDIT, XEDITUG**
- character keys **APGDE**
- character overlay using **COVERLAY** **XEDIT, XEDITUG**
- character position of a string **SPIREF**
- character position using **INDEX** **SPIREF**
- character priority when comparing **SPIUG**
- character removal with **STRIP** function **SPIREF**
- character replace using **CREPLACE** **XEDIT, XEDITUG**
- character set usage **XEDIT**
- character sets
 - 3800 printer
 - modification **OPGDE**
 - predefined **OPGDE**
 - controlling
 - APL** **CPREF**
 - TEXT** **CPREF**
 - CP** command language **CPREF**
 - loading **XEDIT**
- character strings **SPIUG**
- character to decimal conversion **SPIREF**
- character to hexadecimal conversion **SPIREF**
- character translation tables
 - controlling **CPREF**
- CHARDEL** operand of **TERMINAL** command **CPREF**
- CHARMODE** option
 - of **CMS** **QUERY** command **CMSREF**
 - of **CMS** **SET** command **CMSREF**
- CHARS** name operand of **SPOOL** command **CPREF**
- CHARS** operand
 - of **CHANGE** command **CPREF**
 - of **RDEVICE** macro **PLNGDE**
 - of **START** command **CPREF**
- CHECK** macro **CMSPROG**
 - BSAM** **GCSREF**
 - decb address parameter **GCSREF**
 - description **GCSREF**
 - VSAM** **GCSREF**
 - description **GCSREF**
 - rpl parameter **GCSREF**
- CHECK** option of **SQL** **APGDE**
- checking
 - data **SPIUG**
 - tape labels using **TAPESL** **MACREF**
 - the language status **REL5GDE**
 - for **CMS** messages **REL5GDE**
 - using **QUERY LANGUAGE** **REL5GDE**
 - for **CP** messages **REL5GDE**
 - using the **CPLANG** command **REL5GDE**
 - using **QUERY CPLANG** **REL5GDE**
 - your spelling **PRIMER**
- checklists of information to record
 - for a virtual machine wait state **PRGDE**
 - for a wait state in **RSCS** **PRGDE**
 - for an **ABEND** in **GCS** **PRGDE**
 - for **CMS** **ABEND** **PRGDE**
 - for **CP** **ABEND** **PRGDE**
 - for **CP** wait state **PRGDE**
 - for incorrect or unexpected output
 - hardware failure **PRGDE**
 - inadequate system parameters **PRGDE**
 - infinite loop in a virtual machine **PRGDE**

infinite loop in CP PRGDE
 infinite loop in RSCS PRGDE
 for RSCS ABEND PRGDE
 checkpoint
 preparing system for later warm start CPREF
 start OPGDE
 checkpoint cylinder, number of cylinders required
 by device type PLNGDE
 checkpoint start data CPPROG
 calculating number of cylinders needed PLNGDE
 DASD storage requirements PLNGDE
 defining cylinders PLNGDE
 CHKPT macro (SVC 63) CMSPROG
 CHTYPE operand of RCHANNEL macro PLNGDE
 CINSERT XEDITUG
 in typewriter mode XEDITUG
 CINSERT command CMSLOT
 CINSERT subcommand XEDIT
 example of XEDIT
 with DBCS strings XEDIT
 CKD (count-key-data) CPPROG, REL5GDE
 devices, format for CP-owned CPPROG
 class
 A user REL5GDE
 Any user REL5GDE
 B user REL5GDE
 C user REL5GDE
 changing for spool file CPREF
 classifying printed output, SYSPCLAS
 macro PLNGDE
 CP command privilege CMSUG
 CP SPOOL files, of CMSUG
 D user REL5GDE
 device INTRO
 E user REL5GDE
 eight monitor records CPPROG
 F user REL5GDE
 five monitor records CPPROG
 four monitor records CPPROG
 G user REL5GDE
 modifying virtual device spool CPREF
 one monitor record CPPROG
 override file CPPROG
 alternate CPPROG
 create CPPROG
 privilege CPPROG, INTRO
 privilege, for CP commands CPREF, OPGDE
 seven monitor records CPPROG
 six monitor records CPPROG
 structure
 tailoring CPPROG
 three monitor records CPPROG
 two monitor records CPPROG
 zero monitor records CPPROG
 class Any, described CPREF, OPGDE
 CLASS control statement CPPROG, INTRO
 CLASS directory control statement PLNGDE
 class G, described CPREF, OPGDE
 CLASS operand
 of CHANGE command CPREF
 of ORDER command CPREF
 of PURGE command CPREF
 of QUERY command CPREF
 of RDEVICE macro PLNGDE
 of SET command CPREF
 of SPOOL command CPREF, CMSUG
 of SPTAPE command CPREF
 of START command CPREF
 of SYSACNT macro PLNGDE
 of SYSMON macro PLNGDE
 of TRANSFER command CPREF
 class override file REL5GDE
 example CPPROG
 making class assignments effective CPPROG
 verifying that syntax is correct CPPROG
 CLASS OVERRIDE control statement INTRO
 classes, types, models, and features of devices
 (DIAGNOSE code X'24') SFPROG
 CLAST XEDITUG
 CLAST subcommand XEDIT
 example of XEDIT
 with DBCS strings XEDIT
 clause
 as labels SPIREF
 assignment SPIREF
 continuation of SPIREF
 delimiter SPIUG
 description of SPIREF, SPIUG
 null SPIREF, SPIUG
 separating SPIUG
 spanning more than one line SPIUG
 cleanup functions for VSAM CMSUG
 clear error recording cylinders SFPROG
 CLEAR key APGDE
 to remove prefix subcommands XEDITUG
 CLEAR operand
 of IPL command CPREF
 of SYSTEM command CPREF, CPPROG
 of IMMCMD command CMSREF
 CLEAR option
 of DLBL command CMSREF
 of FILEDEF command CMSREF
 of INCLUDE command CMSREF
 of LABELDEF command CMSREF
 of LOAD command CMSREF
 CLEAR VSCREEN command CMSUG
 description CMSREF
 format CMSREF
 messages CMSREF
 operands, vname CMSREF
 summary CMSREF
 usage notes CMSREF
 CLEAR WINDOW command CMSUG
 description CMSREF
 format CMSREF
 messages CMSREF
 operands
 wname CMSREF
 summary CMSREF
 usage notes CMSREF
 clearing
 a stack CMSREF
 a window PRIMER
 DLBL definitions CMSPROG

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- effect on FILEDEF definitions **CMSPROG**
- FILEDEF definitions **CMSPROG**
- interruptions from a virtual machine **CPREF**
- job catalogs in CMS/DOS **CMSPROG**
- job catalogs in OS **CMSPROG**
- storage to zeros **CPREF**
- the prefix area **PRIMER**
- virtual storage **CPREF**
- CLOCATE XEDITUG**
 - in typewriter mode **XEDITUG**
- CLOCATE** command
 - format
 - with column numbers **CMSLOT**
 - with strings **CMSLOT**
 - used with **CDELETE CMSLOT**
 - used with **CINSERT CMSLOT**
- CLOCATE** subcommand **XEDIT**
 - examples of **XEDIT**
 - used in selective change **XEDIT**
 - with DBCS strings **XEDIT**
- clock
 - attached processor **OPGDE**
 - comparator **CPPROG, DIAG**
 - indicator in full-screen CMS **CMSUG**
 - on the CMS window **PRIMER**
 - setting **OPGDE**
 - uniprocessor application **OPGDE**
 - synchronization **OPGDE**
 - time-of-day (TOD)
 - description **OPGDE**
- CLOSE** command **APGDE, CMSUG, CPREF**
 - batch machine output **INTRO**
 - described **CPREF**
 - operands
 - CONSOLE CPREF**
 - DEST CPREF**
 - DIST** distcode **CPREF**
 - dsname CPREF**
 - FORM** form **CPREF**
 - HOLD CPREF**
 - NAME CPREF**
 - NOHOLD CPREF**
 - PRINTER CPREF**
 - PUNCH CPREF**
 - PURGE CPREF**
 - READER CPREF**
 - vaddr CPREF**
 - responses **CPREF**
 - usage notes **CPREF**
- CLOSE** function of SPOOL system service **SFPROG**
- CLOSE** macro
 - BSAM/QSAM GCSREF**
 - dcb address parameter **GCSREF**
 - description **GCSREF**
 - mf address parameter **GCSREF**
 - execute format **GCSREF**
 - list format **GCSREF**
 - VSAM GCSREF**
 - acb address parameter **GCSREF**
 - description **GCSREF**
 - type parameter **GCSREF**
- CLOSE** operand
 - of **ACNT** command **CPREF**
 - of **CPTRAP** command **CPREF**
 - of **MONITOR** command **CPREF**
 - of **PRB** command **DIAG**
 - of **SPOOL** command **CPREF**
- CLOSE/TCLOSE** macro (SVC 20/23) **CMSPROG**
- CLOSED** operand of **STAT** command **DIAG**
- closing
 - CMS files after reading or writing **CMSPROG** files **CPREF, SPIUG**
 - in EXEC procedures **MACREF**
 - via **FINIS** command **CMSREF**
 - spool files **CPREF**
 - TRACE** output **CPREF**
 - virtual devices **CPREF**
 - virtual unit record devices **CMSPROG**
- cluster
 - remote attachments
 - 3270s **PLNGDE**
- CLUSTER** macro
 - coding real I/O configuration **PLNGDE**
 - effect on addressing bisync terminals and printers **PLNGDE**
 - examples **PLNGDE**
 - format **PLNGDE**
 - label requirements **PLNGDE**
 - operands
 - CUTYPE PLNGDE**
 - DIAL** operand **PLNGDE**
 - GPOLL PLNGDE**
 - LINE PLNGDE**
- CLUSTER** operand of **RDEVICE** macro **PLNGDE**
- clusters
 - defining **CMSPROG**
 - deleting **CMSPROG**
 - suballocated **CMSPROG**
 - unique **CMSPROG**
- CMD** command, programmable operator **SFPROG**
- CMD** option
 - of **PER** Command **CPREF, DIAG**
- CMD** parameter of **ISPSTART** command **APGDE**
- CMDCALL EXEX2**
- CMDCALL** command described **CMSREF**
- CMDLINE** option
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
 - of **SET XEDIT**
 - of **TRANSFER XEDIT**
- CMDSI** macro **GCSREF, PLNGDE**
 - command name parameter **GCSREF**
 - description **GCSREF**
 - error parameter **GCSREF**
 - execute format **GCSREF**
 - fileblk parameter **GCSREF**
 - length parameter **GCSREF**
 - list address format **GCSREF**
 - list format **GCSREF**
 - mf parameter **GCSREF**
- CMND** (keyword definition) **DIAG**
- CMNDLINE** (command line) **DIAG**
- CMS** (conversational monitor system) **CPPROG, EXEC2, PRIMER, TERMREF**
 - A-disk **PLNGDE**
 - abnormal termination
 - See CMS abend
 - accessing with no virtual disks attached to virtual machine **CMSREF**
 - adding CMS segment for Y-disk directory **INST**
 - adding segment
 - for Y-disk directory (Y-STAT) **INST**
 - additions
 - alternate tape drive support **REL5GDE**
 - CMSDEV** macro **REL5GDE**

- shared file storage **REL5GDE**
- VALIDATE** command **REL5GDE**
- alternate nucleus placement **INST**
- assembler, use with **CMS PLNGDE**
- assembling programs **INTRO**
- auxiliary storage requirements **PLNGDE**
- basic description **CMSREF**
- batch facility
 - See **CMS** batch facility
- batch processing **INTRO**
- build nucleus
 - after loading national language files **INST**
 - existing VM system procedure **INST**
 - SPGEN EXEC** procedure **INST**
 - Starter System procedure **INST**
 - using **SPGEN** after applying service **INST**
 - VMFLOAD** command procedure **INST**
- called routine modifications
 - to system area **CMSPROG**
- capacity of virtual disks **PLNGDE**
- CMS PLNGDE**
- CMS/DOS** environment restrictions **PLNGDE**
- COMMAND** environment **SPIREF**
- command language **CMSPROG, PLNGDE**
 - basic description **CMSREF**
- command line **PRIMER**
- command processing **CMSPROG**
- command search function **CMSPROG**
- communicating with **INTRO**
- communication intents for **CMS PLNGDE**
- compiling programs **INTRO**
- control block relationship **DIAG**
- control blocks
 - changed **REL5GDE**
 - new **REL5GDE**
- corrective service procedure **INST**
- creating disk-resident modules **INST**
- creating system disks **INST**
- default device addresses **PLNGDE**
- defined **CMSLOT**
- defining **GCSREF**
- definition **APGDE, INTRO**
- description **CMSUG**
- description of **CMSPROG**
- developing applications **INTRO**
- devices **REL5GDE**
- devices supported **CMSPROG, PLNGDE**
- DEVTAB** (device table) **CMSPROG**
- DIRECT** command **PLNGDE**
- disk and file management
 - CMS PLNGDE**
 - OS/DOS PLNGDE**
 - VSAM PLNGDE**
- disks
 - access **PLNGDE**
 - capacity **PLNGDE**
 - formatting **PLNGDE**
 - labels **PLNGDE**
 - linking **PLNGDE**
- DISPW** macro **CMSPROG**
- DMSNUC** **CMSPROG**
- dump **INTRO**
 - file printing **DIAG**
 - option of **PRTDUMP** command **DIAG**
- EDIT** error messages **SYSMSG**
- editor (**EDIT**) **TERMREF**
 - See also **XEDIT** (System Product Editor)
 - compatibility with **XEDIT**
 - invoking **XEDIT**
 - environment **CMSUG**
 - in migration mode **CMSREF**
- enhancements **REL5GDE**
 - EXECIO** command **REL5GDE**
 - execs in storage **REL5GDE**
 - FORMAT** command **REL5GDE**
 - GLOBAL** command **REL5GDE**
 - IUCV** **REL5GDE**
 - PRINTL** macro **REL5GDE**
 - RDCARD** macro **REL5GDE**
 - RDRLIST** command **REL5GDE**
 - TXTLIB** command **REL5GDE**
- environment **APGDE, CMSUG, SPIUG**
 - name **SPIREF**
- establishing contact with **TERMREF**
- EXEC** file
 - appending information to **CMSREF**
 - creating **CMSREF**
 - format **CMSREF**
- EXEC** procedure **INTRO**
 - submitting jobs to **CMS** batch facility **CMSUG**
- EXECs**
 - opening and closing files **CMSPROG**
 - to execute **OS** programs **CMSPROG**
- execs
 - changed **REL5GDE**
 - deleted **REL5GDE**
 - new **REL5GDE**
- executing programs **INTRO**
- existing system procedure
 - build **CMS** nucleus **INST**
 - load base code from product tape **INST**
 - load system code from product tape **INST**
 - save **CMS** named system **INST**
- facility for debugging programs **INTRO**
- FB-512** blocks **PLNGDE**
- file directory **PLNGDE**
- file management function **APGDE**
- file system **APGDE, CMSPROG, CMSUG, INTRO**
- filemode **CMSPROG**
- filename **CMSPROG**
- files
 - containing **VSE** modules **INST**
 - erasing **CMSUG**
 - files **GCS** processes **PLNGDE**
 - format **PLNGDE, CMSUG**
 - identification **PLNGDE**
 - identifiers **CMSUG**
 - maximum number of records **PLNGDE**
 - maximum usable number **PLNGDE**
 - remaining **CMSUG**
 - sharing **PLNGDE**
- filetype **CMSPROG**
- formatted disks volume label contents **PLNGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- free storage management **CMSPROG**
- function of **CMSPROG**
 - functions described **MACREF**
 - invoking **MACREF**
- general description **INST, INTRO**
- generating new module **INST**
- guest running with 3380 DASDs
 - improving the performance of **CPPROG**
- HELP facility **INTRO**
- how to save it **CMSPROG**
- immediate commands
 - See immediate commands
- initialization **CMSPROG**
- initializing **INTRO**
- interface with display terminals **CMSPROG**
- interrupt handling **CMSPROG**
- introduction **CMSPROG, PLNGDE**
- introductory description **INTRO**
- invoking the directory program **PLNGDE**
- issuing commands to **SPIREF**
- IUCV **SFPROG**
 - between two virtual machines **SFPROG**
 - CMSIUCV macro **SFPROG**
 - example **SFPROG**
 - exits **SFPROG**
 - guidelines and limitations **SFPROG**
 - HNDIUCV macro **SFPROG**
 - sample program **SFPROG**
- libraries
 - See libraries
- limited support of OS and VSE **PLNGDE**
- limits **EXEX2**
 - &EXIT return codes **EXEX2**
 - &TRACE **EXEX2**
 - console **EXEX2**
 - console stack **EXEX2**
 - filename **EXEX2**
 - line length **EXEX2**
 - lookaside buffer **EXEX2**
 - NUMERIC OVERFLOW **EXEX2**
 - numeric values **EXEX2**
 - printed line length **EXEX2**
 - statement length **EXEX2**
 - word length **EXEX2**
- load base code from product tape
 - existing VM system procedure **INST**
 - Starter System procedure **INST**
- LOAD command **PLNGDE**
- load libraries **APGDE, PLNGDE**
 - defining **GCSREF**
- load map **DIAG**
 - print **INST**
 - read onto disk **INST**
 - save on disk **INST**
- load system code from product tape
 - existing VM system procedure **INST**
 - Starter System procedure **INST**
- loader
 - See loader
- loader tables **CMSPROG**
 - CMS storage requirements **PLNGDE**
- loading
 - See under loading
- loading
 - disk-resident modules **INST**
 - during system generation **INST**
 - into your virtual machine **CMSUG**
 - national language files from feature tape **INST**
- LOADLIBs
 - See LOADLIBs
- MACLIBs
 - See MACLIBs
- macros
 - See CMS macro instructions
- managing files **CMSPROG**
- message **INTRO**
- message repository
 - updating **SFPROG**
- migration of commands and modules
 - to the CMS nucleus **REL5GDE**
- minidisk **INTRO**
- minidisk labels **PLNGDE**
- minimum configurations **PLNGDE**
- minimum virtual storage size **REL5GDE**
- miscellaneous files, new **REL5GDE**
- modules
 - changed **REL5GDE**
 - creating disk-resident modules **INST**
 - deleted **REL5GDE**
 - DMSABN **CMSPROG**
 - DMSINA **CMSPROG**
 - DMSINT **CMSPROG**
 - DMSIOW **CMSPROG**
 - DMSITE **CMSPROG**
 - DMSITI **CMSPROG**
 - DMSITP **CMSPROG**
 - DMSITS **CMSPROG**
 - DMSLAD **CMSPROG**
 - DMSPAGE **CMSPROG**
 - generating from text file **INST**
 - loading disk-resident modules **INST**
 - new **REL5GDE**
 - regenerating from updated
 - source **INST**
 - utility source programs **INST**
 - when to regenerate **INST**
 - split **REL5GDE**
- nucleus
 - See CMS nucleus
- nucleus generation
 - See under nucleus
- option of DLBL command **CMSREF**
- OS simulation **CMSPROG**
- OS support **CMSPROG**
- overlay structures **CMSPROG**
- partitioned data sets **PLNGDE**
- PF keys **PRIMER**
 - setting **PRIMER**
- planning considerations **PLNGDE**
- preventive service procedure **INST**
- Primer **SPIUG**
- PROFILE EXEC, IPLing
 - MVS virtual machines **RGOS**
 - VM/VSE **RGOS**
- program development **CMSPROG**
- programming languages
 - supported under CMS **PLNGDE**
- PSW keys **CMSPROG**
- ready message **TERMREF**
- records
 - maximum usable number per file **PLNGDE**
- register restoration **CMSPROG**
- register usage **CMSPROG**
- relation to GCS **PLNGDE**
- returning to called routine **CMSPROG**
- sequence of functions **SFPROG**

save CMS named system
 existing VM system procedure **INST**
 Starter System procedure **INST**
 saved system restrictions **CMSPROG**
 search order **SPIREF**
 segments
 adding segment for Y-disk directory **INST**
 service
 corrective **INST**
 preventive **INST**
 shared segments **PLNGDE**
 simulated partitioned data sets **PLNGDE**
 simulation of VSE functions **CMSPROG**
 source file identifiers
 DMSMSP CNTRL INST
 DMSSP CNTRL INST
 starter system procedure
 build CMS nucleus **INST**
 load CMS base code **INST**
 load CMS system code **INST**
 print load map **INST**
 save CMS named system **INST**
 save load map on disk **INST**
 storage
 DMSEXES macro **CMSPROG**
 DMSFREE macro **CMSPROG**
 DMSFRES macro **CMSPROG**
 DMSFRET macro **CMSPROG**
 DMSKEY macro **CMSPROG**
 map **CMSPROG**
 STRINIT macro **CMSPROG**
 structure **CMSPROG**
 using **CMSPROG**
SUBCOM function **CMSPROG**
 subcommands **INTRO**
 See also subcommand of **DUMPSCAN** command
 subset
 environment **CMSUG**
 using **CMSUG**
 support for OS **CMSPROG**
 support for VSAM **CMSPROG**
 support of DL/I **PLNGDE**
 supported configurations **REL5GDE**
SVC handling **CMSPROG**
 symbol references **CMSPROG**
 symbolic names for devices **PLNGDE**
 system disk
 S-disk **PLNGDE**
 system libraries
 macro **PLNGDE**
 text **PLNGDE**
 System Product Interpreter **APGDE**
 system save area modification **CMSPROG**
 system services **APGDE**
 tailoring it using the **SYSPROF EXEC REL5GDE**
 tape support **PLNGDE**
 tape volume switching **CMSPROG**
 terminal system **APGDE**
 transient area **CMSPROG**
 transient program area **CMSPROG**
 understanding it **CMSUG**
 unique functions **SPIREF**
 unit record support **PLNGDE**
UPDATE option **APGDE**
 COBOL APGDE
 FORTTRAN APGDE
 updating
 building nucleus using **SPGEN INST**
 used with SNA **GCSREF**
 user program area **CMSPROG**
 user task **INTRO**
 users
 AUTOOCR option **CPREF**
 BATCH option **CPREF**
 INSTSEG option **CPREF**
 NOSPROF option **CPREF**
 view **INTRO**
USERSECT (user area) **CMSPROG**
 using **OPGDE**
 using OS compilers **CMSPROG**
 using OS data sets **CMSPROG**
 using VSE compilers **CMSPROG**
 virtual storage requirements **PLNGDE**
VMFDOS
 creating CMS files containing VSE modules **INST**
VSAM support **CMSPROG**
 VSE macros **CMSPROG**
 VSE simulation **CMSPROG**
 what it provides **CMSPROG**
 window **PRIMER**
XEDIT CMSPROG
 Y-disk directory (Y-STAT) **INST**
CMS abend DIAG
 exit routine processing **CMSPROG**
 processing **CMSPROG**
 recovery **CMSPROG**
 codes **SYSMSG**
 action for **SYSMSG**
 codes **SYSMSG**
 information collection **SYSMSG**
 reason for **SYSMSG**
 recovering from the abend **SYSMSG**
 reporting the abend **SYSMSG**
 user action **SYSMSG**
 dump reading **DIAG**
 message **DIAG**
 recovery function **DIAG**
CMS Batch Facility REL5GDE
 /* **CMSUG**
 /JOB **CMSUG**
 /SET **CMSUG**
 control cards **CMSUG**
 controlling spool files **CMSUG**
 description **CMSUG**
 housekeeping done after executing job **CMSUG**
 how jobs are processed **CMSUG**
 ID card **CMSUG**
 jobs for non-CMS users **CMSUG**
 using EXEC procedure to submit jobs **CMSUG**
CMS commands
ACCESS CMSREF, CMSPROG
ALARM VSCREEN CMSREF
AMSERV CMSREF
ARNGEND INST

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

ASMGEND INST
 ASM3705 INST
 ASSEMBLE CMSREF
 ASSGN CMSREF
 CLEAR VSCREEN CMSREF
 CLEAR WINDOW CMSREF
 CMDCALL CMSREF
 CMSBATCH CMSREF
 CMSGEND INST
 CMSSERV CMSREF
 COMPARE CMSREF
 CONVERT COMMANDS CMSREF
 CONWAIT CMSREF
 COPYFILE CMSREF
 CP CMSREF
 CURSOR VSCREEN CMSREF
 DEBUG CMSREF
 DEFAULTS CMSREF
 DEFINE VSCREEN CMSREF
 DEFINE WINDOW CMSREF
 DELETE VSCREEN CMSREF
 DELETE WINDOW CMSREF
 DESBUF CMSREF
 DIRECT INST
 DISCARD CMSREF
 DISKMAP INST
 DISK CMSREF
 DLBL CMSREF
 DOSLIB CMSREF
 DOSLKED CMSREF
 DROFBUF SPIUG
 DROP WINDOW CMSREF
 DROPBUF CMSREF
 DSERV CMSREF
 EDIT CMSREF
 entering CMSREF
 ERASE CMSREF
 ESERV CMSREF
 EXEC CMSREF
 EXECDROP CMSREF, SPIREF
 EXECIO CMSREF, SPIREF, SPIUG
 EXECLOAD CMSREF, SPIREF
 EXECMAP CMSREF, SPIREF
 EXECOS CMSREF, SPIREF
 EXECSTAT CMSREF, SPIREF
 EXECUPDT CMSREF, SPIREF
 EXECUTE CMSREF
 execution characteristics CMSREF, CMSUG
 FETCH CMSREF
 FILEDEF CMSREF
 FILELIST CMSREF
 FINIS CMSREF, SPIUG
 FORMAT CMSREF
 GENDIRT CMSREF, CMSPROG
 general information CMSUG
 GENIMAGE CPPROG
 GENMOD CMSREF
 GENMSG CMSREF
 GENTSAP INST
 GEN3705 INST
 GLOBAL CMSREF
 GLOBALV CMSREF, SPIREF
 HELP CMSREF
 HELPCONV CMSREF
 HIDE WINDOW CMSREF
 HT SPIUG
 IDENTIFY CMSREF, SPIREF
 IMAGELIB CPPROG
 IMMCMD CMSREF
 immediate commands SFPROG
 in EXECs APGDE
 issued from a macro XEDITUG
 INCLUDE CMSREF
 INSTEP INST
 IPL CMSPROG
 ITASK INST
 LABELDEF CMSREF
 LANGGEN SFPROG
 LANGMERG SFPROG
 LISTDS CMSREF
 LISTFILE CMSREF, SPIREF, SPIUG
 LISTIO CMSREF
 LKED CMSREF
 LOAD CMSREF
 LOADLIB CMSREF
 LOADMOD CMSREF
 MACLIB CMSREF
 MACLIST CMSREF
 MAKEBUF CMSREF, SPIUG
 MAXIMIZE WINDOW CMSREF
 MINIMIZE WINDOW CMSREF
 MODMAP CMSREF
 MOREHELP CMSREF
 MOVEFILE CMSREF
 NAMEFIND CMSREF
 NAMES CMSREF
 not for general users CMSREF
 NOTE CMSREF
 NUCXDROP CMSREF
 NUCXLOAD CMSREF
 NUCXMAP CMSREF
 OPTION CMSREF
 OS program development CMSPROG
 OSRUN CMSREF
 OVERRIDE CPPROG
 PARSECMD CMSREF, SPIREF
 PEEK CMSREF
 POP WINDOW CMSREF
 POSITION WINDOW CMSREF
 PRELOAD INST
 PRINT CMSREF
 processing tape labels CMSUG
 PSERV CMSREF
 PUNCH CMSREF
 PUT SCREEN CMSREF
 PUT VSCREEN CMSREF
 putting data onto a program stack SPIUG
 QUERY CMSREF, SPIREF
 RDR CMSREF
 RDRLIST CMSREF
 READCARD CMSREF
 RECEIVE CMSREF
 REFRESH CMSREF
 RELEASE CMSREF
 RENAME CMSREF
 RESERVE CMSREF, SFPROG
 RESTORE WINDOW CMSREF
 ROUTE CMSREF
 RSERV CMSREF
 RT SPIUG
 RUN CMSREF
 SAVENCP INST
 SCROLL CMSREF
 search order CMSREF, CMSUG
 SENDFILE CMSREF
 SENTRIES CMSREF

- SET CMSREF, SPIREF**
SNTMAP INST
SORT SPIUG
SPGEN INST
SPLOAD INST
summary **CMSREF, CMSUG**
suppressing messages issued by **SPIUG**
taking data from a program stack **SPIUG**
transient area **CMSREF, CMSUG**
used with EXECs written in REXX language **CMSUG**
used with OS data sets **CMSPROG**
user area **CMSREF, CMSUG**
using **SPIUG**
UTILITY INST
VMFASM INST
VMFDOS INST
VMFLKED INST
VMFLOAD INST
VMFMAC INST
VMFMERGE INST
VMFNLS INST
VMFPLC2 INST
VMFREMOV INST
VMFTXT INST
VMFZAP INST
VMSERV INST
VRSIZE INST
VSE program development **CMSPROG**
VSEVSAM INST
XEDIT SPIREF
XMITMSG SPIREF
ZAP INST
ZAPTEXT INST
CMS command line PRIMER
CMS commands and modules
migration to the CMS nucleus **REL5GDE**
control blocks, execs, macros, and modules
new and changed **REL5GDE**
CMS control block relationship DIAG
CMS dump file printing DIAG
CMS dump option of PRTDUMP command DIAG
CMS editor
See also **XEDIT** (System Product Editor)
environment **CMSUG**
CMS editor in migration mode CMSREF
CMS environment CMSUG, SPIUG
CMS EXEC file
appending information to **CMSREF**
creating **CMSREF**
format **CMSREF**
CMS EXEC procedures
submitting jobs to CMS batch facility **CMSUG**
CMS file management function APGDE
CMS files
See under **CMS** (conversational monitor system)
CMS functions described MACREF
invoking **MACREF**
CMS immediate commands
See immediate commands
CMS in full-screen
See full-screen **CMS**
- CMS IUCV SFPROG**
exits **SFPROG**
sample program **SFPROG**
CMS language files REL5GDE
combining **REL5GDE**
creating **REL5GDE**
saving **REL5GDE**
CMS load library APGDE, PLNGDE
defining **GCSREF**
CMS loader
See loader
CMS LOADLIBs
See **LOADLIBs**
CMS Macro Instructions MACREF, TSAREF
ABNEXIT CMSPROG
changed **REL5GDE**
described **MACREF**
coding conventions **MACREF**
register usage **MACREF**
return code placement **MACREF**
DISPW CMSPROG
DMSEXS CMSPROG
DMSFREE CMSPROG
DMSFRES CMSPROG
DMSFRET CMSPROG
DMSFST CMSPROG
DMSKEY CMSPROG
examples **CMSPROG**
formats described **MACREF**
complex list format **MACREF**
execute format **MACREF**
list format **MACREF**
standard format **MACREF**
FSCB CMSPROG
GETMAIN CMSPROG
HNDXEXT (use in sample program) **TSAFREF**
list of **CMSPROG**
new **REL5GDE**
STRINIT CMSPROG
usage **CMSPROG**
WAITECB (use in sample program) **TSAFREF**
CMS messages, other SYMSMG
nucleus **CMSPROG**
adding segment
for Y-disk directory **INST**
alternate placement **INST**
building after
applying service **INST**
loading national language files **INST**
load map **INST**
storage requirements **PLNGDE**
when to regenerate **INST**
CMS nucleus generation profile (DMSNGP) REL5GDE
description **INST**
load from product tape
existing VM system procedure **INST**
starter system procedure **INST**
sample file **INST**
tailoring considerations **INST**
existing VM system procedure **INST**
planning **INST**
Starter System procedure **INST**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- CMS nucleus generation prompts and responses
existing VM system procedure **INST**
Starter System procedure **INST**
- CMS PF keys **PRIMER**
setting **PRIMER**
- CMS Primer **SPIUG**
- CMS PROFILE EXEC, IPLing
MVS virtual machines **RGOS**
VM/VSE **RGOS**
- CMS ready message **TERMREF**
- CMS Session Services
border commands **REL5GDE**
commands, new **REL5GDE**
control blocks, new and changed **REL5GDE**
full screen **REL5GDE**
functions **REL5GDE**
macro support **REL5GDE**
macros, new and changed **REL5GDE**
migration considerations **REL5GDE**
modules, new and changed **REL5GDE**
overview **REL5GDE**
QUERY command enhancement **REL5GDE**
references to other publications **REL5GDE**
SET command enhancement **REL5GDE**
use with System Product Editor **REL5GDE**
virtual screens **REL5GDE**
- CMS Shared Segments **PLNGDE**
- CMS subcommand **XEDIT**, **XEDITUG**
issuing without an operand **XEDIT**
- CMS subcommand of **DUMPSCAN** command
description **DIAG**
error message **DIAG**
format **DIAG**
functional category **DIAG**
response **DIAG**
sample output **DIAG**
usage **DIAG**
- CMS subset
environment **CMSUG**
using **CMSUG**
- CMS subset mode
entering **XEDIT**
returning from **XEDIT**
with full-screen CMS OFF **XEDIT**
with full-screen CMS ON **XEDIT**
- CMS user
using the VSE Interactive Interface **RGOS**
- CMS user load map **DIAG**
- CMS users
AUTOCR option **CPREF**
BATCH option **CPREF**
INSTSEG option **CPREF**
NOSPROF option **CPREF**
- CMS window **PRIMER**
- CMS/DOS **CPPROG**, **REL5GDE**
commands **CMSPROG**
considerations for execution **CMSPROG**
control blocks simulated by **CMSPROG**
directory entries **PLNGDE**
DOSLKED command **CMSPROG**
DTFCD macro **CMSPROG**
DTFCN macro **CMSPROG**
DTFDI macro **CMSPROG**
DTFMT macro **CMSPROG**
DTFPR macro **CMSPROG**
DTFSD macro **CMSPROG**
end-of-tape processing **CMSUG**
entering the environment **CMSPROG**
environment restrictions **PLNGDE**
EXCP support **CMSPROG**
extents **CMSPROG**
generating **CMSPROG**
invoking linkage editor **CMSPROG**
label information area **PLNGDE**
libraries **CMSPROG**
library volume directory entries **CMSPROG**
options
BUFSP **CMSPROG**
CAT **CMSPROG**
EXTENT **CMSPROG**
MULT **CMSPROG**
VSAM **CMSPROG**
overview **CMSUG**
performance **CMSPROG**
physical IOCS macros **CMSPROG**
planning considerations **PLNGDE**
program development using **CMSPROG**
relationship to CMS and VSE **CMSPROG**
restrictions **CMSPROG**
restrictions when using VSE/SP 2.1 **RGOS**
SVC support routines **CMSPROG**
tape handling **PLNGDE**
tape label processing **CMSUG**
terminology **CMSPROG**
user responsibilities **CMSPROG**
using tape input/output **CMSPROG**
using with VSE/SP 2.1 **RGOS**
VM/SP directory entries **CMSPROG**
VSE I/O macros **CMSPROG**
VSE supervisor macros **CMSPROG**
VSE system generation considerations **PLNGDE**
VSE transients simulation **CMSPROG**
VSE volumes needed **CMSPROG**
VSE/VSAM macros supported **CMSPROG**
when VSE system must be online **PLNGDE**
- CMSAMS** segment
installation procedure **INST**
loading and saving using **VSAMGEN** **INST**
updating **INST**
- CMSBAM** segment **PLNGDE**
installation procedure **INST**
loading and saving using **SAMGEN** **INST**
requirements for installation **INST**
updating **INST**
- CMSBATCH** **INST**, **PLNGDE**
- CMSBATCH** command
description **CMSREF**
example of use **INTRO**
recursive abends encountered by **CMSREF**
- CMSCB** (OS control blocks) **DIAG**
- CMSDEV** macro **CMSPROG**, **REL5GDE**
complex list format **MACREF**
control blocks, new and changed **REL5GDE**
ERROR= operand **MACREF**
execute format **MACREF**
execs, new and changed **REL5GDE**
list format **MACREF**
macros, new and changed **REL5GDE**
modules, new and changed **REL5GDE**
obtaining virtual device characteristics **MACREF**
standard format **MACREF**
using with **PRINTL** macro **MACREF**
- CMSDOS** segment **PLNGDE**
installation procedure **INST**
loading and saving using **DOSGEN** **INST**
map **DIAG**

- requirements for installation **INST**
 updating **INST**
- CMSG XEDITUG**
CMSG subcommand **XEDIT**
 issued to a typewriter terminal **XEDIT**
 issued when cmdline is off **XEDIT**
 issued when stack is empty **XEDIT**
- CMSGEND EXEC**
 access requirements **INST**
 and function **SFPROG**
 command format **INST**
 creating CMS disk-resident modules **INST**
 function **INST**
 generating CMS module **INST**
 how it works **INST**
 messages **INST**
 options **INST**
 regenerating PROP command **INST**
 update procedure **INST**
 usage notes **INST**
 when to use **INST**
- CMSINST** (installation discontinuous shared segment)
REL5GDE
 function **INST**
 installation procedure **INST**
 loading and saving using **DCSSGEN INST**
 prompts displayed during CMS nucleus build **INST**
 selection and name entries
 in **DMSNGP ASSEMBLE INST**
- CMSIPCS MAP DIAG**
CMSIUCV macro **CMSPROG, REL5GDE, SFPROG**
 complex list format (MF=(L,addr[,label])) **SFPROG**
 execute format (MF=(E,addr)) **SFPROG**
 list format (MF=L) **SFPROG**
 standard format **SFPROG**
- CMSLEVEL** macro **CMSPROG**
CMSLEVEL option, of **CMS QUERY** command **CMSREF**
CMSLIB assembler macro library ddname **CMSREF**
CMSLIB MACLIB APGDE, CMSPROG
CMSNUC MAP DIAG
CMSOUT window **PRIMER**
CMSPF option
 of **CMS QUERY** command **CMSREF**
 of **CMS SET** command **CMSREF**
- CMSPOINT** subcommand of **DUMPSCAN** command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
 sample output **DIAG**
 usage **DIAG**
- CMSSERV** command **CMSUG, REL5GDE**
 description **CMSREF**
 format **CMSREF**
 messages **CMSREF**
 summary **CMSREF**
 usage notes **CMSREF**
- CMSTYPE** option
 of **CMS QUERY** command **CMSREF**
 of **CMS SET** command **CMSREF**
- CMSUSER INST, PLNGDE**
CMSUT1 file
 created by **DISK LOAD** command **CMSREF**
 created by **READCARD** command **CMSREF**
CMSUT1 file and **CMS** commands that create **CMSUG**
CMSVSAM segment
 installation procedure **INST**
 loading and saving using **VSAMGEN INST**
 updating **INST**
- CNCL** key **APGDE**
CNTL operand
 of **TERMINAL** command **CPREF**
- CNTRL** filetype
 usage in **CMS CMSUG**
- COBOL APGDE, INTRO, PRIMER**
 compilers **APGDE**
 files created by **APGDE**
 querying options in effect for **CMSREF**
 specifying options for in **CMS/DOS CMSREF**
 compiling **APGDE**
 compiling programs under **CMS PLNGDE**
 data types **APGDE**
 ddnames in **APGDE**
 filetype **APGDE**
 tab settings **APGDE**
INCLUDE statement of **SQL APGDE**
OS COBOL files **APGDE**
OS/VS COBOL Compiler **APGDE**
SQL
 data types **APGDE**
 invoking **APGDE**
SQL commands **APGDE**
 updating source files **APGDE**
- COBOL** (Full American National Standard
 Common Business Oriented Language)
COBOL command **APGDE**
COBOL interactive debug **APGDE**
COBOL workfiles **APGDE**
COBOL 2 INST
CODE operand
 of **CPTRAP** command **CPREF**
 of **EXTERNAL** command **CPREF**
- CODE** parameter
 of **SENDERR TSAFREF**
 of **SEVER TSAFREF**
- code conversion
 of **APL** keys **XEDIT**
 of **TEXT** keys **XEDIT**
- codes
 abend **SYSMSG**
 error **SPIREF**
- coding conventions **CPPROG**
COL option of **COMPARE** command **CMSREF**
Col= XEDITUG
 cold start, **VM/SP HPO OPGDE**
 collating sequence using **XRANGE SPIREF**
 collect operand of **FDISPLAY** subcommand **DIAG**
 collection
 See also inter-collection communication
 example **TSAFREF**
 initialization **TSAFREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- links for **TSAFREF**
- merging **TSAFREF**
- querying **TSAFREF**
 - TSAF QUERY TSAFREF**
- revoking resources when merging **TSAFREF**
- sharing resources within **TSAFREF**
- sizes **TSAFREF**
- structure **TSAFREF**
- Collection Resource Management System Service
- INTRO, REL5GDE**
- *IDENT's use of the *CRM path **TSAFREF**
- authorizing a virtual machine
 - to connect to **TSAFREF**
- communications **TSAFREF**
- connecting to **TSAFREF**
- control blocks, new and changed **REL5GDE**
- macros, new and changed **REL5GDE**
- modules, new and changed **REL5GDE**
- path **TSAFREF**
- request resource table information **TSAFREF**
- responsibilities **TSAFREF**
- revoking a resource **TSAFREF**
- send format **TSAFREF**
- SEVER** reason codes **TSAFREF**
- severing connection to **TSAFREF**
- colon as label terminators **SPIREF**
- color
 - defining
 - SCREEN** directory control statement **PLNGDE**
 - with **SET COLOR XEDITUG**
 - with **SET CTLCHAR XEDITUG**
 - with **SET RESERVED XEDITUG**
 - determining values in effect **CPREF**
- color display, defining
 - using **SET COLOR XEDIT**
 - using **SET CTLCHAR XEDIT**
 - using **SET RESERVED XEDIT**
- color graphics **INTRO**
- GDDM INTRO**
- COLOR** option
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
 - of **SET XEDIT**
- COLPTR** option
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
 - of **SET XEDIT**
 - of **TRANSFER XEDIT**
- column numbers
 - specifying column-target as **XEDIT**
 - used with **CDELETE CMSLOT**
 - used with **CLOCATE CMSLOT**
- COLUMN** option
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
 - of **TRANSFER XEDIT**
- column pointer
 - defined **XEDITUG**
 - displayed in the scale **XEDITUG**
 - displayed on typewriter terminal **XEDITUG**
 - displaying on typewriter terminal **XEDIT**
 - indicator in file identification line **XEDITUG**
 - moved by **CFIRST XEDIT**
 - moved by **CINSERT XEDIT**
 - moved by **CLAST XEDIT**
 - moved by **CLOCATE XEDIT**
 - movement restricted by zone **XEDIT**
- moving **XEDIT, XEDITUG**
 - in typewriter mode **XEDITUG**
 - to beginning of line **XEDITUG**
 - to end of line **XEDITUG**
- removing from typewriter terminal **XEDIT**
- resetting **CMSLOT, XEDITUG**
 - in typewriter mode **XEDITUG**
- splitting a line at **XEDIT**
- subcommands based on position of **XEDITUG**
- use in **CAPPEND XEDIT**
- use in **CDELETE XEDIT**
- use in **COVERLAY XEDIT**
- use in **CREPLACE XEDIT**
- use in **JOIN XEDIT**
- use in **SPLIT XEDIT**
- used with **CDELETE CMSLOT**
- used with **CFIRST CMSLOT**
- used with **CINSERT CMSLOT**
- used with **CLOCATE CMSLOT**
- column-target **XEDITUG**
 - as absolute column number **XEDIT**
 - as complex string expression **XEDIT**
 - as relative displacement **XEDIT**
 - as string expression **XEDIT**
 - description of **XEDIT**
 - search for affected by **SET STREAM XEDIT**
 - use in **CDELETE XEDIT**
 - use in **CLOCATE XEDIT**
- columns
 - comparing disk files by **CMSREF**
 - defined for target searches **XEDIT**
 - displayed
 - multiple pairs of **XEDIT**
 - specifying **XEDIT**
 - formatting **SPIUG**
 - location **EXEX2**
 - information **PRIMER**
 - of data, copying **CMSREF**
 - specified for viewing **XEDITUG**
 - specifying for copy operations **CMSREF**
- combination, arithmetic **SPIREF**
- combining
 - all CMS language files into one file **REL5GDE**
 - using the **LANGMERG** command **REL5GDE**
 - files **XEDITUG**
 - in typewriter mode **XEDITUG**
 - using **GET XEDIT**
 - using **PUT XEDIT**
 - using **PUTD XEDIT**
 - lines **XEDIT**
 - examples **XEDIT**
 - SET** options **XEDITUG**
 - sets of lines **XEDIT**
 - words **EXEX2**
- comma to indicate continuation of a clause **SPIUG**
- command
 - and module migration to the CMS nucleus **REL5GDE**
 - assigning privilege classes **CPPROG**
 - authorization, planning **CPPROG**
 - syntax checking **REL5GDE**
- COMMAND** as an environment name **SPIREF**
- command class assignments **PLNGDE**
 - defined **CPREF**
 - virtual machine **CPREF**
- command file **PLNGDE**
- command **HELP CMSUG**
- command inhibition
 - See **TRACE** instruction

command input area **XEDITUG**
 command input area of the CMS window **PRIMER**
 command language processor **INTRO**
 command language, CMS **CMSPROG**
 command line
 changing location **XEDITUG**
 example of **XEDITUG**
 changing position of **XEDIT**
 defining display features **XEDITUG**
 displaying message in **XEDIT, XEDITUG**
 entering the **CMSSERV** command **SRPI**
 in **CMS PRIMER**
 in full-screen CMS **CMSUG**
 in the CMS window **PRIMER**
 large arrow **PRIMER**
 location on screen **XEDITUG**
 on host (CMS) screen **SRPI**
 on the **CMSSERV** screen **SRPI**
 redisplaying subcommand in **XEDIT**
 stacked by **READ XEDIT**
 command name **CPREF**
 command operands **CPREF**
 command stack **APGDE**
COMMAND subcommand **XEDIT**
 command syntax **TSAFREF**
 command types **CPPROG**
 command use
 for the 3880 **CPPROG**
 for Vector Facility **CPPROG**
 commandline operand
 of #CP command **CPREF**
 of CP command **CPREF**
 commands **EXEX2**
 abbreviations used in **HELP CMSUG**
 abbreviating **CMSREF, PRIMER**
 access
 changing for virtual machines **CPPROG**
 migration considerations **CPPROG**
 security and system integrity **CPPROG**
ACCESS CMSPROG, INTRO
ACNT CPPROG
ADSTOP CPPROG, INTRO
 alternative destinations **SPIREF**
AMSERV CMSPROG
ASSEMBLE CMSPROG, INTRO
ASSGN CMSPROG
 assigning to kinds of users **CPPROG**
ATTACH CPPROG, INTRO
ATTACH CHANNEL CPPROG
AUTHORIZE INTRO
AUTOLOG CPPROG, REL5GDE
BACKSPAC CPPROG, INTRO
CACHE CPPROG
CACHE OWN CPPROG
CACHE QUERY CPPROG
CALL CMSPROG
CANCEL CMSPROG
CHANGE CPPROG, INTRO
 changing **CPPROG**
CLOSE INTRO

CMS
ARNGEND INST
ASMGEND INST
ASM3705 INST
CMSEGEN INST
DIRECT INST
DISKMAP INST
GENTSAF INST
GEN3705 INST
INSTEP INST
ITASK INST
NETWORK LOAD INST
PRELOAD INST
SAVENCP INST
SNTMAP INST
SPGEN INST
SPLOAD INST
 used to regenerate CP/CMS/IPCS
 modules/segments **INST**
UTILITY INST
VMFASM INST
VMFDOS INST
VMFLKED INST
VMFLOAD INST
VMFMAC INST
VMFMERGE INST
VMFNLS INST
VMFPLC2 INST
VMFREMOV INST
VMFTXT INST
VMFZAP INST
VMSERV INST
VRSIZE INST
VSEVSAM INST
ZAP INST
ZAPTEXT INST
CMS/DOS CMSPROG
CMSBATCH INTRO
 command options in **HELP REL5GDE**
COMMANDS CMSUG, CPPROG, CPREF, CPPROG
 responses **CPREF**
 usage notes **CPREF**
COMPARE REL5GDE
COPYFILE INTRO
COPYV CPPROG
CP INTRO
 CPTRAP CPREF
 entering **OPGDE**
 miscellaneous **CPREF**
 spooling **OPGDE**
 summarized **CPREF, OPGDE**
 summary **CPREF**
 used for analysis and monitor functions **CPREF**
 used for device control **CPREF**
 used for spooling and file control **CPREF**
 used for virtual console **CPREF**
 CP summarized **CPREF, OPGDE**
DDR CMSPROG
DEBUG INTRO
 defaults shown by underscore
 in command format box **CMSREF**
DEFINE CPPROG, INTRO

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

deleted from release 5 REL5GDE
 QUERY SRM SWPQTIME REL5GDE
 SET SRM SWPQTIME REL5GDE
 described CPREF
 destination of SPIREF
 DETACH INTRO, REL5GDE
 developing CMSPROG
 DIAL INTRO
 used with VSCS SFPROG
 DIRMAIN INTRO
 DISCARD INTRO
 DISCONN INTRO
 DISPLAY APGDE, CPPROG, INTRO
 DLBL CMSPROG
 DLBL command CMSPROG
 DOSLIB CMSPROG
 DOSLKED CMSPROG
 DOSPLI CMSPROG
 DRAIN INTRO
 DSERV CMSPROG
 DTRIPF INTRO
 editing, help on how to use CMSLOT
 enhanced
 ACCESS REL5GDE
 DEFAULTS REL5GDE
 DETACH REL5GDE
 DUMPSCAN REL5GDE
 EXECDROP REL5GDE
 EXECIO REL5GDE
 EXECMAP REL5GDE
 EXECUPDT REL5GDE
 FILEDEF REL5GDE
 FORMAT REL5GDE
 GENMOD REL5GDE
 GLOBAL REL5GDE
 INCLUDE REL5GDE
 IPL REL5GDE
 LABELDEF REL5GDE
 LOAD REL5GDE
 MAP REL5GDE
 QUERY REL5GDE
 RECEIVE REL5GDE
 SET REL5GDE
 TERMINAL REL5GDE
 TXTLIB REL5GDE
 entered from a terminal CMSPROG
 entering CMSREF
 environment SPIUG
 See also environments
 CMS CMSREF
 CP CPREF, CMSREF, CMSUG
 errors, trapping (See SIGNAL instruction)
 ESERV CMSPROG
 EXECIO INTRO
 FCOBOL CMSPROG
 FETCH CMSPROG
 FILEDEF CMSPROG, INTRO
 finding those authorized for user CPREF
 FLUSH INTRO
 formats
 in GCS GCSREF
 interpreting PRIMER
 FORCE CPPROG, INTRO, REL5GDE
 FREE INTRO
 GCS, in
 ACCESS GCSREF
 DLBL GCSREF
 ETRACE GCSREF
 FILEDEF GCSREF
 GDUMP GCSREF
 GLOBAL GCSREF
 HX GCSREF
 ITRACE GCSREF
 LOADCMD GCSREF
 OSRUN GCSREF
 QUERY GCSREF
 RELEASE GCSREF
 REPLY GCSREF
 SET GCSREF
 general INTRO
 GENIMAGE CPPROG
 GENMOD CMSPROG, INTRO
 GET LOG INTRO
 GLOBAL CMSPROG, INTRO PLNGDE
 handling, SNA CCS SFPROG
 HASM INTRO
 HOLD INTRO
 how a user can display which can be used CPPROG
 how to enter CMSUG, PRIMER
 HX PLNGDE
 IDENTIFY REL5GDE
 IMAGEMOD CPPROG
 immediate SFPROG
 in common with CMS PLNGDE
 INCLUDE INTRO
 INDICATE CPPROG, INTRO
 INDICATE LOAD CPPROG
 INDICATE POSITION CPPROG
 INDICATE USER APGDE, CPPROG, OPGDE
 inhibiting with TRACE instruction SPIREF
 IPL CMSPROG, PLNGDE
 issued from a macro XEDITUG
 issuing PLNGDE
 from a program APGDE
 to host SPIREF
 keyboard differences in entering CMSREF
 LANGGEN SFPROG
 LANGMERG SFPROG
 language CMSUG
 CMS CMSUG
 CP CMSUG
 language, CMS CMSREF
 LINK CPPROG, INTRO
 list of supported PLNGDE
 LISTDS CMSPROG
 LISTIO CMSPROG
 LKED CMSPROG
 LOAD INTRO
 LOADBUF CPPROG, INTRO
 LOADMOD CMSPROG
 LOCK CPPROG
 LOGOFF
 FORCE CPPROG
 LOGON CPPROG, REL5GDE
 MESSAGE CPPROG
 MIGRATE CPPROG, INTRO
 modules, creating CMSREF
 MONITOR CPPROG, INTRO
 MOVEFILE CMSPROG
 NAMES INTRO
 NCCF PROP INTRO
 new
 CMSSERV REL5GDE
 CONVERT COMMANDS REL5GDE
 GENMSG REL5GDE
 LANGGEN REL5GDE

LANGMERG REL5GDE
 MOREHELP REL5GDE
 PARSECMD REL5GDE
 SAVEFD REL5GDE
 VALIDATE REL5GDE
 XMITMSG REL5GDE
 notational conventions CPREF
 operands CMSREF
 OPTION CMSPROG
 options CMSREF
 ORDER INTRO
 OSRUN PLNGDE
 OVERRIDE CPPROG
 passing CPREF
 PASSTHRU INTRO
 PEEK INTRO
 PER INTRO
 PLIOPT INTRO
 PREPARE CPPROG
 privilege classes, changing CPPROG
 privileged INTRO
 programmable operator SFPROG
 CMD SFPROG
 FEEDBACK SFPROG
 GET SFPROG
 LGLOPR SFPROG
 LOADTBL SFPROG
 LOG SFPROG
 QUERY SFPROG
 SET SFPROG
 STOP SFPROG
 processing CMSPROG, PLNGDE
 PROP INTRO
 PSERV CMSPROG
 PURGE INTRO
 QUERY CMSPROG, INTRO, PLNGDE, REL5GDE
 QUERY MITIME CPPROG
 QUERY PAGING CPPROG
 QUERY PSTOR CPPROG
 QUERY QDROP CPPROG
 QUERY SET CPPROG
 QUERY SRM CPPROG
 QUERY SRM PGMACT CPPROG
 QUERY VECTOR CPPROG, OPGDE
 QUERY VMSAVE CPPROG
 RDRLIST INTRO, REL5GDE
 RECEIVE INTRO
 RECOVERV CPPROG
 RELEASE CMSPROG
 REPEAT INTRO
 REPLY PLNGDE
 rerunning PRIMER
 RESERVE SFPROG
 retrieving PRIMER
 RSERV CMSPROG
 rules for entering PRIMER, CMSLOT
 RUN INTRO
 SAVEFD CMSPROG
 SAVENCP CPPROG
 SAVESYS CPPROG
 SCRIPT INTRO
 search function CMSPROG
 search hierarchy for CMSPROG
 search order CMSUG
 SEND used with single console image
 facility SFPROG
 SENDFILE INTRO
 SET CMSPROG, INTRO
 SET AFFINITY CPPROG
 SET ASSIST CPPROG
 SET CPASSIST OFF CPPROG
 SET EMSG SFPROG
 SET FAVORED command CPPROG
 SET MIH CPPROG
 SET MINWS CPPROG
 SET MITIME CPPROG
 SET NOTRANS CPPROG
 SET PAGING CPPROG
 SET PRIORITY CPPROG
 SET QDROP CPPROG
 SET RESERVE CPPROG
 SET SASSIST CPPROG
 SET SASSIST OFF CPPROG
 SET SMSG INTRO
 SET SRM CPPROG
 SET SRM IBUFF CPPROG
 SET SRM MHFULL CPPROG
 SET SRM MINNUMSS CPPROG
 SET SRM PGFULL CPPROG
 SET SRM PGMTLIM CPPROG
 SET SRM PREPAGE CPPROG
 SET STBYPASS CPPROG
 SET STBYPASS VR CPPROG
 SET STMULTI CPPROG
 SET S370E ON CPPROG
 SET VMSAVE CPPROG
 SETPRT CPPROG
 SHUTDOWN INTRO
 SMSG SFPROG
 SPACE INTRO
 SPMODE CPPROG, INTRO
 SPOOL CPPROG, INTRO
 SPOOL CONSOLE START CPPROG
 SPOOL CONSOLE STOP CPPROG
 SPTAPE CPPROG, INTRO
 SSERV CMSPROG
 stacking in terminal input buffer CMSREF
 START CPPROG, INTRO
 STATE CMSPROG
 STCP CPPROG
 stopping GCSREF
 STORE APGDE, CPPROG
 summary of use CPREF, OPGDE
 SVCTRACE INTRO
 SYSTEM CLEAR CPPROG
 TAG CPPROG
 TELL INTRO
 TERMINAL INTRO
 BREAKIN GUESTCTL SFPROG
 BRKKEY SFPROG
 CONMODE 3270 SFPROG
 SCRNSAVE OFF SFPROG
 SCRNSAVE ON SFPROG
 transmitted to CMS/CP XEDIT

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

TESTFORT INTRO
TSAF (transparent services access facility)
ADD LINK TSAFREF
DELETE LINK TSAFREF
QUERY TSAFREF
RUNTSAF TSAFREF
SET ETRACE TSAFREF
STOP TSAF TSAFREF
TRACE CPPROG, INTRO
TRANSFER CPPROG, INTRO
translation synonyms **CMSUG**
translations **CMSUG**
transmitted to CMS/CP **XEDIT**
truncating **CMSREF**
UNLOCK CPPROG
used to control a terminal session
summary of **CPREF, OPGDE**
utility **APGDE**
VARY INTRO
VARY OFFLINE CPPROG, OPGDE
VARY ONLINE CPPROG, OPGDE
VMDUMP INTRO
when to enter **CMSREF**
XEDIT INTRO
prefix subcommands **APGDE**
QQUIT subcommand **APGDE**
QUIT subcommand **APGDE**
COMMD macro **CPPROG**
COMMENT command of DMS/CMS **APGDE**
COMMENT control record, ZAP program
format **INST**
function **INST**
COMMENT statement **CMSPROG**
comments **EXEC2, SPIUG**
description of **SPREF**
entering **CPREF**
how to write **CPREF**
in an **EXEC CMSLOT**
in **HELP** text files **CMSUG**
in **REXX** language **CMSUG**
to identify program language **SPREF**
COMMENTS option of **EXECUPDT** command **CMSREF**
COMMIT WORK command of **SQL** **APGDE**
common segment facility **CPPROG**
common carrier **TERMREF**
common dump receiver **DIAG**
common lock **PLNGDE**
common service area (CSA) **CPPROG**
common storage **PLNGDE**
communicating **PRIMER**
between execs **PLNGDE**
between virtual machines **INTRO**
between VM/SP and work stations **INTRO**
system operator with VM/SP **INTRO**
through **IUCV** **PLNGDE**
through the console **PLNGDE**
user with VM/SP **INTRO**
with **CMS** **INTRO**
with **CP** **INTRO**
with other computer users **CMSUG**
with other virtual machines **INTRO**
with system operator **INTRO**
with VM/SP **CMSUG**
communication
***CRM** **TSAFREF**
APPC/VM **TSAFREF**
between the programmable operator and the
network **SFPROG**
between virtual machines **SFPROG**
checking for the programmable operator **SFPROG**
establishing SNA links **SFPROG**
example **SFPROG**
interfaces of SNA **SFPROG**
IUCV
DASD block I/O system service **SFPROG**
error logging system service **SFPROG**
message system service **SFPROG**
signal system service **SFPROG**
spool system service **SFPROG**
PMX protocol **SFPROG**
programmable operator **SFPROG**
and **NCCF** or **NetView** **SFPROG**
communication facility
virtual machines
IUCV **PLNGDE**
VMCF **PLNGDE**
communication partner
connecting to **TSAFREF**
overview **TSAFREF**
receiving from **TSAFREF**
sending to (**SEND CNF**) **TSAFREF**
sending to (**SEND CNFD**) **TSAFREF**
sending to (**SEND DATA**) **TSAFREF**
sending to (**SENDER R**) **TSAFREF**
sending to (**SEND REQ**) **TSAFREF**
severing from **TSAFREF**
severing paths **TSAFREF**
communication server **TSAFREF**
communications controller considerations:
loading **OPGDE**
Communications Module termination notification
list **MACREF**
adding entry-names **MACREF**
deleting entry-names **MACREF**
COMP option
of **DOSLIB** command **CMSREF**
of **FETCH** command **CMSREF**
of **MACLIB** command **CMSREF**
COMPACT option of **DDR** command **CMSUG**
compact simple lists **PRIMER**
compacting tape output **CMSUG**
COMPARE command **APGDE, CMSLOT, PRIMER**
COL option **CMSREF**
description **CMSREF**
to compare contents of two **CMS** files **CMSUG**
COMPARE function **SPREF, SPIUG**
comparing
average in-queue time
with earlier releases **CPPROG**
files **CMSREF**
storage keys **PLNGDE**
protection key, checking **PLNGDE**
two files **CMSLOT, PRIMER**
comparison operators **SPIUG**
comparisons
allowing approximation **SPIUG**
characters **SPIUG**
exact **SPIUG**
fuzzy arithmetical **SPIUG**
numbers **SPIUG**
of numbers **SPREF**
of strings **SPREF**
using **COMPARE** **SPREF**
priority of characters **SPIUG**
strings **SPIUG**
compatibility with **CMS** editor **XEDIT**

- COMPID (keyword definition) **DIAG**
 COMPID keyword of SYMP subcommand **DIAG**
 compile option, **TEST** **INTRO**
 compile, defined **INTRO**
 compiler command **CMSLOT**
 compiler switch flag **MACREF**
 compilers **CMSLOT**, **SPIUG**
 COBOL **APGDE**, **INTRO**
 devices assigned **CMSPROG**
 documentation references **INTRO**
 FORTRAN **APGDE**
 input/output assignments **CMSPROG**
 PL/I **INTRO**
 supported
 by **VM/SP** **INTRO**
 in **CMS** **CMSUG**
 used under **CMS** **CMSREF**
 compiling **APGDE**
 a program **CMSLOT**, **PRIMER**
 the message repository **REL5GDE**
 using the **GENMSG** command **REL5GDE**
 completion codes
 system **GCSREF**
 user **GCSREF**
 X'00B' **CPPROG**
 completion options screen **APGDE**
 in **DMS/CMS** **APGDE**
 completion, function
 See function completion
 complex list format (MF=(L,addr[,label]))
 CMSIUCV macro **SFPROG**
 HNDIUCV macro **SFPROG**
 complex session (examples) **TERMREF**
 complex string expression as target **XEDITUG**
 example of **XEDITUG**
 specifying column-target as **XEDIT**
 specifying target as **XEDIT**
 complimentary copy of note **CMSLOT**
 component **MENU** in **HELP** **CMSUG**
 components
 CMS (conversational monitor system) **PLNGDE**
 CP (control program) **PLNGDE**
 definition **INST**
 introduction **PLNGDE**
 network **INTRO**
 of **VM/SP** **CMSREF**, **CMSUG**
 of **VM/370** **CMSREF**
 composing notes **CMSUG**
 Composition Utility **INST**
 compound symbols
 description of **SPIUG**
 for repeated substitution **SPIUG**
 use of a period **SPIUG**
 compound variable
 description of **SPIREF**
 setting new value **SPIREF**
COMPRESS **XEDITUG**
COMPRESS option
 of **EXECUPDT** command **CMSREF**
 of **LOADLIB** command **CMSREF**
COMPRESS subcommand **XEDIT**
 example of **XEDIT**
 compressing
 DOSLIB files **CMSPROG**
 members of a **MACLIB** **CMSPROG**
 records using **SET** **PACK** **XEDIT**
COMPSWT macro **APGDE**, **CMSPROG**
 See also **MACREF**
 OFF operand **MACREF**
 ON operand **MACREF**
 turning compiler switch flag on or off **MACREF**
 computer identification **CMSLOT**
COMSRV directory option **TSAFREF**
COMSRV operand of **OPTION** directory control
 statement **PLNGDE**
COMSRV option defining in directory **PLNGDE**
CONCAT option of **FILEDEF** command **APGDE**, **CMSREF**
 concatenating files **XEDITUG**
 in typewriter mode **XEDITUG**
 using **GET** **XEDIT**
 using **PUT** **XEDIT**
 using **PUTD** **XEDIT**
 concatenating words **EXEX2**
 concatenation **SPIUG**
 of lines during string target search **XEDIT**
 of strings **SPIREF**
 concatenation operator **SPIUG**
 || **SPIREF**
 blank **SPIREF**
CONCEAL directory option **TSAFREF**
CONCEAL operand
 of **OPTION** directory control statement **PLNGDE**
 of **SET** command **CPREF**
CONCEAL option, defining in directory **PLNGDE**
CONCEAL option of **SET** command **CMSUG**
 concepts **SRPI**
 of **VM/SP** **INTRO**
 concurrent operation **CPPROG**, **REL5GDE**
 condition codes
 ACCEPT **TSAFREF**
 CONNECT **TSAFREF**
 DCLBFR **TSAFREF**
 DESCRIBE **TSAFREF**
 DIAGNOSE code
 X'A0' **SFPROG**
 X'BC' **SFPROG**
 X'B4' **SFPROG**
 X'B8' **SFPROG**
 X'D0' **SFPROG**
 X'0C' **SFPROG**
 X'00' **SFPROG**
 X'08' **SFPROG**
 X'10' **SFPROG**
 X'14' **SFPROG**
 X'18' **SFPROG**
 X'28' **SFPROG**
 X'3C' **SFPROG**
 X'30' **SFPROG**
 X'34' **SFPROG**
 X'38' **SFPROG**
 X'4C' **SFPROG**
 X'58' **SFPROG**
 X'6C' **SFPROG**
 X'64' **SFPROG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

X'7C' SFPROG
X'78' SFPROG
X'80' SFPROG
X'84' SFPROG
X'94' SFPROG
FINDSYS function SFPROG
IUCV
ACCEPT SFPROG
CONNECT SFPROG
DECLARE BUFFER SFPROG
DESCRIBE SFPROG
PURGE SFPROG
QUERY SFPROG
QUIESCE SFPROG
RECEIVE SFPROG
REJECT SFPROG
REPLY SFPROG
RESUME SFPROG
RETRIEVE BUFFER SFPROG
SEND SFPROG
SET CONTROL MASK SFPROG
SET MASK SFPROG
SEVER SFPROG
TEST COMPLETION SFPROG
TEST MESSAGE SFPROG
LOADSYS function SFPROG
LOCK macro CPPROG
PURGESYS function SFPROG
QUERY TSAFREF
RECEIVE TSAFREF
RTRVBFR TSAFREF
SEND CNF TSAFREF
SEND CNFD TSAFREF
SEND DATA TSAFREF
SEND ERR TSAFREF
SEND REQ TSAFREF
SETCMASK TSAFREF
SETMASK TSAFREF
SEVER TSAFREF
TESTC MPL TSAFREF
TESTMSG TSAFREF
conditional execution
conditional loops SPIREF
description of SPIUG
DO FOREVER instruction SPIUG
DO UNTIL instruction SPIUG
DO WHILE instruction SPIUG
LEAVE instruction SPIUG
conditional statements EXEX2
&IF control statement EXEX2
&LOOP control statement EXEX2
example EXEX2
syntax EXEX2
conditionally displaying text CMSUG
conditions
ERROR SPIREF
HALT SPIREF
NOVALUE SPIREF
saved during subroutine calls SPIREF
SYNTAX SPIREF
trapping of
See SIGNAL instruction
CONFIG macro GCSREF
description GCSREF
dumpvm parameter GCSREF
maxvm parameter GCSREF
recvm parameter GCSREF
sdisk parameter GCSREF
sysid parameter GCSREF
sysname parameter GCSREF
tabsize parameter GCSREF
ydisk parameter GCSREF
configuration aid PLNGDE
configuration file PLNGDE
configuration file for GCS DIAG
configurations PLNGDE
aid PLNGDE
defining device INTRO
examples RGOS
for preferred machine assist systems RGOS
VM under VM RGOS
VM/VSE RGOS
factors influencing performance
VM under VM RGOS
VM/VSE RGOS
for VM/IS INTRO
other considerations for planning PLNGDE
remote spooling PLNGDE
supported by VM/SP HPO PLNGDE
TCUs
3704/3705/3725 required features PLNGDE
terminals PLNGDE
3704/3705, macros INST
CONFIRM state TSAFREF
CONFIRM, APPC verb
abend conditions TSAFREF
mapped with APPC/VM TSAFREF
parameters TSAFREF
state changes TSAFREF
confirmation, request TSAFREF
See also SENDCNF function of APPC/VM
CONFIRMED, APPC verb
abend conditions TSAFREF
mapped with APPC/VM TSAFREF
parameters TSAFREF
state changes TSAFREF
CONMODE operand of TERMINAL command CPREF
CONMODE 3270
option REL5GDE
restrictions PLNGDE
CONNECT, authorizing IUCV directory control
statement PLNGDE
CONNECT function of APPC/VM TSAFREF
communication servers TSAFREF
completion TSAFREF
condition codes TSAFREF
mapped with APPC TSAFREF
overview TSAFREF
parameter list TSAFREF
parameters
ALTID TSAFREF
CONTROL TSAFREF
MF=L TSAFREF
PRMLIST TSAFREF
RESID TSAFREF
SYNCLVL TSAFREF
WAIT TSAFREF
program exceptions TSAFREF
return codes TSAFREF
scenario TSAFREF
state changes TSAFREF
to communication partner TSAFREF
use in sample resource program TSAFREF
use in sample user program TSAFREF

- CONNECT** function of IUCV **SFPROG**
 parameter list format **SFPROG**
 to the DASD block I/O system service **SFPROG**
 to the signal system service **SFPROG**
 to the SPOOL system service **SFPROG**
 trace table entry format **SFPROG**
 using **SFPROG**
- CONNECT** state **TSAFREF**
- connecting
 DASD for CP access and control **CPREF**
 previously unconnected communication lines **CPREF**
 real device to virtual machine **CPREF**
 remote terminals **CPREF**
 virtual channel-to-channel adapters **CPREF**
 work stations to VM/SP **INTRO**
- connecting to
 *CRM **TSAFREF**
 *IDENT **TSAFREF**
 *IDENT to revoke a resource **TSAFREF**
 resource manager **TSAFREF**
 resources **TSAFREF**
 virtual machines **TSAFREF**
- connections
 complete external interrupt in IUCV **SFPROG**
 complete interrupt **TSAFREF**
 format **TSAFREF**
 pending interrupt **TSAFREF**
 complete external interrupt in IUCV **SFPROG**
 contents **TSAFREF**
 format **TSAFREF**
 in IUCV **SFPROG**
 quiesced external interrupt in IUCV **SFPROG**
 resumed external interrupt in IUCV **SFPROG**
 severed external interrupt in IUCV **SFPROG**
 terminal **TERMREF**
- Connectivity Facilities on VM/SP
 applications **INTRO**
 description **INTRO**
 enhanced **REL5GDE**
 CMSSERV command **REL5GDE**
 execs, new and changed **REL5GDE**
 modules, new and changed **REL5GDE**
 SRPI **REL5GDE**
 for VM/SP **INTRO**
 servers and requesters **INTRO**
 SRPI **INTRO**
 starting **INTRO**
 writing applications **INTRO**
- Connectivity Program Control Block
 See CPRB (Connectivity Programming Request Block)
- CONRES parameter
- CONS operand
 of RIOGEN macro **PLNGDE**
- considerations
 control switch assist **CPPROG**
 for virtual = real performance option **OPGDE**
 spooling **OPGDE**
- console **INTRO**
 alternate
 defining in RIOGEN macro **PLNGDE**
 description **OPGDE**
 selecting **OPGDE**
- controlling spooling **CPREF**
 defining real system console **PLNGDE**
 definition **INTRO**, **OPGDE**
 disconnected **INTRO**
 disconnecting from virtual machine **CPREF**
 external
 interrupt **CPPROG**
 facility **CMSPROG**
 function
 adding **CPPROG**
 virtual **SFPROG**
 input
 procedures **OPGDE**
 to Format/Allocate program **CPPROG**
 issuing commands from **PLNGDE**
 log **DIAG**
 creating disk file from **CMSUG**
 definition of **PRGDE**, **TERMREF**
 printing **CMSUG**
 produced by CMS batch facility **CMSUG**
 sample, **TSAF** **DIAG**
TSAF **TSAFREF**
- messages
 after VM/SP HPO initialization **OPGDE**
 modifying spool file **CPREF**
 primary
 description **OPGDE**
 disabling **OPGDE**
 read, controlling after CMS command execution
CMSREF
 reading from with **PULL** **SPIREF**
 services **MACREF**
 accessing, using **CONSOLE** macro **MACREF**
 CMS full-screen **MACREF**
 sheet, annotating **CPREF**
 single **SFPROG**
 image facility **INTRO**
 spooling **INTRO**
 output **TERMREF**
 output, for display terminal **CMSUG**
 stack **INTRO**, **APGDE**, **SPIUG**, **XEDITUG**
 See also program stack
 clearing **CMSREF**
 used by **PARSE** **XEDIT**
 used by **READ** **XEDIT**
 used by **SI** **XEDIT**
 used by **SI** prefix macro **XEDIT**
 used by **STACK** **XEDIT**
 used by **TRANSFER** **XEDIT**
- support **PLNGDE**
 supported
 by VM/SP **TERMREF**
 by VM/SP HPO **PLNGDE**
 system, description **OPGDE**
 terminal input buffer, clearing **CMSREF**
 terminating input/output **CPREF**
 usage by system operator **INTRO**
 virtual console management **INTRO**
 writing messages to and from **PLNGDE**
 writing to with **SAY** **SPIREF**
- Console Communication Service (CCS) **GCSREF**, **INTRO**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- CONSOLE control statement**
 considerations
 MVS stage 1 input **RGOS**
 VM under VM **RGOS**
 definitions
 MVS virtual machine **RGOS**
 VM under VM **RGOS**
 VM/VSE **RGOS**
- CONSOLE directory control statement** **INTRO, PLNGDE**
- CONSOLE function** **TERMREF**
 I/O interrupts **CMSPROG**
- CONSOLE macro** **APGDE, CMSPROG, REL5GDE**
 accessing CMS full-screen console services **MACREF**
BUFFER operand **MACREF**
 building the CCW (Channel Command Word) **MACREF**
CCW operand **MACREF**
 checking device error status **MACREF**
 complex list format **MACREF**
 closing a path **MACREF**
 defining a path **MACREF**
 obtaining device information **MACREF**
 obtaining path information **MACREF**
 reading from display device **MACREF**
 specifying own CCW **MACREF**
 waiting for an interrupt **MACREF**
 writing a 3270 data stream **MACREF**
- DEVICE** operand **MACREF**
ERROR operand **MACREF**
 execute format **MACREF**
 closing a path **MACREF**
 defining a path **MACREF**
 obtaining device information **MACREF**
 obtaining path information **MACREF**
 reading from display device **MACREF**
 specifying own CCW **MACREF**
 waiting for an interrupt **MACREF**
 writing a 3270 data stream **MACREF**
- EXIT** operand **MACREF**
 issuing **DIAGNOSE** code X'58' **MACREF**
 issuing SIO instructions **MACREF**
- list format **MACREF**
 closing a path **MACREF**
 defining a path **MACREF**
 obtaining device information **MACREF**
 obtaining path information **MACREF**
 reading from display device **MACREF**
 specifying own CCW **MACREF**
 waiting for an interrupt **MACREF**
 writing a 3270 data stream **MACREF**
- OPEN/CLOSE** function **MACREF**
OPTIONS operand **MACREF**
PATH operand **MACREF**
 performing 3270 I/O operations **MACREF**
QUERY function **MACREF**
READ/WRITE/EXCP function **MACREF**
 standard format **MACREF**
 closing a path **MACREF**
 defining a path **MACREF**
 obtaining device information **MACREF**
 obtaining path information **MACREF**
 reading from display device **MACREF**
 specifying own CCW **MACREF**
 waiting for an interrupt **MACREF**
 writing a 3270 data stream **MACREF**
- UWORD** operand **MACREF**
WAIT function **MACREF**
- CONSOLE operand**
 of **CLOSE** command **CPREF**
 of **DEFINE** command **CPREF**
 of **QUERY VIRTUAL** command **CPREF**
 of **SPOOL** command **CPREF**
- constants
 altering with **LOAD** command **CMSREF**
 symbols **SPIREF**
- CONT** operand, of **CP SPOOL** command **CMSUG**
CONT operand of **SPOOL** command **CPREF**
 content addressable storage **SPIREF**
- contents
 of a save area **GCSREF**
 of real storage displayed **CPREF**
 of the feature tape for a national language **SFPROG**
- CONTENTS** macro **GCSREF, PLNGDE**
 description **GCSREF**
 end parameter **GCSREF**
 ep parameter **GCSREF**
 name parameter **GCSREF**
 ol parameter **GCSREF**
 start parameter **GCSREF**
- Contextual File Search/370 **INST**
- continuation
 character **SPIREF**
 on **COPYFILE** specification list **CMSREF**
 on **COPYFILE** translation list **CMSREF**
 of clauses **SPIUG, SPIREF**
 of data for display **SPIREF**
 of expression in **SAY** instruction **SPIUG**
- CONTINUE** in **SQL** **APGDE**
CONTINUE option of **SCRIPT** command **CMSLOT, PRIMER**
 continuous reading of file **CPREF**
 continuous spooling **CMSUG**
 continuous typing **XEDIT**
- control
 conventions
 for passing **GCSREF**
 for receiving **GCSREF**
- statement
 MDISK **CPPROG**
- control blocks
 CMS relationship **DIAG**
 DMKRIO
 defining **PLNGDE**
 examining for MVS problems **RGOS**
- in **CP**
 RCHBLOK **DIAG**
 RCUBLOK **DIAG**
 RDEVBLOK **DIAG**
 RDEVBLOK device type class and values **DIAG**
 relationships **DIAG**
 BLOK **DIAG**
 VCUBLOK **DIAG**
 VDEVBLOK **DIAG**
 VMBLOK **DIAG**
- new and changed
 DETACH command **REL5GDE**
 for alternate nucleus support **REL5GDE**
 for alternate tape drive support **REL5GDE**
 for alternate userid support **REL5GDE**
 for **APPC/VM** **REL5GDE**
 for **ASCII** support **REL5GDE**
 for Central Message Facility **REL5GDE**
 for **CMS** Session Services **REL5GDE**
 for **CMS** support of **APPC/VM** **REL5GDE**
 for **CMSDEV** macro **REL5GDE**
 for Collection Resource Management and
 Identify System Services **REL5GDE**
 for Enhanced Connectivity Facilities **REL5GDE**

for Error Logging System Services **REL5GDE**
 for Error Recording Enhancements **REL5GDE**
 for execs in storage **REL5GDE**
 for GLOBAL command **REL5GDE**
 for HELP facility **REL5GDE**
 for installation and service **REL5GDE**
 for IPCS changes **REL5GDE**
 for LOGON from logo screen **REL5GDE**
 for LOGON/LOGOFF enhancements **REL5GDE**
 for migration of CMS commands and modules
 to the CMS nucleus **REL5GDE**
 for National Language Support **REL5GDE**
 for Paging Storage Enhancements **REL5GDE**
 for Parsing Facility **REL5GDE**
 for PRINTL macro **REL5GDE**
 for programming changes **REL5GDE**
 for Protected Application Environment **REL5GDE**
 for RDCARD macro **REL5GDE**
 for remote and VM/VTAM terminals **REL5GDE**
 for shared storage access **REL5GDE**
 for spool file compression support **REL5GDE**
 for spool file limit enhancements **REL5GDE**
 for SPOOL system service **REL5GDE**
 for storage management and
 tuning enhancements **REL5GDE**
 for system profile **REL5GDE**
 for TSAF support **REL5GDE**
 for 3422 support **REL5GDE**
 simulated by CMS/DOS **CMSPROG**
 types, VSE supervisor **CMSPROG**
 used by CMS/DOS routines **CMSPROG**
 control buffer **TSAFREF**
 control cards for CMS batch facility
 See CMS batch facility
 control character
 defining **XEDIT**
 stacking it **XEDIT**
 control files
 attached processor system **PLNGDE**
 description **CMSPROG**
 identifiers
DMKH50 INST
DMKH50A INST
DMKH50AT INST
DMKH50M INST
DMKH50MT INST
DMKH50T INST
DMKSP INST
DMKSPA INST
DMKSPAT INST
DMKSPM INST
DMKSPMT INST
DMKSPT INST
DMMSPT INST
DMSMSP INST
DMSSP INST
LANGGEN SFPROG
 example **SFPROG**
 updating **SFPROG**
LANGMERG SFPROG
 example **SFPROG**
 multiprocessor system **PLNGDE**
 supplied by IBM
AUXSP CNTRL INST
DMKH50 CNTRL INST
DMKH50A CNTRL INST
DMKH50AT CNTRL INST
DMKH50M CNTRL INST
DMKH50MT CNTRL INST
DMKSP CNTRL INST
DMKSPA CNTRL INST
DMKSPAT CNTRL INST
DMKSPM CNTRL INST
DMKSPMT CNTRL INST
DMKSPT CNTRL INST
DMMSPT CNTRL INST
DMSMSP CNTRL INST
DMSSP CNTRL INST
 system updates **INST**
 updating example **CMSPROG**
 control functions
 of VMCF **SFPROG**
 setting **CPREF**
 control keys **APGDE**
 CONTROL parameter
 of CONNECT **TSAFREF**
 of DCLBFR **TSAFREF**
 CONTROL parameter of ISPF **APGDE**
 control paths **TSAFREF**
 in IUCV **SFPROG**
 control program (CP)
 See CP (control program)
 control program (CP) commands
 See CP (control program) commands
 control records
BASE, ZAP program INST
COMMENT, ZAP program INST
DUMP, ZAP program INST
END, ZAP program INST
EXPAND, ZAPTEXT program INST
LOG, ZAP program INST
NAME, ZAP program INST
REP, ZAP program INST
VERIFY, ZAP program INST
ZAP service program INST
ZAPTEXT INST
 control register allocation **DIAG**
 control registers **DIAG**
 changing **CPREF**
 CONTROL service setting **APGDE**
 CONTROL services of ISPF **APGDE**
 control statement
MDISK CPPROG
 control statements
&ARGS EXEX2
&BEGPRINT EXEX2
&BEGSTACK EXEX2
&BEGTYPE EXEX2
&BUFFER EXEX2
&CALL EXEX2
&CASE EXEX2
&COMMAND EXEX2
&DUMP EXEX2
&ERROR EXEX2

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&EXIT EXEX2
&GOTO EXEX2
&IF EXEX2
&LOOP EXEX2
&PRESUME EXEX2
&PRINT EXEX2
&READ EXEX2
&RETURN EXEX2
&SKIP EXEX2
&STACK EXEX2
&SUBCOMMAND EXEX2
&TRACE EXEX2
&TRUNC EXEX2
&TYPE EXEX2
&UPPER EXEX2
ACIGROUP CPPROG
CLASS CPPROG, INTRO
CLASS OVERRIDE INTRO
COMMENT statement CMSPROG
CONSOLE INTRO
DDR (DASD Dump Restore)
INPUT CPPROG
OUTPUT CPPROG
DEDICATE INTRO
DELETE statement CMSPROG
description of EXEX2
directory PLNGDE
for access method services CMSREF
Format/Allocate program
ALLOCATE CPPROG
FORMAT CPPROG
LABEL CPPROG
in AMSERV file CMSPROG
INSERT statement CMSPROG
IUCV TSAFREF
MDISK CPPROG, INTRO
multiple IUCV TSAFREF
of DDR (DASD Dump Restore)
SYSPRINT CPPROG
OVERRIDE CPPROG
REPLACE statement CMSPROG
SEQUENCE statement CMSPROG
used by UPDATE command CMSPROG
USER CPPROG, INTRO
Control Store Extension PLNGDE
control switch assist RGOS
considerations CPPROG
extensions
preferred machine assist CPPROG
of preferred machine assist CPREF, OPGDE
of preferred machine assist feature CPREF
starting CPPROG
control switch assist guest
dumping considerations RGOS
control units
DASD
supported by VM/SP HPO PLNGDE, REL5GDE
local terminal support PLNGDE
magnetic tape control units
supported by VM/SP HPO PLNGDE, REL5GDE
remote terminal support PLNGDE
unit record control units
supported by VM/SP HPO PLNGDE, REL5GDE
control variable SPIREF, SPIUG
control word, SCRIPT INTRO
control words
examples EXEX2
controlled loops SPIREF
controlling
a terminal session
summary of commands used CPREF, OPGDE
amount of pageable storage
used for interactive buffer CPPROG
authorization SFPROG
I/O functions CPREF
PA2 program function key, DIAGNOSE code X'54'
system in a virtual machine CPREF
terminal output CMSUG
the CMS batch facility OPGDE
virtual machine CPREF
virtual machine options CPREF
3270 display terminal CPREF
3704/3705 Communications Controller OPGDE
controlling access to
CP commands PLNGDE
GCS supervisor PLNGDE
supervisor state PLNGDE
controlling printed output
VM under VM RGOS
VM/VSE RGOS
conventions EXEX2
for formatting macros GCSREF
for passing and receiving control GCSREF
for passing control GCSREF
for receiving control GCSREF
notational CMSREF
notational for HELP CMSUG
of notation XEDIT
conversational defined TERMREF
conversational monitor system
See CMS (conversational monitor system)
conversational monitor system (CMS) CPPROG, EXEC2,
PRIMER, TERMREF
See also CMS (conversational monitor system)
abnormal termination
exit routine processing CMSPROG
processing CMSPROG
recovery CMSPROG
accessing with no virtual disks
attached to virtual machine CMSREF
assembling programs INTRO
basic description CMSREF
batch facility CMSPROG
See also CMS batch facility
called routine modifications to system area CMSPROG
COMMAND environment SPIREF
command language CMSPROG
command language, basic description CMSREF
command processing CMSPROG
command search function CMSPROG
commands APGDE
See also CMS (conversational monitor system)
commands
ACCESS CMSPROG
GENDIRT CMSPROG
IPL CMSPROG
OS program development CMSPROG
used with OS data sets CMSPROG
VSE program development CMSPROG
communicating with INTRO
compiling programs INTRO
defining GCSREF
definition APGDE, INTRO
description CMSUG
description of CMSPROG
developing applications INTRO

devices supported **CMSPROG**
 DEVTAB (device table) **CMSPROG**
 DISPW macro **CMSPROG**
 DMSNUC **CMSPROG**
 dump **INTRO**
 editor (EDIT) **TERMREF**
 environment **APGDE**
 environment name **SPIREF**
 establishing contact with **TERMREF**
 EXEC procedure **INTRO**
 EXECs
 opening and closing files **CMSPROG**
 to execute OS programs **CMSPROG**
 executing programs **INTRO**
 facility for debugging programs **INTRO**
 file system **APGDE, CMSPROG, CMSUG, INTRO**
 filemode **CMSPROG**
 filename **CMSPROG**
 files
 See files
 filetype **CMSPROG**
 free storage management **CMSPROG**
 function of **CMSPROG**
 general description **INTRO**
 HELP facility **INTRO**
 how to save it **CMSPROG**
 initialization **CMSPROG**
 initializing **INTRO**
 interface with display terminals **CMSPROG**
 interrupt handling **CMSPROG**
 introduction **CMSPROG**
 introductory description **INTRO**
 issuing commands to **SPIREF**
 IUCV **SFPROG**
 between two virtual machines **SFPROG**
 CMSIUCV macro **SFPROG**
 example **SFPROG**
 exits **SFPROG**
 guidelines and limitations **SFPROG**
 HNDIUCV macro **SFPROG**
 sample program **SFPROG**
 libraries
 See libraries
 load libraries, defining **GCSREF**
 loader
 See loader
 loader tables **CMSPROG**
 loading into your virtual machine **CMSUG**
 MACLIBS
 See MACLIBS
 macros
 ABNEXIT CMSPROG
 DISPW CMSPROG
 DMSEXS CMSPROG
 DMSFREE CMSPROG
 DMSFRES CMSPROG
 DMSFRET CMSPROG
 DMSFST CMSPROG
 DMSKEY CMSPROG
 examples **CMSPROG**
 FSCB CMSPROG
 GETMAIN CMSPROG
 list of **CMSPROG**
 STRINIT CMSPROG
 usage **CMSPROG**
 managing files **CMSPROG**
 message **INTRO**
 message repository
 updating **SFPROG**
 minidisk **INTRO**
 modules
 DMSABN CMSPROG
 DMSINA CMSPROG
 DMSINT CMSPROG
 DMSIOW CMSPROG
 DMSITE CMSPROG
 DMSITI CMSPROG
 DMSITP CMSPROG
 DMSITS CMSPROG
 DMSLAD CMSPROG
 DMSPAGE CMSPROG
 nucleus **CMSPROG**
 OS simulation **CMSPROG**
 OS support **CMSPROG**
 overlay structures **CMSPROG**
 program development **CMSPROG**
 PSW keys **CMSPROG**
 register restoration **CMSPROG**
 register usage **CMSPROG**
 returning to called routine **CMSPROG**
 saved system restrictions **CMSPROG**
 search order **SPIREF**
 sequence of functions **SFPROG**
 simulation of VSE functions **CMSPROG**
 storage
 DMSEXS macro CMSPROG
 DMSFREE macro CMSPROG
 DMSFRES macro CMSPROG
 DMSFRET macro CMSPROG
 DMSKEY macro CMSPROG
 map **CMSPROG**
 STRINIT macro CMSPROG
 structure **CMSPROG**
 using **CMSPROG**
 SUBCOM function CMSPROG
 subcommands **INTRO**
 subset
 See CMS subset
 support for OS **CMSPROG**
 support for VSAM **CMSPROG**
 SVC handling **CMSPROG**
 symbol references **CMSPROG**
 System Product Interpreter **APGDE**
 system save area modification **CMSPROG**
 system services **APGDE**
 tape volume switching **CMSPROG**
 terminal system **APGDE**
 transient area **CMSPROG**
 transient program area **CMSPROG**
 understanding it **CMSUG**
 unique functions **SPIREF**
 UPDATE option **APGDE**
 COBOL APGDE
 FORTTRAN APGDE

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

used with SNA GCSREF
 user program area CMSPROG
 user task INTRO
 user's view INTRO
 USERSECT (user area) CMSPROG
 using OS compilers CMSPROG
 using OS data sets CMSPROG
 using VSE compilers CMSPROG
 VSAM support CMSPROG
 VSE macros CMSPROG
 VSE simulation CMSPROG
 what it provides CMSPROG
 XEDIT CMSPROG

conversational monitor system (CMS) commands

ACCESS CMSREF
 ALARM VSCREEN CMSREF
 AMSERV CMSREF
 ASSEMBLE CMSREF
 ASSGN CMSREF
 CLEAR VSCREEN CMSREF
 CLEAR WINDOW CMSREF
 CMDCALL CMSREF
 CMSBATCH CMSREF
 CMSSERV CMSREF
 COMPARE CMSREF
 CONVERT COMMANDS CMSREF
 CONWAIT CMSREF
 COPYFILE CMSREF
 CP CMSREF
 CURSOR VSCREEN CMSREF
 DEBUG CMSREF
 DEFAULTS CMSREF
 DEFINE VSCREEN CMSREF
 DEFINE WINDOW CMSREF
 DELETE VSCREEN CMSREF
 DELETE WINDOW CMSREF
 DESBUF CMSREF
 DISCARD CMSREF
 DISK CMSREF
 DLBL CMSREF
 DOSLIB CMSREF
 DOSLKED CMSREF
 DROFBUF SPIUG
 DROP WINDOW CMSREF
 DROPBUF CMSREF
 DSERV CMSREF
 EDIT CMSREF
 entering CMSREF
 ERASE CMSREF
 ESERV CMSREF
 EXEC CMSREF
 EXECDROP CMSREF
 EXECIO CMSREF, SPIUG
 EXECLOAD CMSREF
 EXECMAP CMSREF
 EXECOS CMSREF
 EXECSTAT CMSREF
 EXECUPDT CMSREF
 EXECUTE CMSREF
 execution characteristics CMSREF
 FETCH CMSREF
 FILEDEF CMSREF
 FILELIST CMSREF
 FINIS CMSREF, SPIUG
 FORMAT CMSREF
 GENDIRT CMSREF
 GENMOD CMSREF
 GENMSG CMSREF

GLOBAL CMSREF
 GLOBALV CMSREF
 HELP CMSREF
 HELPCONV CMSREF
 HIDE WINDOW CMSREF
 HT SPIUG
 IDENTIFY CMSREF
 IMMCMD CMSREF
 INCLUDE CMSREF
 LABELDEF CMSREF
 LISTDS CMSREF
 LISTFILE CMSREF, SPIUG
 LISTIO CMSREF
 LKED CMSREF
 LOAD CMSREF
 LOADLIB CMSREF
 LOADMOD CMSREF
 MACLIB CMSREF
 MACLIST CMSREF
 MAKEBUF CMSREF, SPIUG
 MAXIMIZE WINDOW CMSREF
 MINIMIZE WINDOW CMSREF
 MODMAP CMSREF
 MOREHELP CMSREF
 MOVEFILE CMSREF
 NAMEFIND CMSREF
 NAMES CMSREF
 not for general users CMSREF
 NOTE CMSREF
 NUCXDROP CMSREF
 NUCXLOAD CMSREF
 NUCXMAP CMSREF
 OPTION CMSREF
 OSRUN CMSREF
 PARSECMD CMSREF
 PEEK CMSREF
 POP WINDOW CMSREF
 POSITION WINDOW CMSREF
 PRINT CMSREF
 PSERV CMSREF
 PUNCH CMSREF
 PUT SCREEN CMSREF
 PUT VSCREEN CMSREF
 putting data onto a program stack SPIUG
 QUERY CMSREF
 RDR CMSREF
 RDRLIST CMSREF
 READCARD CMSREF
 RECEIVE CMSREF
 REFRESH CMSREF
 RELEASE CMSREF
 RENAME CMSREF
 RESERVE CMSREF
 RESTORE WINDOW CMSREF
 ROUTE CMSREF
 RSERV CMSREF
 RT SPIUG
 RUN CMSREF
 SCROLL CMSREF
 search order CMSREF
 SENDFILE CMSREF
 SENTRIES CMSREF
 SET CMSREF
 SORT SPIUG
 summary CMSREF
 suppressing messages issued by SPIUG
 taking data from a program stack SPIUG
 transient area CMSREF

user area **CMSREF**
 using **SPIUG**
 conversational monitor system (CMS) limits **EXEX2**
 &EXIT return codes **EXEX2**
 &TRACE **EXEX2**
 console **EXEX2**
 console stack **EXEX2**
 filename **EXEX2**
 line length **EXEX2**
 lookaside buffer **EXEX2**
 NUMERIC OVERFLOW **EXEX2**
 numeric values **EXEX2**
 printed line length **EXEX2**
 statement length **EXEX2**
 word length **EXEX2**
 conversations
 APPC **TSAFREF**
 starting an APPC one **TSAFREF**
 states **TSAFREF**
 conversion
 character to decimal **SPIREF**
 character to hexadecimal **SPIREF**
 decimal to character **SPIREF**
 decimal to hexadecimal **SPIREF, SPIUG**
 formatting numbers **SPIREF**
 functions **SPIREF**
 hexadecimal to character **SPIREF**
 hexadecimal to decimal **SPIREF, SPIUG**
 conversion of dump file **DIAG**
 conversion of symptom summary file **DIAG**
 CONVERT command **DIAG**
 all conversion **DIAG**
 error message **DIAG**
 format **DIAG**
 response **DIAG**
 usage notes **DIAG**
 CONVERT COMMANDS command **CMSUG, REL5GDE**
 description **CMSREF**
 examples **CMSREF**
 format **CMSREF**
 messages **CMSREF**
 operands
 ALL **CMSREF**
 CHECK **CMSREF**
 FIFO **CMSREF**
 fn ft fm **CMSREF**
 LIFO **CMSREF**
 OUTMODE **CMSREF**
 STACK **CMSREF**
 SYSTEM **CMSREF**
 USER **CMSREF**
 summary **CMSREF**
 usage notes **CMSREF**
 converting
 file to a HELP file **CMSUG**
 fixed-length file to variable-length format **CMSUG**
 routing tables **SFPROG**
 variable-length file to fixed-length format **CMSUG**
 CONVIPCS EXEC **DIAG, PLNGDE**
 CONWAIT command
 description **CMSREF**
 using **CMSREF**
 CON1ECB format **MACREF**
 Cooperative Viewing Facility **INST**
 coordination
 resource **PLNGDE**
 task **PLNGDE**
 COPIES function **SPIREF, SPIUG**
 copies of notes, keeping **CMSLOT**
 copies, number of printed **CMSLOT**
 COPY
 filetype
 adding to MACLIBs **CMSREF**
 usage in CMS **CMSUG**
 function on display terminals **CMSUG**
 operand of CP SPOOL command **CMSUG**
 option of LOADLIB command **CMSREF**
 COPY command **APGDE, CMSLOT, TERMREF**
 of DMS/CMS **APGDE**
 COPY control statement
 of DDR (DASD Dump Restore) **CPPROG**
 COPY EUDCOBOL statement of DMS/CMS **APGDE**
 copy files, new
 for ASCII support **REL5GDE**
 for vector facility use restrictions **REL5GDE**
 IPCS **REL5GDE**
 COPY files **APGDE**
 adding to MACLIBs **CMSPROG**
 COPY filetype **APGDE**
 COPY in typewriter mode **XEDITUG**
 copy modification
 description for 3800 printer **OPGDE**
 3800 printer **CPPROG**
 COPY operand
 of CHANGE command **CPREF**
 COPY subcommand **XEDIT**
 example of **XEDIT**
 of XEDIT command **APGDE**
 COPY, XEDIT subcommand **SPIUG**
 COPY##*“nnn operand
 of CHANGE command **CPREF**
 of SPOOL command **CPREF**
 COPYFILE command **CMSLOT, PRIMER**
 APPEND option **CMSREF**
 changing filemode numbers **CMSUG**
 character translations **CMSREF**
 copying files
 from one virtual disk to another **CMSUG**
 creating small files from large one **CMSUG**
 description **CMSREF**
 EBCDIC option **CMSREF**
 examples **CMSREF**
 FILL option **CMSREF**
 FOR option **CMSREF**
 FRLABEL option **CMSREF**
 FROM option **CMSREF**
 incompatible options **CMSREF**
 LOWCASE option **CMSREF**
 LRECL option **CMSREF**
 NEWDATE option **CMSREF**
 NEWFILE option **CMSREF**
 NOPROMPT option **CMSREF**
 NOSPECS option **CMSREF**
 NOTRUNC option **CMSREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- NOTYPE option **CMSREF**
 OLDDATE option **CMSREF**
 OVLY option **CMSREF**
 PACK option **CMSREF**
 PROMPT option **CMSREF**
 RECFM option **CMSREF**
 REPLACE option **CMSREF**
 SINGLE option **CMSREF**
 specification list **CMSREF**
 SPECS option **CMSREF**
 TOLABEL option **CMSREF**
 TRANS option **CMSREF**
 TRUNC option **CMSREF**
 TYPE option **CMSREF**
 UNPACK option **CMSREF**
 UPCASE option **CMSREF**
 usage **CMSREF**
 used to change record formats of files **CMSUG**
- COPYFILE** command, example of use **INTRO**
 copying
 a file **CMSLOT**
 block of lines **XEDIT**
 books from VSE source statement
 libraries **CMSPROG**
 contents of a display screen **CMSUG**
 DOS cataloged procedure **CMSPROG**
 DOS files into CMS files **CMSPROG**
 file, with **COPYFILE** command **CMSUG**
 files, from one device to another **CMSUG**
 from tape to disk **CMSUG**
 lines **CMSLOT**
 using C (prefix subcommand) **XEDIT**
 using **COPY XEDIT**
 macros from VSE libraries
 to add to CMS **MACLIB CMSPROG**
 members of **MACLIBs CMSPROG**
 members of OS partitioned data set
 with **FILEDEF CMSPROG**
 modules from VSE library
 or **SYSIN tapes CMSPROG**
 modules from VSE relocatable libraries **CMSPROG**
 OS data sets into CMS files **CMSPROG**
 spool files **CMSUG**
 VSAM files into CMS disk files **CMSPROG**
- copying a file **PRIMER**
 copying a string **SPIUG**
 copying a string using **COPIES SPIREF**
 copying files **CMSREF**
 copying lines **PRIMER**
 in typewriter mode **XEDITUG**
 using C prefix subcommand **XEDITUG**
- COPYKEY** option
 of **SET ENTER XEDIT**
 of **SET PAn XEDIT**
 of **SET PFn XEDIT**
- COPYV** command **CPPROG**
- core image
 libraries, using in CMS/DOS **CMSPROG**
 on a DOS disk **CMSPROG**
 VSE libraries **CMSPROG**
- core table scan **CPPROG**
- corequisite change, definition **INST**
- correcting
 problems related to page migration **CPPROG**
- correcting typing mistakes **PRIMER**
- correcting your program **SPIUG**
- corrections
 of lines as you enter them **CMSUG**
 using logical line editing symbols **CMSUG**
- corrective service **INST**
 definition **INST**
 description **INST**
 example **INST**
 object code **INST**
 source code **INST**
 tape format **INST**
- CORTABLE**
 defining in **DMKSYS PLNGDE**
 specifying size **RGOS**
- CORTABLE** subcommand of **DUMPSCAN** command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
 sample output **DIAG**
 usage **DIAG**
- COUNT XEDITUG**
 example of **XEDITUG**
- COUNT** function of **SQL APGDE**
- count operand of **TRACE** subcommand **DIAG**
- COUNT** sub-command
 of **PER** command **CPREF**
- COUNT** subcommand of the **PER** command **DIAG**
- Count-Key-Data **REL5GDE**
- Count-Key-Data **DASD**
 COPY restriction **CPPROG**
 definition **CPPROG**
 formatting cylinder volumes **CPPROG**
 label requirements **OPGDE**
 record count area
 initializing **CPPROG**
 tape dump
 movement of data **CPPROG**
- count-key-data devices
 characteristics **PLNGDE**
 CMS block **PLNGDE**
- counting
 a string **XEDIT**
 words in a string **SPIREF**
 subcommand executions **XEDIT**
- COUPLE** command **CMSUG**, **CPREF**
 described **CPREF**
 operands
 userid **CPREF**
 vaddr **CPREF**
 responses **CPREF**
 usage notes **CPREF**
- COVERLAY XEDITUG**
- COVERLAY** subcommand **XEDIT**
 example of **XEDIT**
- CP** (control program) **CPPROG**, **PRIMER**, **SPIUG**,
TERMREF
 abend **DIAG**
 codes (see **CP** abend codes)
 dump (see **CP** abend dump)
 message **DIAG**
 additions
 DEST option for spool files **REL5GDE**
 DIAGNOSE code 'X'BC' **REL5GDE**
 AP mode **CPPROG**
 assist **CPPROG**
 basic description **CMSREF**, **CMSUG**

- build nucleus
 - after loading national language files **INST**
 - existing VM system procedure **INST**
 - SPGEN EXEC procedure **INST**
 - Starter System procedure **INST**
 - using SPGEN after applying service **INST**
 - using VMFLOAD after applying service **INST**
 - VMFLOAD command procedure **INST**
- checkpoint start data
 - DASD storage requirements **PLNGDE**
- coding conventions **CPPROG**
- command (see CP command)
- command information **CMSUG**
- commands
 - See CP (control program) commands
- communicating with **INTRO**
- concurrent execution of virtual machines **CPPROG**
- console function mode **CPREF, XEDIT**
- console functions, how to add one **CPPROG**
- control block addresses, finding
 - real device's **CPREF**
 - user's **CPREF**
 - virtual device's **CPREF**
- control blocks, changed **REL5GDE**
- control blocks, new **REL5GDE**
- corrective service procedure **INST**
- defining more than one CP nucleus
 - existing system procedure **INST**
 - Starter System procedure **INST**
- definition **APGDE, INTRO**
- device classes, types, models, and features (DIAGNOSE code X'24') **SFPROG**
- directory
 - DASD storage requirements **PLNGDE**
- disk access **PLNGDE**
- disk formats **CPPROG**
- dump space
 - DASD requirements **PLNGDE**
- enhancements **REL5GDE**
- DETACH command **REL5GDE**
- VM message identifier **REL5GDE**
- environment **APGDE, SPIUG**
- entering **CMSUG**
- error messages **SYSMSG**
- error recording
 - area **REL5GDE**
 - DASD storage requirements **PLNGDE**
- execs, changed **REL5GDE**
- existing VM system procedure
 - build nucleus **INST**
 - defining more than one CP nucleus **INST**
 - load object code from product tape **INST**
 - print load map **INST**
 - save load map on disk **INST**
 - saving IPLable CP nucleus on tape **INST**
- facilities for debugging programs **INTRO**
- free storage requirements **PLNGDE**
- functions, changing restricted access **PLNGDE**
- general description **INST, INTRO**
- how it allocates processor resources **CPPROG**
- how it keeps track of the order
 - in which virtual machines run **CPPROG**
- I/O management on virtual machine **CPPROG**
- interface entries **CPREF**
- internal trace table **DIAG**
 - allocated size **DIAG**
 - description **DIAG**
 - entry format **DIAG**
 - IUCV entry **DIAG**
 - monitoring events **CPREF**
 - obtaining a copy of **PRGDE**
 - poster **DIAG**
 - restart tracing **DIAG**
 - specifying size **DIAG**
 - suppress tracing **DIAG**
 - traced events **DIAG**
 - use **DIAG**
- introduction **PLNGDE**
- introductory description **INTRO**
- issuing commands to **SPIREF**
- load address **INST**
- load map
 - (CPNUC MAP) **DIAG**
 - print **INST**
 - save on disk **INST**
- load object code from product tape, existing VM system procedure **INST**
- loading national language files
 - from feature tape **INST**
- macros
 - See CP (control program) macros
- message **INTRO**
- message repository **SFPROG**
 - DASD space for **SFPROG**
 - saving with DIAGNOSE code X'CC' **SFPROG**
- minimum configurations **PLNGDE**
- modules
 - changed **REL5GDE**
 - deleted **REL5GDE**
 - new **REL5GDE**
 - split **REL5GDE**
- MP mode **CPPROG**
- nucleus
 - alternate **PLNGDE**
 - building a new VM under VM **RGOS**
 - building a new VM/VSE **RGOS**
 - building after applying service **INST**
 - building after loading national language files **INST**
 - considerations, VM under VM **RGOS**
 - considerations, VM/VSE **RGOS**
 - DASD storage requirements **PLNGDE**
 - defining **SYSNUC OPGDE**
 - DMKSYS ASSEMBLE file **OPGDE**
 - end of resident nucleus address **INST**
 - IPL procedure improvements **OPGDE**
 - protecting spool files **OPGDE**
 - reducing its size **PLNGDE**
 - reducing its size, excluding SNA CCS **PLNGDE**
- options
 - FRET Trap **INST**
 - virtual=real **INST**
- pageable nucleus, locking **CPREF**
- paging, DASD requirements **PLNGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

preventive service procedure **INST**
 privilege classes **CMSUG**
 privileged instruction simulation **CPPROG**
 problem state execution **CPPROG**
 processor time allocation **INTRO**
 real control blocks storage requirements **PLNGDE**
 real resource management **INTRO**
 real storage allocation **INTRO**
 real storage requirements
 example **PLNGDE**
 resident nucleus storage requirements **PLNGDE**
 RMS (Recovery Management Support) **CPPROG**
 running operating systems **INTRO**
 saved systems
 DASD requirements **PLNGDE**
 saving IPLable CP nucleus on tape
 existing VM system procedure **INST**
 Starter System procedure **INST**
 service
 corrective **INST**
 preventive **INST**
 Signal System Service **PLNGDE, INTRO**
 source file identifiers
 DMKH50 CNTRL **INST**
 DMKH50A CNTRL **INST**
 DMKH50AT CNTRL **INST**
 DMKH50M CNTRL **INST**
 DMKH50MT CNTRL **INST**
 DMKH50T CNTRL **INST**
 DMKSP CNTRL **INST**
 DMKSPA CNTRL **INST**
 DMKSPAT CNTRL **INST**
 DMKSPM CNTRL **INST**
 DMKSPMT CNTRL **INST**
 DMKSPT CNTRL **INST**
 special code in CP **CPPROG**
 Special Message Facility **PLNGDE**
 spool management **INTRO**
 spooling
 DASD requirements **PLNGDE**
 spooling facilities **CMSUG**
 starter system procedure
 (see starter system procedure (CP))
 subcommand **XEDIT**
 transmitting command to **XEDIT**
 system service **INTRO**
 Console Communication **INTRO**
 DASD block I/O **SFPROG, INTRO**
 error logging **SFPROG**
 IUCV communication **SFPROG**
 message **INTRO, SFPROG**
 message all **SFPROG**
 signal **SFPROG**
 SNA virtual console communication **SFPROG**
 spool **SFPROG**
 system services
 See Collection Resource Management System Service
 See Identify System Service
 trace command **DIAG**
 trace table
 MVS problem determination **RGOS**
 storage requirements **PLNGDE**
 updating, building nucleus using SPGEN **INST**
 using **OPGDE**
 virtual machine creation **INTRO**
 virtual storage management **INTRO**
 VM/SP HPO directory, DASD requirements **PLNGDE**
 Wait State Codes **SYMSG**
 warm start data, DASD storage
 requirements **PLNGDE**
 what it does with Q classification **CPPROG**
 370X **SFPROG**
 CP (control program) commands **CPPROG**
 ACNT **CPPROG, CPREF**
 ADSTOP **CPPROG**
 assigning privilege classes **CPPROG**
 ATTACH **CPPROG, CPREF, RGOS**
 ATTACH CHANNEL **CPPROG**
 AUTOLOG **CPPROG, CPREF**
 BACKSPAC **CPPROG, CPREF**
 BEGIN **RGOS**
 BRKKEY **RGOS**
 CACHE **CPPROG, CPREF**
 CACHE OWN **CPPROG**
 CACHE QUERY **CPPROG**
 CHANGE **CPPROG, CPREF**
 COMMANDS **CPPROG**
 COPYV **CPPROG**
 CPTRAP **CPREF, RGOS**
 DCP **CPREF**
 DEFINE **CPPROG, CPREF, RGOS**
 description **CMSREF**
 DETACH **CPREF**
 DIAL **RGOS**
 used with VSCS **SFPROG**
 DISABLE **CPREF**
 DISCONN **RGOS**
 DISPLAY **CPPROG, APGDE**
 DMCP **CPREF**
 DRAIN **CPREF**
 ENABLE **CPREF**
 entering from
 CP console function mode **CPREF**
 from a virtual machine environment **CPREF**
 while running **CPREF**
 executing
 in CMS command environment **CMSREF**
 in EXEC procedure **CMSREF**
 in jobs for CMS batch facility **CMSREF**
 EXTERNAL **RGOS**
 FLUSH **CPREF**
 FORCE **CPPROG, CPREF**
 format **CPREF**
 FREE **CPREF**
 GENIMAGE **CPPROG**
 HALT **CPREF**
 HOLD **CPREF**
 how a user can display which can be used **CPPROG**
 how to add command **CPPROG**
 in EXECs **APGDE**
 INDICATE **CPPROG, CPREF**
 class A **CPREF**
 class E **CPREF**
 INDICATE LOAD **CPPROG**
 INDICATE POSITION **CPPROG**
 INDICATE USER **CPPROG, OPGDE, APGDE**
 issued from a macro **XEDITUG**
 journaling **CPPROG**
 LINK **CPPROG**
 journaling **CPPROG**
 LOADBUF **CPPROG**
 LOCATE **CPREF**
 LOCK **CPPROG, CPREF**
 LOGOFF
 FORCE **CPPROG**

LOGON CPPROG
 journaling CPPROG
MESSAGE CPPROG, CPREF
MIGRATE CPREF
MIGRATE command CPPROG
MONITOR CPPROG, CPREF
MSGNOH CPREF
NETWORK CPREF
 class A CPREF
 class B CPREF
 support PLNGDE
 obtaining a reply from SPIUG
ORDER CPREF
PER CPREF, RGOS
PREPARE CPPROG
 privilege class for CPREF, OPGDE
PURGE CPREF
QUERY CPREF
 class A CPREF
 class B CPREF
 class C CPREF
 privilege class D CPREF
 privilege class E CPREF
 privilege class F CPREF
QUERY MITIME CPPROG
QUERY PAGING CPPROG
QUERY PSTOR CPPROG
QUERY QDROP CPPROG
QUERY SET CPPROG
QUERY SRM CPPROG
QUERY SRM PGMACT CPPROG
QUERY VECTOR CPPROG, OPGDE
QUERY VMSAVE CPPROG
QVM CPREF
READY RGOS
RECOVERV CPPROG
REPEAT CPREF
RESET RGOS
 restrictions PLNGDE
SAVENCP CPPROG
SAVESYS CPPROG, CPREF, PLNGDE
SEND RGOS
 used with single console image
 facility SFPROG
SET CPREF, RGOS
 class A CPREF
 class B CPREF
 class E CPREF
 class F CPREF
SET AFFINITY CPPROG
SET ASSIST CPPROG
SET CPASSIST OFF CPPROG
SET DUMP command DIAG
SET EMSG SFPROG
SET FAVORED command CPPROG
SET MIH CPPROG
SET MINWS CPPROG
SET MITIME CPPROG
SET NOTRANS CPPROG
SET PAGING CPPROG
SET PRIORITY CPPROG
SET QDROP CPPROG
SET RESERVE CPPROG
SET SASSIST CPPROG
SET SASSIST OFF CPPROG
SET SRM CPPROG
SET SRM IBUFF CPPROG
SET SRM MHFULL CPPROG
SET SRM MINNUMSS CPPROG
SET SRM PGFULL CPPROG
SET SRM PGMTLIM CPPROG
SET SRM PREPAGE CPPROG
SET STBYPASS CPPROG
SET STBYPASS VR CPPROG
SET STMULTI CPPROG
SET S370E ON CPPROG
SET VMSAVE CPPROG
SETPRT CPPROG
SHUTDOWN CPREF, OPGDE
SMSG SFPROG
SPACE CPREF
SPMODE CPPROG, CPREF, RGOS
SPOOL CPPROG, OPGDE
SPOOL CONSOLE START CPPROG
SPOOL CONSOLE STOP CPPROG
SPTAPE CPPROG, CPREF
START CPPROG, CPREF
STCP CPPROG, CPREF
STORE CPPROG, APGDE
 STATUS RGOS
 summarized CPREF, OPGDE
 summary CPREF, CMSUG
 suppressing messages issued by SPIUG
SYSTEM RGOS
SYSTEM CLEAR CPPROG
TAG CPPROG
TERMINAL RGOS
 BREAKIN GUESTCTL SFPROG
 BRKKEY SFPROG
 CONMODE 3270 SFPROG
 SCRNSAVE OFF SFPROG
 SCRNSAVE ON SFPROG
 text format of CPREF
TRACE CPPROG
TRANSFER CPPROG, CPREF
UNLOCK CPPROG, CPREF
 used in
 job for CMS batch facility CMSUG
 System Product Interpreter EXECs CMSUG
 using SPIUG
VARY CPREF, RGOS
VARY OFFLINE CPPROG, OPGDE
VARY ONLINE CPPROG, OPGDE
VMDUMP RGOS
WARNING CPREF
 when to use CMSREF
 3800 printer CPPROG
 3800 printer support CPPROG
 CP abend codes SYSMMSG
 action for SYSMMSG
 codes SYSMMSG
 information collection SYSMMSG
 reason for SYSMMSG
 recovering from the abend SYSMMSG

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- reporting the abend **SYMSMG**
 System Operator Action **SYMSMG**
 System Programmer Action **SYMSMG**
- CP abend dump**
 description of type **DIAG**
 dumping to DASD **DIAG**
 dumping to printer **DIAG**
 dumping to tape **DIAG**
 printing from tape **DIAG**
 reading **DIAG**
 collect information **DIAG**
 debugging an AP/MP system **DIAG**
 examine control blocks **DIAG**
 identifying and locating pageable module **DIAG**
 reason for abend **DIAG**
 register use convention **DIAG**
 save area convention **DIAG**
 VMDUMP records **DIAG**
 specifying output device **DIAG**
- CP assist**
 attached processor application **OPGDE**
 description **PLNGDE**
 supported processors **OPGDE**
 using SET command **CPREF**
- CP AUTOLOG PLNGDE**
- CP commands CMSUG, CPREF, INTRO**
 described **CPREF**
 DIAL used with VSCS **SFPROG**
 environment **CPREF**
 format **CPREF**
 NETWORK LOAD INST
 operand
 commandline **CPREF**
 responses **CPREF**
 SEND used with single console image facility **SFPROG**
 SET MSG **SFPROG**
 SMSG **SFPROG**
 structure **CPREF**
 TERMINAL
 BREAKIN GUESTCTL **SFPROG**
 BRKKEY **SFPROG**
 CONMODE 3270 **SFPROG**
 SCRNSAVE OFF **SFPROG**
 SCRNSAVE ON **SFPROG**
 usage notes **CPREF**
- CP dump option of PRTDUMP command DIAG**
- CP FRET Trap DIAG**
 control files **INST**
 CP source file identifiers
 DMKH50AT CNTRL **INST**
 DMKH50MT CNTRL **INST**
 DMKH50T CNTRL **INST**
 DMKSPAT CNTRL **INST**
 DMKSPMT CNTRL **INST**
 DMKSPT CNTRL **INST**
 description **DIAG**
 examples **DIAG**
 installing
 using manual procedure **INST**
 using SPGEN EXEC **INST**
 local modification considerations **INST**
 maclibs **INST**
 overview **INST**
 removal procedure **INST**
 selection statement in SPGEN PROFILE **INST**
 text files **INST**
- CP ID card**
 description **OPGDE**
 usage **OPGDE**
- CP language files REL5GDE**
 reserving DASD space for **REL5GDE**
 saving **REL5GDE**
- CP loadlists, changed REL5GDE**
- CP (control program) macros**
 changed **REL5GDE**
 FCB (forms control buffer) **CPPROG**
 FOB (font offset buffer) **CPPROG**
 FOBCCW **CPPROG**
 GETMAIN **CPPROG**
 LOCK **CPPROG**
 NAMESYS **CPPROG**
 NAME3800 **CPPROG**
 new **REL5GDE**
 RCHANNEL **CPPROG**
 RCTLUNIT **CPPROG**
 RDEVICE **CPPROG**
 SIGNAL **CPPROG**
 SWITCHVM **CPPROG**
 SWTCHVM **CPPROG**
 SYSACNT **CPPROG**
 SYSCOR **CPPROG**
 SYSJRL **CPPROG**
 SYSMIH **CPPROG**
 SYSMON **CPPROG**
 SYSPAG **CPPROG**
 SYSXSTOR **CPPROG**
 TRANS macro **CPPROG**
 UCC **CPPROG**
 UCCCCW **CPPROG**
 UCS (universal character set) **CPPROG**
 UCSCCW **CPPROG**
- CP operand**
 of EXECIO command **CMSREF**
 of SEND COMMAND **CPREF**
 of SET command **CPREF**
- CP READ**
 (terminal status) **APGDE**
 READ status notice **PRIMER**
 READ status on display terminal **CMSUG**
- CP subcommand XEDITUG**
- CP-owned**
 CKD devices
 format for **CPPROG**
 FBA devices
 format for **CPPROG**
- CPABEND (abend code) DIAG**
- CPASSIST operand**
 of QUERY command **CPREF**
 of SET command **CPREF, CPPROG, OPGDE**
- CPCONIO operand**
 of SET command **CPREF**
- CPEREP program DIAG**
 error recording
 I/O **OPGDE**
- CPIPCS MAP DIAG**
- CPLANG operand**
 of QUERY command **CPREF**
- CPLEVEL operand**
 of QUERY command **CPREF**
- CPNAME operand**
 of NAMENCP macro **PLNGDE**
 of NAME3800 macro **PLNGDE**
 of RDEVICE macro **PLNGDE**
- CPNUC MAP DIAG**

- CPOut operand**
of SCREEN command **CPREF**
- CPPROG**
See VM/SP CP for System Programming
- CPRB (Connectivity Programming Request Block)**
content on entry to server (receive request) **SRPI**
content on return to requester **SRPI**
DSECT, building **MACREF**
fields on exit from server **SRPI**
freeing storage for **SRPI**
layout **SRPI**
macro **SRPI**
macro syntax **SRPI**
messages (MNOTES) **SRPI**
on send reply (exit from server) **SRPI**
using on service request **SRPI**
- CPRB macro CMSPROG**
building CPRB DSECT **MACREF**
DSECT= operand **MACREF**
messages (MNOTES) **MACREF**
- CPRD operand**
of SYSFCN macro **PLNGDE**
- CPRM INST**
- CPSIZE operand**
of NAMENCP macro **PLNGDE**
- CPSTAT (CP running status) DIAG**
- CPT-TWX interface TERMREF**
- CPT-TWX restrictions TERMREF**
- CPT-TWX 33/35**
supported remotely on start-stop lines **PLNGDE**
- CPT-TWX, 3704/3705 sign-on procedure INST**
- CPTRACE operand**
of MONITOR command **CPREF**
- CPTRAP PRGDE**
- CPTRAP command CMSUG, CPREF, DIAG, TSAFREF, RGOS**
described **CPREF**
operands
* **CPREF**
ALL **CPREF**
ALLOWID **CPREF**
CLOSE **CPREF**
CODE **CPREF**
DEVADDR **CPREF**
group-name **CPREF**
GROUPID **CPREF**
START **CPREF**
STOP **CPREF**
TO **CPREF**
typenum **CPREF**
userid **CPREF**
VMBLOK **CPREF**
WRAP **CPREF**
wrap-size **CPREF**
querying **TSAFREF**
responses **CPREF**
usage notes **CPREF**
viewing data **TSAFREF**
- CPTRAP facility DIAG, REL5GDE**
activating **DIAG**
AP and MP support **DIAG**
checkpointing **DIAG**
collecting virtual machine data **DIAG**
CP/virtual machine interface error **DIAG**
examples **DIAG**
collecting CP data **DIAG**
collecting virtual machine data **DIAG**
display formatted CPTRAP output **DIAG**
logoff considerations **DIAG**
lost data **DIAG**
non-wrap file **DIAG**
recording CP data **DIAG**
recording CP trace table entries **DIAG**
recording virtual machine data **DIAG**
release level conflicts **DIAG**
running with microcode assist active **DIAG**
spool space considerations **DIAG**
TRAPRED facility **DIAG**
wrap file **DIAG**
- CPTYPE operand**
of NAMENCP macro **PLNGDE**
of RDEVICE macro **PLNGDE**
- CPU**
See processor
- CPU id TSAFREF**
- CPU identification.**
\$ASIPROC RGOS
using CP SET command **RGOS**
VM/VSE directory entry **RGOS**
- cpuid**
See CPU identification.
- CPUID operand**
of OPTION directory control statement **PLNGDE**
of QUERY command **CPREF**
of SET command **CPREF**
- CPUID option**
defining in directory **PLNGDE**
- CPWT operand**
of SYSFCN macro **PLNGDE**
- CQYSECT macro CMSPROG**
- CRDTE operand of LABELF command CMSREF**
- CREATE INDEX command of SQL APGDE**
- CREATE TABLE command of SQL APGDE**
- CREATE VIEW**
command of SQL **APGDE**
statement in SQL **APGDE**
- CREATED output field of STAT command DIAG**
creating
a file
using PUT **XEDIT**
using PUTD **XEDIT**
using XEDIT command **XEDIT**
using XEDIT subcommand **XEDIT**
CMS files from DOS libraries **CMSPROG**
command HELP files **CMSUG**
copy modifications **CPPROG**
DCSS for CMS language files **REL5GDE**
NAMESYS macro **REL5GDE**
disk space, precautions **CPREF**
DOSLIB files **CMSPROG**
dumps **TSAFREF**
file **XEDITUG**
from a FILELIST screen **PRIMER**
from DOS disks and tapes **CMSPROG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- from FILELIST CMSLOT
- in typewriter mode XEDITUG
- using XEDIT command CMSLOT, PRIMER
- with System Product Editor CMSUG
- forms control buffers CPPROG
- graphic modifications CPPROG
- HELP text files CMSUG
- HELPMENU files CMSUG
- HELPTASK files CMSUG
- immediate commands CMSPROG
- macro file XEDITUG
- library character sets CPPROG
- macro libraries
 - example in CMS/DOS CMSPROG
 - from a DOS library CMSPROG
- menus, HELP file CMSUG
- modules from VSE library or SYSIN tapes CMSPROG
- named system CPREF
- new file from an existing file SPIUG
- notes CMSUG
- one spool file
 - from many files being printed or punched CMSUG
- PROFILE EXEC CMSUG
- program CMSLOT, PRIMER
- program stack buffer via MAKEBUF CMSREF
- System Product Interpreter EXECs CMSUG
- up to 9900 spool files per user REL5GDE
- XEDIT profile PRIMER
- CREPLACE XEDITUG
- CREPLACE subcommand XEDIT
 - compared to OVERLAY XEDIT
 - with DBCS strings XEDIT
- Cross Memory Assist feature
 - enabling CPREF
 - use with MVS/SP REL5GDE
- cross memory processing
 - for MVS guest RGOS
- cross memory services CPPROG
 - MVS PLNGDE
- Cross System Product/Application Development INST
- Cross System Product/Application Execution INST
- Cross System Product/Query INST
- CSA (common service area) CPPROG
- CSB macro, 3704/3705 control program INST
- CSECTs duplicated for LOAD command CMSREF
- CSIYTD control program DIAG
- CSMRETCD (IBM Enhanced Connectivity Facilities return code) SRPI
- CSMRETCD macro CMSPROG
 - return codes, defining names for MACREF
- CSP/AD INST
- CSP/AE INST
- CSP/Q INST
- CSPUSER INST
- CSW (channel status word) APGDE
 - definition of PRGDE
 - displaying CPREF
 - in describing a wait state PRGDE
 - information contained in PRGDE
 - problems helped by PRGDE
- CSW operand
 - of DISPLAY command CPREF
 - of TRACE command CPREF
- CSW subcommand of DEBUG command APGDE
- CTCA (channel-to-channel adapter driver) DIAG
 - coding RDEVICE macro PLNGDE
- CTCA operand
 - of DEFINE command CPREF
- CTL
 - option
 - of EXECUPDT command CMSREF
- CTLCHAR option
 - of EXTRACT XEDIT
 - of SET XEDIT
 - of TRANSFER XEDIT
- CURLINE option
 - of EXTRACT XEDIT
 - of QUERY XEDIT
 - of SET XEDIT
 - of TRANSFER XEDIT
- current column XEDITUG
 - in typewriter mode XEDITUG
- current line
 - advancing
 - using a target XEDIT
 - using DOWN XEDIT
 - using NEXT XEDIT
 - appending text to XEDIT
 - appending words to XEDITUG
 - in typewriter mode XEDITUG
 - as starting place for subcommands XEDITUG
 - changing
 - using / XEDITUG
 - using a target XEDITUG
 - using CLOCATE XEDITUG
 - using DOWN XEDITUG
 - using UP XEDITUG
 - changing location on screen XEDITUG
 - example of XEDITUG
 - changing position on screen of XEDIT
 - defining line on screen as XEDIT
 - defining display features XEDITUG
 - description CMSLOT
 - displaying CMSLOT
 - in typewriter mode XEDITUG
 - in file identification line PRIMER
 - indicator in file identification line XEDITUG
 - location on screen XEDITUG
 - moving
 - to last line of file, using BOTTOM CMSLOT
 - to top of file, using TOP CMSLOT
 - toward end of file, using DOWN CMSLOT
 - toward top of file, using UP CMSLOT
 - using LOCATE CMSLOT
 - position on screen PRIMER
 - positioning EXEX2
 - replacing CMSLOT, XEDIT
 - in typewriter mode XEDITUG
 - setting XEDIT
 - using target as displacement from XEDITUG
- CURRENT operand
 - of QUERY command CPREF
- current terminal line width SPIREF
- cursor CMSLOT, XEDITUG
 - defined TERMREF
 - displaying position of XEDIT
 - explanation of PRIMER
 - extracting position of XEDIT
 - joining lines at XEDIT
 - movement keys for PRIMER
 - moving
 - back and forth between command line and screen XEDIT
 - in the file XEDIT
 - on the screen XEDIT
 - to command line XEDIT

to current column **XEDIT**
 to command line **XEDITUG**
 to specified location **XEDITUG**
 placement in multiple screens **XEDITUG**
 splitting a line at **XEDIT**
 transferring position of **XEDIT**
CURSOR command of DMS/CMS **APGDE**
 cursor control keys **APGDE**
CURSOR option
 of **EXTRACT XEDIT**
 of **CMS QUERY CMSREF, XEDIT**
 of **TRANSFER XEDIT**
CURSOR subcommand **XEDIT**
 with DBCS strings **XEDIT**
CURSOR VSCREEN command **CMSUG**
 description **CMSREF**
 format **CMSREF**
 messages **CMSREF**
 operands
 col **CMSREF**
 DATA **CMSREF**
 line **CMSREF**
 RESERVED **CMSREF**
 vname **CMSREF**
 responses **CMSREF**
 summary **CMSREF**
 usage notes **CMSREF**
 Customer Assistance Center
 Dallas System Center **CPREF**
CUSTOMER PROFILE file **DIAG**
 complete for **IPCS**
 existing VM system procedure **INST**
 Starter System procedure **INST**
 customer profile sample **DIAG**
 customization
 VM/SP HPO **PLNGDE**
CUTYPE operand
 of **CLUSTER** macro **PLNGDE**
 of **RCTLUNIT** macro **PLNGDE**
cuu
 described **CPREF**
cuu operand of **MRIOBLOK** subcommand **DIAG**
CU2 INST
CVIEW INST
CVT macro **GCSREF**
 description **GCSREF**
CVTSECT (CMS Communications Vector Table) **DIAG**
CYLADDR operand
 of **DEFNUC** macro **PLNGDE**
 cylinder zero
 format for **CPPROG**
 format for all cylinders except **CPPROG**
 cylinders **REL5GDE**
 assignments, 3340 **PLNGDE**
 except cylinder zero
 format for **CPPROG**
 faults, MSS (mass storage system)
 VM/SP HPO processing **CPPROG**
 formats
 for use by CP **CPPROG**
 of cylinder zero **CPPROG**
 on 2314/2319 disk **CMSPROG**
 on 3330 disk **CMSPROG**
cylno operand
 of **IPL** command **CPREF**
C2D function **SPIREF**
C2X function **SPIREF**

Refer to the foldout page at the back of this book for a chart
 of abbreviations and their corresponding manuals.

D

- D border command **PRIMER**
- D prefix command **PRIMER**
- D prefix subcommand **XEDIT, XEDITUG**
 - example of **XEDIT**
 - of **XEDIT** command **APGDE**
 - practice exercise using **XEDITUG**
- D-disk accessed after IPL of CMS **CMSREF**
- dangling **ELSE SPIUG**
- DASD (direct access storage device) **CPPROG, REL5GDE**
 - cached **CPPROG**
 - caching **CPREF**
 - configuration aid **PLNGDE**
 - connecting for CP access and control **CPREF**
 - control units supported
 - by VM/SP HPO **PLNGDE, REL5GDE**
 - device addresses, specifying **CPREF**
 - displaying status **CPREF**
 - error recording space requirements **PLNGDE**
 - factors affecting requirements **INTRO**
 - for spool buffering **OPGDE**
 - listing users currently linked
 - to the same **CPREF**
 - minidisk **INTRO**
 - monitoring missing interruptions **CPREF**
 - operations **CPPROG**
 - paths to **CPPROG**
 - preferred DASD area **INTRO**
 - shared DASD **INTRO**
 - sharing **CPPROG**
 - reserve/release support **PLNGDE**
 - skew **CPPROG**
 - space
 - allocating for the directory **PLNGDE**
 - allocating on CP owned volumes **CPPROG**
 - allocating on FB-512 volumes **PLNGDE**
 - calculating for saved systems **PLNGDE**
 - formatting for the directory **PLNGDE**
 - needed by CMS **PLNGDE**
 - reserving for
 - 3704/3705 control program image **PLNGDE**
 - specified in system directory **INTRO**
 - storage
 - for CMS minidisks **PLNGDE**
 - required by CP nucleus **PLNGDE**
 - required for Access Method Services **PLNGDE**
 - required for CMS/VSAM **PLNGDE**
 - supported by VM/SP HPO **PLNGDE**
 - SYSOWN** macro
 - allocating on CP-owned volumes **PLNGDE**
 - SYSRES** macro, calculating cylinders
 - for checkpoint start data **PLNGDE**
 - needed for warm start data **PLNGDE**
 - virtual storage **INTRO**
 - volumes
 - formatting and labeling **CPPROG**
 - required to install VM/SP HPO **INST**
 - 3350 **CPPROG**
 - 3380 **CPPROG**
- DASD Block I/O System Service **INTRO, SFPROG**
 - establishing communications **SFPROG**
 - from CMS **SFPROG**
 - IUCV communication **SFPROG**
- IUCV CONNECT **SFPROG**
- IUCV SEND **SFPROG**
- DASD Dump/Restore (DDR)
 - (see **DDR (DASD Dump/Restore)**)
- DASD format, stand-alone dump **DIAG**
- DASD I/O function **SFPROG**
- DASD operand
 - of **QUERY** command **CPREF**
 - of **QUERY VIRTUAL** command **CPREF**
 - of **SYSMIH** macro **PLNGDE**
- DASD sharing
 - MVS virtual machine **RGOS**
 - address considerations **RGOS**
 - alternate path support **RGOS**
 - asymmetric multiprocessing **RGOS**
 - data protection
 - with virtual reserve/release **RGOS**
 - definitions **RGOS**
 - dynamic path selection **RGOS**
 - hardware for **RGOS**
 - initializing **RGOS**
 - multiprocessing considerations
 - with MVS guest **RGOS**
 - real reserve/release **RGOS**
 - reserve/release CCWs **RGOS**
 - sharing minidisk **RGOS**
 - symmetric multiprocessing **RGOS**
 - VSE virtual machine **RGOS**
 - considerations **RGOS**
 - data protection
 - with virtual reserve/release **RGOS**
 - dedicated or attached **RGOS**
 - hardware for **RGOS**
 - minidisk with virtual reserve/release **RGOS**
 - minidisk without virtual reserve/release **RGOS**
 - reserve/release support **RGOS**
 - sharing minidisk **RGOS**
 - virtual reserve/release **RGOS**
 - volume labels **REL5GDE**
 - with a stand-alone VSE System **RGOS**
 - with hardware switches
 - but within one Processor **RGOS**
 - without hardware switches **RGOS**
- DASD space **REL5GDE**
 - allocating override **PLNGDE**
 - for CP message repository **SFPROG**
 - reserving for the CP message file **REL5GDE**
 - using the **NAMELANG** macro **REL5GDE**
- DASTAP**
 - class monitor records **CPPROG**
 - data collection class **PLNGDE**
- DASTAP** operand
 - of **MONITOR** command **CPREF**
- DAT** (dynamic address translation) **CPPROG, PLNGDE**
- DAT** option
 - of **PER** command **CPREF**
- data
 - changing (see **data, changing**)
 - entering (see **data, entering**)
 - how it is sent **TSAFREF**
 - integrity **INTRO**
 - needed before calling IBM for assistance **DIAG**
 - prompting user for **SPIUG**
 - putting onto a program stack **SPIUG**
 - taking from a program stack **SPIUG**
- DATA** (keyword definition) **DIAG**
- data base (SQL) **INTRO**
- data base testing **APGDE**

- data catalog sharing **CMSPROG**
- data collection
 - defining in **SYSMON** macro **PLNGDE**
 - performance measurement and analysis **PLNGDE**
- data control block (DCB)
 - See also DCB (data control block)
 - multiple **PLNGDE**
- data extraction routine **DIAG**
- data field **APGDE**
- data file, sharing **INTRO**
- data length **SPIREF**
- data management **DIAG, PLNGDE**
- DATA** parameter (**APPC**)
 - of **RECEIVE_AND_WAIT** **TSAFREF**
 - of **SEND_DATA** **TSAFREF**
- data path through VTAM machine **GCSREF**
- data protection
 - MVS virtual machine, using
 - real reserve/release **RGOS**
 - virtual reserve/release **RGOS**
 - VM/VSE, using
 - real reserve/release **RGOS**
 - virtual reserve/release **RGOS**
- data reduction program
 - TRAPRED** **CPREF**
- data security in batch facility **CMSPROG**
- Data Set Control Block (DSCB) **CMSPROG**
- data sets
 - (see also under modem)
 - compatibility
 - CMS/VSAM** **PLNGDE**
 - creating files **CMSPROG**
 - format of **CMSPROG**
 - identify VSAM **CMSPROG**
 - OS **CMSPROG**
 - reading, OS **CMSPROG**
 - specifying a member name **CMSPROG**
 - VSAM, compatibility considerations **CMSPROG**
- data sheet, problem inquiry **DIAG**
- Data Streaming, processor feature **PLNGDE**
- data
 - changing
 - globally **XEDITUG**
 - globally in typewriter mode **XEDITUG**
 - selectively **XEDITUG**
 - selectively in typewriter mode **XEDITUG**
 - using **CHANGE** **XEDITUG**
 - using **CHANGE** in typewriter mode **XEDITUG**
 - using **COVERLAY** **XEDITUG**
 - using **CREPLACE** **XEDITUG**
 - entering
 - on display terminal **XEDITUG**
 - on typewriter terminal **XEDITUG**
 - locating
 - using a target **XEDITUG**
 - using **CLOCATE** **XEDITUG**
 - using **CLOCATE** in typewriter mode **XEDITUG**
 - terms **SPIREF**
 - transfer
 - error codes, VMCF **SFPROG**
 - functions of VMCF **SFPROG**
 - logical device support facility **PLNGDE**
 - types, checking **SPIUG**
- datamask in DMS/CMS **APGDE**
- DATAMOVE** **INST**
- DATATYPE** function **SPIREF, SPIUG**
- datatype of a word **EXEX2**
- date and time zones in the VSE virtual machine **RGOS**
- date and version of the interpreter **SPIREF**
- date displayed **CMSLOT, PRIMER**
- DATE** function **SPIREF**
- DATE** option of **LISTFILE** command **CMSREF**
 - examples **CMSREF**
- DATOFF** option of **PER** command **CPREF**
- day of week displayed **CMSLOT, PRIMER**
- DBCS** (Double-Byte Character Set) **XEDIT**
 - strings **SPIREF**
- DBCS** operand of **DEFNUC** macro **PLNGDE**
- DCB (data control block)
 - exit **CMSPROG**
 - multiple **PLNGDE**
 - relationship to **FILEDEF** command **CMSPROG**
- DCB macro **CMSPROG**
- DCB macro (**BSAM/QSAM**) **GCSREF**
 - blksize parameter **GCSREF**
 - ddname parameter **GCSREF**
 - description **GCSREF**
 - dsorg parameter **GCSREF**
 - eodad parameter **GCSREF**
 - exlst parameter **GCSREF**
 - lrecl parameter **GCSREF**
 - macrf parameter **GCSREF**
 - optcd parameter **GCSREF**
 - recfm parameter **GCSREF**
 - synad parameter **GCSREF**
- DCBD macro (**BSAM/QSAM**) **GCSREF**
 - description **GCSREF**
 - dsorg parameter **GCSREF**
- DCF (Document Composition Facility) **INTRO, INST, PRIMER, CMSLOT**
- DCLBFR** function of **IUCV** **TSAFREF**
 - completion **TSAFREF**
 - condition codes **TSAFREF**
 - considerations for **TSAFREF**
 - parameter list **TSAFREF**
 - parameters
 - BUFFER** **TSAFREF**
 - CONTROL** **TSAFREF**
 - MF=L** **TSAFREF**
 - PRMLIST** **TSAFREF**
 - program exceptions **TSAFREF**
 - return codes **TSAFREF**
 - scenario **TSAFREF**
 - state changes **TSAFREF**
 - use in sample resource program **TSAFREF**
 - use in sample user program **TSAFREF**
- DCP command **CMSUG, CPREF, DIAG**
 - described **CPREF**
 - operands
 - bytecount **CPREF**
 - END** **CPREF**
 - hexloc1 **CPREF**
 - hexloc2 **CPREF**
 - L** **CPREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- Lhexloc1 CPREF
- Mhexloc1 CPREF
- MLhexloc1 CPREF
- MThexloc1 CPREF
- Nhexloc1 CPREF
- NLhexloc1 CPREF
- NThexloc1 CPREF
- T CPREF
- Thexloc1 CPREF
- 0 CPREF
- responses CPREF
- security PLNGDE
- usage notes CPREF
- DCSS (discontiguous saved segment) CPPROG, REL5GDE
 - CMSAMS INST
 - CMSBAM INST
 - CMSDOS INST
 - CMSINST INST
 - CMSVASM INST
 - considerations SRPI
 - creating one for CMS language files REL5GDE
 - using the NAMESYS macro REL5GDE
 - DASD SNTMAP INST
 - defined in DMKSNT ASSEMBLE file INST
 - defining PLNGDE
 - definition CPPROG, INST
 - description PLNGDE
 - DIAGNOSE code interface CPPROG
 - file directory information
 - for shared disk CMSPROG
 - finding CPPROG
 - installation CMSPROG
 - installing PLNGDE
 - SNTMAP EXEC PLNGDE
 - loading SFPROG, CPPROG
 - loading and saving CPPROG
 - CMSAMS INST
 - CMSBAM INST
 - CMSDOS INST
 - CMSINST INST
 - CMSVSAM INST
 - considerations INST
 - segment installation requirements INST
 - MEMORY SNTMAP INST
 - overview INST
 - placing Editor macros in CMSPROG
 - placing EXECs in CMSPROG
 - purging CPPROG, SFPROG
 - suggested layout of storage INST
- DCSSGEN command CMSUG
- DCSSGEN EXEC
 - error messages INST
 - functions INST
 - loadlist entry format INST
 - requirements for installation INST
 - used to install CMSINST INST
- DCSSMAP filetype usage in CMS CMSUG
- DD (data definition), simulating in CMS CMSREF
- DD prefix command PRIMER
- ddnames
 - defining
 - with DLBL command CMSREF
 - with FILEDEF command CMSREF
 - entering tape ddnames for AMSERV CMSREF
 - for DLBL command
 - restrictions for OS users CMSREF
 - IJSCT CMSPROG
 - IJSUC CMSPROG
- IJSYSCT CMSPROG
 - in COBOL APGDE
 - in FORTRAN APGDE
 - in OS VSAM programs
 - restricted to seven characters
 - in CMS CMSPROG
 - relating to CMS file CMSREF
 - specifying with FILEDEF command CMSPROG
 - to identify VSAM catalogs
 - CMS/DOS CMSREF
 - OS VSAM users CMSREF
 - used by assembler CMSREF
 - used when assembling source programs CMSPROG
- DDP (distributed data processing)
 - See also distributed data processing (DDP)
 - advantages INTRO
 - definition INTRO
 - distributed site requirements INTRO
 - network components INTRO
 - programmable operator facility INTRO
 - related terms defined INTRO
 - VM/SP facilities INTRO
- DDP logical operator REL5GDE
- DDR (DASD Dump/Restore) CPPROG, DIAG, REL5GDE
 - and the second-level VM system RGOS
 - control statements CPPROG
 - function control statements
 - PRINT CPPROG
 - TYPE CPPROG
 - I/O definition statements CPPROG
 - invoking
 - as a stand-alone program CPPROG
 - program INST, DIAG
 - creating stand-alone version INST
 - explained CPPROG
 - updating INST
 - used to dump to tape CMSUG
 - restrictions CPPROG
 - use with paging storage CPPROG
 - utility tape, creating in VM RGOS
 - with 3480 tape drives CPPROG
- DDR command CMSPROG, DIAG, CPPROG
 - COMPACT option for tape output CMSUG
 - CMS command RGOS
 - invoking under CMS CPPROG
 - return codes SYSMSG
- DDR control statements
 - COPY CPPROG
 - description CPPROG
 - DUMP CPPROG
 - INPUT CPPROG
 - OUTPUT CPPROG
 - RESTORE CPPROG
 - SYSPRINT CPPROG
- de-editing VSE macros CMSPROG
- deadline priority CPPROG, REL5GDE
 - changing a virtual machine's CPPROG
- DEALLOCATE, APPC verb
 - abend conditions TSAFREF
 - mapped with APPC/VM TSAFREF
 - parameters TSAFREF
 - state changes TSAFREF
- DEBUG command APGDE, CMSPROG, CMSUG
 - described CMSREF, INTRO
 - subcommands CMSUG
- debug environment CMSUG
- debug, interactive
 - (see interactive debug)

debug mode, programmable operator **SFPROG**
 debugging **SPIUG**
 abends **DIAG**
 CMS DIAG
 CP DIAG
 GCS DIAG
 TSAF DIAG
 virtual machine **DIAG**
ADSTOP command **INTRO**
 aid, PL/I **INTRO**
 application programs **INTRO**
CMS DIAG
 commands **PLNGDE**
CP DIAG
 CP (control program)
 STCP command **CPPROG**
 data needed before calling IBM **DIAG**
 dump **DIAG**
 environment **CMSUG**
 facilities **APGDE**
 for CP abnormal termination (abend) **SYSMSG**
GCS DIAG
 how to start **DIAG**
 analyzing problem **DIAG**
 does a problem exist? **DIAG**
 identify problem **DIAG**
 loop **DIAG**
 CP disabled loop **DIAG**
 virtual machine disabled loop **DIAG**
 virtual machine enabled loop **DIAG**
 problem types **DIAG**
 procedures for unexpected results and an abend **DIAG**
 procedures for waits and loops **DIAG**
 programs **CPREF**
 See also interactive debug
 See also TRACE instruction
 tools summary **DIAG**
 the EXEC 2 interpreter **EXEX2**
 tools
 (see debugging tools summary)
TSAF DIAG
 unexpected result **DIAG**
 using **IPCS DIAG**
 virtual machine **DIAG**
 VM/SP **INTRO**
 wait **DIAG**
 CP disabled wait **DIAG**
 CP enabled wait **DIAG**
 virtual machine disabled wait **DIAG**
 virtual machine enabled wait **DIAG**
 with VM/SP facilities **DIAG**
 debugging tools summary
 command **DIAG**
 ADSTOP DIAG
 BEGIN DIAG
 CPTRAP DIAG
 DCP DIAG
 DDR DIAG
 DISPLAY DIAG
 DUMP DIAG
 MONITOR DIAG
 PER DIAG
 STCP DIAG
 STORE DIAG
 SVCTRACE DIAG
 TRACE DIAG
 VMDUMP DIAG
 function **DIAG**
 continue execution **DIAG**
 display real CP data **DIAG**
 display virtual data **DIAG**
 dump data **DIAG**
 resume execution **DIAG**
 stop execution **DIAG**
 store real CP data **DIAG**
 store virtual data **DIAG**
 trace execution **DIAG**
 trace real machine events **DIAG**
 decimal arithmetic **SPIREF**
 DECIMAL data Type in SQL and COBOL
 COBOL **APGDE**
 decimal number
 converting **SPIUG**
 description of **SPIUG**
 decimal to character conversion **SPIREF**
 decimal to hexadecimal conversion **SPIREF**
 decision
 page versus swap **CPPROG**
 decision making **SPIUG**
 DECK option
 of ASSEMBLE command **CMSREF**
 of OPTION command **CMSREF**
 declarative macros
 DTFCD CMSPROG
 DTFCN CMSPROG
 DTFDI CMSPROG
 DTFMT CMSPROG
 DTFPR CMSPROG
 DTFSD CMSPROG
 DECLARE BUFFER function of IUCV **SFPROG**,
 TSAFREF
 See also **DCLBFR** function of IUCV
 parameter list format **SFPROG**
 trace table entry format **SFPROG**
 using **SFPROG**
 DECLARE CURSOR statement of SQL **APGDE**
 DEDICATE command
 DEDICATE control statement **INTRO**
 MVS virtual machine **RGOS**
 VM/VSE **RGOS**
 DEDICATE directory control statement
 example **PLNGDE**
 operands
 NETWORK PLNGDE
 R/O PLNGDE
 VOLID PLNGDE
 3330V PLNGDE
 preferred machine assist **PLNGDE**
 dedicated
 channel **REL5GDE**
 assigning to virtual machine **CPPROG**
 devices **CPPROG**, **REL5GDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- dedicated channels
 - attaching CPREF
 - detaching CPREF
- dedicated DASD volumes, initializing with DSF RGOS
- dedicated devices
 - attaching CPREF
 - detaching CPREF
 - 3800 printer support OPGDE
- dedicated tape device INTRO
- dedicated terminal definitions RGOS
- dedicated 2305 restriction CPREF
- dedicating links TSAFREF
- defaults
 - according to filetype XEDIT
 - DLBL definitions CMSPROG
 - environment SPIREF
 - FILEDEF definition CMSPROG
 - for optional parameters TSAFREF
 - interval values
 - logical line editing symbols CMSUG
 - logical operator SFPROG
 - notebook CMSUG
 - of MACLIB MAP command CMSPROG
 - setting with DEFAULTS command CMSUG
 - tabs, displaying PRIMER
 - MIH (missing interrupt handler) CPPROG
- DEFAULT operand
 - of SYSID macro PLNGDE
- DEFAULTS command
 - description CMSREF
 - enhancement REL5GDE
 - LIST option CMSREF
 - SET option CMSREF
 - valid CMS command options CMSREF
- DEFCON operand of SYSFORM macro PLNGDE
- defective tracks, 3375/3380 disks PLNGDE
- DEFFCB operand of START command CPREF
- define
 - command (CP), use in file sharing and access PLNGDE
 - starter system INST
- DEFINE command CMSUG, CPPROG, CPREF, DIAG
 - class A CPREF
 - class B CPREF
 - class G CPREF
 - defining temporary disks CMSUG
 - described CPREF
 - example of use INTRO
 - operands
 - BMX CPREF
 - CHANNELS CPREF
 - CONSOLE CPREF
 - CTCA CPREF
 - GRAF CPREF
 - LINE CPREF
 - PRINTER CPREF
 - PUNCH CPREF
 - raddr CPREF
 - READER CPREF
 - SEL CPREF
 - STORAGE CPREF
 - SYSVIRT CPREF
 - TFB-512 CPREF
 - TIMER CPREF
 - T2305 CPREF
 - T3310 CPREF
 - T3330 CPREF
 - T3340 CPREF
 - T3350 CPREF
- T3370 CPREF
- T3375 CPREF
- T3380 CPREF
- vaddr CPREF
- VIRTUAL CPREF
- 1403 CPREF
- 1443 CPREF
- 2501 CPREF
- 2540P CPREF
- 2540R CPREF
- 3036 CPREF
- 3066 CPREF
- 3088 CPREF
- 3138 CPREF
- 3148 CPREF
- 3158 CPREF
- 3203 CPREF
- 3211 CPREF
- 3262 CPREF
- 3270 CPREF
- 3289E CPREF
- 3505 CPREF
- 3525 CPREF
- 3800 CPREF
- 4245 CPREF
- 4248 CPREF
- responses CPREF
- to increase virtual storage size CMSUG
- usage notes CPREF
- DEFINE control statement CMSPROG
- DEFINE STORAGE command CMSLOT, PRIMER
- DEFINE VSCREEN command CMSUG
 - description CMSREF
 - examples CMSREF
 - format CMSREF
 - messages CMSREF
- operands
 - color CMSREF
 - cols CMSREF
 - exthi CMSREF
 - HIGH CMSREF
 - lines CMSREF
 - NOHIGH CMSREF
 - NOPROTECT CMSREF
 - NOTYPE CMSREF
 - PROTECT CMSREF
 - psset CMSREF
 - rbot CMSREF
 - rtop CMSREF
 - SYSTEM CMSREF
 - TYPE CMSREF
 - USER CMSREF
 - vname CMSREF
- summary CMSREF
- usage notes CMSREF
- DEFINE WINDOW command CMSUG
 - description CMSREF
 - format CMSREF
 - messages CMSREF
- operands
 - BORDER CMSREF
 - cols CMSREF
 - FIXED CMSREF
 - lines CMSREF
 - NOBORDER CMSREF
 - NOPOP CMSREF
 - NOTOP CMSREF
 - POP CMSREF

- pscol **CMSREF**
 psline **CMSREF**
 SYSTEM **CMSREF**
 TOP **CMSREF**
 USER **CMSREF**
 VARIABLE **CMSREF**
 wname **CMSREF**
 summary **CMSREF**
 DEFINE, CP command **RGOS**
 defining
 a basic MVS virtual machine **RGOS**
 a control character **XEDIT**
 a single VSE virtual machine **RGOS**
 a tab character **CMSLOT**
 a virtual screen **XEDIT**
 a virtual 3800 printer **CPPROG**
 a window **XEDIT**
 alternate path to tape or DASD **RGOS**
 AUTOLOG1 in the directory **RGOS**
 cluster for VSAM space **CMSPROG**
 clusters **CMSPROG**
 CMS files **GCSREF**
 CMS load libraries **GCSREF**
 columns for target searches **XEDIT**
 commands **GCSREF**
 CPUIDs for the VSE virtual machine **RGOS**
 DOS input files **CMSPROG**
 DOS output files **CMSPROG**
 first and second-level VM system **RGOS**
 fixed-block mode devices **CPREF**
 logical line editing symbols **CMSUG**
 minidisks **PLNGDE**
 more than 8 privilege classes **PLNGDE**
 OS data sets **CMSPROG**
 OS input/output files **CMSPROG**
 privilege classes **CPPROG**
 privilege classes for a virtual machine **CPPROG**
 screen size **XEDITUG**
 space for VSAM files in CMS/DOS **CMSPROG**
 space for VSAM files in OS **CMSPROG**
 spool files **GCSREF**
 spool unit record devices **RGOS**
 system device configuration **INTRO**
 tapes
 nonstandard **CMSUG**
 standard **CMSUG**
 unlabeled **CMSUG**
 temporary disks **CMSUG, CPREF**
 the alternate nucleus **PLNGDE**
 unique clusters **CMSPROG**
 user catalogs **CMSPROG**
 virtual console for VM/VSE **RGOS**
 virtual consoles for MVS guest **RGOS**
 virtual devices **CPREF**
 VSAM files **GCSREF**
 VSAM master catalog in CMS/DOS **CMSPROG**
 VSAM master catalog in OS **CMSPROG**
 introduction **PLNGDE**
 definition **TSAFREF**
 Definition Language for Command Syntax (DLCS)
 MACREF, REL5GDE
 See DLCS (definition language for command syntax)
- definition list **CMSLOT, PRIMER**
 definition of GCS **GCSREF**
 definition of terms **DIAG, SRPI, TSAFREF**
 definitions
 console **TERMREF**
 conversational **TERMREF**
 cursor **TERMREF**
 interactive **TERMREF**
 mode **TERMREF**
 modem **TERMREF**
 network **TERMREF**
 raddr **TERMREF**
 terminal **TERMREF**
 DEFNUC macro **PLNGDE, REL5GDE**
 example **PLNGDE**
 format **PLNGDE**
 operands
 CYLADDR PLNGDE
 DBCS PLNGDE
 HELP PLNGDE
 INSTID PLNGDE
 INSTSEG PLNGDE
 IPLADDR PLNGDE
 IPLCYLO PLNGDE
 LANGID PLNGDE
 LANGLEV PLNGDE
 REWRITE PLNGDE
 SAVESYS PLNGDE
 SYSDISK PLNGDE
 SYSNAME PLNGDE
 USEINST PLNGDE
 VERSION PLNGDE
 YDISK PLNGDE
 DEFPRT operand of SYSFORM macro **PLNGDE**
 DEFPUN operand of SYSFORM macro **PLNGDE**
 DEGRADE (keyword definition) **DIAG**
 DEL function
 of MACLIB command **APGDE**
 of TXTLIB command **APGDE**
 DEL key **APGDE**
 DEL option
 of DOSLIB command **CMSREF**
 of MACLIB command **CMSREF**
 DELENTY macro **CMSPROG**
 assembly message **SRPI**
 assembly message (MNOTE) **MACREF**
 Communications Module
 termination notification list **MACREF**
 entry-name dropped from **MACREF**
 DELENTY macro (PL/AS) **SRPI**
 DELENTY subcommand
 description **SRPI**
 syntax **SRPI**
 DELETE command **CMSLOT, CMSPROG**
 of DMS/CMS **APGDE**
 of SQL **APGDE**
 DELETE control statement **CMSPROG**
 DELETE in typewriter mode **XEDITUG**
 DELETE key used to delete a line **PRIMER, XEDIT**
 DELETE LINK command **TSAFREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- DELETE macro GCSREF, PLNGDE
 de parameter GCSREF
 description GCSREF
 ep parameter GCSREF
 eploc parameter GCSREF
 related parameter GCSREF
- DELETE macro (SVC 9) CMSPROG
- DELETE operand of MONITOR command CPREF
- DELETE statement of SQL APGDE
- DELETE subcommand
 of XEDIT command APGDE, XEDIT
 example of XEDIT
- DELETE VSCREEN command CMSUG
 description CMSREF
 format CMSREF
 messages CMSREF
 operands
 vname CMSREF
 summary CMSREF
 usage notes CMSREF
- DELETE WINDOW command CMSUG
 description CMSREF
 format CMSREF
 messages CMSREF
 operands
 oper CMSREF
 summary CMSREF
 usage notes CMSREF
- deleted lines, recovering CMSLOT, PRIMER, XEDIT deleting
 access method services function CMSPROG
 characters XEDIT, XEDITUG
 in typewriter mode XEDITUG
 CMS disk files MACREF
 HELP files CMSUG
 lines
 block of lines PRIMER, XEDITUG
 from a file CMSLOT, PRIMER
 using D (prefix subcommand) XEDIT
 using DELETE XEDIT
 using REPLACE XEDIT
 members of a MACLIB CMSPROG
 national language SFPROG
 part of a string SPIREF
 program stack buffer for CMSREF
 recovering XEDITUG
 in typewriter mode XEDITUG
 spool files CPREF
 the rest of the line PRIMER
 using D prefix subcommand XEDITUG
 using DELETE in typewriter mode XEDITUG
 VSAM catalogs CMSPROG
 VSAM clusters CMSPROG
 VSAM spaces CMSPROG
 words
 from a line CMSLOT
 from a string SPIREF
- delimiters
 clause SPIUG
 comment SPIUG
 in a clause
 (see semicolons)
 in command lines CPREF
 parenthesis EXEX2
 space EXEX2
 using XEDITUG
 in typewriter mode XEDITUG
- DELSTR function SPIREF
- delta disk, definition INST
- DELWORD function SPIREF, SPIUG
- demand page area REL5GDE
- demand page migration CPPROG
- demand paging CPPROG
- DEMO1 INST
- DEMO2 INST
- DEMO3 INST
- DEMO4 INST
- DEN option
 of ASSGN command CMSREF
 of FILEDEF command CMSREF
- density of tapes CMSUG
- deoptimizing macro XEDIT
- dependent PTF, definition INST
- DEQ macro GCSREF, PLNGDE
 description GCSREF
 execute format GCSREF
 list format GCSREF
 mf parameter GCSREF
 qname address parameter GCSREF
 related parameter GCSREF
 ret parameter GCSREF
 rname address parameter GCSREF
 rname length parameter GCSREF
- DEQ macro (SVC 48) CMSPROG
- derived names SPIREF, SPIUG
 of variables SPIREF
- DESBUF command described CMSREF
- descending order sorting CMSLOT, XEDIT
- DESCRIBE function of IUCV SFPROG, TSAFREF
 completion TSAFREF
 condition codes TSAFREF
 parameter list TSAFREF
 parameter list format SFPROG
 parameters
 PRMLIST TSAFREF
 program exceptions TSAFREF
 return codes TSAFREF
 trace table entry format SFPROG
 using SFPROG
 use in sample resource program TSAFREF
- DESCRIPT option of DETAIL HELP CMSUG
- descriptions
 message number SYSMMSG
 module code SYSMMSG
 of IUCV macro parameters SFPROG
 prefix SYSMMSG
 type code SYSMMSG
- design changes REL5GDE
- design grid screen APGDE
- designing a program SPIUG
- DEST dest operand
 of SPOOL command CPREF
 of TRANSFER command CPREF
- DEST off operand
 of SPOOL command CPREF
- DEST operand
 of CHANGE command CPREF
 of CLOSE command CPREF
 of ORDER command CPREF
 of PURGE command CPREF
 of QUERY command CPREF
 of SPTAPE command CPREF
 of START command CPREF
- destination line
 F prefix subcommand XEDITUG
 for copied lines XEDITUG

- for moved lines **XEDITUG**
- of copied lines
 - specifying **XEDIT**
 - specifying using F **XEDIT**
 - specifying using P **XEDIT**
- of moved lines
 - specifying **XEDIT**
 - specifying using F **XEDIT**
 - specifying using P **XEDIT**
- P prefix subcommand **XEDITUG**
- destroying a file **PRIMER**
- reader file **PRIMER**
- dest1 operand
 - of CHANGE command **CPREF**
 - of ORDER command **CPREF**
 - of PURGE command **CPREF**
- dest2 operand
 - of CHANGE command **CPREF**
 - of ORDER command **CPREF**
 - of PURGE command **CPREF**
- DET option in release command **CMSLOT, CMSREF**
- DETACH command **CMSUG, CPREF, INTRO, REL5GDE**
 - after RELEASE command **CMSUG**
 - class B **CPREF**
 - class G **CPREF**
 - control blocks, new and changed **REL5GDE**
 - described **CPREF**
 - example of use **INTRO**
 - macros, new and changed **REL5GDE**
 - modules, new and changed **REL5GDE**
- operands
 - * **CPREF**
 - CHANNEL CPREF**
 - FROM CPREF**
 - LEAVE CPREF**
 - PROC CPREF**
 - raddr CPREF**
 - SYSTEM CPREF**
 - UNLOAD CPREF**
 - userid CPREF**
 - vaddr CPREF**
- responses **CPREF**
- usage notes **CPREF**
- DETACH macro **GCSREF, PLNGDE**
 - description **GCSREF**
 - task id address parameter **GCSREF**
- DETACH macro (SVC 62) **CMSPROG**
- DETACH operand of NETWORK command **CPREF**
- detaching
 - a disk from virtual machine configuration **CMSREF**
 - and attaching volumes
 - user and system **OPGDE**
 - dedicated devices **CPREF**
 - disks **CMSUG**
 - without releasing them **CMSUG**
 - temporary disks **CPREF**
 - virtual devices **CPPROG, CPREF**
- DETAIL HELP **CMSUG**
- detecting problems related to page migration **CPPROG**
- determining
 - amount of Paging Storage **CPPROG**
 - current command environment **CPREF**
- DASD space for CP message repository **SFPROG**
- device or file attributes **CPREF**
- virtual machine storage size **SFPROG**
- DEV PRT/PCH/CONSOLE/vaddr operand
 - of TAG command **CPREF**
- DEVADDR operand of CPTRAP command **CPREF**
- developing
 - applications **INTRO**
 - commands **CMSPROG**
 - message files **CMSPROG**
 - OS programs **CMSPROG**
 - programs **CMSPROG**
 - VSE programs **CMSPROG**
- device end
 - posting
 - 3880 **CPPROG**
- device error status **MACREF**
 - checking, using CONSOLE macro **MACREF**
- Device Support Facility **CMSPROG, CPPROG**
 - assigning alternate tracks for minidisks **PLNGDE**
- example **RGOS**
- formatting temporary disks **CMSPROG**
- full-volume minidisk restriction **RGOS**
- initialize DASD volumes **RGOS**
- IPLing under VM **RGOS**
- program **INST**
 - creating stand-alone version on tape **INST**
 - updating **INST**
- use with OS and VSE minidisks **PLNGDE**
- 3380 minidisk allocation **PLNGDE**
- device table (DEVTAB) **CMSPROG**
- device types **APGDE**
 - DISK APGDE**
 - PRINTER APGDE**
 - PUNCH APGDE**
 - READER APGDE**
 - TAPn APGDE**
 - TERMINAL APGDE**
- devices **DIAG, REL5GDE**
 - addresses
 - changing for loader **INST**
 - use under preferred machine assist **CPPROG**
 - assignments in CMS/DOS **CMSPROG**
 - channel switching **PLNGDE**
 - characteristics
 - class **INTRO**
 - coding RDEVICE macro
 - system console **PLNGDE**
 - unsupported devices **PLNGDE**
 - configuration aid **PLNGDE**
 - configuration, defining **INTRO**
 - configuring **PLNGDE**
 - control, CP command used **CPREF**
 - CP-owned CKD
 - format for **CPPROG**
 - CP-owned FBA
 - format for **CPPROG**
 - DASD supported by VM/SP HPO **PLNGDE**
 - dedicated **CPPROG**
 - dedicating to virtual machines **PLNGDE**
 - default addresses for CMS **PLNGDE**
 - direct access storage **REL5GDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

feature codes **SFPROG**
 for CMS system **CMSPROG**
 for stand-alone dump **DIAG**
 hardware supported by CMS VSAM **PLNGDE**
 how to attach more than 410 to a virtual machine
CPPROG
 I/O assignments **CMSPROG**
 interrupts **CMSPROG**
 linking at logon **PLNGDE**
 magnetic tape supported
 by VM/SP HPO **PLNGDE, REL5GDE**
 marking available
 for user or control program **CPREF**
 marking unavailable
 for user or control program **CPREF**
 model codes **SFPROG**
 monitored, missing interrupt handler **CPPROG**
 Multisystem Communications Units **REL5GDE**
 nondedicated **CPPROG**
 output, restrictions in CMS/DOS **CMSPROG**
 paging, 3880 Storage Control System **CPPROG**
 Paging Storage **CPPROG**
 printers **REL5GDE**
 processors supported
 by VM/SP HPO **PLNGDE, REL5GDE**
 real devices supported by VM/SP HPO **PLNGDE**
 recording mode, set **CPREF**
 remote spooling **PLNGDE**
 required for cardless system **PLNGDE**
 simulated by programming **PLNGDE**
 simulated I/O, specifying **PLNGDE**
 simulating not ready status for virtual **CPREF**
 special, configuration aid **PLNGDE**
 specifying type with FILEDEF command **CMSPROG**
 subclass, defining unsupported devices **PLNGDE**
 supported by CMS **CMSPROG, PLNGDE**
 supported by CMS VSAM **PLNGDE**
 supported by VM/SP HPO **PLNGDE, REL5GDE**
 supported, for VSAM under CMS **CMSPROG**
 switching between systems **RGOS**
 tape **REL5GDE**
 terminals supported
 by VM/SP HPO **PLNGDE, REL5GDE**
 transmission control units **REL5GDE**
 type codes **SFPROG**
 unit record **INTRO**
 supported by VM/SP HPO **PLNGDE, REL5GDE**
 unsupported
 coding RDEVICE macro **PLNGDE**
 devices dedicated to
 virtual machines **PLNGDE**
 used by an operating system
 in a virtual machine **PLNGDE**
 Vector Facility **CPPROG**
 virtual
 linking to **CPREF**
 VM/SP input and output **INTRO**
 devices, disks, cylinders, and tracks **CMSPROG**
 DEVTAB (device table) **CMSPROG**
 DEVTYPE (keyword definition) **DIAG**
 DEVTYPE macro (SVC 24) **CMSPROG**
 DEVTYPE operand
 of RDEVICE macro **PLNGDE, PLNGDE**
 DFLT operand of SYSCFN macro **PLNGDE**
 DIAG function **SPIREF**
 DIAGNOSE codes
 assigning privilege classes **CPPROG**
 control blocks, new and changed **REL5GDE**
 determine virtual machine storage size **CPPROG**
 find address of DCSS **CPPROG**
 finding those authorized for user **CPREF**
 FINDSYS function **CPPROG**
 for printers **REL5GDE**
 instruction use **SFPROG**
 interface with a DCSS **CPPROG**
 load DCSS **CPPROG**
 LOADSYS function **CPPROG**
 macros, new and changed **REL5GDE**
 modules, new and changed **REL5GDE**
 MSS mount and demount processing **CPPROG**
 privilege classes
 changing **CPPROG**
 pseudo timer **CPPROG**
 purge DCSS **CPPROG**
 PURGESYS function **CPPROG**
 support for MVS guest **RGOS**
 supported
 by preferred machine assist
 with control switch assist **CPPROG**
 when you IPL MVS
 with the PMAV option **RGOS**
 X'A0'
 retrieve a group name **SFPROG**
 X'BC' **REL5GDE**
 open a spool file **SFPROG**
 X'B0'
 access diagnostic information saved for
 protected application facility
 users **SFPROG**
 X'B4' **REL5GDE**
 virtual printer external attribute
 buffer manipulation **SFPROG**
 X'B8' **REL5GDE**
 spool file external attribute
 buffer manipulation **SFPROG**
 X'CC' **REL5GDE**
 saving the CP message repository **SFPROG**
 X'C8' **REL5GDE**
 set language **SFPROG**
 X'D0' **REL5GDE**
 provide 3480 tape VOLSER **SFPROG**
 X'D4' **REL5GDE**
 specify an alternate userid **SFPROG**
 X'D8' **REL5GDE**
 system spool information **SFPROG**
 X'0C', pseudo timer **SFPROG**
 X'00', store extended-identification code **SFPROG**
 licensed program identification bits **SFPROG**
 X'04', examine real storage **SFPROG**
 X'08'
 interface **DIAG**
 virtual console function **SFPROG**
 X'1C', clear error recording cylinders **SFPROG**
 X'10', release pages **SFPROG**
 X'14' **REL5GDE**
 input spool file manipulation **SFPROG**
 X'18', standard DASD I/O **SFPROG**
 X'2C', start of LOGREC area **SFPROG**
 X'20', general I/O **SFPROG**
 X'24' **REL5GDE**
 device type and features **SFPROG**
 X'28', channel program modification **SFPROG**
 X'3C', VM directory **SFPROG**
 X'30', read LOGREC data **SFPROG**
 X'34', read system dump spool file **SFPROG**
 X'38', read system symbol table **SFPROG**

X'4C' TSAFREF
 generate accounting records
 for the virtual user **SFPROG**

X'40'
 clean-up after virtual IPL by device **SFPROG**

X'48', issue SVC 76
 from a second level machine **SFPROG**

X'5C' REL5GDE
 error message editing **SFPROG**

X'50'
 save the 370X control program image **SFPROG**

X'54'
 control function of the PA2 function key **SFPROG**

X'58' REL5GDE, SFPROG
 display data on 3270 console screen **SFPROG**
 3270 virtual console interface
 full screen interactions **SFPROG**
 full screen mode **SFPROG**

X'6C', shadow table maintenance **SFPROG**

X'60'
 determine virtual machine storage
 size **SFPROG**

X'64'
 finding, loading, purging named segments **SFPROG**
FINDSYS function **SFPROG, CPPROG**
LOADSYS function **CPPROG, SFPROG**
PURGESYS function **SFPROG**

X'68', VMCF function **SFPROG**

X'7C' REL5GDE
 logical device support facility **SFPROG**

X'70'
 activating TOD-clock accounting
 interface **SFPROG**
 issued by TODACCNT function **MACREF**
 using ENABLE subfunction **MACREF**
 using QUERY subfunction **MACREF**

X'74'
 saving or loading a 3800 named system **SFPROG**

X'78', MSS communication **SFPROG**

X'8C' REL5GDE
 access device dependent information **SFPROG**

X'80', MSSFCALL **SFPROG**

X'84', directory update in-place **SFPROG**

X'94' INTRO
 interface **DIAG**
VMDUMP Function **SFPROG**

X'98', real channel program support **SFPROG**

DIAGNOSE instruction **CPPROG, SFPROG**
 access device dependent information **SFPROG**
 access diagnostic information saved for
 protected application facility users **SFPROG**
 activating the TOD-clock
 accounting interface **SFPROG**
 channel program modification **SFPROG**
 clean-up after virtual IPL by device **SFPROG**
 clear error recording **SFPROG**
 control function of the PA2 function key **SFPROG**
 determine virtual machine storage size **SFPROG**
 device type and features **SFPROG**
 directory update in-place **SFPROG**
 display data on 3270 console screen **SFPROG**

error message editing **SFPROG**
 examine real storage **SFPROG**
 finding, loading, purging
 named segments **SFPROG**
FINDSYS function **SFPROG**
 format **SFPROG**
 general I/O **SFPROG**
 generate accounting records
 for the virtual user **SFPROG**
 input spool file manipulation **SFPROG**
 invoking logical device facility **PLNGDE**
 issue SVC 76
 from a second level
 virtual machine **SFPROG**
 logical device support facility **SFPROG**
MSS communication **SFPROG**
MSSFCALL **SFPROG**
 open a spool file **SFPROG**
 page release function **SFPROG**
 provide 3480 tape volume serial number **SFPROG**
 pseudo timer **SFPROG**
PURGESYS function **SFPROG**
 read LOGREC data **SFPROG**
 read system dump spool file **SFPROG**
 read system symbol table **SFPROG**
 real channel program support **SFPROG**
 restrictions
 preferred machine assist **RGOS**
 single processor mode **RGOS**
 retrieve a group name **SFPROG**
 save the 370X control program image **SFPROG**
 saving or loading a 3800 named system **SFPROG**
 saving the CP messages repository **SFPROG**
 set language **SFPROG**
 shadow table maintenance **SFPROG**
 specify an alternate userid **SFPROG**
 spool file external attribute
 buffer manipulation **SFPROG**
 standard DASD I/O **SFPROG**
 start of LOGREC area **SFPROG**
 store extended-identification code **SFPROG**
 system spool information **SFPROG**
 update VM directory **SFPROG**
 virtual console function **SFPROG**
 virtual printer external attribute
 buffer manipulation **SFPROG**
VMCF function **SFPROG**
 data transfer error codes **SFPROG**
 return codes **SFPROG**
VMCPARM parameter list **SFPROG**
VMDUMP Function **SFPROG**
 3270 virtual console interface
 full screen interactions **SFPROG**
 full screen mode **SFPROG**
DIAGNOSE interface **REL5GDE**
 diagnosing a TSAF Dump **REL5GDE**
 diagnosing dumps **TSAFREF**
 diagnostic information saved for
 protected application facility users **SFPROG**
 diagnosing problems **DIAG, TSAFREF**
 diagnosing system programming problems **INTRO**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

diagnostic aids

MIH (missing interrupt handler) CPPROG
 SYSCOR macro CPPROG
 Vector Facility CPPROG
 3088 CPPROG
 3880 CPPROG

diagonal (/)

See slash (/)

DIAGRC function SPIREF

DIAG98 PLNGDE

DIAG98 operand of OPTION

directory control statement PLNGDE

DIAG98 option, defining in directory PLNGDE

DIAL command CMSUG, CPREF, INTRO,

TERMREF

CP command RGOS

described CPREF

device restriction CPREF

operands

userid CPREF

vaddr CPREF

responses CPREF

used with VSCS SFPROG

usage notes CPREF

DIAL operand of CLUSTER macro PLNGDE

dialing in CPREF

dialog elements APGDE

dialog management system APGDE

dialog test option APGDE

dialog testing APGDE

dialog variables in ISPF APGDE

variable pools APGDE

dialogs APGDE

differences between a Q1, Q2,

and Q3 virtual machine CPPROG

digital clock on the CMS window PRIMER

DIGITS option

of NUMERIC instruction SPIREF, SPIUG

DIRECGEN EXEC

after running INST

command format INST

DIRECGEN HISTORY file INST

invoking INST

panels INST

restarting INST

specifying products directly INST

using DIRECGEN panels INST

using on a line mode terminal INST

direct access storage device (see DASD)

DIRECT command

EDIT option INST

format INST, PLNGDE

function INST

return codes SYMSG

usage notes INST

DIRECT filetype usage in CMS CMSUG

direct interface to variables SPIREF

directing messages to a file PRIMER

directing warnings to a file PRIMER

directories APGDE, CPPROG, REL5GDE

See also TSAF virtual machine

*LOGREC option PLNGDE

*SPL option PLNGDE

ACCOUNT control statement PLNGDE

ACCT option PLNGDE

ACIGROUP control statement PLNGDE

AFFINITY option PLNGDE

allocating DASD space PLNGDE

authorization for IUCV SFPROG

backup CPPROG

BMX option PLNGDE

capabilities, defined PLNGDE

changing passwords for program product

userid INST

CMS auxiliary CMSREF

CMS file, writing to disk CMSREF

CMS file directory PLNGDE

COMSRV option PLNGDE

CONCEAL option PLNGDE

considerations for preparing entries PLNGDE

CONSOLE control statement PLNGDE

control statements

(See also directory control statements)

for creating PLNGDE

CPUID option PLNGDE

DASD storage requirements PLNGDE

DEDICATE control statement PLNGDE

defining access control groups PLNGDE

defining accounting number PLNGDE

defining distribution code PLNGDE

defining volume to contain PLNGDE

DIAG98 option PLNGDE

directory

considerations for preparing PLNGDE

DIRECTORY control statement PLNGDE

ECMODE option PLNGDE

control statement for IUCV SFPROG

entries PLNGDE, CMSPROG

first-level VM system RGOS

for national languages, updating SFPROG

in IUCV SFPROG

MVS considerations RGOS

MVS preferred guest RGOS

MVS V=R guest RGOS

MVS V=V guest RGOS

second-level VM system RGOS

virtual machine attributes CPREF

VSE virtual machine RGOS

entries for CMS/DOS PLNGDE

entries for CMS/DOS library volumes CMSPROG

entry for resource manager TSAFREF

example

a virtual machine for updating VMSYS PLNGDE

maintenance virtual machine, hardware PLNGDE

operating systems in a virtual machine

system dump PLNGDE

for TSAF TSAFREF

formatting DASD space PLNGDE

hardware support PLNGDE

INCLUDE control statement PLNGDE

IPL control statement PLNGDE

ISAM option PLNGDE

IUCV control statement PLNGDE

LANG option PLNGDE

LINK control statement PLNGDE

management CPPROG

MAXCONN option PLNGDE

MAXDEV option PLNGDE

MDISK control statement PLNGDE

3380 CPPROG

MDISK statements PLNGDE

MIH option PLNGDE

minidisks

overlapping extents PLNGDE

modify current directory INST

multiple resource owner TSAFREF

NOVF option **PLNGDE**
of VSE libraries, sorting **CMSREF**
operator directory entry
 example **PLNGDE**
OPTION control statement **PLNGDE**
other system virtual machines **PLNGDE**
permitted number of users **PLNGDE**
PMA option **PLNGDE**
profiles **CPPROG**
 creating **PLNGDE**
 description **PLNGDE**
 example **PLNGDE**
 invoking **PLNGDE**
PROFILE control statement **PLNGDE**
reading **SFPROG**
REALTIMER option **PLNGDE**
replacing entries **SFPROG**
requirements for changing **PLNGDE**
resource manager **TSAFREF**
resource owner **TSAFREF**
sample **PLNGDE**
sample for 3350 **PLNGDE**
sample for 3375 **PLNGDE**
sample for 3380 **PLNGDE**
sample **TSAF TSAFREF**
SCREEN control statement **PLNGDE**
setting up entries for program products
 with **DIRECGEN INST**
software support **PLNGDE**
SPECIAL control statement **PLNGDE**
SPOOL control statement **PLNGDE**
SVCACCL option **PLNGDE**
SVCOFF option **PLNGDE**
system
 data contained **INTRO**
 definition **INTRO**
 for RSCS systems **INTRO**
 maintenance **INTRO**
 Pass-Through directory **INTRO**
 virtual machine definition **INTRO**
system support virtual machines **PLNGDE**
tailoring considerations
 adding userids **INST**
 existing VM system procedure **INST**
 logon passwords **INST**
 MAINT userid **INST**
 minidisk read/write passwords **INST**
 minidisks for GCS source code **INST**
 minidisks for **TSAF** source code **INST**
 modifying the GCS userid **INST**
 modifying the **TSAFVM** userid **INST**
 planning **INST**
 Starter System procedure **INST**
 system volumes **INST**
 TDISK space **INST**
 TEMP space **INST**
 user classes **INST**
 using **DIRECT** command
 to place directory on line **INST**
 using **DISKMAP EXEC** to check changes **INST**
 using mixed **DASD INST**
update in-place **SFPROG**
 updating with **DIAGNOSE** code X'3C' **SFPROG**
 USER control statement **PLNGDE**
 using **DISKMAP EXEC** to check changes **INST**
 VCUNOSHR option **PLNGDE**
 VIRT=REAL option **PLNGDE**
 XMEM option **PLNGDE**
 370E option **PLNGDE**
directory control statements
 ACCOUNT PLNGDE
 ACIGROUP PLNGDE, CPPROG
 CLASS PLNGDE
 CONSOLE PLNGDE
 DEDICATE PLNGDE
 entry example **CPPROG**
 first-level VM system
 CONSOLE RGOS
 OPTION RGOS
 restriction **RGOS**
 SPECIAL RGOS
 SPOOL RGOS
 USER RGOS
 INCLUDE PLNGDE
 IPL PLNGDE
 IUCV PLNGDE
 LINK PLNGDE
 list of **PLNGDE**
 MDISK PLNGDE
 MVS virtual machine
 ACCOUNT RGOS
 CONSOLE RGOS
 DEDICATE RGOS
 LINK RGOS
 MDISK RGOS
 OPTION RGOS
 SPECIAL RGOS
 SPOOL RGOS
 USER RGOS
 OPTION PLNGDE
 PROFILE PLNGDE
 SCREEN PLNGDE
 SPECIAL PLNGDE
 SPOOL PLNGDE
 USER PLNGDE
 VSE virtual machine
 ACCOUNT RGOS
 CONSOLE RGOS
 DEDICATE RGOS
 LINK RGOS
 MDISK RGOS
 OPTION RGOS
 restriction **RGOS**
 SPECIAL RGOS
 SPOOL RGOS
 USER RGOS
DIRECTORY directory control statement **PLNGDE**
Directory Maintenance **INST, INTRO**
Directory program
 creating stand-alone version on disk **INST**
 creating stand-alone version on tape **INST**
 directory
 list of **PLNGDE**
 invoking under **CMS PLNGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- running standalone **PLNGDE**
- DIRMAIN** command, uses **INTRO**
- DIRMAINT INST**
- disable
 - external tracing **GCSREF**
 - tracing of GTRACE events **GCSREF**
- DISABLE** command **CMSUG**, **CPREF**, **REL5GDE**
- described **CPREF**
- operands
 - ALL CPREF**
 - raddr **CPREF**
 - SNA CPREF**
 - userid **CPREF**
- responses **CPREF**
- usage notes **CPREF**
- DISABLE** operand of **NETWORK** command **CPREF**
- disabling the primary console **OPGDE**
- DISCARD** command **INTRO**, **PRIMER**
- use with **FILELIST** command **CMSREF**
- use with **PEEK** command **CMSREF**
- use with **RDRLIST** command **CMSREF**
- used on **FILELIST** display **CMSLOT**
- used on **PEEK** **CMSLOT**
- used on **RDRLIST** display **CMSLOT**
- discarding
 - file **PRIMER**
 - from disk **CMSLOT**
 - from reader **CMSLOT**
 - reader file **PRIMER**
 - task **PLNGDE**
- DISCONN** command **CMSUG**, **CPREF**, **CPPROG**
- CP** command **RGOS**
- described **CPREF**
- example of use **INTRO**
- operand **HOLD CPREF**
- responses **CPREF**
- usage notes **CPREF**
- disconnect **TERMREF**
- reconnecting text terminal **TERMREF**
- disconnected
 - console **INTRO**
 - full screen switched to line mode **XEDIT**
- disconnecting
 - an **XEDIT** session **XEDIT**
 - virtual console **CPREF**
 - virtual machine **CPREF**
 - logging off your virtual machine **CPREF**
 - your terminal **TERMREF**
 - from your virtual machine **CMSUG**
- discontiguous segment **CPPROG**
- Discontiguous Saved Segment (**DCSS**) **CPPROG**, **CMSUG**, **PLNGDE**
- See **DCSS** (Discontiguous Saved Segment)
- discontinuing access to **EXEC**
- in Discontiguous Shared Segment (**DCSS**) **CMSUG**
- disk **APGDE**
- See also **DASD** (direct access storage device)
- command
 - description **CMSREF**
 - DUMP** operand **CMSREF**
 - LOAD** operand **CMSREF**
- formats
 - CP CPPROG**
- formatting **CPPROG**
- initialization **CPPROG**
- option
 - interactive use with **FILEDEF** command **CMSREF**
 - of **ASSEMBLE** command **CMSREF**
- of **CMS QUERY** command **CMSREF**
- of **DOSLIB** command **CMSREF**
- of **DOSLKED** command **CMSREF**
- of **DSESV** command **CMSREF**
- of **FILEDEF** command **CMSREF**
- of **LKED** command **CMSREF**
- of **LOADLIB** command **CMSREF**
- of **MACLIB** command **CMSREF**
- of **PSESV** command **CMSREF**
- of **RSESV** command **CMSREF**
- use with **FILEDEF** command **CMSREF**
- disk access profile
 - SPGEN PROFILE** file **INST**
 - VMPUT PRODUCTS** Inventory file **INST**
- disk accessed automatically at IPL **PLNGDE**
- disk address, displaying **PRIMER**
- DISK** command
 - DUMP** operand, using **CMSUG**
 - LOAD** operand
 - restricted in job for **CMS batch facility** **CMSUG**
 - using **CMSUG**
 - loading files **CMSUG**
- disk determination
 - default for reading files
 - commands that search
 - all accessed disks **CMSUG**
 - only A-disk **CMSUG**
 - only A-disk and its extensions **CMSUG**
 - default for writing files
 - commands for which you must
 - specify filemode **CMSUG**
 - commands that write output to A-disk **CMSUG**
 - commands that write output
 - to read/write disk **CMSUG**
- DISK** device type **APGDE**
- disk error, **SVC 199** services **DIAG**
- disk file **MACREF**
- reading records from **MACREF**
- writing records to **MACREF**
- disk label, displaying **PRIMER**
- disk letter with **ACCESS** command **CMSLOT**
- disk number **CMSLOT**
- disk numbers **PRIMER**
- DISK** operand
 - of **SET** command **CPREF**
- Disk Operating System (**DOS**)
- See **DOS** (Disk Operating System)
- DISK** option
 - QUERY** **CMSLOT**
 - LKED** command **APGDE**
 - MACLIB** command **MAP** function **APGDE**
 - TXTLIB** command **APGDE**
- disk space, displaying amount used **CMSLOT**, **PRIMER**
- disk-resident **CMS** modules
 - creating **INST**
 - loading **INST**
- DISKACNT** **INST**
- DISKID** Function
- See also **MACREF**
- obtaining minidisk information **MACREF**
- PLIST** **MACREF**
- usage **MACREF**
- using **CP DASD Block I/O System Service** **MACREF**
- DISKMAP** command **CMSUG**
- DISKMAP EXEC**
 - command format **INST**
 - example **INST**
 - function **INST**

- usage notes **INST**
DISKR option of EXECIO command **CMSREF**
 disks **CMSLOT**
 See also minidisks
 accessing **CMSREF**
 allocating space for CP use **CPPROG**
 CMS access **PLNGDE**
 defined in VM/SP directory entry **CMSUG**
 defining temporary disks
 for terminal session **CMSUG**
 definition **CMSUG**
 detaching **CMSREF**
 determining
 if disk is full **CMSREF**
 read/write status of **CMSREF**
 erasing files from **CMSREF**
 extensions **CMSUG**
 extents **CMSPROG**
 files
 See files
 for spool buffering **OPGDE**
 formatting **CMSREF**
 formatting for CMS **PLNGDE**
 full, in editing session, recovery from **CMSUG**
 how much space is on a disk **CMSUG**
 identifying to CMS **CMSUG**
 labels, CMS **PLNGDE**
 linking **CMSUG**
 listing information about the files on **CMSUG**
 management
 CMS PLNGDE
 OS/DOS PLNGDE
 VSAM PLNGDE
 master file directory **CMSUG**
 providing for CMS batch virtual machine **CMSUG**
 query status of **CMSUG**
 read-only extensions **CMSUG**
 read-only, exporting VSAM files from **CMSPROG**
 read/write, sharing **CMSREF**
 releasing **GCSREF**
 effect on logical unit
 assignments in CMS/DOS **CMSREF**
 in CMS/DOS **CMSREF**
 when DLBL definitions are active **CMSREF**
 search order **CMSUG**
 sharing **CMSPROG, CMSUG**
 storage capacity, displaying status **CMSREF**
 storing files on **PRIMER**
 temporary **CMSPROG**
 virtual permanent **CPREF**
 virtual temporary **CPREF**
 volumes
 formatting **CPPROG**
 labeling **CPPROG**
DISKW option of EXECIO command **CMSREF**
DISP (keyword definition) **DIAG**
DISP MOD option of FILEDEF command **CMSPROG**
DISP option of FILEDEF command **CMSREF**
 dispatch list **CPPROG**
 algorithm **CPREF, OPGDE**
 modifications **REL5GDE**
 how they work in MP systems **CPPROG**
 dispatch request queue **CPPROG, REL5GDE**
 dispatcher **CPPROG**
 fast path **REL5GDE**
 prepare virtual machine
 fast path dispatcher **CPPROG**
 queues **REL5GDE**
 request queue locks **CPPROG**
 dispatcher (type X'01') entry **DIAG**
 dispatcher/scheduler favoring scheme **CPPROG**
 dispatching priority, replacing directory entry **SFPROG**
 dispatching scheme for virtual machines **CPPROG**
 dispatching a task **PLNGDE**
 dispatching priority, replacing
 directory entry **SFPROG**
DISPLAY command **APGDE, CMSUG, CPPROG,**
CPREF, DIAG
 as debugging aid **INTRO**
 described **CPREF**
 of DMS/CMS **APGDE**
 operands
 CAW CPREF
 CSW CPREF
 elementcount **CPREF**
 element1 **CPREF**
 element2 **CPREF**
 END CPREF
 Greg **CPREF**
 hexloc **CPREF**
 PSW CPREF
 regcount **CPREF**
 VAC CPREF
 VMR CPREF
 VP CPREF
 VR CPREF
 vregcount **CPREF**
 vreg1 **CPREF**
 vreg2 **CPREF**
 VSR CPREF
 Xreg **CPREF**
 Yreg **CPREF**
 responses **CPREF**
 usage notes **CPREF**
 display devices, configuration aid **PLNGDE**
 display features **XEDITUG**
DISPLAY LINE APGDE
 Display Management System for CMS (DMS/CMS)
APGDE, INST, INTRO
 COPY EUDCOBOL statement **APGDE**
 EXEC 2 commands **APGDE**
 panel formatter **APGDE**
 panel manager **APGDE**
 parameter list **APGDE**
 prototyping with EXECs **APGDE**
 write full screen **APGDE**
DISPLAY operand
 of **MONITOR** command **CPREF**
 of **NETWORK** command **CPREF**
DISPLAY option
 of **EXTRACT XEDIT**
 of **QUERY XEDIT**
 of **SET XEDIT**
 display real CP data **DIAG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- display screen layout **TERMREF, XEDITUG**
display screen status notices **CMSUG**
DISPLAY service of ISPF **APGDE**
DISPLAY SM APGDE
DISPLAY subcommand of **DUMPSCAN** command
description **DIAG**
error message **DIAG**
format **DIAG**
functional category **DIAG**
response **DIAG**
sample output **DIAG**
usage **DIAG**
- display terminals
characteristics **CMSUG**
CMS interface **CMSPROG**
entering commands **CMSUG**
example of display screen **CMSUG**
Extended highlight feature **CMSUG**
linemode **CMSUG**
retrieving previously entered data **CMSUG**
setting PF keys **CMSUG**
signalling interruptions **CMSUG**
using in full screen mode **XEDIT**
using in line mode **XEDIT**
- display virtual data **DIAG**
display virtual machine data **DIAG**
Display Write/370 **INST, REL5GDE**
displaying **CMSLOT**
a document **PRIMER**
a file on your screen **PRIMER, SPIUG**
a MACLIB member **CMSPROG**
a reader file **PRIMER**
accounting information **CPREF**
changed lines **XEDIT**
Channel Address Word (CAW) **CPREF**
Channel Status Word (CSW) **CPREF**
commands available to a user **CPPROG**
data
See **SAY** (REXX instruction)
from a macro **XEDITUG**
in hexadecimal **XEDIT**
on a 3270 console screen **SFPROG**
directories of VSE libraries **CMSPROG**
DLBL definitions **CMSPROG**
dump information **TSAFREF**
excluded lines **XEDIT**
extended control registers **CPREF**
floating-point registers **CPREF**
general registers **CPREF**
help menus **XEDITUG**
how much Vector Facility resource
your virtual machine is using **APGDE**
line numbers on screen **XEDIT, XEDITUG**
lines
at terminal, **WRTERM** macro **CMSPROG**
on typewriter terminal **XEDITUG**
using **TYPE XEDIT**
- list of files **PRIMER**
CMS files **CMSUG**
disk files **CMSLOT**
reader files **CMSLOT**
listings from access method services **CMSPROG**
message numbers **SYSMSG**
messages **SYSMSG**
at terminal **SYSMSG**
in languages other than
American English **SYSMSG**
in translation **SYSMSG**
- on editor screen **XEDITUG**
using **CMSG XEDIT**
using **EMSG XEDIT**
using **MSG XEDIT**
more than one file **XEDITUG**
page migration activity **CPPROG**
Paging Storage **CPPROG**
paging variables **CPPROG**
PF key settings **PRIMER**
Program Status Word (PSW) **CPREF**
screensfull of data **CMSUG**
setting of editing options **XEDIT**
SRM variables **CPPROG**
storage keys **CPREF**
system load **CPREF**
tab settings **CMSLOT, PRIMER, XEDITUG**
in typewriter mode **XEDITUG**
trace records **TSAFREF**
vector activity count **APGDE**
vector activity counter **CPREF**
vector mask register **APGDE, CPREF**
vector register pairs **CPREF**
vector registers **CPREF**
vector status register **APGDE, CPREF**
virtual storage **CPREF**
virtual storage locations **CPREF**
- displays, **TSAF**
contention for
processor resources **CPREF**
storage **CPREF**
system resources **CPREF**
full screen in System Product Editor **CMSUG**
internal trace table **CPREF**
message text **CMSREF**
multiple views **CMSUG**
of **CMS QUERY** command **CMSREF**
storage **CPREF**
use of
processor resources **CPREF**
system resources **CPREF**
- DisplayWrite/370 **INTRO**
disposition of spool files **CMSUG**
DISPW macro
description of **CMSPROG**
format of **CMSPROG**
- DIST** distcode operand
of **CHANGE** command **CPREF**
of **CLOSE** command **CPREF**
of **SPOOL** command **CPREF**
- DIST** operand
of **CHANGE** command **CPREF**
- distcode operand
of **CHANGE** command **CPREF**
- DISTINCT** keyword of **SQL APGDE**
- distributed data processing (DDP) **REL5GDE**
advantages **INTRO**
definition **INTRO**
distributed site requirements **INTRO**
network components **INTRO**
programmable operator facility **INTRO**
related terms defined **INTRO**
VM/SP facilities **INTRO**
- distributed logical operator **REL5GDE**
distributed site
DDP defined **INTRO**
requirements **INTRO**
distributed system use
of the programmable operator **SFPROG**

- distributing and receiving documents **INTRO**
 - distribution code
 - defining in the directory **PLNGDE**
 - for output files **CPREF**
 - distribution list **CMSLOT**
 - dividing numbers **EXEX2**
 - dividing screen **XEDITUG**
 - division **SPIUG**
 - definition **SPIREF**
 - operator **SPIREF**
 - division operator **SPIUG**
 - DL/I
 - support in CMS/DOS environment **PLNGDE**
 - DL/I programs in CMS/DOS **CMSPROG**
 - restrictions **CMSPROG**
 - DLBL command **GCSREF**
 - ? operand **GCSREF**
 - assigning filemode numbers **CMSUG**
 - BUFSP operand **GCSREF, CMSPROG**
 - CAT option **CMSREF, GCSREF, CMSPROG**
 - CHANGE option **CMSREF, GCSREF**
 - CLEAR option **CMSREF, GCSREF**
 - CMS operand **CMSPROG, CMSREF**
 - ddname operand **GCSREF**
 - restrictions (OS users) **CMSREF**
 - default file definitions **CMSPROG**
 - description **GCSREF, CMSREF, CMSPROG**
 - displaying
 - volumes on which all
 - multivolume data sets reside **CMSREF**
 - VSAM data set extents **CMSREF**
 - DSN ? operand **CMSPROG**
 - DSN operand **CMSREF**
 - DUMMY option **CMSREF**
 - entering
 - before program execution **CMSPROG**
 - OS data set names **CMSREF**
 - the SYSxxx operand **CMSREF**
 - VSE fileid **CMSREF**
 - EXTENT option **CMSREF, CMSPROG**
 - how to use in CMS/DOS **CMSPROG**
 - identifying VSAM data sets **CMSPROG**
 - on CMS/DOS **CMSPROG**
 - IJSYSCT ddname **CMSPROG**
 - MODE operand **GCSREF**
 - MULT operand **GCSREF, CMSREF, CMSPROG**
 - NOCHANGE operand **CMSREF, GCSREF**
 - PERM operand **GCSREF, CMSREF**
 - qual operand **GCSREF**
 - relationship to ASSGN command **CMSPROG**
 - specifying extents in CMS/DOS **CMSPROG**
 - specifying multiple extents **CMSPROG**
 - SYSxxx operand **CMSPROG, CMSREF**
 - to identify files for AMSERV **CMSREF**
 - VSAM operand **GCSREF, CMSREF, CMSPROG**
 - when to use (OS users) **CMSREF**
- DLBL definitions
 - cleared by ESERV command **CMSREF**
 - clearing **CMSREF**
 - displaying **CMSREF**
 - entering in a CMS EXEC procedure **CMSPROG**
 - using the HX command **CMSPROG**
- DLBL option of CMS QUERY command **CMSREF**
- DLCS (definition language for command syntax)
 - REL5GDE**
 - coding command syntax **CMSPROG**
 - coding statements **CMSPROG**
 - converting a DLCS file **CMSPROG**
 - creating a DLCS file **CMSPROG**
 - description of **CMSPROG**
 - DLCS statement **CMSPROG**
 - example **CMSPROG**
 - file **CMSUG**
 - for parsing commands **REL5GDE**
 - parsing command arguments **REL5GDE**
 - types of statements **CMSPROG**
- DMCP command **CMSUG, CPREF, DIAG**
 - described **CPREF**
 - operands
- DMKBOX ASSEMBLE
 - description **INST**
 - tailoring considerations
 - existing VM system procedure **INST**
 - Starter System procedure **INST**
- DMKBOX, updating for the second-level system **RGOS**
- DMKCFB (console function) support **CPROG**
- DMKCPEND (end of CP resident nucleus) **DIAG**
- DMKDIR directory program, invoking under CMS **PLNGDE**
- DMKDMP **DIAG**
- DMKDSP **CPROG**
- DMKFCB, VM under VM **RGOS**
- DMKFCB ASSEMBLE
 - description **INST**
 - tailoring considerations
 - existing VM system procedure **INST**
 - Starter System procedure **INST**
 - updating **INST**
- DMKFRE **DIAG**
- DMKFRT **DIAG**
- DMKH50 CNTRL **INST**
- DMKH50A CNTRL **INST**
- DMKH50AT CNTRL **INST**
- DMKH50M CNTRL **INST**
- DMKH50MT CNTRL **INST**
- DMKH50T CNTRL **INST**
- DMKLD00E
 - See loader
- DMKMSP CNTRL **INST**
- DMKMSS **PLNGDE**
 - mass storage system error messages **OPGDE**
- DMKPPIA ASSEMBLE
 - description **INST**
- DMKPIB ASSEMBLE
 - description **INST**
- DMKPIB MODULE
 - updating **INST**
- DMKRIO TSAFREF
 - considerations
 - MVS stage 1 input **RGOS**
 - MVS virtual machine **RGOS**
 - when defining tape drives **RGOS**
 - preparing for system generation **PLNGDE**
 - RCHANNEL macro **PLNGDE**
 - RCTLUNIT macro **PLNGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- RDEVICE macro **PLNGDE**
- RIOGEN macro **PLNGDE**
- sample for 3350 **PLNGDE**
- sample for 3375 **PLNGDE**
- sample for 3380 **PLNGDE**
- sequence of macros **PLNGDE**
- TERMINAL macro **PLNGDE**
- updating, for
 - second-level VM system **RGOS**
 - VM/VSE system **RGOS**
 - 3270, example assemble file **PLNGDE**
- DMKRIO ASSEMBLE
 - description **INST**
 - tailoring considerations
 - existing VM system procedure **INST**
 - planning **INST**
 - Starter System procedure **INST**
- DMKRIO file, defined **INTRO**
- DMKSCH **CPPROG**
- DMKSNT (system name table) **CPPROG**
 - creating an entry for 3704/3705 **PLNGDE**
 - creating your own version **PLNGDE**
 - file, defined **INTRO**
 - NAMELANG macro **PLNGDE**
 - NAMENCP macro **PLNGDE**
 - NAMESYS macro **PLNGDE**
 - NAME3800 macro **PLNGDE**
 - preparing **PLNGDE**
 - sample for 3350 **PLNGDE**
 - sample for 3375 **PLNGDE**
 - sample for 3380 **PLNGDE**
 - sample for 3380-E4 **PLNGDE**
 - table **PLNGDE**
 - updating for the second-level system **RGOS**
 - updating for the VM/VSE system **RGOS**
- DMKSNT ASSEMBLE
 - description **INST**
 - tailoring
 - existing VM system procedure **INST**
 - GCS entry **INST**
 - new entries **INST**
 - planning **INST**
 - Starter System procedure **INST**
 - system disk pointers **INST**
 - using SNTMAP EXEC to verify changes **INST**
 - using SNTMAP EXEC to verify changes **INST**
- DMKSNT table **PLNGDE**
- DMKSP CNTRL **INST**
- DMKSP MACLIB **CMSPROG**
- DMKSPA CNTRL **INST**
- DMKSPAT CNTRL **INST**
- DMKSPM CNTRL **INST**
- DMKSPM maclib, multiprocessor system **PLNGDE**
- DMKSPMT CNTRL **INST**
- DMKSPT CNTRL **INST**
- DMKSTA **DIAG**
- DMKSYS
 - file, defined **INTRO**
 - performance considerations for coding **PLNGDE**
 - preparing system control file **PLNGDE**
 - sample for 3350 **PLNGDE**
 - sample for 3375 **PLNGDE**
 - sample for 3380 **PLNGDE**
 - supplied with starter systems **PLNGDE**
 - SYSCOR macro **PLNGDE**
 - SYSFCN macro **PLNGDE**
 - SYSFORM macro **PLNGDE**
 - SYSID macro **PLNGDE**
- SYSJRL macro **PLNGDE**
- SYSLOCS macro **PLNGDE**
- SYSMIH macro **PLNGDE**
- SYSMON macro **PLNGDE**
- SYSOPR macro **PLNGDE**
- SYSOWN macro **PLNGDE**
- SYSPAG macro **PLNGDE**
- SYSPCLAS macro **PLNGDE**
- SYSRES macro **PLNGDE**
- SYSTIME macro **PLNGDE**
- SYSXSTOR macro **PLNGDE**
- updating for the second-level VM system **RGOS**
- DMKSYS ASSEMBLE
 - description **INST**
 - tailoring considerations
 - AP and MP systems **INST**
 - existing VM system procedure **INST**
 - GCS volume **INST**
 - paging **INST**
 - planning **INST**
 - Starter System procedure **INST**
 - user classes **INST**
 - VMSRES address **INST**
- DMKUCB ASSEMBLE
 - description **INST**
- DMKUCB MODULE
 - updating **INST**
- DMKUCC ASSEMBLE
 - description **INST**
- DMKUCC MODULE
 - updating **INST**
- DMKUCS ASSEMBLE
 - description **INST**
- DMKUCS MODULE
 - updating **INST**
- DMMDSC **DIAG**
- DMMSP CNTRL **INST**
- DMMTAB communication table **DIAG**
- DMPINREC **DIAG**
- DMPKYREC1 **DIAG**
- DMPKYREC2 **DIAG**
- DMS/CMS (Display Management System for CMS) **APGDE, INST, INTRO**
 - commands **APGDE**
 - COPY EUDCBOL statement **APGDE**
 - EXEC 2 commands **APGDE**
 - panel formatter **APGDE**
 - panel manager **APGDE**
 - parameter list **APGDE**
 - prototyping with EXECs **APGDE**
 - write full screen **APGDE**
- DMSABN **CMSPROG**
- DMSABN (abend routine) **DIAG**
- DMSABN macro **CMSPROG, DIAG**
- DMSABW CSECT **CMSPROG**
- DMSEXE085E **EXEX2**
- DMSEXE175E **EXEX2**
- DMSEXE255T **EXEX2**
- DMSEXS macro
 - description of **CMSPROG**
 - format of **CMSPROG**
- DMSFRE service routines **CMSPROG**
- DMSFREE macro
 - allocating nucleus free storage **CMSPROG**
 - allocating storage **CMSPROG**
 - allocating user free storage **CMSPROG**
 - description of **CMSPROG**
 - error codes **CMSPROG**

- format of **CMSPROG**
- free storage management **CMSPROG**
- nucleus free storage **CMSPROG**
- storage pointers **CMSPROG**
- TYPE=NUCLEUS** parameter **CMSPROG**
- TYPE=USER** parameter **CMSPROG**
- user free storage **CMSPROG**
- DMSFRES** macro
 - error codes **CMSPROG**
 - format of **CMSPROG**
- DMSFRET** macro
 - description of **CMSPROG**
 - error codes **CMSPROG**
 - format of **CMSPROG**
 - releasing storage **CMSPROG**
- DMSFRT CSECT** **CMSPROG**
- DMSFST** macro
 - description of **CMSPROG**
 - format of **CMSPROG**
- DMSINA** module **CMSPROG**
- DMSINT** module **CMSPROG**
- DMSIOW** module **CMSPROG**
- DMSITE** module **CMSPROG**
- DMSITI** module **CMSPROG**
- DMSITP** **DIAG**
- DMSITP** module **CMSPROG**
- DMSITP** routine **DIAG**
- DMSITS** module **CMSPROG**
- DMSKEY** macro
 - description of **CMSPROG**
 - format of **CMSPROG**
- DMSLAD** module **CMSPROG**
- DMSNGP ASSEMBLE** **REL5GDE**
 - description **INST**
 - load from product tape
 - existing VM system procedure **INST**
 - starter system procedure **INST**
 - sample file **INST**
 - tailoring considerations
 - existing VM system procedure **INST**
 - planning **INST**
 - Starter System procedure **INST**
- DMSNUC**
 - DEV** TAB (device table) **CMSPROG**
 - structure of **CMSPROG**
 - USERSECT** (user area) **CMSPROG**
 - within CMS storage **CMSPROG**
- DMSFAG** module **CMSPROG**
- DMSPOL** programmable operator
 - action routine **SFPROG**
- DMSPOR** programmable operator
 - action routine **SFPROG**
- DMSPOS** programmable operator
 - action routine **SFPROG**
- DMSSP CNTRL** **INST**
- DMSSP** **MACLIB** **APGDE**, **CMSPROG**
- DMSTVS** module **CMSPROG**
- DMSVSR** command **CMSUG**
- DMSXFLPT** **XEDIT** routine **CMSPROG**
- DMSXFLRD** **XEDIT** routine **CMSPROG**
- DMSXFLST** **XEDIT** routine **CMSPROG**
- DMSXFLWR** **XEDIT** routine **CMSPROG**
- DO FOREVER** instruction **SPIUG**
- DO** instruction **SPIREF**
 - See also loops
 - BY** expression **SPIUG**
 - conditional loop **SPIUG**
 - control variable **SPIUG**
 - DO FOREVER** instruction **SPIUG**
 - DO UNTIL** instruction **SPIUG**
 - DO WHILE** instruction **SPIUG**
 - END** keyword **SPIUG**
 - ITERATE** instruction **SPIUG**
 - LEAVE** instruction **SPIUG**
 - non-looping **SPIUG**
 - repetitive loops **SPIUG**
- DO UNTIL** instruction **SPIUG**
- DO WHILE** instruction **SPIUG**
- DOC** (keyword definition) **DIAG**
- DOC FAILURE** code (keyword definition) **DIAG**
- DOC** operand of **STAT** command **DIAG**
- DOCNO** (keyword definition) **DIAG**
- Document Composition Facility (DCF) **CMSLOT**, **INST**, **INTRO**, **PRIMER**, **REL5GDE**
- document preparation **INTRO**
- document preparation (**PROFS**) **INTRO**
- document, proofreading **INTRO**
- DOS** (Disk Operating System)
 - core image library **CMSPROG**
 - creating CMS files **CMSPROG**
 - declarative macros
 - DTFCD** **CMSPROG**
 - DTFCN** **CMSPROG**
 - DTFDI** **CMSPROG**
 - DTFMT** **CMSPROG**
 - DTFPR** **CMSPROG**
 - DTFSD** **CMSPROG**
- disks, accessing **CMSPROG**, **CMSREF**
 - compatibility with OS disks **CMSPROG**
 - determining free space **CMSPROG**
 - formatting using **DSF** **CMSPROG**
 - using with **AMSERV** **CMSPROG**
- DOSMAC EXEC**, copying **VSE** macros into **CMS** **MACLIB** **INST**
- files
 - listing information **CMSREF**
 - specifying **FILEDEF** options for **CMSREF**
 - used in **CMS** **CMSPROG**
- for transient routines **CMSPROG**
- hardware devices supported **CMSPROG**
- imperative macros **CMSPROG**
- libraries
 - executing phases from **CMSPROG**
 - link-editing modules from **CMSPROG**
 - size considerations **CMSPROG**
- macro libraries for **CMS** **PLNGDE**
- macros supported in **CMS** **CMSPROG**
- programs, assembling **PLNGDE**
- restrictions on reading in **CMS** **CMSPROG**
- simulation in **CMS** **CMSPROG**
- support of physical **IOCS** macros **CMSPROG**
- support under **CMS** **PLNGDE**
- terminal sessions **CMSPROG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- VMFDOS, creating CMS files
 containing VSE modules **INST**
 VSE macros under CMS **CMSPROG**
- DOS** option
 of CMS **QUERY** command **CMSREF**
 of CMS **SET** command **CMSREF**
 of **GENMOD** command **CMSREF**
- DOS PL/I Optimizer** **PLNGDE**
- DOS** virtual = real storage assignments **OPGDE**
- DOS/VS COBOL** **PLNGDE**
- DOS/VS RPG II** **PLNGDE**
- DOSGEN EXEC**
 error messages **INST**
 functions **INST**
 requirements for installing **CMSDOS** **INST**
 used to install **CMSDOS** **INST**
- DOSLIB**
 command
COMP option **CMSREF**
 compressing **DOSLIBs** **CMSPROG**
DEL option **CMSREF**
 description **CMSREF**, **CMSPROG**
DISK option **CMSREF**
MAP option **CMSREF**
PRINT option **CMSREF**
TERM option **CMSREF**
- files
 adding phases to **CMSREF**
 fetching phases from **CMSREF**
 identifying for fetching **CMSREF**
 listing information about members **CMSREF**
 output filemode **CMSREF**
 size considerations **CMSREF**
 space considerations **CMSREF**
 which **DOSLIBs** will be searched **CMSREF**
- option
 of CMS **QUERY** command **CMSREF**
 of **GLOBAL** command **CMSREF**
- DOSLKED** command
 description **CMSREF**
 description of **CMSPROG**
DISK option **CMSREF**
PRINT option **CMSREF**
TERM option **CMSREF**
 using **CMSPROG**
- DOSLNCNT** option
 of CMS **QUERY** command **CMSREF**
 of CMS **SET** command **CMSREF**
- DOSLNK** files
 used by **DOSLKED** command **CMSPROG**
 used in **CMS/DOS** **CMSPROG**
- DOSLNK** filetype
CMS/DOS linkage editor input **CMSREF**
 creating **CMSREF**
- DOSMAC EXEC**, copying VSE macros
 into CMS **MACLIB** **INST**
- DOSMACRO** **MACLIB** **CMSPROG**
- DOSPART** option
 of CMS **QUERY** command **CMSREF**
 of CMS **SET** command **CMSREF**
- DOSPLI** command **CMSPROG**
- DOSPOINT** subcommand of **DUMPSCAN** command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
- sample output **DIAG**
 usage **DIAG**
- double hold status
 removing spool files from it **CPREF**
- double key support
 storage keys **CPPROG**
- Double-Byte Character Set (DBCS) strings **SPIREF**, **XEDIT**
- DOWN** **XEDITUG**
 example of **XEDITUG**
 in typewriter mode **XEDITUG**
 practice exercise using **XEDITUG**
- DOWN** command **CMSLOT**, **PRIMER**
- DOWN** subcommand **XEDIT**
- DOWN** subcommand of **TRAPRED** command **DIAG**
- DPA** (dynamic paging area) **CPPROG**, **REL5GDE**
- DPA** operand of **INDICATE** command **CPREF**, **CPPROG**
- DPMSIZE** operand of **RDEVICE** macro **PLNGDE**
- DPS**
 See Dynamic Path Selection (**DPS**)
- DRAIN** command **CMSUG**, **CPREF**, **INTRO**
 described **CPREF**
 operands
ALL **CPREF**
lprt **CPREF**
PRINTER **CPREF**
PUNCH **CPREF**
raddr **CPREF**
READER **CPREF**
 responses **CPREF**
 usage notes **CPREF**
- drawing boxes **CMSUG**
- DROP INDEX** command of **SQL** **APGDE**
- DROP** instruction **SPIREF**, **SPIUG**
- DROP TABLE** command of **SQL** **APGDE**
- DROP VIEW** command of **SQL** **APGDE**
- DROP WINDOW** command **CMSUG**, **REL5GDE**
 description **CMSREF**
 format **CMSREF**
 messages **CMSREF**
 operands
 * (asterisk) **CMSREF**
 = (equal sign) **CMSREF**
n **CMSREF**
WM **CMSREF**
wname **CMSREF**
 usage notes **CMSREF**
- DROPBUF** command **APGDE**, **SPIUG**
 description **CMSREF**
 using **CMSREF**
- dropping a window **PRIMER**
- dropping the **WM** window **PRIMER**
- dropping variables **SPIUG**
- DRUM** operand of **SET** command **CPREF**
- DSCB** (Data Set Control Block) **CMSPROG**
- DSECT** for file system control block (**FSCB**) **MACREF**
- DSECT** generated for **PARSECMD** control block **MACREF**
 using **PARSERCB** macro **MACREF**
- DSECT** generated for Parser
 Validation Code Table entry **MACREF**
 using **PVCENTRY** macro **MACREF**
- DSERV** command
ALL operand **CMSREF**
CD operand **CMSREF**
 creating **MAP** files **CMSPROG**
 description **CMSREF**
 description of **CMSPROG**
DISK option **CMSREF**
 examples **CMSPROG**

- PD operand **CMSREF**
- PRINT option **CMSREF**
- RD operand **CMSREF**
- SD operand **CMSREF**
- SORT option **CMSREF**
- TD operand **CMSREF**
- TERM option **CMSREF**
- DSF EXEC RGOS**
- DSMPROF3 specified in SCRIPT command **CMSLOT**
- DSN operand of DLBL command **CMSPROG, CMSREF**
- dsname described **CPREF**
- dsname operand
 - of CHANGE command **CPREF**
 - of CLOSE command **CPREF**
- DSORG option of FILEDEF command **APGDE, CMSPROG, CMSREF**
- DSPLY operand of PRB command **DIAG**
- DSPSLICE operand
 - of QUERY command **CPREF**
 - of SET command **CPREF**
- DSS operand of VMDUMP command **CPREF**
- DTFCD macro **CMSPROG**
- DTFCN macro **CMSPROG**
- DTFDI macro **CMSPROG**
- DTFMT macro **CMSPROG**
- DTFPR macro **CMSPROG**
- DTFSD macro **CMSPROG**
- DTRIPF command, example of use **INTRO**
- dual **REL5GDE**
- dual address space assist
 - support enabled or disabled **CPREF**
 - use with MVS/SP **REL5GDE**
- dual processor
 - definition of **RGOS**
 - environment **CPPROG**
- dual-frame configuration
 - 3880 Storage Subsystem **PLNGDE**
- dummy data set name
 - specified on FILEDEF command **CMSPROG**
- dummy instruction
 - See NOP instruction
- DUMMY option
 - of DLBL command
 - restrictions for OS VSAM user **CMSREF**
 - using in CMS/DOS **CMSREF**
 - of FILEDEF command **CMSREF**
- DUMP**
 - option
 - of DISK command **CMSREF**
 - of OPTION command **CMSREF**
 - system ABEND **CPREF, OPGDE**
 - unit
 - for system failure **OPGDE**
 - setting with the SET command **CPREF**
- dump address parameter list **SFPROG**
- DUMP** command **CMSUG, CPREF, DIAG**
 - described **CPREF**
 - operands
 - *dumpid **CPREF**
 - bytecount **CPREF**
 - END **CPREF**
 - hexloc **CPREF**
 - responses **CPREF**
 - to print virtual storage **DIAG**
 - usage notes **CPREF**
- DUMP** control record, ZAP program
 - format **INST**
 - function **INST**
 - options **INST**
 - usage notes **INST**
- DUMP** control statement
 - of DDR (DASD Dump Restore) **CPPROG**
- DUMP** operand
 - of NETWORK command **CPREF**
 - of QUERY command **CPREF**
 - of SET command **CPREF, OPGDE**
 - of SPTAPE command **CPREF**
- DUMP** procedure
 - MVS guest
 - considerations **RGOS**
 - defining enough space **RGOS**
 - preferred machine assist **RGOS**
 - restrictions **RGOS**
 - single processor mode **RGOS**
 - stand-alone **RGOS**
 - SVC **RGOS**
 - second-level VM system **RGOS**
 - VSE virtual machine **RGOS**
- dump spool file, read **SFPROG**
- DUMP** subcommand of TESTCOB command **APGDE**
- DUMPID** subcommand of DUMPSCAN command
 - description **DIAG**
 - error message **DIAG**
 - format **DIAG**
 - functional category **DIAG**
 - response **DIAG**
 - sample output **DIAG**
 - usage **DIAG**
- dumping
 - considerations for control switch assist guest **RGOS**
 - extended control registers **CPREF**
 - floating-point registers **CPREF**
 - general registers **CPREF**
 - guest virtual storage **CPREF**
 - spool files **CPREF**
 - storage locations **CPREF**
 - to DASD **DIAG**
 - to printer **DIAG**
 - to tape **DIAG**
 - virtual storage **CPREF**
 - virtual machine storage **GCSREF**
- .dumps **REL5GDE**
 - communication controller, obtaining copy of **PRGDE**
 - CP restart, example of **PRGDE**
 - CP restart, obtaining copy of **PRGDE**
 - creating **TSAFREF**
 - data **DIAG**
 - used by IPCS **INTRO**
 - debugging **DIAG**
 - definition **PRGDE**
 - diagnosing **TSAFREF**
 - directory entry
 - example **PLNGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

displaying dump information **TSAFREF**
 displaying trace records **TSAFREF**
 file conversion **DIAG**
 formatting trace records **TSAFREF**
 information included in **PRGDE**
 loading **TSAFREF**
 printing **TSAFREF**
 problems helped by **PRGDE**
 recursive **DUMP/ABEND REL5GDE**
 routing **PLNGDE**
 space, DASD requirements **PLNGDE**
 stand-alone **PRGDE**
 types of **PRGDE**
 used in problem determination **DIAG**
 virtual machine, obtaining copy of **PRGDE**
 virtual machine data **DIAG**
DUMPSAVE (DMLDMP save area) DIAG
DUMPSCAN command REL5GDE
 description **DIAG**
 display of CP dump **DIAG**
 error message **DIAG**
 format **DIAG**
 interactive display **DIAG**
 locating addresses **DIAG**
 on a display terminal **DIAG**
 printing data **DIAG**
 response **DIAG**
 usage **DIAG**
DUMPSCAN scroll interface DIAG
DUMPSCAN subcommands
 + and - subcommand **DIAG**
 &name **DIAG**
 ? subcommand **DIAG**
AREGS subcommand DIAG
ARIOBLOK subcommand DIAG
C subcommand DIAG
CHAIN subcommand DIAG
CMS subcommand DIAG
CMSPOINT subcommand DIAG
CORTABLE subcommand DIAG
DISPLAY subcommand DIAG
DOSPOINT subcommand DIAG
DUMPID subcommand DIAG
END subcommand DIAG
FDISPLAY subcommand DIAG
 functionally grouped
 CMS dump subcommands **DIAG**
 common subcommands **DIAG**
 CP dump subcommands **DIAG**
 GCS dump subcommands **DIAG**
 TSAF dump subcommands **DIAG**
 general usage notes **DIAG**
G subcommand DIAG
HELP subcommand DIAG
HX subcommand DIAG
IPCSMAP subcommand DIAG
IUCV subcommand DIAG
LOCATE (UP) subcommand DIAG
MAPA subcommand DIAG
MAPN subcommand DIAG
MREGS subcommand DIAG
MRIOBLOK subcommand DIAG
OSPOINT subcommand DIAG
PRINT subcommand DIAG
QUIT subcommand DIAG
REGS subcommand DIAG
REUSE subcommand DIAG
RIOBLOK subcommand DIAG
SCROLL subcommand DIAG
 summary **DIAG**
SYMP subcommand DIAG
TACTIVE subcommand DIAG
TLOADL subcommand DIAG
TRACE subcommand DIAG
TSAB subcommand DIAG
USERMAP subcommand DIAG
VIOBLOK subcommand DIAG
VMBLOK subcommand DIAG
VMLOADL subcommand DIAG
DUMPSCAN TRACE command (IPCS) TSAFREF
DUMPT, used to install MSS PLNGDE
DUP option
 of **INCLUDE** command **CMSREF**
 of **LOAD** command **CMSREF**
DUP output field of **STAT** command **DIAG**
DUPLICATE command **CMSLOT**
 of **DMS/CMS APGDE**
 duplicate file names **CMSLOT**
 duplicate names **SPIUG**
 duplicate problem **DIAG**
DUPLICATE subcommand of **XEDIT** command **APGDE, XEDIT**
 duplicating
 a file **PRIMER**
 block of lines **XEDIT**
 filenames or filetypes **CMSUG**
 lines **CMSLOT, PRIMER, XEDITUG**
 using " (prefix subcommand) **XEDIT**
 using **DUPLICAT XEDIT**
 strings **SPIUG**
DUPOF operand of **PRB** command **DIAG**
DVOL1 function in tape command processing **CMSUG**
 dyadic **CPPROG, REL5GDE**
 and dual processors **REL5GDE**
 environment **CPPROG**
 processors **PLNGDE, REL5GDE**
 definition of **RGOS**
 performance enhancements **CPPROG, REL5GDE**
 store-in cache **CPPROG**
 dynamic SCP transition
 to or from native mode **CPPROG**
 dynamic address translation (**DAT**) **INTRO, PLNGDE**
 System/370
 introduction **PLNGDE**
 dynamic configuration **TSAFREF**
 inoperational link **TSAFREF**
 route failure **TSAFREF**
 dynamic linkage **CMSPROG**
 dynamic load overlay **CMSPROG**
 dynamic loading **APGDE**
TXTLIB members **CMSPROG**
 dynamic paging area **REL5GDE**
 Dynamic Path Selection (**DPS**)
 coexistence with **VM/SP HPO RGOS**
VM/VSE sharing **DASD RGOS**
 dynamic SCP transition **REL5GDE**
 use with preferred machine assist **REL5GDE**
 dynamically loading servers (**SRPI** macro) **SRPI**
 dynamically modified channel program
 restrictions **PLNGDE**
D2C function **SPIREF**
D2X function **SPIREF**

E

E (exponent symbol) **SPIUG**
 E prefix subcommand **XEDIT**
 EBCDIC
 devices supported by VM/SP
 of COPYFILE command **CMSREF**
 order sorting **XEDIT**
 EC mode **CPPROG**, **REL5GDE**
 ECB (event control block) **PLNGDE**
 format **MACREF**
 ECHO command **CMSUG**, **CPREF**
 described **CPREF**
 operands
 nn **CPREF**
 1 **CPREF**
 responses **CPREF**
 usage notes **CPREF**
 ECMODE directory option **TSAFREF**
 ECMODE operand
 of OPTION directory control statement **PLNGDE**
 of SET command **CPREF**
 ECMODE option **CPPROG**, **DIAG**, **RGOS**
 defining in directory **PLNGDE**
 ECPS (Extended Control-Program Support: VM/370)
 CPPROG, **REL5GDE**
 attached processor application **OPGDE**
 CP assist **CPPROG**
 description **PLNGDE**
 expanded virtual machine assist **CPPROG**
 option, SET command **INTRO**
 processors supported **PLNGDE**
 restricted use **CPPROG**
 SET CPASSIST command **CPREF**
 support processors **OPGDE**
 using **CPPROG**
 virtual interval timer assist **CPPROG**
 ECPS Expansion, processor feature **PLNGDE**
 ECRLOG (extended control registers) field **DIAG**
 edit **REL5GDE**
 EDIT **CPPROG**
 command
 description **CMSREF**
 LRECL option **CMSREF**
 NODISP option **CMSREF**
 prefix subcommands **APGDE**
 compatibility mode **XEDIT**
 subcommands
 See EDIT subcommands
 EDIT (CMS Editor) **TERMREF**
 EDIT command prefix subcommands **APGDE**
 edit environment **XEDITUG**
 in typewriter mode **XEDITUG**
 EDIT EXEC S2, suppression
 of execution **CMSREF**
 edit mode **APGDE**, **XEDITUG**
 in typewriter mode **XEDITUG**
 returning from input mode **CMSUG**
 EDIT service of ISPF **APGDE**
 EDIT subcommands

supported in compatibility mode **XEDIT**
 editing
 a member of a MACLIB **XEDIT**
 CMS files **CMSUG**
 commands, help on how to use **CMSLOT**
 DBCS strings **XEDIT**
 defined **XEDITUG**
 in typewriter mode **XEDITUG**
 error messages with DIAGNOSE code X'5C' **SFPROG**
 files **TERMREF**, **CMSLOT**, **PRIMER**
 full-screen **INTRO**
 multiple files **PRIMER**, **XEDIT**, **XEDITUG**
 illustration of **XEDITUG**
 one file **XEDITUG**
 in typewriter mode **XEDITUG**
 options
 See also variables
 displaying setting of **XEDIT**
 transferring setting of **XEDIT**
 session **CMSUG**, **CMSLOT**, **PRIMER**
 symbols
 controlling use of **CPREF**
 variables
 preserving **XEDITUG**
 restoring **XEDIT**, **XEDITUG**
 saving **XEDIT**
 transferring **XEDITUG**
 with logical line editing symbols **CMSUG**
 editor
 See also System Product Editor
 CMS
 migration mode **CMSREF**
 defined **CMSLOT**, **PRIMER**
 image symbol **INTRO**
 invoking **APGDE**, **XEDIT**, **XEDITUG**
 in typewriter mode **XEDITUG**
 macros **EXEC2**, **SPIREF**
 executing **EXEX2**
 filetype **EXEX2**
 implementation **EXEX2**
 VM/SP **INTRO**
 EFMODE option
 of EXTRACT **XEDIT**
 of QUERY **XEDIT**
 EFNAME option
 of EXTRACT **XEDIT**
 of QUERY **XEDIT**
 EFTYPE option
 of EXTRACT **XEDIT**
 of QUERY **XEDIT**
 elapsed time calculator **SPIREF**
 elapsed time saved during subroutine calls **SPIREF**
 element **APGDE**, **CPPROG**, **OPGDE**
 element operand of STORE command **CPREF**
 element, definition **INST**
 elementcount operand of
 DISPLAY command **CPREF**
 element1 operand of DISPLAY command **CPREF**
 element2 operand of DISPLAY command **CPREF**
 eligible list **CPPROG**
 determining whether it is working properly **CPPROG**
 finding place on **CPREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- eliminating
 - a reader file **PRIMER**
 - spool files **CPREF**
- ellipsis, use of **CPREF**
- ELSE** keyword
 - See also **IF** instruction
 - dangling **SPIUG**
 - NOP** instruction **SPIUG**
 - of **IF** instruction **SPIUG**
- embedded blanks
 - discussion of **EXEX2**
 - examples **EXEX2**
 - exceptions **EXEX2**
 - handling **EXEX2**
 - variables **EXEX2**
- emphasizing a word or phrase **CMSLOT**, **PRIMER**
- emptying a stack **CMSREF**
- EMSG XEDITUG**
 - setting **SFPROG**
- EMSG** operand of **SET** command **CPREF**
- EMSG** option of **EXECIO** command **CMSREF**
- EMSG** subcommand **XEDIT**
- emulation program (**EP**)
 - See also **EP** (Emulation Program)
 - coding the **RDEVICE** macro **PLNGDE**
 - special considerations for loading **OPGDE**
- emulated 3270, recognition of **REL5GDE**
- EMUL3270** feature
 - in **DMKRIO REL5GDE**
 - RDEVICE** macro **PLNGDE**
- ENABLE** command **CMSUG**, **CPREF**, **REL5GDE**
 - described **CPREF**
 - operands
 - ALL CPREF**
 - raddr **CPREF**
 - SNA CPREF**
 - userid **CPREF**
 - responses **CPREF**
- ENABLE** operand
 - of **MONITOR** command **CPREF**
 - of **NETWORK** command **CPREF**
 - of **SYSMON** macro **PLNGDE**
- ENABLE** subfunction
- enabling terminals
 - second-level systems **RGOS**
 - SNA** terminals **SFPROG**
 - VSE** virtual machine **RGOS**
- END** clause
 - See also **DO** instruction
 - See also **SELECT** instruction
 - specifying control variable **SPIREF**
- END** command **APGDE**
- END** control record, **ZAP** program
 - format **INST**
 - function **INST**
- END DECLARE SECTION** statement
 - in **COBOL** and **SQL APGDE**
- END** keyword
 - of **DO** instruction **SPIUG**
 - of **SELECT** instruction **SPIUG**
- End of File
 - indicating for input stream
 - line, controlling display of **XEDIT**
 - moving current line toward **CMSLOT**
 - to batch virtual machine **CMSUG**
- End of Range
 - line, controlling display of **XEDIT**
- END** operand
 - of **DCP** command **CPREF**
 - of **DISPLAY** command **CPREF**
 - of **DUMP** command **CPREF**
 - of **NETWORK** command **CPREF**
 - of **SPTAPE** command **CPREF**
 - of **TRACE** command **CPREF**
 - of **VMDUMP** command **CPREF**
- END** statement in **ISPF** panels **APGDE**
- END** subcommand
 - of **DUMPSCAN** command
 - description **DIAG**
 - error message **DIAG**
 - format **DIAG**
 - functional category **DIAG**
 - response **DIAG**
 - sample output **DIAG**
 - usage **DIAG**
 - of **PER** command **CPREF**
 - of **TESTCOB** command **APGDE**
 - of **TESTFORT** command **APGDE**
- end-of-input-line signaling **TERMREF**
- end-of-tape
 - condition **CPPROG**
 - processing **CMSUG**
- end-of-volume, processing **CMSUG**
- end, abnormal
 - See **abend** (abnormal termination)
- ENDCMD** operand of **NUCXLOAD** command **CMSREF**
- ENDCMD** option **SRPI**
- ENDCMD** parameter list **SRPI**
- ENDFILE** command **APGDE**
- ending
 - a **TRACE CPREF**
 - editing session **CMSUG**, **XEDITUG**
 - in typewriter mode **XEDITUG**
 - using **CANCEL XEDIT**
 - using **FILE CMSLOT, PRIMER, XEDIT**
 - using **QUIT PRIMER**
 - using **QUIT CMSLOT, PRIMER, XEDIT**
 - terminal session **CMSUG**, **CMSLOT**
 - VM/SP HPO** functions **CPREF**
- ENDREQ** macro (**VSAM**) **GCSREF**
 - description **GCSREF**
 - rpl parameter **GCSREF**
- endval operand of **CHAIN** subcommand **DIAG**
- Engineering and Scientific Subroutine Library (**ESSL**) **REL5GDE**
- engineering notation **SPIREF**
- Enhanced Connectivity Facilities on **VM REL5GDE**
 - applications **INTRO**
 - CMSERV** command **REL5GDE**
 - description **INTRO**
 - for **VM/SP INTRO**
 - modules, new and changed **REL5GDE**
 - new and changed execs **REL5GDE**
 - Server-Requester Programming Interface (**SRPI**) **REL5GDE**
 - servers and requesters **INTRO**
 - SRPI INTRO**
 - starting **INTRO**
 - starting communications **CMSREF**
 - writing applications **INTRO**
- enhanced paging subsystem support **REL5GDE**
- enhancements to **VM/SP**
 - CMS IUCV** support **REL5GDE**
 - DETACH** command **REL5GDE**
 - Error Recording **REL5GDE**

- EXECIO command **REL5GDE**
 execs in storage **REL5GDE**
 FORMAT command **REL5GDE**
 GLOBAL command **REL5GDE**
 HELP facility **REL5GDE**
 installation and service procedures **REL5GDE**
 See also installation procedures
 additions and enhancements of
 CMS Nucleus Generation Profile **REL5GDE**
 ITASK EXEC **REL5GDE**
 SPGEN EXEC **REL5GDE**
 SPGEN PROFILE **REL5GDE**
 SPLOAD EXEC **REL5GDE**
 SPLOAD PROFILE **REL5GDE**
 HELP DCSS **REL5GDE**
 installation DCSS **REL5GDE**
 NOLOG option **REL5GDE**
 UTILITY EXEC **REL5GDE**
 VMFNLS EXEC **REL5GDE**
 VMFREMOV EXEC **REL5GDE**
 VMFTXT EXEC **REL5GDE**
 INCLUDE, LOAD and GENMOD **REL5GDE**
 VMFLOAD EXEC **REL5GDE**
 VMFMERGE EXEC **REL5GDE**
 references to other publications **REL5GDE**
 renaming of DASD volume labels **REL5GDE**
 logical device host limit relief **REL5GDE**
 migration of commands and modules
 to the CMS nucleus **REL5GDE**
 paging storage **REL5GDE**
 PRINT command **REL5GDE**
 PRINTL macro **REL5GDE**
 RAS (Reliability, Availability and Serviceability)
 alternate nucleus support **REL5GDE**
 CPTRAP, TRAPRED, and QUERY **REL5GDE**
 IPCS **REL5GDE**
 LOGON/LOGOFF **REL5GDE**
 SPOOL file compression support **REL5GDE**
 RDCARD macro **REL5GDE**
 RDRLIST command **REL5GDE**
 Reliability, Availability and Serviceability (RAS)
 alternate nucleus support **REL5GDE**
 CPTRAP, TRAPRED, and QUERY **REL5GDE**
 IPCS **REL5GDE**
 LOGON/LOGOFF **REL5GDE**
 SPOOL file compression support **REL5GDE**
 REXX (Restructured Extended Executor) language
 DATE function **REL5GDE**
 function calls for DIAGNOSE codes
 X'C8' and X'CC' **REL5GDE**
 references to other publications **REL5GDE**
 security
 3270 read inhibit **REL5GDE**
 serviceability
 support of ASCII **REL5GDE**
 TXTLIB command **REL5GDE**
 usability **REL5GDE**
 VM message identifier **REL5GDE**
 ENQ macro **GCSREF**, **PLNGDE**
 description **GCSREF**
 e parameter **GCSREF**
 execute format **GCSREF**
 list format **GCSREF**
 mf parameter **GCSREF**
 qname address parameter **GCSREF**
 related parameter **GCSREF**
 ret parameter **GCSREF**
 rname address parameter **GCSREF**
 rname length parameter **GCSREF**
 s parameter **GCSREF**
 ENQ macro (SVC 56) **CMSPROG**
 ensuring a complete log **SFPROG**
 in a distributed system **SFPROG**
 in a mixed environment **SFPROG**
 in a single system **SFPROG**
 Enter a command or press a PF or PA key
 (status notice) **PRIMER**
 ENTER key **CMSLOT**, **INST**, **PRIMER**,
TERMREF
 ENTER option
 of **EXTRACT XEDIT**
 of **QUERY XEDIT**
 of **SET XEDIT**
 ENTER signaling **TERMREF**
 Enter your response (status notice) **PRIMER**
 entering
 APL characters on display terminal **CMSUG**
 CMS commands, in CMS subset environment **CMSUG**
 CMS environment **CMSUG**
 CMS/DOS environment **CMSUG**
 commands
 from the screen **CMSUG**
 more than one on command line **CMSUG**
 on display terminal **CMSUG**
 rules for **CMSLOT**, **PRIMER**
 comments **CPREF**
 CP commands **CPREF**
 from CMS command environment **CMSUG**
 from edit environment **CMSUG**
 from virtual machine environment **CPREF**
 CP environment
 from CMS environment **CMSUG**
 data **XEDITUG**
 in **XEDIT PRIMER**
 using **INPUT XEDITUG**
 using **INPUT** in typewriter mode **XEDITUG**
 using **POWERINP XEDITUG**
 debug environment
 via **CP EXTERNAL** command **CMSUG**
 via **DEBUG** command **CMSUG**
 DEBUG subcommands **CMSUG**
 DLBL definitions in CMS EXEC procedure **CMSPROG**
 file identifications **CMSPROG**
 HELP facility **CMSUG**
 immediate commands **CMSUG**
 lines at terminal
 during program execution **CMSPROG**
 logical line editing symbols as data **CMSUG**
 null lines **CMSUG**
 prefix subcommands **XEDITUG**
 subcommands **XEDITUG**
 rules for **XEDIT**
 XEDIT subcommands **XEDITUG**
 on typewriter terminal **XEDITUG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- ENTRY** (keyword definition) **DIAG**
 Entry Assist **TERMREF**
ENTRY loader control statement **CMSREF**
 entry points **APGDE, PLNGDE**
 authorized with **AUTHNAME PLNGDE**
 determined by loader **CMSREF**
 determining for program execution **CMSPROG**
 displayed following **FETCH** command **CMSPROG**
 displayed with **FETCH** command **CMSREF**
 specified using OS entry statement **CMSPROG**
 specifying
 with **ENTRY** statement **CMSREF**
 with **GENMOD** command **CMSREF**
 entripointname operand of **MAPN** subcommand **DIAG**
ENVIR (keyword definition) **DIAG**
ENVIR output field of **STAT** command **DIAG**
 environmental considerations **REL5GDE**
 National Language Support **REL5GDE**
 Levelid Support **REL5GDE**
 TSAF REL5GDE
 Environmental Recording, Editing and Printing (**EREP**)
REL5GDE
 environments **TERMREF**
 conventions **OPGDE**
 for MVS guest
 definition of **RGOS**
 addressing of **SPIREF**
 changing **TERMREF**
 CMS SPIUG
 COMMAND SPIUG
 CP SPIUG
 default **SPIREF**
 determining current
 using **ADDRESS** function **SPIREF**
 temporary change of **SPIREF**
 of **VM/SP CMSUG**
 of **VM/SP HPO** system load **CPPROG**
 programmable operator **SFPROG**
 distributed **VM SFPROG**
 mixed **SFPROG**
 single system **SFPROG**
SNA SFPROG
EOF operand
 of **BACKSPAC** command **CPREF**
 of **SPOOL** command **CPREF**
EOF option
 of **EXTRACT XEDIT**
 of **QUERY XEDIT**
 of **TRANSFER XEDIT**
EOL option
 of **EXTRACT XEDIT**
 of **QUERY XEDIT**
EP (Emulation Program)
 See also 3704/3705 control program
 loading considerations **INST**
 macro coding considerations **INST**
 minimum storage required **PLNGDE**
 support provided by **PLNGDE**
EPLIST (extended **PLIST**) **SPIREF, SRPI**
 first form **CMSPROG**
 second form **CMSPROG**
EPLIST macro **CMSPROG**
EQU (equate) statements **MACREF**
 generating for registers
 using **REGEQU** macro **MACREF**
 equal buffer, inserting string in **XEDIT**
 equal (=) command
 using in **XEDIT PRIMER**
 using on **FILELIST** screen **PRIMER**
EQUAL command used in **XEDIT CMSLOT**
 equal operator (=) **SPIREF**
 equality, testing of **SPIREF**
ERASE
 command **APGDE, CMSUG**
 description **CMSREF**
 NOTYPE option **CMSREF**
 TYPE option **CMSREF**
 macro (**VSAM**) **GCSREF**
 description **GCSREF**
 rpl parameter **GCSREF**
 option of **ACCESS** command **CMSREF**
ERASE EOF key **APGDE, PRIMER**
 used to delete a line **XEDIT**
ERASE INPUT key **APGDE**
 erased lines, recovering **PRIMER**
 erasing
 a file **PRIMER**
 a reader file **PRIMER**
 CMS files **CMSUG**
 files to clear disk space
 during editing session **CMSUG**
 the rest of the line **PRIMER**
EREP PLNGDE
 file **REL5GDE**
ERROR condition of **SIGNAL** instruction **SPIREF**
ERROR keyword of **SYMP** subcommand **DIAG**
 Error Logging System Service **SFPROG**
 Compression Support enhancement
 described **REL5GDE**
 control blocks, new and changed **REL5GDE**
 described **REL5GDE**
 establishing communications with **SFPROG**
 macros, new and changed **REL5GDE**
 modules, new and changed **REL5GDE**
 overview **REL5GDE**
 references to other publications **REL5GDE**
 error messages
 and codes **SPIREF**
 displaying **XEDIT**
 editing with **DIAGNOSE** code **X'5C'** **SFPROG**
 HELP display of **XEDIT**
 3880 hardware **CPPROG**
ERROR operand
 error rate of lines **TSAFREF**
 error recording area **REL5GDE**
 records for missing interrupts **CPPROG**
 error recording cylinders, clear **SFPROG**
 error recording enhancements **REL5GDE**
 control blocks, new and changed **REL5GDE**
 described **REL5GDE**
 macros, new and changed **REL5GDE**
 modules, new and changed **REL5GDE**
ERROR subcommand of **TESTFORT** command **APGDE**
 errors
 action
 by general user **SYSMSG**
 by system operator **SYSMSG**
 codes **SPIREF, TSAFREF**
 DMSFREE CMSPROG
 DMSFRES CMSPROG
 DMSFRET CMSPROG
 DMSEXE085E EXEX2
 DMSEXE175E EXEX2
 DMSEXE255T EXEX2

command **APGDE**
 display **XEDITUG**
 in typewriter mode **XEDITUG**
 displaying by **SCRIPT CMSLOT**
 during execution of functions **SPIREF**
 from host commands **SPIREF**
 handling
 for stand-alone dumps **DIAG**
 I/O **OPGDE**
 in ISPF **APGDE**
 in SQL **APGDE**
 messages **EXEX2**
 controlling whether you receive them **CMSUG**
 DMKMSS OPGDE
 editing with **DIAGNOSE** code X'5C' **SFPROG**
 handling, controlling **CPREF**
 retrieving with **ERRORTEXT SPIREF**
 SYSXSTOR macro **PLNGDE**
 Vector Facility **APGDE**
 processing
 messages **CMSUG**
 NSL routines **CMSUG**
 OS simulation **CMSUG**
 standard label processing **CMSUG**
 recording
 and analysis for MVS guest **RGOS**
 cylinders, defining **PLNGDE**
 DASD storage requirements **PLNGDE**
 in single processor mode **RGOS**
 use of **SVC 76** by MVS and CP **RGOS**
 VM under VM **RGOS**
 VSE virtual machine **RGOS**
 recording mode
 setting for soft errors **CPREF**
 with **CPEREP** program **OPGDE**
 recovery, 3340 and 3344 **PLNGDE**
 setting the action taken **EXEX2**
 signalling **TSAFREF**
 syntax **SPIREF**
 traceback after **SPIREF**
 trapping
 See **SIGNAL** instruction
 unrecoverable tape **CPPROG**
ERRORS option of **DETAIL HELP CMSUG**
ERRORTEXT function **SPIREF**
ERRS option of **OPTION** command **CMSREF**
 escape character
 default **CMSREF**
 displaying **CMSREF**
 on typewriter terminal **XEDIT**
 setting **CMSREF**
 when not required **CMSREF**
ESCAPE operand
 of **TERMINAL** command **CPREF**
ESCAPE option
 of **EXTRACT XEDIT**
 of **QUERY XEDIT**
 of **SET CMSLOT, XEDIT**
 of **TRANSFER XEDIT**
ESD option of **ASSEMBLE** command **CMSREF**
ESD statement of **TXTLIB** member **APGDE**

ESERV command
 adding **MACRO** files
 created by **ESERV** program **CMSPROG**
 described **CMSREF, CMSPROG**
 examples **CMSPROG**
 using **CMSPROG**
 establishing
 a base register **GCSREF**
 a page migration hierarchy **CPPROG**
 communication
 DASD block I/O system service **SFPROG**
 error logging system service **SFPROG**
 message system service **SFPROG**
 programmable operator
 and **NCCF** or **NetView SFPROG**
 to **IUCV SFPROG**
 signal system service **SFPROG**
 spool system service **SFPROG**
 SNA communications links **SFPROG**
ESTAE macro **GCSREF, PLNGDE**
 asynch parameter **GCSREF**
 ct parameter **GCSREF**
 description **GCSREF**
 execute format **GCSREF**
 exit address parameter **GCSREF**
 list format **GCSREF**
 mf parameter **GCSREF**
 ov parameter **GCSREF**
 param parameter **GCSREF**
 xctl parameter **GCSREF**
ETARBCH option
 of **EXTRACT XEDIT**
 of **QUERY XEDIT**
 of **SET XEDIT**
ETMODE option
 of **EXECUPDT** command **CMSREF**
 of **EXTRACT XEDIT**
 of **QUERY XEDIT**
 of **SET XEDIT**
ETRACE PRGDE
ETRACE command **DIAG, GCSREF**
 all operand **GCSREF**
 description **GCSREF**
 dsp operand **GCSREF**
 end operand **GCSREF**
 ext operand **GCSREF**
 fre operand **GCSREF**
 get operand **GCSREF**
 group operand **GCSREF**
 gtrace operand **GCSREF**
 I/O operand **GCSREF**
 off operand **GCSREF**
 prg operand **GCSREF**
 sio operand **GCSREF**
 sss operand **GCSREF**
 svc operand **GCSREF**
 syn operand **GCSREF**
ETRACE GROUP DIAG
EUDCNTRL APGDE
EUDCOBOL APGDE
EUDEXEC2 command **APGDE**
EUROPEAN option of **DATE** function **SPIREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

EVALBLOK format **SPiREF**
 evaluating expressions **SPiREF**
 order of **SPiUG**
 using parentheses **SPiUG**
 evaluation of &DATE and &TIME **EXEX2**
 event control block (ECB) **PLNGDE**
 format **MACREF**
 exact comparison operators **SPiUG**
 exactly equal operator (=) **SPiREF**
 examine real storage
 with **DIAGNOSE** code X'04' **SFPROG**
 examining output listings
 from access method services **CMSPROG**
 examples **TERMREF**
 &BLANK **EXEX2**
 macro server loader **SRPI**
 assembler language programs **EXEX2**
 assembler server **IBMABASE SRPI**
 assignment statement **EXEX2**
 complex session **TERMREF**
 conditional statements **EXEX2**
 control words **EXEX2**
COPY command **TERMREF**
DIAGNOSE code X'08' **SFPROG**
 generating **EXEC 2** variable names **EXEX2**
 keyboard lock **TERMREF**
 labels **EXEX2**
 leading zeros **EXEX2**
 name substitution **EXEX2**
 of **IUCV** virtual machine communication **SFPROG**
 operating systems in a virtual machine
 system dump directory entry **PLNGDE**
 plus signs **EXEX2**
 programmable operator **SFPROG**
 in a distributed environment **SFPROG**
 in a local environment **SFPROG**
 in a mixed environment **SFPROG**
 programming techniques **EXEX2**
 remote 3270 addressing **PLNGDE**
SCREEN directory control statement **PLNGDE**
SVC 202 EXEX2
SYSFORM macro **PLNGDE**
SYSID macro **PLNGDE**
SYSMIH macro **PLNGDE**
SYSPLAS macro **PLNGDE**
SYSRES macro **PLNGDE**
SYSXSTOR macro **PLNGDE**
TERMINAL macro **PLNGDE**
 tokenized plist **EXEX2**
 typical session **TERMREF**
 untokenized plist **EXEX2**
 use of **SYSPAG** macro **CPPROG**
 user-defined functions **EXEX2**
 variable **EXEX2**
XEDIT subcommands **TERMREF**
 exception conditions
 saved during subroutine calls **SPiREF**
 exceptions
 embedded blanks **EXEX2**
EXEC 2 words **EXEX2**
 programming
 See program exceptions
 Exclude List
 contents **INST**
 definition **INST**
 example **INST**
 part of Program Update Tape (PUT) **INST**
EXCLUDE operand of **MONITOR** command **CPREF**

EXCLUDE **SYSIN** control statement **CMSREF**
 excluding lines from display **XEDIT**
 exclusive OR operator **SPiREF, SPiUG**
 exclusive ORing character strings together **SPiREF**
EXCP supported by **CMS/DOS CMSPROG**
EXDTE operand of **LABELDEF** command **CMSREF**
EXEC CPPROG
 action routines **SFPROG**
CMS EXEC language **SPiUG**
 command, description **CMSREF**
EXEC 2 SPiUG
 files
\$LISTIO EXEC
 created by **LISTIO** command **CMSREF**
CMS EXEC file
 created by **LISTFILE** command **CMSREF**
 executing with the **RUN** command **CMSREF**
 using **IMMCMD** from **CMSREF**
 filetype **APGDE**
 record format **CMSREF**
 used in **CMS SUG**
 loading into
 Discontiguous Shared Segment (DCSS) **CMSUG**
 storage **CMSUG**
 option
 of **LISTFILE** command **CMSREF**
 of **LISTIO** command **CMSREF**
 option of **LISTFILE** command **APGDE**
 procedures
ESERV CMSREF
 executing **CMSREF**
RUN EXEC CMSREF
 using to submit jobs
 to **CMS** batch facility **CMSUG**
 special variables
EXEC procedures
ARNGEND INST
ASMGEND INST
CMSEGEN INST
 described **INTRO**
DISKMAP INST
 entering **FILEDEF** definitions **CMSPROG**
 for **AMSERV CMSPROG**
 for **CMS** batch **CMSPROG**
 for **VSAM CMSPROG**
GENTSAP INST
 in **CMS/DOS CMSPROG**
INSTSTEP INST
ITASK INST
MVS virtual machine **RGOS**
 register contents **CMSPROG**
SNTMAP INST
SPGEN INST
SPLOAD INST
 to execute **VSE** programs **CMSPROG**
 used to regenerate
 CP/CMS modules/segments **INST**
 System Product Interpreter source **INST**
 used to update **VM/SP HPO INST**
 using **CMSPROG**
UTILITY INST
VMFASM INST
VMFLKED INST
VMFMAC INST
VMFMERGE INST
VMFNLS INST
VMFREMOV INST
VMFTXT INST

VMFZAP INST
 VMSERV INST
 VSE virtual machine RGOS
 VSEVSAM INST
 ZAPTEXT INST
EXEC 2 APGDE
 &TRACE statement CMSUG
 comparison to EXEC CMSUG
 comparison to
 System Product Interpreter CMSUG
 errors EXEX2
 file used as XEDIT macro XEDITUG
 files
 attributes CMSUG
 filename, valid character for EXEX2
 filetype EXEX2
 format CMSUG, EXEX2
 identifying EXEX2
 recursive execution EXEX2
 sample of EXEX2
 terminating EXEX2
 in CMS EXEX2
 assembler language programs EXEX2
 EXECCOMM EXEX2
 identifying EXEC 2 files EXEX2
 limits in CMS EXEX2
 XEDIT macros EXEX2
 interpreter
 as a macro processor EXEX2
 invoked EXEX2
 invoking CMSUG
 language EXEX2
 parameter lists EXEX2
 procedures, executing CMSREF
 programs
 assembler language programs EXEX2
 calling EXEX2
 EXEC 2 file EXEX2
 EXEC 2 interpreter EXEX2
 executing EXEX2
 interaction with users EXEX2
 statements
 comment EXEX2
 executable statement EXEX2
 used with System Product Editor CMSUG
EXECCOMM EXEC2, PLNGDE
FETCH EXEX2
 interface to variables SPIREF
 length limit for
 external names of shared variables EXEX2
 values assigned by EXEX2
 sharing EXEC 2 variables
 with assembler programs EXEX2
STORE EXEX2
 subcommand entry point SPIREF
EXECCOMM macro GCSREF
 description GCSREF
 reqlist parameter GCSREF
EXECDROP command
 description CMSREF, CMSUG
 discontinuing access to EXEC
 in DCSS CMSUG
 example CMSUG
 SHARED option REL5GDE
EXECFLAG byte in NUCON SPIREF
EXECIO command REL5GDE, SPIUG
 CARD option CMSREF
 CC option CMSREF
 CP option CMSREF
 description CMSREF, CMSUG
 DISKR option CMSREF
 DISKW option CMSREF
 EMSG option CMSREF
 example CMSUG
 machine code CMSREF
 PRINT option CMSREF
 options INTRO
 PUNCH option CMSREF
 STEM option CMSREF
 VAR option CMSREF
EXECLOAD command SRPI
 description CMSREF, CMSUG
 example CMSUG
 improving performance of HELP CMSUG
EXECMAP command
 description CMSREF, CMSUG
 example CMSUG
 FIFO option CMSREF
 LIFO option CMSREF
 listing EXECs in storage CMSUG
 SHARED option REL5GDE
EXECOS EXEX2
EXECOS command description CMSREF
EXECs APGDE
 arguments APGDE
 arguments to SPIREF
 calling as functions SPIREF
 CMS (conversational monitor system) APGDE
 definition of CMSLOT, PRIMER
 example of PRIMER
 EXEC 2 APGDE
 executing CMSLOT
 FILEDEF command in APGDE
 in GCS PLNGDE
 in storage
 control blocks, macros, modules, execs
 new and changed REL5GDE
 in-store execution of SPIREF
 invoking SPIREF
 ISPEXEC APGDE
 MACLIBs APGDE
 plist for SPIREF
 profile APGDE, PRIMER
 quotation marks within PRIMER
 REXX language APGDE
 compound symbols APGDE
 FILEDEF commands in APGDE
 functions APGDE
 MACLIBs in APGDE
 prototyping algorithms APGDE
 subroutines APGDE

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- substitution rules **APGDE**
- TXTLIBs in **APGDE**
- retrieving name of **SPIREF**
- running **PRIMER**
- sample **CMSLOT**
- TXTLIBs **APGDE**
- with System Product Editor **APGDE**
- EXECSTAT** command
 - description **CMSREF, CMSUG**
 - example **CMSUG**
- EXECTRAC** flag
 - external control of tracing **SPIREF**
- EXECTRAC** option
 - of **CMS QUERY** command **CMSREF**
 - of **CMS SET** command **CMSREF**
- EXECUPDT** command
 - COMMENTS** option **CMSREF**
 - COMPRESS** option **CMSREF**
 - CTL** option **CMSREF**
 - description **CMSREF**
 - ETMODE** option **CMSREF**
 - HISTORY** option **CMSREF**
 - NOCOMMENTS** option **CMSREF, REL5GDE**
 - NOCOMPRESS** option **CMSREF**
 - NOHISTORY** option **CMSREF**
 - NOSID** option **CMSREF**
 - NOUPDATE** option **CMSREF**
 - SID** option **CMSREF**
 - used with System Product interpreter
 - source programs **CMSREF**
 - using **UPDATE** options with **CMSREF**
- EXECUPDT EXEC**
 - used to regenerate
 - REXX** source **INST**
- executable statements
 - assignment statement **EXEX2**
 - assignments **EXEX2**
 - commands **EXEX2**
 - control statements **EXEX2**
 - description of **EXEX2**
 - interpreting **EXEX2**
 - null statement **EXEX2**
 - types **EXEX2**
- EXECUTE** command
 - description **CMSLOT**
 - used in **FILELIST** environment **CMSREF**
 - used in **RDRLIST** environment **CMSREF**
 - used with **COMPARE** **CMSLOT**
 - used with **COPYFILE** **CMSLOT**
 - used with **DISCARD**
 - from **FILELIST** **CMSLOT**
 - from **RDRLIST** **CMSLOT**
 - used with **PEEK** **CMSLOT**
 - used with **PRINT** **CMSLOT**
 - used with **RECEIVE** **CMSLOT**
 - used with **RENAME** **CMSLOT**
 - used with **SCRIPT** **CMSLOT**
 - used with **XEDIT** **CMSLOT**
- EXECUTE** facility of **SQL/DS** **INTRO**
- execute format **GCSREF**
- execute format (MF=(E,addr))
 - CMSIUCV** macro **SFPROG**
 - HNDIUCV** macro **SFPROG**
- executing
 - a channel program (GCS) **PLNGDE**
 - a command (status notice) **PRIMER**
 - a program **CMSLOT**
 - a subcommand **XEDITUG**
- access method services
 - in **EXEC** procedure **CMSPROG**
- command using PF keys **CMSUG**
- commands again **PRIMER**
- DOS** phases **CMSPROG**
- DSF** programs **CMSPROG**
- EXEC** procedures **CMSUG**
- immediate commands in **EXECs** **CMSUG**
- OS** program restrictions **CMSPROG**
- phases from core image **CMSPROG**
- PROFILE EXEC** **CMSUG**
- programs **CMSPROG**
 - in **CMS/DOS** **CMSPROG**
 - under **CMS** **INTRO**
 - real channel I/O **PLNGDE**
- restrictions
 - DL/I** programs in **CMS/DOS** **CMSPROG**
 - OS** programs in **CMS** **CMSPROG**
- TEXT** files **CMSPROG**
- VSAM** programs **CMSPROG**
- VSE** procedures **CMSPROG**
- execution
 - by interpreter **SPIREF**
 - characteristics
 - of **CMS** commands **CMSREF, CMSUG**
 - avored **OPGDE**
 - halting at instruction address **CPREF**
 - of data **SPIREF**
 - resuming virtual machine **CPREF**
 - stopping virtual machine **CPREF**
- execution state indicator
 - in full-screen **CMS** **CMSUG**
- executor language
 - See Restructured Extended Executor language
- exercises, practice **XEDITUG**
- existence of files, determining **MACREF**
- existing **VM** system procedure
 - adding new **CP** commands **INST**
 - assumptions **INST**
 - build new **CP** nucleus **INST**
 - complete **CUSTOMER PROFILE** **INST**
 - create new **CMS** nucleus **INST**
 - create stand-alone service utility tape **INST**
 - format new system minidisks **INST**
 - install **GCS** **INST**
 - load **IPCS** **INST**
 - load source code **INST**
 - load system **HELP** files **INST**
 - load **VM/SP** product tape **INST**
 - migration considerations **INST**
 - modify current system directory **INST**
 - planning considerations **INST**
 - preparation **INST**
 - save **CMS** **INST**
 - tailor **DMKBOX** **INST**
 - tailor **DMKFCB** **INST**
 - tailor **DMKRIO** **INST**
 - tailor **DMKSNT** **INST**
 - tailor **DMKSYS** **INST**
 - tailor **SPGEN PROFILE** **INST**
 - tailor system directory **INST**
 - update **SYSTEM NETID** file **INST**
- exit **EXECs**, programmable operator **SFPROG**
 - communication error **SFPROG**
 - PROPHCHK** **SFPROG**
 - PROPPCHK** **SFPROG**
 - interface **SFPROG**

- log error **SFPROG**
- PROPLGER SFPROG**
- exit from an EXEC 2 file **EXEX2**
- exit in GCS
 - establishing **PLNGDE**
 - machine **PLNGDE**
 - resource cleanup **PLNGDE**
 - scheduling **PLNGDE**
 - task **PLNGDE**
- EXIT** instruction **SPIREF, SPIUG**
- EXIT** operand
- exit routine processing **CMSPROG**
- EXIT/RETURN** macro (SVC 3) **CMSPROG**
- exiting from
 - editing session **CMSUG**
 - execution of a program **CMSUG**
 - terminal session **CMSUG**
- exiting the editor **XEDITUG**
 - in typewriter mode **XEDITUG**
- EXLST** macro (VSAM) **GCSREF**
 - a parameter **GCSREF**
 - address parameter **GCSREF**
 - description **GCSREF**
 - eodad parameter **GCSREF**
 - jrjad parameter **GCSREF**
 - l parameter **GCSREF**
 - lerad parameter **GCSREF**
 - n parameter **GCSREF**
 - synad parameter **GCSREF**
- EXPAND XEDITUG**
- EXPAND** command
 - format **INST**
 - function **INST**
 - object deck form **INST**
 - options **INST**
 - system response **INST**
- EXPAND** control record
 - format **INST**
 - usage notes **INST**
 - use by **ZAPTEXT INST**
- EXPAND** subcommand **XEDIT**
 - example of **XEDIT**
 - used with **COMPRESS XEDIT**
- expand macro (MF=L) **TSAFREF**
- expanded
 - storage **CPPROG**
 - virtual machine assist **CPPROG**
- Expanded Control Store **PLNGDE**
- Expanded Storage
 - See **Paging Storage**
- expanded virtual machine assist **PLNGDE**
- expanding
 - data **XEDIT**
 - tabs **XEDIT**
 - filler character used in **XEDIT**
- EXPLAIN** command of SQL **APGDE**
- exponent **SPIUG**
- exponential notation
 - definition **SPIREF**
 - description of **SPIREF, SPIUG**
 - NUMERIC DIGITS** instruction **SPIUG**
 - significant digits **SPIUG**
 - specifying **SPIUG**
 - usage **SPIREF**
- exponentiation **SPIUG**
 - definition **SPIREF**
 - operator **SPIREF, SPIUG**
- EXPORT** access method services function **CMSPROG**
- exporting VSAM data sets **CMSPROG**
- EXPOSE** keyword of **PROCEDURE** instruction **SPIUG**
- EXPOSE** option of **PROCEDURE** instruction **SPIREF**
- expressions
 - description of **SPIUG**
 - evaluating
 - order of **SPIUG**
 - using parentheses **SPIUG**
 - using the **TRACE** instruction **SPIUG**
 - evaluation **SPIREF**
 - examples **SPIREF**
 - in an assignment **SPIUG**
 - in **IF** clause **SPIUG**
 - parsing **SPIUG**
 - parsing of **SPIREF**
 - results of **SPIREF**
 - text **SPIUG**
 - tracing results of **SPIREF**
 - using parentheses **SPIUG**
 - using **TRUE** and **FALSE SPIUG**
- extcolor operand
 - of **SCREEN** command **CPREF**
- EXTEND** option of **DETAIL HELP CMSUG**
- extended
 - arbitrary character **XEDIT**
 - channel support **CPPROG, PLNGDE, REL5GDE**
 - restrictions **PLNGDE**
 - control mode **CPPROG**
 - mode **XEDIT**
 - storage **CPPROG**
 - storage key support
 - considerations **CPPROG**
 - extended key instructions **CPPROG**
 - old key instructions **CPPROG**
 - systems available on **CPPROG**
 - storage support **CPPROG**
 - page interchange techniques **CPPROG**
- extended control mode **DIAG, REL5GDE**
- setting **CPREF**
 - System/370
 - introduction **PLNGDE**
- extended control PSW description **DIAG**
- extended control registers
 - displaying **CPREF**
 - printing **CPREF**
- Extended Control-Program Support: VM/370 (ECPS)
 - See **ECPS (Extended Control-Program Support: VM/370)**
- Extended Count-Key-Data **REL5GDE**
- Extended Data Stream Support **REL5GDE**
- extended file system **PLNGDE**
- extended highlighting, defining
 - with **SET COLOR XEDITUG**
 - with **SET CTLCHAR XEDITUG**
 - with **SET RESERVED XEDITUG**
- extended-identification code **SFPROG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- extended parameter lists **APGDE**
- extended PLIST (EPLIST)
 - See **EPLIST** (extended PLIST)
- extended storage **REL5GDE**
 - general information **PLNGDE**
 - keys **REL5GDE**
 - performance **PLNGDE**
 - processor requirements **REL5GDE**
 - processors supported **PLNGDE**
 - SYSCOR** macro **PLNGDE**
 - system generation considerations **PLNGDE**
 - TEST BLOCK**
 - validating storage **PLNGDE**
- extended virtual machine assist **OPGDE**
- Extended-control program support **PLNGDE**
- extending a line **XEDIT**
- extension, virtual devices **REL5GDE**
- extensions
 - read-only
 - accessing **CMSREF**
 - editing files on **CMSREF**
 - using **CMSUG**
 - releasing **CMSREF**
- EXTENT** option
 - of **DLBL** command **CMSREF**, **CMSPROG**
 - of **DLBL** for **CMS/DOS** users **CMSREF**
 - of **LISTDS** command **CMSREF**
- extents
 - allocating on OS disks and minidisk **CMSPROG**
 - availability of **CMSPROG**
 - determining for **VSAM** functions **CMSPROG**
 - entering in **CMS/DOS** **CMSPROG**
 - information when defining
 - VSAM** master catalog **CMSPROG**
 - multiple in **CMS/DOS** **CMSPROG**
 - multiple in OS **CMSPROG**
 - multivolume **CMSPROG**
- external attribute buffer (XAB) **REL5GDE**, **SFPROG**
 - manipulation of spool file **SFPROG**
 - manipulation of virtual printer **SFPROG**
 - READ-XAB** function of **SPOOL**
 - system service **SFPROG**
- EXTERNAL** command **CMSUG**, **CPREF**, **DIAG**
 - described **CPREF**
 - operands
 - code **CPREF**
 - 40 **CPREF**
 - responses **CPREF**
 - usage notes **CPREF**
- external functions
 - See also external routines
 - description of **SPIREF**
 - interface **SPIREF**
- external interrupt
 - See also interrupt handler
 - BLIP** character **CMSPROG**
 - external console interrupt **CPPROG**
 - functions controlling **SFPROG**
 - handling **MACREF**
 - caused by **CP EXTERNAL** command **MACREF**
 - caused by **CP EXTERNAL** command **MACREF**
 - HNDXCT** macro **CMSPROG**
- in **VMCF SFPROG**
 - message header **SFPROG**
- IUCV SFPROG**
 - avoiding **SFPROG**
 - connection complete **SFPROG**
 - connection pending **SFPROG**
 - connection quiesced **SFPROG**
 - connection resumed **SFPROG**
 - connection severed **SFPROG**
 - control **SFPROG**
 - enabling or disabling **SFPROG**
 - message **SFPROG**
 - message complete **SFPROG**
 - message pending **SFPROG**
- interval timer **CPPROG**
- monitored **CPREF**
- simulated **CPREF**
- timer **CMSPROG**
- type 'X02' entry **DIAG**
- EXTERNAL** operand
 - of **TRACE** command **CPREF**
- EXTERNAL** option of **PARSE** instruction **SPIREF**
- external references, resolving **CMSPROG**
- external routine invoking **SPIREF**
- external routines
 - functions **SPIUG**
 - subroutines **SPIUG**
- external subroutines
 - interface **SPIREF**
- External Symbol Dictionary statement
 - of **TXTLIB** member **APGDE**
- external trace bit **SPIREF**
 - in **EXECFLAG** **SPIREF**
- external trace option
 - querying **TSAFREF**
- external trace records
 - formatting and displaying **DIAG**
- external tracing **GCSREF**
 - facilities, **GCS** **DIAG**
- EXTERNAL**, **CP** command **RGOS**
- EXTERNALS** function **SPIREF**
- exthilght operand
 - of **SCREEN** command **CPREF**
- EXTOPSW** (external old **PSW**) **DIAG**
- extra references
 - resolving **CMSPROG**
- EXTRACT** **XEDITUG**
- EXTRACT** macro (**SVC** 40) **CMSPROG**
- EXTRACT** subcommand **XEDIT**
 - examples of **XEDIT**
 - of **XEDIT** **SPIUG**
 - options **XEDIT**
 - with **DBCS** strings **XEDIT**
- extracting
 - a member from a **MACLIB** **CMSPROG**
 - a substring **SPIREF**
 - words
 - from a string **SPIREF**
 - from a string of words **EXEX2**
 - from other words **EXEX2**
- EXTSECT** (external interrupt work area) **DIAG**
- E3270HLD** feature
 - RDEVICE** macro **PLNGDE**

F

F border command **PRIMER**
 F prefix command **PRIMER**
 F prefix subcommand **XEDIT, XEDITUG**
 example of **XEDIT**
 of **XEDIT** command **APGDE**
 facilities, restart **OPGDE**
 FAILURE (keyword definition) **DIAG**
 failure of routes **TSAFREF**
 FAILURE output field of **STAT** command **DIAG**
 FALSE expression **SPIUG**
 fast path dispatcher
 common state **CPPROG**
 faults, MSS cylinder
 VM/SP HPO processing **CPPROG**
 favored execution option **CPPROG**
 description and usage **OPGDE**
 FAVORED operand
 of **INDICATE** command **CPREF**
 of **SET** command **CPREF, CPPROG, OPGDE**
 FAVORED option of **SET** command **INTRO**
 FAVORED, CP **SET** command **RGOS**
 FB-512
 allocating DASD space **PLNGDE**
 for directory **PLNGDE**
 alternate blocks
 minidisks **PLNGDE**
 coding **RDEVICE** macro **PLNGDE**
 DASD space requirements
 CP **PLNGDE**
 devices, determining information
 about **CPREF**
 disks **PLNGDE**
 format defective block procedure **PLNGDE**
 minidisk space allocation **PLNGDE**
 specifying in **SYSRES** macro **PLNGDE**
 FB-512 DASD
 block format **CPPROG**
 COPY restriction **CPPROG**
 device capacity **CPPROG**
 Format/Allocate program
 using the **ALLOCATE** function **CPPROG**
 using the **LABEL** function **CPPROG**
 general description **CPPROG**
 label requirements **OPGDE**
 page formatting/allocating **CPPROG**
 tape dump
 movement of data **CPPROG**
 FBA (fixed-block architecture) **CPPROG, REL5GDE**
 devices
 format for CP-owned **CPPROG**
 FBD (file block descriptor) **CMSPROG**
 FCB (file control block) **CMSPROG**
 FCB (forms control buffer) **CPPROG, CPREF**
 examples **CPPROG**
 file
 See forms control buffer file
 index feature **CPPROG**

loading **RGOS**
 3800 printer **CPPROG**
 FCB macro **CPPROG**
 FCB operand
 of **CHANGE** command **CPREF**
 of **LOADVFCB** command **CPREF**
 of **LOAFBUF** command **CPREF**
 of **RDEVICE** macro **PLNGDE**
 of **SPOOL** command **CPREF**
 of **START** command **CPREF**
 FCBTAB (file control block table) **DIAG**
 FCOBOL command **CMSPROG**
 FCODE field
 of **CONNECT** request (*IDENT) **TSAFREF**
 of **REVOKE** request (*CRM) **TSAFREF**
 of **SEND** request (*CRM) **TSAFREF**
 of **SEND** request (*IDENT) **TSAFREF**
 FDISPLAY command (IPCS) **TSAFREF**
 FDISPLAY subcommand of **DUMPSCAN** command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
 sample output **DIAG**
 usage note **DIAG**
 FEATURE operand
 of **RCTLUNIT** macro **PLNGDE**
 of **RDEVICE** macro **PLNGDE**
 of **TERMINAL** macro **PLNGDE**
 feature numbers **REL5GDE**
 general information **REL5GDE**
 feature tape, national language **SFPROG**
 object files **SFPROG**
 source files **SFPROG**
 features
 defining for a 3330V **OPGDE**
 device **SFPROG**
 keyboard lock **TERMREF**
 line timeout **TERMREF**
 processor
 Channel Indirect Data Addressing **PLNGDE**
 channel-to-channel adapter **PLNGDE**
 Data Streaming **PLNGDE**
 ECPS Expansion **PLNGDE**
 special-feature keyboards **TERMREF**
 sysvirt **OPGDE**
 two-channel Switch **PLNGDE**
 typamatic **TERMREF**
 types, models, and classes of devices
 (DIAGNOSE code X'24') **SFPROG**
 virtual **OPGDE**
 FEDFEXSW **DIAG**
 FEEDBACK command, programmable operator **SFPROG**
 feedback file **INTRO, SFPROG**
 See also programmable operator facility
 feedback variables
 calculating for paging load **CPPROG**
 FEOV macro (SVC 31) **CMSPROG**
 fetch-protected storage, not dumped **SFPROG**
 fetch storage protection **CPPROG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- FETCH** command
 COMP option **CMSREF**
 description **CMSREF**
 description of **CMSPROG**
 loading phases in **CMS/DOS CMSPROG**
 ORIGIN option **CMSREF**
 START option **CMSPROG, CMSREF**
- FETCH** statement of **SQL APGDE**
- fetch-protected storage **DIAG**
- fetching core image phases
 for execution in **CMS/DOS CMSPROG**
- FFILE** subcommand **XEDIT**
- FID** operand of **LABELDEF** command **CMSREF**
- field definition screen **APGDE**
 in **DMS/CMS APGDE**
- fields for sorting **PRIMER**
- FIFO** (first-in/first-out) **APGDE, EXEC2, SPIUG**
 option
 of **IDENTIFY** command **CMSREF**
 of **NAMEFIND** command **CMSREF**
 of **NUCXMAP** command **CMSREF**
 of **RDR** command **CMSREF**
 stacking **SPIREF**
- FILE** **APGDE, CMSLOT, XEDITUG**
 closing **SPIUG**
CMS, defining **GCSREF**
 converting to a **HELP** file **CMSUG**
 creating **SPIUG**
 directories, **CMS CMSUG**
 displaying **SPIUG**
 identifier
 changing with **SAVE** subcommand **CMSUG**
CMS, rules for assigning **CMSUG**
 coded as asterisk (*) **CMSUG**
 coded as equal sign (=) **CMSUG**
 in typewriter mode **XEDITUG**
 modifying **SPIUG**
 practice exercise using **XEDITUG**
 reading **SPIUG**
 sorting **SPIUG**
 system **CMSUG**
VSAM, defining **GCSREF**
 writing **SPIUG**
- file area in **XEDIT PRIMER**
- file area on screen **XEDITUG**
- file block descriptor (**FBD**) **CMSPROG**
- FILE** command **CMSLOT, PRIMER**
 in **FILELIST PRIMER**
- file control block (**FCB**) **CMSPROG**
- file control macros **APGDE**
- file directory information **CMSPROG**
- file identification line **XEDIT, XEDITUG**
 in **XEDIT PRIMER**
- file identifier **APGDE**
 changing
 using **FILE XEDIT**
 using **SAVE XEDIT**
 filemode, definition and use **INTRO**
 filename, definition and use **INTRO**
 filetype, definition and use **INTRO**
 in command syntax **CMSREF**
 of **AUTOSAVE** file **XEDIT**
- file label **CMSLOT, PRIMER**
- file lines, stacking **XEDIT**
- file name, type, mode of program **SPIREF**
- file operand
 of **BACKSPAC** command **CPREF**
- FILE** option of **NAMEFIND** command **CMSREF**
- file serialization **XEDIT**
- file sharing **INTRO, PLNGDE**
- FILE** spoolid operand
 of **TAG** command **CPREF**
- file status table (**FST**) **MACREF**
 creating a copy of using **FSSTATE** macro **MACREF**
- file storage **CMSLOT**
- File Storage Facility **INST**
 program offering **INTRO**
- FILE** subcommand **XEDIT, TERMREF**
 of **XEDIT** command **APGDE**
 example of use **INTRO**
 issued from a macro **XEDIT**
 to write files to disk **CMSUG**
 versus **FFILE XEDIT**
- file system **APGDE, CMSPROG**
- file system control block (**FSCB**)
 See **FSCB** (file system control block)
- file system of **CMS** **INTRO**
- file tailoring skeletons **APGDE**
- file transfer **INTRO**
- file, inserting **XEDITUG**
 in typewriter mode **XEDITUG**
- FILEBLK** **PLNGDE**
- FILEDEF** command
 ALT option **CMSREF**
 and **MACLIB** members **APGDE**
 assigning filemode numbers **CMSUG**
AUXPROC option **CMSPROG, CMSREF**
 blksize operand **GCSREF**
BLKSIZE option **CMSREF**
 block operand **GCSREF**
BLOCK option **CMSPROG, CMSREF**
BLP operand **CMSREF**
 change operand **GCSREF**
CHANGE option **CMSREF**
 clear operand **GCSREF**
CLEAR option **CMSREF**
CONCAT option **CMSREF**
 ddname operand **GCSREF**
 default definition **CMSPROG**
 default **FILEDEF** commands
 issued by assembler **CMSREF**
 definition **INTRO**
 for **MOVEFILE** command **CMSREF**
DEN option **CMSREF**
 description **GCSREF, CMSREF**
 device type, specifying **CMSPROG**
 disk operand **GCSREF**
DISK option **CMSREF**
 disp mod operand **GCSREF**
DISP MOD option **GCSREF, CMSREF**
DSORG option **CMSPROG, CMSREF**
 dsorg ps operand **GCSREF**
 dummy data set name specified **CMSPROG**
 dummy operand **GCSREF**
DUMMY option **CMSREF**
 entering file identifications **CMSPROG**
 establishing a file definition
 for a member **CMSPROG**
 example of use **INTRO, CMSREF**
 file format, specifying **CMSPROG**
GRAF option **CMSREF**
 guidelines for entering **CMSPROG**
 how to use **CMSPROG**
 in **EXECs** **APGDE**
 issued by assembler, overriding **CMSPROG**
KEYLEN option **CMSREF**

- LABOFF** operand **CMSREF**
LEAVE option **CMSREF**
LIMCT option **CMSREF**
LOWCASE option **CMSREF**
lrecl operand **GCSREF**
LRECL option **CMSREF**
MEMBER option **CMSPROG, CMSREF**
NL operand **CMSREF**
nochange operand **GCSREF**
NOCHANGE option **CMSREF**
NOEOV option **CMSREF**
NSL operand **CMSREF**
OPTCD option **CMSREF**
options **APGDE**
 AUXPROC **CMSPROG**
 BLOCK **CMSPROG**
 DISP MOD **CMSPROG**
 DSORG **CMSPROG**
 MEMBER **CMSPROG**
 PERM **CMSPROG**
 RECFM **CMSPROG**
 SYSARM **CMSPROG**
OS simulation **CMSUG**
override default file definitions **CMSPROG**
perm operand **GCSREF**
PERM option **CMSPROG, CMSREF**
positioning read/write pointer **CMSREF**
PRINTER option **CMSREF**
punch operand **GCSREF**
PUNCH option **CMSREF**
reader operand **GCSREF**
READER option **CMSREF**
recfm operand **GCSREF**
RECFM option **CMSREF**
RECFM option **CMSPROG**
SL operand **CMSREF**
standard tape labels **CMSUG**
SUL operand **CMSREF**
SYSARM option **CMSPROG, CMSREF**
tape label processing **CMSUG**
TAPn option **CMSREF**
TERMINAL option **CMSREF**
to invoke the programmable operator **SFPROG**
TRTCH option **CMSREF**
UPCASE option **CMSREF**
used with OS data sets **CMSPROG**
VOLID operand **CMSREF**
when to use (OS users) **CMSREF**
when to use in CMS/DOS **CMSREF**
XTENT option **CMSREF**
18TRACK option **CMSREF**
7TRACK option **CMSREF**
9TRACK option **CMSREF**
FILEDEF definitions
 clearing **CMSPROG, CMSREF**
 displaying **CMSREF, CMSPROG**
 making with **FILEDEF** command **CMSPROG**
FILEDEF option of CMS QUERY command **CMSREF**
FILEFCB operand
 of **START** command **CPREF**
- fileid**
 See file identifier
FILELIST
 command **APGDE, CMSLOT, PRIMER**
 APPEND option **CMSREF**
 description **CMSREF**
 DISCARD command
 used in **FILELIST** environment **CMSREF**
 example **CMSREF**
 EXECUTE command
 used in **FILELIST** environment **CMSREF**
 FILELIST option **CMSREF**
 NOFILELIST option **CMSREF**
 PROFILE option **CMSREF**
 setting defaults **CMSREF**
 option
 of **FILELIST** command **CMSREF**
 of **SENDFILE** command **CMSREF**
 used to list disk files in
 full screen environment **CMSUG**
 used to save a list of files **PRIMER**
FILELIST environment
 headings **CMSLOT**
 using **XEDIT** from **CMSLOT**
FILELIST filetype **PRIMER**
FILELIST used to save list of files to send **CMSLOT**
 filemode **APGDE, CMSLOT, CMSPROG,**
 PRIMER, XEDITUG
 changing **XEDIT**
 with **COPYFILE** command **CMSREF**
 definition and use **INTRO**
 extensions **CMSUG**
 in file identifier **CMSUG**
 letter
 establishing **CMSREF**
 replacing **CMSREF**
 letters
 assigning **CMSUG**
 when to specify for reading files **CMSUG**
 when to specify for writing files **CMSUG**
 numbers
 descriptions **CMSUG**
 when to specify **CMSUG**
 numbers, changing **CMSREF**
 of **XEDIT** macro **XEDITUG**
 specifying on **READCARD** command **CMSREF**
 specifying when receiving a file **CMSREF**
 filemode 0 **CMSUG**
 filemode 1 **CMSUG**
 filemode 2 **CMSUG**
 filemode 3 **CMSUG**
 filemode 4 **CMSUG**
 filemode 5 **CMSUG**
 filemode 6 **CMSUG**
 filenames **APGDE, CMSLOT, CMSPROG, CMSUG,**
 PRIMER
 changing **PRIMER, XEDIT**
 definition **INST**
 definition and use **INTRO**
 of **AUTOSAVE** files **PRIMER**
 of **XEDIT** macro **XEDITUG**

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of XEDIT prefix macro XEDITUG
 operand of MODMAP command DIAG
 files APGDE, CPPROG, TERMREF
 accessing APGDE
 adding lines to PRIMER
 altering external attributes CPREF
 auxiliary CMSPROG
 blocksize (BLKSIZE) CMSPROG
 changing PRIMER
 spool class of CPREF
 spool filename for CPREF
 spoolid CPREF
 closing CMSPROG, CPREF
 CMS
 erasing CMSUG
 format CMSUG
 identifiers CMSUG
 maximum number of records PLNGDE
 renaming CMSUG
 COBOL APGDE
 updating APGDE
 workfiles APGDE
 comparing PRIMER
 control file identifiers INST
 COPY APGDE
 copying PRIMER
 created by COBOL compiler APGDE
 created by FORTRAN compiler APGDE
 creating APGDE, PRIMER
 COBOL APGDE
 FORTRAN APGDE
 from DOS libraries CMSPROG
 from OS data sets CMSPROG
 or changing TERMREF
 with CMS editor CMSREF
 with COPYFILE command CMSREF
 with READCARD command CMSREF
 defining CMSPROG
 and allocating space CMSPROG
 for CMS/DOS CMSREF
 OS input and output CMSPROG
 definition of PRIMER
 deleting lines from PRIMER
 deleting records CMSPROG
 described by FSCB CMSPROG
 directory PLNGDE
 discarding after being read CMSUG
 display new name for
 after renaming CMSREF
 displaying APGDE, PRIMER
 distribution codes for CPREF
 DOS CMSPROG
 editing APGDE
 multiple APGDE, XEDIT
 erasing APGDE, PRIMER
 executing APGDE
 for a language
 object SFPROG
 source SFPROG
 format information CMSPROG
 format
 specifying on FILEDEF command CMSPROG
 FORTRAN APGDE
 updating APGDE
 handling OS data
 residing on CMS disks CMSPROG
 residing on OS disks CMSPROG
 holding CPREF
 before output processing CPREF
 from further processing CPREF
 identification CMSPROG
 identifier
 entering on FILEDEF command CMSREF
 entering on LISTDS command CMSREF
 in command syntax CMSREF
 input APGDE
 inserting records CMSPROG
 labels for PRIMER
 libraries APGDE
 listing APGDE, PRIMER
 information about CMSREF
 LISTING (FORTRAN) APGDE
 loading from virtual
 reader to disk CMSREF
 logical grouping CMSUG
 management
 CMS PLNGDE, CMSPROG
 OS/DOS PLNGDE
 VSAM PLNGDE
 manipulating CMSPROG
 manipulation using XEDIT CMSUG
 message log file PRIMER
 modifying APGDE, CMSREF
 moving from device to device CMSREF
 multiple APGDE
 multivolume identification CMSPROG
 opening CMSPROG
 OS COBOL APGDE
 OS FORTRAN APGDE
 output APGDE
 produced by ASSEMBLE command CMSPROG
 overlaying data in
 with COPYFILE command CMSREF
 packing CMSREF
 specifying fill character CMSREF
 printing APGDE
 in hexadecimal format CMSREF
 specifying number of lines
 per page CMSREF
 private CMSUG
 processing SPIUG
 creating a file SPIUG
 reading a file SPIUG
 writing a file SPIUG
 protecting PRIMER
 PTF and update files INST
 punched, restoring to disk
 with DISK LOAD command CMSREF
 with READCARD command CMSREF
 with RECEIVE command CMSREF
 punching to virtual card punch CMSREF
 purging CPREF
 reading CMSPROG
 from virtual card reader. CMSREF
 VSAM tape CMSPROG
 receiving PRIMER
 from your virtual reader CMSREF
 reclaiming CPREF
 relating to OS ddname CMSREF
 renaming CMSREF, PRIMER
 reordering closed spool files CPREF
 replacing PRIMER
 lines in
 old file with new copy CMSREF
 records CMSPROG

requesting information about **CMSUG**
 saving **APGDE, PRIMER**
 a list of **PRIMER**
 sending **PRIMER**
 more than one **PRIMER**
 sequence numbers in source files **CMSPROG**
 shared by users **CMSUG**
 sharing **PRIMER**
 size, determining **CMSPROG**
 sorting **APGDE, PRIMER**
 splitting into smaller files **CMSUG**
 spool **APGDE**
 storing of **PRIMER**
 support of OS format **CMSPROG**
 terminating processing **CPREF**
TEXT APGDE
 executing **APGDE**
TEXT (COBOL) APGDE
TEXT (FORTRAN) APGDE
 too large to edit, what to do **CMSUG**
 transferring **APGDE**
 data between
 using **GET XEDIT**
 using **PUT XEDIT**
 using **PUTD XEDIT**
 to another user **CPREF**
 with **DISK DUMP** command **CMSREF**
 transmitting **CPREF, TERMREF**
 unpack **CMSREF**
 update **APGDE**
 updating
 for a national language **SFPROG**
 verifying existence of
VSAM
 allocating **CMSPROG**
 defining **CMSPROG**
 warning log file **PRIMER**
 workfiles, **COBOL APGDE**
 writing **CMSPROG**
FILES message **TERMREF**
FILES operand of **QUERY** command **CPREF**
 filetype **APGDE, CMSLOT, PRIMER**
 attribute
 spool files **OPGDE**
 changing **XEDIT**
COBOL APGDE
COPY APGDE
 created by assembler
 and language processors **CMSUG**
 defaults according to **XEDIT**
 definition and use **INTRO**
EXEC APGDE
FORTRAN APGDE
FREEFORT APGDE
HELP facility **CMSUG**
 \$HLPABBR CMSUG
 \$HLPCMS CMSUG
 \$HLPCMSQ CMSUG
 \$HLP CMSS CMSUG
 \$HLP CP CMSUG
 \$HLP CPQU CMSUG
 \$HLP CPSE CMSUG
 \$HLP DEBU CMSUG
 \$HLP EDIT CMSUG
 \$HLP EXC2 CMSUG
 \$HLP EXEC CMSUG
 \$HLP GROU CMSUG
 \$HLP HELP CMSUG
 \$HLP IPCS CMSUG
 \$HLP MENU CMSUG
 \$HLP MSG CMSUG
 \$HLP PREF CMSUG
 \$HLP QUER CMSUG
 \$HLP PREXX CMSUG
 \$HLP SET CMSUG
 \$HLP SQLD CMSUG
 \$HLP TASK CMSUG
 \$HLP T SAF CMSUG
 \$HLP XEDI CMSUG
 HELPABBR CMSUG
 HELPCMS CMSUG
 HELPCMSQ CMSUG
 HELPCMSS CMSUG
 HELPCP CMSUG
 HELPCPQU CMSUG
 HELPCPSE CMSUG
 HELPDEBU CMSUG
 HELPEDIT CMSUG
 HELPEXC2 CMSUG
 HELPEXEC CMSUG
 HELPGROU CMSUG
 HELPHelp CMSUG
 HELPIP CS CMSUG
 HELPMENU CMSUG
 HELPMMSG CMSUG
 HELPPREF CMSUG
 HELPQUER CMSUG
 HELPPREXX CMSUG
 HELPSET CMSUG
 HELPSQLD CMSUG
 HELPTASK CMSUG
 HELPTS AF CMSUG
 HELPIXEDI CMSUG
 in file identifier **CMSUG**
LISTING CMSLOT
LKEDIT APGDE
LOADLIB APGDE
MACLIB APGDE
 compressing **APGDE**
 displaying members of **APGDE**
 examining contents of **APGDE**
 extracting a member of **APGDE**
 manipulating members of **APGDE**
 printing members of **APGDE**
 system **APGDE**
MACRO APGDE
MAP APGDE
 of **XEDIT** macro **XEDITUG**
 preferred **CMSPROG**
 program **CMSLOT**
 reserved for language processors **CMSUG**
 temporary work files **CMSUG**
TEXT CMSLOT

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- TXTLIB APGDE**
 adding members to **APGDE**
 deleting members of **APGDE**
 replacing members of **APGDE**
 used by CMS commands **CMSUG**
 used in file identification **CMSPROG**
XEDIT APGDE
- FILL** option of **COPYFILE** command **CMSREF**
FILL parameter (**APPC**)
 of **RECEIVE_AND_WAIT TSAFREF**
filler character
 defining **XEDIT**
 removed by **COMPRESS XEDIT**
- FILLER** option
 of **EXTRACT XEDIT**
 of **QUERY XEDIT**
 of **SET XEDIT**
 of **TRANSFER XEDIT**
- filtering** messages **SFPROG**
FIND function **SPIREF, SPIUG**
FIND macro (**SVC 18**) **CMSPROG**
FIND subcommand of **XEDIT** command **APGDE, XEDIT**
 example of **XEDIT**
 with **DBCS** strings **XEDIT**
- finding**
 a mismatch using **COMPARE SPIREF**
 a string in another string **SPIREF, SPIUG**
 address of **DCSS CPPROG**
 data **XEDIT**
 data, using
 a target **XEDITUG**
CLOCATE XEDITUG
CLOCATE in typewriter mode **XEDITUG**
LOCATE CMSLOT
 files in **FILELIST CMSLOT**
 phrase in a string **SPIUG**
 saved systems **SFPROG**
 text in a file **PRIMER**
 the length of a string **SPIREF**
- FINDSYS** function **SFPROG**
FINDUP subcommand of **XEDIT** command **APGDE, XEDIT**
 with **DBCS** strings **XEDIT**
- FINIS** command **SPIUG**
 described **CMSREF**
- first in/first out**
 See **FIFO**
- first level installation INST**
first-level storage CPPROG
 requesting **CPREF**
- first-level VM system**
 defining **RGOS**
 directory entry **RGOS**
 issuing **CP** commands to **RGOS**
 spooling **RGOS**
- firstpage** operand
 of **LOCK** command **CPREF**
 of **UNLOCK** command **CPREF**
- fix-in-error, remove INST**
fix, bad, remove INST
Fixed-Block-Architecture REL5GDE
fixed head feature
RDEVICE macro **PLNGDE**
fixed packed record format XEDIT
fixed point number
 description of **SPIUG**
 specifying **SPIUG**
fixed record format XEDIT
- fixed-head preferred paging area**
 migration **CPPROG**
- fixed-length files**
 converting to variable-length **CMSREF**
- fixed-length record, description INTRO**
- fixing**
 system problems **INTRO**
 typing mistakes **PRIMER**
- FIXUP** command **APGDE**
FIXUP subcommand of **TESTFORT** command **APGDE**
- FLAG** field
 of **CONNECT** request (***IDENT**) **TSAFREF**
FLAG option of **ASSEMBLE** command **CMSREF**
- FLASH** name operand
 of **CHANGE** command **CPREF**
 of **SPOOL** command **CPREF**
- FLASH** operand
 of **CHANGE** command **CPREF**
 of **START** command **CPREF**
- flashing (forms overlay)**
 3800 printer **CPPROG**
- FLOAT** data type in **SQL**
COBOL APGDE
FORTRAN APGDE
- floating-point number**
 description of **SPIUG**
 specifying **SPIUG**
- floating-point registers**
 changing **CPREF**
 displaying **CPREF**
 printing **CPREF**
- flow control**
 abnormal, with **SIGNAL SPIREF**
 with **CALL/RETURN SPIREF**
 with **DO** construct **SPIREF**
 with **IF** construct **SPIREF**
 with **SELECT** construct **SPIREF**
- FLS** macro **GCSREF**
 description **GCSREF**
- FLSCREN** option
 of **EXTRACT XEDIT**
- FLSCTB DIAG**
FLSF INST
- FLUSH** command **CMSUG, CPREF, INTRO**
 described **CPREF**
 operands
ALL CPREF
HOLD CPREF
lprt CPREF
raddr CPREF
 responses **CPREF**
 usage notes **CPREF**
- flush list CPPROG**
 management **CPPROG**
- FLUSHLIST REL5GDE**
FLUSHLST CPPROG
- fm** operand of **DUMPSCAN** command **DIAG**
- FMODE** option
 of **EXTRACT XEDIT**
 of **LISTFILE** command **CMSREF**
 of **QUERY XEDIT**
 of **SET XEDIT**
 of **TRANSFER XEDIT**
- fn** described **CPREF**
fn ft **fm** used to represent file identifier **CMSREF**
- FNAME** option
 of **EXTRACT XEDIT**
 of **LISTFILE** command **CMSREF**

- of QUERY XEDIT
- of SET XEDIT
- of TRANSFER XEDIT
- FOB (font offset buffer) CPREF, CPPROG
 - altering PLNGDE
 - updating INST
 - for 3289 Model 4 printer
 - adding CPPROG
 - purpose of CPPROG
- FOB macro CPPROG
- FOBCCW macro CPPROG
- FOLD operand
 - of LOADBUF command CPREF
- following line as destination XEDIT
- following virtual machine activity CPREF
- Font Library Service Facility INST
- font offset buffer .
 - See FOB (font offset buffer)
- for * command
- FOR operand
 - of MONITOR command CPREF
 - of SPOOL command CPREF
- FOR operand of CP SPOOL command, usage CMSUG
- for operand of TRACE subcommand DIAG
- FOR option of COPYFILE command CMSREF
- FOR phrase of DO instruction SPIREF
- FORCE command CMSUG, CPPROG, CPREF,
- INTRO
 - described CPREF
 - operands
 - userid CPREF
 - responses CPREF
 - usage notes CPREF
- FORCE operand
 - of PURGE command CPREF
 - of VARY command CPREF
- force start CPPROG
- VM/SP HPO OPGDE
- forcing
 - logoff CPREF
 - output to be single spaced CPREF
- forecasting INTRO
- foreign languages
 - See National Language Support (NLS)
- FOREVER repetitor on DO instruction SPIREF
- FORM form operand
 - of CHANGE command CPREF
 - of CLOSE command CPREF
 - of ORDER command CPREF
 - of PURGE command CPREF
 - of QUERY command CPREF
 - of SPOOL command CPREF
 - of TRANSFER command CPREF
- FORM operand
 - of ORDER command CPREF
 - of PURGE command CPREF
 - of QUERY command CPREF
 - of SPTAPE command CPREF
 - of START command CPREF
 - of TRANSFER command CPREF
- FORM option of NUMERIC instruction SPIREF
- form width codes PLNGDE
- FORMAT command PLNGDE
 - command
 - BLKSIZE option CMSREF
 - description CMSREF
 - examples CMSREF
 - LABEL option CMSREF
 - NOERASE option CMSREF
 - performance considerations CMSREF
 - RECOMP option CMSREF
 - selecting appropriate blocksize CMSREF
 - new and changed modules REL5GDE
 - option
 - of LISTDS command CMSREF
 - of LISTFILE command CMSREF
 - subcommand
- FORMAT command to format a CMS disk CMSUG
- FORMAT control statement CPPROG
- format defective block procedure
 - FB-512 disks PLNGDE
- FORMAT function SPIREF, SPIUG
- format of DIAGNOSE instruction SFPROG
- format operand of TRACE subcommand DIAG
- FORMAT option of DETAIL HELP CMSUG
- FORMAT subcommand of TRAPRED command DIAG
- FORMAT vmttype operand
 - of VMDUMP command CPREF
- format words
 - .BX (BOX) CMSUG
 - .CM (COMMENT) CMSUG
 - .CS (CONDITIONAL SECTION) CMSUG
 - .FO (FORMAT MODE) CMSUG
 - .IL (INDENT LINE) CMSUG
 - .IN (INDENT) CMSUG
 - .MT (MENU TYPE) CMSUG
 - .OF (OFFSET) CMSUG
 - .SP (SPACE LINES) CMSUG
 - .TR (TRANSLATE CHARACTER) CMSUG
 - summary CMSUG
- format-mode, processing CMSUG
- format/allocate
 - 3880 CPPROG
- Format/Allocate program INST
 - ALLOCATE control statement CPPROG
 - card input CPPROG
 - console input CPPROG
 - control statements CPPROG
 - creating stand-alone version on disk INST
 - creating stand-alone version on tape INST
 - described CPPROG
 - example of program execution CPPROG
 - FORMAT control statement CPPROG
 - formatting minidisks PLNGDE
 - LABEL control statement CPPROG
 - updating INST
- format/allocate VM under VM session RGOS
- formats
 - CP disk CPPROG
 - DASD INST
 - existing VM system procedure
 - new system minidisks INST
 - for all cylinders
 - except cylinder zero CPPROG

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- for CP-owned CKD devices **CPPROG**
 - for CP-owned FBA devices **CPPROG**
 - for cylinder zero **CPPROG**
 - messages **SYSMSG**
 - identifier **SYSMSG**
 - text **SYSMSG**
 - minidisks
 - existing VM system procedure **INST**
 - of commands, interpreting **PRIMER**
 - of cylinder zero **CPPROG**
 - of cylinders for use by CP **CPPROG**
 - of user identification card **OPGDE**
 - starter system procedure
 - DASD INST**
 - remaining base CP minidisks **INST**
 - formatted device capacity **CPPROG**
 - formatting
 - a file
 - and displaying **CMSLOT**
 - and printing **CMSLOT**
 - using Script for **CMSLOT**
 - and allocating volumes needed for program
 - product installation **INST**
 - and printing documents **INTRO**
 - CMS disks, example **CMSUG**
 - count-key-data DASD **CPPROG**
 - disk **CPPROG**
 - FB-512 DASD **CPPROG**
 - files **CMSPROG**
 - minidisks **INTRO**
 - numbers for display **SPIREF**
 - numbers with TRUNC **SPIREF**
 - of output during tracing **SPIREF**
 - OS and DOS disks **CMSPROG**
 - output
 - lining up numbers **SPIUG**
 - putting in columns **SPIUG**
 - temporary disks **CMSPROG**
 - text centering **SPIREF**
 - text justification **SPIREF**
 - text left justification **SPIREF**
 - text right justification **SPIREF**
 - text spacing **SPIREF**
 - trace records **TSAFREF**
 - volumes
 - general information **CPPROG**
 - formatting conventions for macros **GCSREF**
 - forms control
 - description for 3800 printer **OPGDE**
 - supplied with starter systems **PLNGDE**
 - Forms control buffer (FCB)
 - See FCB (Forms control buffer)
 - forms control buffer file
 - description **INST**
 - tailoring considerations
 - existing VM system procedure **INST**
 - Starter System procedure **INST**
 - updating **INST**
 - forms controls for a virtual printer
 - specifying **CPREF**
 - forms overlay
 - description for 3800 printer **OPGDE**
 - forms overlay (flashing)
 - 3800 printer **CPPROG**
 - formula for calculating
 - feedback variables for paging load **CPPROG**
 - Formula 1
 - calculating available real storage **PLNGDE**
 - Formula 2
 - calculating maximum size of
 - virtual = real area **PLNGDE**
 - FORTRAN CMSLOT, INTRO, PRIMER**
 - and ISPF **APGDE**
 - compilers **APGDE**
 - VS FORTRAN **APGDE**
 - VS FORTRAN Version 2 **APGDE**
 - compiling **APGDE**
 - ddnames in **APGDE**
 - filetype **APGDE**
 - tab settings **APGDE**
 - FORTRAN IV G1 compiler**
 - and ISPF **APGDE**
 - INCLUDE** statement of SQL **APGDE**
 - interactive debug **APGDE**
 - main variables (exceptions) **APGDE**
 - OS FORTRAN files **APGDE**
 - SQL
 - data types **APGDE**
 - invoking **APGDE**
 - preprocessor **APGDE**
 - SQL commands **APGDE**
 - updating source files **APGDE**
 - using the VM/SP HPO Vector Facility **APGDE**
 - Utilities **INST**
 - VS FORTRAN interactive debug **APGDE**
 - VS FORTRAN Version2 Compiler **APGDE**
 - FORTRAN Interactive Debug INTRO**
 - FORTRAN IV**
 - compiling programs under CMS **PLNGDE**
 - FORTRAN IV G1 compiler APGDE**
 - and ISPF **APGDE**
 - FORTVS command CMSLOT, PRIMER**
 - FORTVS2 command APGDE**
 - forward
 - moving the line pointer **XEDIT**
 - scrolling in **XEDIT PRIMER**
 - search **XEDITUG**
 - FORWARD XEDITUG**
 - FORWARD** command of DMS/CMS **APGDE**
 - FORWARD** subcommand of **XEDIT** command **APGDE, XEDIT**
 - assigned to PF key **XEDIT**
- four-channel switch
 - DASD sharing with MVS guest **RGOS**
 - DASD sharing with VSE guest **RGOS**
 - RDEVICE macro **PLNGDE**
- FPRLOG** (floating-point registers) field **DIAG**
- frame **INTRO**
- frames
 - page, unlocking those
 - previously locked **CPREF**
 - reserve page
 - for multiple users **CPREF**
- free chain element format **CMSPROG**
- FREE** command **CMSUG, CPREF**
 - described **CPREF**
- operands
 - ALL CPREF**
 - PRINTER CPREF**
 - PUNCH CPREF**
 - userid **CPREF**
- operator use **INTRO**
- responses **CPREF**
- free list **CPPROG**
 - replenishment **CPPROG**

- FREE** operand
of NETWORK command **CPREF**
of QUERY command **CPREF**
of SYSCOR macro **PLNGDE**
- FREE** option of LISTDS command **CMSREF**
- free** storage
alignment **CPPROG**
allocation
using SYSCOR macro to control **CPPROG**
DMSFREE macro **CMSPROG**
GETMAIN macro **CMSPROG**
lock **CPPROG**
management **REL5GDE**
improvements **REL5GDE**
managing **CMSPROG**
nucleus **CMSPROG**
permanently allocated for CP **PLNGDE**
release
monitored in CP internal trace table **CPREF**
requests
monitored in CP internal trace table **CPREF**
requirements when using
shadow tables **RGOS**
subpools **CPPROG**
user **CMSPROG**
- FREEDBUF** macro (SVC 56) **CMSPROG**
- FREEFORT** file
renumbering **XEDIT**
- FREEFORT** filetype **APGDE**
tab settings **APGDE**
- FREELIST** **CPPROG, REL5GDE**
- FREELOWE** **CMSPROG**
- FREEMAIN** macro (SVC 5) **CMSPROG, GCSREF, PLNGDE**
a parameter **GCSREF**
description **GCSREF**
e parameter **GCSREF**
eu parameter **GCSREF**
execute format **GCSREF**
list format **GCSREF**
lv parameter **GCSREF**
mf parameter **GCSREF**
r parameter **GCSREF**
rc parameter **GCSREF**
releasing storage **CMSPROG**
ru parameter **GCSREF**
sp parameter **GCSREF**
v parameter **GCSREF**
vu parameter **GCSREF**
- Freemain via SVC (type X'09') entry **DIAG**
- FREESAVE** **DIAG**
- FREETAB** storage table **CMSPROG**
- FREWORK** (DMKFRE and DMKFRT save area) **DIAG**
- FRERESPG** **CMSPROG**
- FRLABEL** option of COPYFILE command **CMSREF**
- FROM** clause of SQL **APGDE**
- FROM** operand
of DETACH command **CPREF**
of MONITOR command **CPREF**
of NETWORK command **CPREF**
of TRACE subcommand **DIAG**
of TRANSFER command **CPREF**
- FROM** option
of COPYFILE command **CMSREF**
of GENMOD command **CMSREF**
of PER command **CPREF**
- fromhexloc** operand
of CHAIN subcommand **DIAG**
of LOCATE (UP) subcommand **DIAG**
- fromloc** operand of TRACE subcommand **DIAG**
- FSCB** (file system control block) **APGDE**
creating **CMSPROG**
fields defined **CMSPROG**
format of **CMSPROG**
modifying for read/write operations **CMSPROG**
using **CMSPROG**
with I/O macros **CMSPROG**
- FSCB** macro **APGDE**
See also **MACREF**
BSIZE operand **MACREF**
BUFFER operand **MACREF**
creating **CMSPROG, MACREF**
description of **CMSPROG**
file system control block **MACREF**
FORM = operand **MACREF**
multiple **FSCBs** **MACREF**
NOREC operand **MACREF**
RECFM operand **MACREF**
RECNO operand **MACREF**
- FSCBD** macro **APGDE**
See also **MACREF**
description of **CMSPROG**
DSECT
for file system control block **MACREF**
generating **DSECT** for **FSCB** **CMSPROG**
macro expansion **MACREF**
- FSCLOSE** macro **APGDE**
See also **MACREF**
closing open files **MACREF**
description of **CMSPROG**
ERROR = operand **MACREF**
example **CMSPROG**
FSCB operand **MACREF**
- FSEQ** operand of LABELDEF command **CMSREF**
- FSERASE** macro **APGDE**
See also **MACREF**
deleting CMS disk files **MACREF**
description of **CMSPROG**
ERROR = operand **MACREF**
FSCB operand **MACREF**
usage **CMSPROG**
- FSFADMIN** **INST**
- FSFCNTRL** **INST**
- FSOPEN** macro **APGDE, CMSPROG**
See also **MACREF**
ERROR = operand **MACREF**
FORM = E operand **MACREF**
FSCB macro options on **FSOPEN** macro **MACREF**
FSCB operand **MACREF**
readying files for input or output **MACREF**
- FSPOINT** macro **APGDE, CMSPROG**
See also **MACREF**
ERROR = operand **MACREF**
FORM = E operand **MACREF**

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- FSCB operand MACREF**
RDPNT operand MACREF
 resetting write and read pointers **MACREF**
WRPNT operand MACREF
FSREAD macro APGDE
 See also **MACREF**
 description of **CMSPROG**
ERROR= operand MACREF
 example **CMSPROG**
FORM=E operand MACREF
FSCB macro options on FSREAD macro MACREF
FSCB operand MACREF
 reading disk files **CMSPROG**
 reading records
 from CMS disk file to I/O buffer **MACREF**
FSSTATE macro APGDE, CMSPROG
 See also **MACREF**
 creating a copy of file status table **MACREF**
 determining existence of files **MACREF**
ERROR= operand MACREF
FORM=E operand MACREF
FSCB operand MACREF
FST (file status table) CMSPROG, MACREF
 creating a copy of using **FSSTATE macro MACREF**
FSWRITE macro APGDE
 See also **MACREF**
 description of **CMSPROG**
ERROR= operand MACREF
 example **CMSPROG**
FORM=E operand MACREF
FSCB macro options on FSWRITE macro MACREF
FSCB operand MACREF
 update-in-place facility **MACREF**
 updating existing files
 of variable-length records **MACREF**
 writing disk files **CMSPROG**
 writing records
 from I/O buffer to CMS disk file **MACREF**
- ft
- described **CPREF**
FTCLOSE APGDE
FTERASE APGDE
FTINCL APGDE
FTOPEN APGDE
FTYPE option
 of **EXTRACT XEDIT**
 of **LISTFILE command CMSREF**
 of **QUERY XEDIT**
 of **SET XEDIT**
 of **TRANSFER XEDIT**
Full American National Standard
Common Business Oriented Language (COBOL)
 See **COBOL**
 full disk during editing session **CMSUG**
 full screen display
 with System Product Editor **CMSUG**
 full screen menus **SPIUG**
 full-screen CMS **CMSUG, REL5GDE**
 border commands **CMSUG**
 entering commands from the screen **CMSUG**
 location information **CMSUG**
 maximizing windows **CMSUG**
 messages **CMSUG**
 PA and PF keys
 Backward **CMSUG**
 Clear Top **CMSUG**
 Cursor **CMSUG**
 Filelist **CMSUG**
 Forward **CMSUG**
 Help **CMSUG**
 Left **CMSUG**
 Pop Msg **CMSUG**
 Quit **CMSUG**
 Rdrlst **CMSUG**
 Retrieve **CMSUG**
 Right **CMSUG**
 PA1 key **CMSUG**
 physical screen characteristics
 command line **CMSUG**
 location information **CMSUG**
 PF key definition area **CMSUG**
 scrollable data area **CMSUG**
 status area **CMSUG**
 title line **CMSUG**
 positioning windows **CMSUG**
 restoring windows **CMSUG**
 setting the reserved line **CMSUG**
 setting window borders **CMSUG**
 sizing windows **CMSUG**
 starting **PRIMER**
 status information **CMSUG**
 status notices
 enter a command
 or press a PA or PF key **CMSUG**
 enter your response
 in vscreen vname **CMSUG**
 executing a command **CMSUG**
 press ENTER to view more data **CMSUG**
 scroll forward for more information
 in vscreen vname **CMSUG**
 suspending **PRIMER**
 system-defined windows
 and virtual screens **CMSUG**
 using **CMSUG, PRIMER**
 full-screen console service **CMSPROG**
 full-screen display **TERMREF**
 full-screen editing **INTRO**
 full-screen mode **XEDITUG**
 editing in **XEDIT**
 HELP facility **INTRO**
 full-volume minidisks
 initializing with **DSF RGOS**
 FULLREAD option
 of **CMS QUERY command CMSREF, XEDIT**
 of **CMS SET command CMSREF, XEDIT**
 of **EXTRACT XEDIT**
 FULLSCREEN option
 of **CMS QUERY command CMSREF**
 of **CMS SET command CMSREF**
 function call **SPIUG**
 function complete interrupt **TSAFREF**
 multiple **TSAFREF**
 RECEIVE TSAFREF
 SENDCNF TSAFREF
 SENDDATA TSAFREF
 SENDERR TSAFREF
 function completion
 ACCEPT TSAFREF
 CONNECT TSAFREF
 DCLBFR TSAFREF
 DESCRIBE TSAFREF
 QUERY TSAFREF
 RECEIVE TSAFREF
 RTRVBFR TSAFREF
 SENDCNF TSAFREF
 SENDCNFD TSAFREF

SENDDATA TSAFREF
 SENDERR TSAFREF
 SENDREQ TSAFREF
 SETCMASK TSAFREF
 SETMASK TSAFREF
 SEVER TSAFREF
 TESTCMPL TSAFREF
 TESTMSG TSAFREF
 function control statements
 DDR (DASD Dump Restore)
 COPY CPPROG
 description CPPROG
 DUMP CPPROG
 PRINT CPPROG
 RESTORE CPPROG
 TYPE CPPROG
 of DDR (DASD Dump Restore)
 description CPPROG
 function id
 in CPRB
 field CRBFID, layout SRPI
 when SENDREQ issued SRPI
 fields used on entry to server SRPI
 in definition of service function SRPI
 in GETREQ subcommand SRPI
 loading, in sample program SRPI
 return code 1550(060E) SRPI
 function invocation
 predefined function EXEX2
 user-defined functions EXEX2
 function keys TERMREF
 PC, IBM TERMREF
 function pools of ISPF APGDE
 function trace option in ISPF APGDE
 function types, CP command CMSUG
 function, built-in
 See built-in functions
 functional descriptions
 of IUCV macro parameters SFPROG
 functions
 ABBREV SPIUG
 ARG SPIUG
 arguments for SPIUG
 built-in SPIREF, SPIUG
 calling EXECs as SPIREF
 COMPARE SPIUG
 COPIES SPIUG
 DATATYPE SPIUG
 DELWORD SPIUG
 description of SPIREF, SPIUG
 differences with subroutines SPIUG
 example of SPIUG
 external SPIREF, SPIUG
 external interface SPIREF
 external packages SPIREF
 FIND SPIUG
 for VM/SP information SPIREF
 forcing built-in or
 external reference SPIREF
 FORMAT SPIUG
 HALF SPIUG
 INDEX SPIUG
 internal SPIREF, SPIUG
 invocation of SPIREF
 LASTPOS SPIUG
 LEFT SPIUG
 LENGTH SPIUG
 MAX SPIUG
 numeric arguments of SPIREF
 OVERLAY SPIUG
 POS SPIUG
 predefined EXEX2
 RANDOM SPIUG
 return from SPIREF
 returning from SPIUG
 search order SPIUG
 SIGN SPIUG
 similarities with subroutines SPIUG
 SNA SFPROG
 SOURCELINE SPIUG
 SUBSTR SPIUG
 SUBWORD SPIUG
 SYMBOL SPIUG
 TRANSLATE SPIUG
 TRUNC SPIUG
 user-defined EXEX2
 user-written SPIUG
 using the ARG instruction SPIUG
 VALUE SPIUG
 variables in SPIREF
 VERIFY SPIUG
 WORD SPIUG
 WORDINDEX SPIUG
 WORDLENGTH SPIUG
 WORDS SPIUG
 written in Assembler language SPIUG
 FUNCTN field DIAG
 FUNCTN output field of STAT command DIAG
 FUZZ
 controlling numeric comparison SPIREF
 option of NUMERIC instruction SPIREF
 FUZZ option
 of NUMERIC instruction SPIUG
 fuzzy arithmetical comparison SPIUG

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

G

G subcommand of DUMPSCAN command

description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
 sample output **DIAG**
 usage **DIAG**

GREG1" event-type of
 PER command **CPREF**

GASP **INST**

GCS (group control system) **GCSREF**, **CPPROG**,
TERMREF, **PLNGDE**, **REL5GDE**

abend codes **SYSMSG**
 action for **SYSMSG**
 codes **SYSMSG**
 problem determination **SYSMSG**
 reason for **SYSMSG**
 user action **SYSMSG**

abend message **DIAG**

abends **DIAG**, **PRGDE**

access to **PLNGDE**

accessing other shared segments **INST**

administration

authorizing access to GCS **PLNGDE**
 authorizing commands **PLNGDE**
 authorizing for real I/O **PLNGDE**
 making VSAM available **PLNGDE**
 setting up a PROFILE GCS **PLNGDE**
 using AUTOLOG functions **PLNGDE**

alternate nucleus placement **INST**

and the programmable operator facility **SFPROG**

applications **PLNGDE**

at a glance **GCSREF**

authorized userids **INST**

build nucleus

after loading national language files **INST**
 existing VM system procedure **INST**
 SPGEN EXEC procedure **INST**
 Starter System procedure **INST**
 VMFLOAD command procedure **INST**

building **PLNGDE**

commands **INTRO**, **PLNGDE**, **GCSREF**

ACCESS GCSREF
DLBL GCSREF
ETRACE GCSREF
FILEDEF GCSREF
FILEDEF GCSREF
format GCSREF
GDUMP GCSREF
GLOBAL GCSREF
halting GCSREF
HX GCSREF
ITRACE GCSREF
LOADCMD GCSREF
OSRUN GCSREF
QUERY GCSREF
RELEASE GCSREF
REPLY GCSREF
SET GCSREF

common dump receiver **INST**

configuration file **DIAG**

authorized userids **INST**

common dump receiver **INST**

maximum virtual machines **INST**

planning **INST**

recovery machine **INST**

shared segments **INST**

system disk **INST**

system disk extension **INST**

system ID **INST**

system name **INST**

trace table size **INST**

console and command support **PLNGDE**

corrective service procedure **INST**

data management services **PLNGDE**

debugging

See GCS debugging

defined **GCSREF**

definition **GCSREF**

description **INST**

dumps **INTRO**

analyzing **DIAG**

initiating **DIAG**

environment **SPIREF**

existing VM system procedure

allocate DASD volume **INST**

designate volume as CP-owned **INST**

format DASD volume **INST**

load interface code **INST**

load object code **INST**

external trace table formatted entries, examples

entry type X'0A' **DIAG**

entry type X'0B' **DIAG**

entry type X'0C' **DIAG**

entry type X'0E' **DIAG**

entry type X'02' **DIAG**

entry type X'03' **DIAG**

entry type X'05' **DIAG**

entry type X'08' **DIAG**

entry type X'09' **DIAG**

filetype used in CMS **CMSUG**

general description **INST**

GLOBAL command **REL5GDE**

listing CMS load libraries **REL5GDE**

GROUP EXEC

planning configuration file entries **INST**

immediate commands **GCSREF**

install

Starter System procedure **INST**

installing **INTRO**

multiple GCS systems **INST**

internal trace table **DIAG**

formats (See GCS internal trace table
 formats)

introduction **PLNGDE**, **GCSREF**

introductory description **INTRO**

IUCV support enhancement **REL5GDE**

load interface code from product tape

existing VM system procedure **INST**

Starter System procedure **INST**

load map (GCSNUC MAP) **DIAG**

load object code from product tape

existing VM system procedure **INST**

Starter System procedure **INST**

loading national language files

from feature tape **INST**

loadlist

modified when building nucleus **INST**

- macro instruction formats **GCSREF**
- macros **TSAFREF**
- maximum virtual machines in group **INST**
- multitasking services **PLNGDE**
- national language files, saving **SFPROG**
- native services **PLNGDE**
- nucleus
 - alternate placement **INST**
 - building after loading
 - national language files **INST**
- OS services **PLNGDE**
- plan
 - configuration file **INST**
 - storage requirements **INST**
 - system directory entry **INST**
 - system name table entry **INST**
- planning for **PLNGDE**
- preventive service procedure **INST**
- profile **INTRO**
- program management **PLNGDE**
- recovery machine **INST**
- references to other publications **REL5GDE**
- relation to CMS **PLNGDE**
- service
 - corrective **INST**
 - preventive **INST**
- serviceability enhancements **REL5GDE**
 - APPC/VM trace support **REL5GDE**
 - dump services **REL5GDE**
 - QUERY command **REL5GDE**
 - recursive DUMP/ABEND **REL5GDE**
 - TRACE command **REL5GDE**
- specific purpose **GCSREF**
- starter system procedure
 - build GCS nucleus **INST**
 - load GCS code from product tape **INST**
- starting a session **INTRO**
- storage
 - (See GCS storage)
- supervisor **PLNGDE**
- system directory entry
 - planning **INST**
- system disk **INST**
- system disk extension **INST**
- system ID **INST**
- system name **INST**
- system name table entry
 - planning **INST**
- tasks
 - adding and discarding subtasks **PLNGDE**
 - coordination **PLNGDE**
 - defined **PLNGDE**
 - dispatching **PLNGDE**
 - exit routines **PLNGDE**
 - priority **PLNGDE**
 - resource sharing **PLNGDE**
 - termination **PLNGDE**
- timer management **PLNGDE**
- trace table **INST**
 - size **PLNGDE**
- userid directory entry **PLNGDE**
- virtual machine group **INTRO**
- virtual storage layout **PLNGDE**
- GCS debugging
 - dumping facilities **DIAG**
 - common dump receiver **DIAG**
 - how to initiate dumps **DIAG**
 - rules of authorization **DIAG**
 - external tracing facilities **DIAG**
 - CPTRAP command **DIAG**
 - displaying external trace records **DIAG**
 - ETTRACE command **DIAG**
 - ETTRACE GROUP **DIAG**
 - external trace table formatted entries
 - examples **DIAG**
 - formatting external trace records **DIAG**
 - interactive debug support **DIAG**
 - analyzing dumps **DIAG**
 - CP commands **DIAG**
 - dumping VSAM information **DIAG**
 - internal tracing facilities **DIAG**
 - GTRACE macro **DIAG**
 - internal trace table formats **DIAG**
 - ITRACE command **DIAG**
- GCS dump option of PRTDUMP command **DIAG**
- GCS internal trace table formats
 - GTRACE entries **DIAG**
 - GTRACE (type X'0E') **DIAG**
 - header1 **DIAG**
 - header2 **DIAG**
 - how to look at entries **DIAG**
 - supervisor entries **DIAG**
 - APPC/VM synchronous event (type X'0C') **DIAG**
 - branch entry Freemain (type X'0B') **DIAG**
 - branch entry Getmain (type X'0A') **DIAG**
 - dispatcher (type X'01') **DIAG**
 - external interrupt (type X'02') **DIAG**
 - Freemain via SVC (type X'09') **DIAG**
 - Getmain via SVC (type X'08') **DIAG**
 - header1 **DIAG**
 - I/O interrupt (type X'03') **DIAG**
 - IUCV signal system service (type X'07') **DIAG**
 - program interrupt (type X'04') **DIAG**
 - SIO (type X'06') **DIAG**
 - SVC interrupt (type X'05') **DIAG**
- GCS storage
 - common storage **PLNGDE**
 - dump **PLNGDE**
 - ABEND with DUMP option **PLNGDE**
 - fetch-protected **PLNGDE**
 - key **PLNGDE**
 - changing **PLNGDE**
 - layout in a group **PLNGDE**
 - management **PLNGDE**
 - obtaining **PLNGDE**
 - private storage **PLNGDE**
 - protecting **PLNGDE**
 - protection key
 - requirements **PLNGDE, INST**
 - securing pages of **PLNGDE**
- GCSIPCS MAP **DIAG**
- GCSLEVEL macro **GCSREF**
 - description **GCSREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- GCSLOAD EXEC
modified when building GCS nucleus **INST**
- GCSNUC MAP **DIAG**
- GDDM (Graphical Data Display Manager) **INTRO**
to load character sets **XEDIT**
- GDDM-IMD **INST**
- GDDM-PGF **INST**
- GDDM-PGF NL **INST**
- GDDM/VM **INST**
- GDDM/VM NL **INST**
- GDQF **INST**
- GDUMP command **DIAG, GCSREF**
description **GCSREF**
dss operand **GCSREF**
format operand **GCSREF**
hexloc operand **GCSREF**
to operand **GCSREF**
- GEN function of TXTLIB command **APGDE**
- GEN option of MACLIB command **CMSREF**
- GEN parameter of MACLIB command **APGDE**
- GENCB macro (VSAM) **GCSREF**
a parameter **GCSREF**
acb parameter **GCSREF**
address parameter **GCSREF**
am parameter **GCSREF**
area parameter **GCSREF**
arealen parameter **GCSREF**
arg parameter **GCSREF**
blk parameter **GCSREF**
bufnd parameter **GCSREF**
bufni parameter **GCSREF**
bufsp parameter **GCSREF**
copies parameter **GCSREF**
ddname parameter **GCSREF**
description **GCSREF**
ecb parameter **GCSREF**
eodad parameter **GCSREF**
exlst parameter **GCSREF**
generate an ACB at execution time **GCSREF**
generate an exit list at execution time **GCSREF**
generate an RPL at execution time **GCSREF**
jrnad parameter **GCSREF**
keylen parameter **GCSREF**
l parameter **GCSREF**
length parameter **GCSREF**
lerad parameter **GCSREF**
macrf parameter **GCSREF**
marea parameter **GCSREF**
mlen parameter **GCSREF**
n parameter **GCSREF**
nxtrpl parameter **GCSREF**
operand notation **GCSREF**
optcd parameter **GCSREF**
passwd parameter **GCSREF**
reclen parameter **GCSREF**
strno parameter **GCSREF**
synad parameter **GCSREF**
warea parameter **GCSREF**
- GENDIRT command
creating auxiliary directories **CMSPROG**
described **CMSREF**
format of **CMSPROG**
- GENEND macro for 3704/3705 control program **INST**
general command **INTRO**
- General I/O (GCS) **PLNGDE**
function **SFPROG**
- general polling characters **PLNGDE**
figure **PLNGDE**
- general registers **APGDE**
changing **CPREF**
displaying **CPREF**
printing **CPREF**
- general user
action on CP errors **SYMSMSG**
communicate with VM/SP **INTRO**
console usage **INTRO**
described **CPREF, OPGDE**
view of spooling **INTRO**
- Generalized Markup Language (GML) **INTRO, PRIMER**
See GML (Generalized Markup Language)
- generate format **GCSREF**
- generating
accounting records
with DIAGNOSE code X'4C' **SFPROG**
CMS/DOS CMSPROG
CP for different modes of operation
false AP system for
preferred machine assist guest **CPPROG**
load map **DIAG**
the 3800 image library **PLNGDE**
VSE system **CMSPROG**
- GENIMAGE command **CPPROG**
- GENIMAGE service program
description **CPPROG**
- GENIO macro **GCSREF, PLNGDE**
ccw parameter **GCSREF**
char parameter **GCSREF**
close parameter **GCSREF**
data parameter **GCSREF**
description **GCSREF**
dev parameter **GCSREF**
error parameter **GCSREF**
execute format **GCSREF**
exit parameter **GCSREF**
halt parameter **GCSREF**
list address format **GCSREF**
list format **GCSREF**
mf parameter **GCSREF**
modify parameter **GCSREF**
open parameter **GCSREF**
start parameter **GCSREF**
startr parameter **GCSREF**
uword parameter **GCSREF**
- GENMOD command **APGDE, DIAG, PRIMER, REL5GDE**
ALL option **CMSREF**
creating program modules **CMSPROG**
creating user-written CMS command **CMSPROG**
definition **INTRO**
definition of use during service **INST**
description **CMSREF, CMSPROG**
DOS option **CMSREF**
FROM option **CMSREF**
MAP option **CMSREF**
NOMAP option **CMSREF**
NOSTR option **CMSREF**
OS option **CMSREF**
STR option **CMSREF**
SYSTEM option **CMSREF**
TO option **CMSREF**
used to regenerate IPCS modules **INST**
- GENMSG command **CMSUG, REL5GDE**
description **CMSREF**
examples **CMSREF**
for compiling the
message repository **REL5GDE**
format **CMSREF**

- messages **CMSREF**
- operands
 - applid **CMSREF**
 - CP **CMSREF**
 - DBCS **CMSREF**
 - fn ft fm **CMSREF**
 - langid **CMSREF**
 - LIST **CMSREF**
 - MARGIN **CMSREF**
 - NODBCS **CMSREF**
 - NOLIST **CMSREF**
 - NOOBJECT **CMSREF**
 - NOXREF **CMSREF**
 - OBJECT **CMSREF**
 - XREF **CMSREF**
- summary **CMSREF**
- usage notes **CMSREF**
- GENN operand of LABEL command **CMSREF**
- GENTSAF command **CMSUG**
- GENTSAF EXEC
 - command format **INST**
 - function **INST**
 - generating the module **INST**
 - how it works **INST**
 - when to use **INST**
- GENV operand of LABEL command **CMSREF**
- GEN3705 command
 - files created by **INST**
 - format **INST**
 - function **INST**
 - options **INST**
- GEN3705 macro library **INST**
- GET **XEDITUG**
 - action routine **SFPROG**
 - command, programmable operator **SFPROG**
 - in typewriter mode **XEDITUG**
 - practice exercise using **XEDITUG**
- GET command **CMSLOT, PRIMER**
- GET LOG command
 - programmable operator facility **INTRO**
- GET macro **CMSPROG**
- QSAM **GCSREF**
 - area address parameter **GCSREF**
 - dcb address parameter **GCSREF**
 - description **GCSREF**
- VSAM **GCSREF**
 - description **GCSREF**
 - rpl parameter **GCSREF**
- GET subcommand **XEDIT**
 - example of **XEDIT**
 - of PER command **CPREF**
 - of **XEDIT** command **APGDE**
 - creating small files
 - from large one **CMSUG**
 - with DBCS strings **XEDIT**
- GET sub-function of GLOBALV command **CMSREF**
- GET VSCREEN command **CMSUG**
 - summary **CMSREF**
- GET_ATTRIBUTES, APPC verb
 - mapped with APPC/VM **TSAFREF**
- GETMAIN macro **CPPROG, GCSREF, PLNGDE**
 - a parameter **GCSREF**
 - bndry parameter **GCSREF**
 - description **GCSREF**
 - ec parameter **GCSREF**
 - eu parameter **GCSREF**
 - execute format **GCSREF**
 - free element chain **CMSPROG**
 - la parameter **GCSREF**
 - list format **GCSREF**
 - lv parameter **GCSREF**
 - mf parameter **GCSREF**
 - r parameter **GCSREF**
 - rc parameter **GCSREF**
 - ru parameter **GCSREF**
 - sp parameter **GCSREF**
 - storage management **CMSPROG**
 - storage maximum **CMSPROG**
 - vc parameter **GCSREF**
 - vu parameter **GCSREF**
- GETMAIN macro (SVC 4) **CMSPROG**
- Getmain via SVC (type X'08') entry **DIAG**
- GETPOOL/FREEPOOL macro **CMSPROG**
- GETREQ subcommand
 - description **SRPI**
 - handling errors on return from **SRPI**
 - in example **SRPI** macro loader **SRPI**
 - in dynamically loading server **SRPI**
 - in server request-handling sequence **SRPI**
 - receiving a service request **SRPI**
 - syntax **SRPI**
 - variables set by (on return from) **SRPI**
- getting
 - a file **XEDIT**
 - arguments for a function or routine **SPIUG**
 - data
 - from another file **PRIMER**
 - from the command line **SPIUG**
 - when you are prompted **SPIUG**
- help **PRIMER**
- national languages on your system **SFPROG**
 - deleting a language **SFPROG**
 - feature tape **SFPROG**
 - installing **SFPROG**
 - LANGGEN command **SFPROG**
 - LANGMERG command **SFPROG**
 - loading the files from disk to tape **SFPROG**
 - saving files for CP and CMS **SFPROG**
 - updating files for an existing language **SFPROG**
- out of loops **SPIUG**
- rid of
 - the WM window **PRIMER**
 - your changes **PRIMER**
- giving up status as TSAF virtual machine **TSAFREF**
- global changes **XEDIT, XEDITUG**
 - in typewriter mode **XEDITUG**
 - querying
 - which DOSLIBs were last specified **CMSREF**
 - which MACLIBs were last specified **CMSREF**
 - which TXTLIBs were last specified **CMSREF**
- GLOBAL command **APGDE, CMSLOT, GCSREF, PLNGDE, PRIMER, REL5GDE**
 - definition **INTRO**
 - description **CMSREF, GCSREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- DOSLIB option **CMSREF**
 enhancement **REL5GDE**
 example of use **INTRO**
 for ISPF **APGDE**
 identify TXTLIBs **CMSPROG**
 in CMS/DOS **CMSPROG**
 in EXECs **APGDE**
 loadlib operand **GCSREF**
 LOADLIB option **CMSREF**
 MACLIB option **CMSREF**
 new and changed modules **REL5GDE**
 control blocks, new and changed **REL5GDE**
 macros, new and changed **REL5GDE**
 TXTLIB option **CMSREF**
 used to identify DOSLIBs **CMSPROG**
 used to identify macro libraries **CMSPROG**
 in CMS/DOS **CMSPROG**
 used to identify TXTLIBs **CMSPROG**
- GLOBAL** operand
 of IUCV directory control statement **PLNGDE**
- global resource
 access to **TSAFREF**
 control statements for **TSAFREF**
 how *IDENT handles **TSAFREF**
 how *IDENT handles requests **TSAFREF**
 identifying **TSAFREF**
 request to send **TSAFREF**
 revoking **TSAFREF**
 revoking your own **TSAFREF**
- global system lock **CPPROG, REL5GDE**
- global TSAF functions **TSAFREF**
- global variables, creating **CMSREF**
- GLOBALV** command
 description **CMSREF**
 examples **CMSREF**
 GET sub-function **CMSREF**
 GRPLIST option **CMSREF**
 GRPSTACK option **CMSREF**
 INIT option **CMSREF**
 LIST option **CMSREF**
 PURGE option **CMSREF**
 PUT sub-function **CMSREF**
 SELECT option **CMSREF**
 SESSION file **CMSREF**
 STACK option **CMSREF**
 STACKR option **CMSREF**
 use in CMS EXECs **CMSREF**
 used with REXX language
 System Product Interpreter EXECs **CMSUG**
- GLOBALV** filetype usage in CMS **CMSUG**
- glossary **DIAG, TSAFREF**
- GML** (Generalized Markup Language) **INTRO, PRIMER**
- tags
 description of **CMSLOT**
 types of
 heading **CMSLOT**
 highlighting **CMSLOT**
 list **CMSLOT**
 paragraph **CMSLOT**
- GO** command **APGDE**
 of VS FORTRAN interactive debug **APGDE**
- GO** option of **RETURN** command **APGDE**
- GO** subcommand
 of **TESTCOB** command **APGDE**
 of **TESTFORT** command **APGDE**
- GOTO**
 abnormal
 See **SIGNAL** instruction
- considered harmful **SPIUG**
 in SQL **APGDE**
- GPOLL** operand
 of **CLUSTER** macro **PLNGDE**
- GPRLOG** (general purpose registers) field **DIAG**
- GRAF** operand
 of **DEFINE** command **CPREF**
 of **QUERY** command **CPREF**
 of **QUERY VIRTUAL** command **CPREF**
 of **SYSMIH** macro **PLNGDE**
- GRAF** option of **FILEDEF** command **CMSREF**
- GRAPHIC** data type in SQL
 COBOL **APGDE**
- graphic-hexadecimal substitution **TERMREF**
 for 2741 APL **TERMREF**
 for 3270 APL **TERMREF**
 for 3270 text feature **TERMREF**
- Graphic Data Display Manager Base **INST**
- National Language Feature **INST**
- Presentation Graphics Function National Language Feature **INST**
- Interactive Map Definition **INST**
- Presentation Graphics Function **INST**
- Graphical Display and Query Facility **INST**
- Graphical Data Display Manager (GDDM) **INTRO, XEDIT**
- graphics **INTRO**
 devices
 monitoring missing interruptions **CPREF**
 color **INTRO**
 GDDM **INTRO**
- Graphics Attachment Support Program **INST**
- greater than operator (>) **SPIREF, SPIUG**
- greater than or equal operator (>=) **SPIREF**
- greater than or less than operator (><) **SPIREF**
- Greg operand
 of **DISPLAY** command **CPREF**
 of **STORE** command **CPREF**
- group **REL5GDE**
 DO **SPIREF**
 virtual machine **INTRO, SFPROG**
- group configuration file **PLNGDE**
- group control system (GCS)
 See GCS (group control system)
- group control systemabend codes
 See GCSabend codes
- GROUP EXEC PLNGDE**
- GROUP** filetype use in CMS **CMSUG**
- GROUP** macro for 3704/3705 control program **INST**
- group names
 assigning to users **CPPROG**
 retrieve with **DIAGNOSE** code X'A0' **SFPROG**
- group-name operand
 of **CPTRAP** command **CPREF**
- GROUPID** operand
 of **CPTRAP** command **CPREF**
- grouping instructions
 to execute repetitively **SPIREF**
- groups of instructions **SPIUG**
- GRPLIST** option of **GLOBALV** command **CMSREF**
- GRPSTACK** option of **GLOBALV** command **CMSREF**
- GTF** header **DIAG**
- GTRACE PRGDE**
- GTRACE** (type X'0E') entry **DIAG**
- GTRACE** macro **DIAG, GCSREF**
 data parameter **GCSREF**
 description **GCSREF**
 execute format **GCSREF**
 fid parameter **GCSREF**

id parameter **GCSREF**
list format **GCSREF**
lng parameter **GCSREF**
mf parameter **GCSREF**
guest operating system **INTRO**
defined **PLNGDE**
guest virtual machine (GVM) **DIAG, CPPROG**

GUESTR option
of PER command **CPREF, DIAG**
GUESTV option
of PER command **CPREF, DIAG**
guidelines
and limitations of CMS IUCV **SFPROG**
performance **CPPROG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

H

- h
 - described **CPREF**
 - HALF function **SPIUG**
 - half-duplex communication **TSAFREF**
 - HALT command **CMSUG, CPREF**
 - described **CPREF**
 - operands, raddr **CPREF**
 - responses **CPREF**
 - HALT condition of SIGNAL instruction **SPIREF**
 - halt device monitored in
 - CP internal trace table **CPREF**
 - halt execution (HX) in CMS **DIAG**
 - Halt Interpretation (HI)
 - immediate command **SPIREF, SPIUG**
 - halt, trapping
 - See SIGNAL instruction
 - halting
 - a looping program **SPIREF**
 - commands and programs **GCSREF**
 - execution
 - at instruction address **CPREF**
 - of virtual machine **CPREF**
 - program execution **CMSUG**
 - screen status **CMSUG**
 - System Product Interpreter EXECs **CMSUG**
 - terminal displays **CMSUG**
 - handling I/O errors **OPGDE**
 - handshaking
 - IX/370 **PLNGDE**
 - VM/VS **CPREF, PLNGDE**
 - hard-copy APAR form **DIAG**
 - hard-copy listing of dump **DIAG**
 - hard-copy of display screen **TERMREF**
 - hardware
 - error record **PRGDE**
 - failure
 - checklist for reporting **PRGDE**
 - dealing with **PRGDE**
 - described **PRGDE**
 - for DASD sharing **RGOS**
 - for MVS guest **RGOS**
 - maintenance directory entry
 - example **PLNGDE**
 - segment protect follow-on **REL5GDE**
 - status messages **OPGDE**
 - support, virtual machines **PLNGDE**
 - hardware assist **CPPROG, CPREF**
 - See also Extended Control-Program Support
 - description **OPGDE**
 - restrictions **OPGDE**
 - hash table complex (HASHTAB) **CMSPROG**
 - HASHTAB (hash table complex) **CMSPROG**
 - HASM **PLNGDE**
 - HASM command to invoke assembler H **INTRO**
 - HDDI **INST**
 - HDR1 tape label **CMSUG**
 - header
 - card
 - as READ control card **CMSREF**
 - punched by PUNCH command **CMSREF**
 - for LISTFILE command **CMSREF**
 - format **CMSREF**
- HEADER option
 - of LISTFILE command **CMSREF**
 - of PUNCH command **CMSREF**
- heading tags **CMSLOT, PRIMER**
- headings
 - on FILELIST display **CMSLOT**
 - on NOTE display **CMSLOT**
 - on RDRLIST display **CMSLOT**
- HELP **XEDITUG**
 - command **APGDE, CMSLOT, PRIMER**
 - BRIEF **CMSUG**
 - description **CMSREF**
 - DETAIL **CMSUG**
 - RELATED **CMSUG**
 - sample requests **CMSREF**
 - setting defaults **CMSREF**
- discontiguous shared segment **REL5GDE**
- format words
 - summary **CMSUG**
- menus
 - component **CMSUG**
 - task **CMSUG**
- message **CMSUG**
- notational conventions **CMSUG**
- help display **XEDIT, XEDITUG**
- HELP Facility **REL5GDE**
 - BRIEF **REL5GDE**
 - command options, new **REL5GDE**
 - components **CMSUG**
 - control blocks, new and changed **REL5GDE**
 - control section keywords, new **REL5GDE**
 - DEFAULTS command enhancement **REL5GDE**
 - description **INTRO**
 - DETAIL **REL5GDE**
 - example **INTRO**
 - execs, new and changed **REL5GDE**
 - filetypes **CMSUG**
 - improved search algorithm **REL5GDE**
 - keys, PF and PA2 **CMSUG**
 - macros, new and changed **REL5GDE**
 - menus **XEDIT**
 - migration considerations **REL5GDE**
 - modules, deleted **REL5GDE**
 - modules, new and changed **REL5GDE**
 - modules, split **REL5GDE**
 - MOREHELP command **REL5GDE**
 - naming conventions **CMSUG**
 - National Language Support (NLS) **REL5GDE**
 - overview **REL5GDE**
 - references to other publications **REL5GDE**
 - RELATED **REL5GDE**
 - tailoring **CMSUG**
 - toggling ability **REL5GDE**
 - using **CMSUG**
 - using System Product Editor **CMSUG**
 - windowing of BRIEF HELP **REL5GDE**
- HELP files
 - adding **CMSUG**
 - altering existing **CMSUG**
 - BRIEF section, adding **CMSUG**
 - changing menus **CMSUG**
 - convert to uppercase **INST**
 - converting to a formatted HELP file **CMSUG**
 - creating a new file **CMSUG**
 - deleting **CMSUG**
 - DESCRIPT section, adding **CMSUG**
 - DETAIL section, adding **CMSUG**
 - ERRORS section, adding **CMSUG**

- FORMAT section, adding **CMSUG**
- how to name **CMSUG**
- load from product tape
 - existing VM system procedure **INST**
 - Starter System procedure **INST**
- loading national language
 - files from feature tape **INST**
- NOTES section, adding **CMSUG**
- OPTIONS section, adding **CMSUG**
- PARMS section, adding **CMSUG**
- printing **CMSUG**
- RELATED section, adding **CMSUG**
- tailoring **XEDIT**
- updating
 - considerations when changing command classes **CPPROG**
- HELP operand
 - of DEFNUC macro **PLNGDE**
 - of PRB command **DIAG**
 - of STAT command **DIAG**
- HELP panels (ISPF) **APGDE**
- HELP PVM **DIAG**
- HELP subcommand **XEDIT**
- HELP subcommand of DUMPSCAN command
 - description **DIAG**
 - error message **DIAG**
 - examples **DIAG**
 - format **DIAG**
 - functional category **DIAG**
 - response **DIAG**
 - sample output **DIAG**
 - usage **DIAG**
- help, providing, to explain a program **SPIUG**
- HELPABBR filetype usage in CMS **CMSUG**
- HELPCMS filetype usage in CMS **CMSUG**
- HELPCMSQ filetype usage in CMS **CMSUG**
- HELPCMSM filetype usage in CMS **CMSUG**
- HELPCONV command
 - description **CMSREF, CMSUG**
 - how it treats comments **CMSUG**
 - summary of format words **CMSUG**
 - using to create additional HELP files **CMSUG**
- HELPCP filetype usage in CMS **CMSUG**
- HELPCPQU filetype usage in CMS **CMSUG**
- HELPCPSE filetype usage in CMS **CMSUG**
- HELPDEBU filetype usage in CMS **CMSUG**
- HELPEEDIT filetype usage in CMS **CMSUG**
- HELPEXC2 filetype usage in CMS **CMSUG**
- HELPEXEC filetype usage in CMS **CMSUG**
- helpful hints
 - programmable operator **SFPROG**
- HELPGROU filetype usage in CMS **CMSUG**
- HELPHelp filetype usage in CMS **CMSUG**
- HELPIPCS filetype usage in CMS **CMSUG**
- HELPMENU files, creating **CMSUG**
- HELPMENU filetype usage in CMS **CMSUG**
- HELPMMSG filetype usage in CMS **CMSUG**
- HELPPREF filetype usage in CMS **CMSUG**
- HELPPQUER filetype usage in CMS **CMSUG**
- HELPPREXX filetype usage in CMS **CMSUG**
- HELPPSET filetype usage in CMS **CMSUG**
- HELPPSQLD filetype usage in CMS **CMSUG**
- HELPTASK files, creating **CMSUG**
- HELPTASK filetype usage in CMS **CMSUG**
- HELPTSAF filetype usage in CMS **CMSUG**
- HELXPEDI filetype usage in CMS **CMSUG**
- hex operand of SCROLL subcommand **DIAG**
- hex operand of TRACE subcommand **DIAG**
- HEX option
 - of EXTRACT **XEDIT**
 - of QUERY **XEDIT**
 - of SET **XEDIT**
 - of PRINT command **CMSREF**
 - of TRANSFER **XEDIT**
- HEX subcommand of TRAPRED command **DIAG**
- HEXAD **DIAG**
- hexadecimal
 - See also conversion
 - checking with DATATYPE **SPIREF**
 - converting **SPIUG**
 - data, entering **XEDIT**
 - description of **SPIUG**
 - display
 - using HEXTYPE **XEDIT**
 - using SET VERIFY **XEDIT**
 - operands, recognizing **XEDIT**
 - printing file in **CMSREF**
 - substitution
- hexadecimal strings **SPIREF**
- hexdata operand
 - of STCP command **CPREF**
- hexdword1 operand
 - of STORE command **CPREF**
- hexdword2 operand
 - of STORE command **CPREF**
- hexloc described **CPREF**
- hexloc operand
 - of ADSTOP command **CPREF**
 - of BEGIN command **CPREF**
 - of CORTABLE subcommand **DIAG**
 - of DISPLAY command **CPREF**
 - of DISPLAY subcommand **DIAG**
 - of DUMP command **CPREF**
 - of MAPA subcommand **DIAG**
 - of NETWORK command **CPREF**
 - of STCP command **CPREF**
 - of STORE command **CPREF**
 - of VMDUMP command **CPREF**
- hexloc% operand of DISPLAY subcommand **DIAG**
- hexloc1 operand of DCP command **CPREF**
- hexloc2 operand of DCP command **CPREF**
- HEXTYPE macro **XEDIT**
 - example of **XEDIT**
- hexword operand of STCP command **CPREF**
- hexword1 operand of STORE command **CPREF**
- hexword2 operand of STORE command **CPREF**
- HFGD coding RDEVICE macro **PLNGDE**
- HI (Halt Interpretation) immediate command **CMSUG, SPIREF, SPIUG**
- HIDE option of CMS QUERY command **CMSREF**
- HIDE WINDOW command **CMSUG**
 - description **CMSREF**
 - format **CMSREF**
 - messages **CMSREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- operands
 col **CMSREF**
 line **CMSREF**
 vname **CMSREF**
 wname **CMSREF**
 summary **CMSREF**
 usage notes **CMSREF**
- hiding your password **CPREF**
- hierarchy
 page migration
 establishing **CPPROG**
 paging **CPPROG**
- High Performance Option (HPO)
 See VM/SP HPO
- high-priority messages,
 transmitting **CPREF**
- high-speed buffer **CPPROG, REL5GDE**
- high-water mark **CPPROG**
- highlight, defining
 SCREEN directory control statement **PLNGDE**
- highlight phrase tags **CMSLOT, PRIMER**
- highlighting **PRIMER**
 defining
 with **SET COLOR XEDITUG**
 with **SET CTLCHAR XEDITUG**
 with **SET RESERVED XEDITUG**
 words in a file using **HELP CMSUG**
 3270 terminal display **CPREF**
- HIGHLIGHT** operand of **TERMINAL**
 command **CPREF**
- history
 information, saving **CMSPROG**
 recent processor **CPPROG**
- history files
 definition **INST**
 part of Merge Log **INST**
- HISTORY** option of **EXECUPDT** command **CMSREF**
- HNDEXT** macro **APGDE, CMSPROG**
 See also **MACREF**
 CLR operand **MACREF**
 handling external interruptions **MACREF**
 SET operand **MACREF**
 use in sample program **TSAFREF**
- HNDEXT** macro **APGDE, CMSPROG, REL5GDE**
 See also **CONSOLE** macro, **MACREF**
 ASAP operand **MACREF**
 CLR operand **MACREF**
 ERROR = operand **MACREF**
 handling I/O interruptions **MACREF**
 handling interruptions during program execution
 caused by supervisor call (SVC)
 instructions **MACREF**
 SET operand **MACREF**
 WAIT operand **MACREF**
- HNDIUCV** macro **CMSPROG, REL5GDE, SFPROG**
 complex list format (MF=(L,addr[,label])) **SFPROG**
 execute format (MF=(E,addr)) **SFPROG**
 list format (MF=L) **SFPROG**
 standard format **SFPROG**
- HNDSVC** macro **APGDE, CMSPROG**
 See also **MACREF**
 CLR operand **MACREF**
 ERROR = operand **MACREF**
 handling interruptions during
 program execution **MACREF**
 SET operand **MACREF**
- HOLD** command **CMSUG, CPREF**
 described **CPREF**
- operands
 ALL **CPREF**
 PRINTER **CPREF**
 PUNCH **CPREF**
 userid **CPREF**
 operator use **INTRO**
 responses **CPREF**
 usage notes **CPREF**
- HOLD** operand
 of **CHANGE** command **CPREF**
 of **CLOSE** command **CPREF**
 of **DISCONN** command **CPREF**
 of **FLUSH** command **CPREF**
 of **LOGOFF** command **CPREF, CMSLOT**
 of **QUERY** command **CPREF**
 of **REPEAT** command **CPREF**
 of **SPOOL** command **CPREF, CMSUG**
- hold output files **CPREF**
- holding
 display on terminal **CMSUG**
 file before output processing **CPREF**
 files by user hold status **CPREF**
 files from further processing **CPREF**
 spool file
 to keep them from being processed **CMSUG**
- HOLDING**
 screen status **CMSUG**
 terminal status **APGDE, PRIMER**
- horizontal screens, multiple **XEDITUG**
- host commands **SPIREF**
- host data base access **INTRO**
- host VM system, preparing for
 VM under VM **RGOS**
 VM/VSE **RGOS**
- HOSTCHK** statement **SFPROG**
 See also programmable operator facility
- hours calculated from midnight **SPIREF**
- how to enter commands **PRIMER**
- HPO (High Performance Option)
 See VM/SP HPO
- HPODIRnn DIRECT**, description **INST**
- HPORIONn ASSEMBLE**
 description **INST**
- HPOSNTnn ASSEMBLE**
 description **INST**
- HPOSYSnn ASSEMBLE**
 description **INST**
- HT** (Halt Type) immediate command **CMSUG**
 SET **CMSTYPE HT** command **SPIUG**
- HX** (Halt Execution) immediate command **GCSREF**
 description **GCSREF**
 effect in CMS subset **CMSUG**
 effect on **DLBL** definitions **CMSPROG**
- HX** immediate command **PLNGDE**
 Immediate command
 effect on **DLBL** definitions **CMSREF**
 effect on **FILEDEF** definitions **CMSREF**
- HX** subcommand of **DUMPSCAN** command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
 sample output **DIAG**
 usage **DIAG**
- hyperblock mapping table (**HYPMAP**) **CMSPROG**
HYPMAP (hyperblock mapping table) **CMSPROG**

I

I prefix subcommand of XEDIT command **APGDE, XEDIT**
I/O (input/output)

assignments **CMSPROG**
buffer **MACREF**
 reading lines to **MACREF**
 reading records to **MACREF**
 writing records from **MACREF**
defining files **CMSPROG**
defining VSAM files **CMSPROG**
definition statements
 DDR (DASD Dump Restore) CPPROG
device assignments in CMS/DOS **CMSPROG**
devices
 defining for virtual machine **CPREF**
 handling interruptions for **MACREF**
 monitor considerations **CPPROG**
errors
 handling **OPGDE**
 recording with CPEREPR program **OPGDE**
 recovery from **CPPROG**
files, defining **CMSPROG**
functions
 DASD SFPROG
 GCS PLNGDE
 general **SFPROG**
interrupt (type X'03') entry **DIAG**
interrupt handler in DMSITI module **CMSPROG**
interrupt support **RGOS**
interruption monitored in
 CP internal trace table **CPREF**
interrupts **CMSPROG, CPPROG**
listing assignments **CMSPROG**
lock **CPPROG**
macros **CMSPROG**
management **CPPROG**
minidisk **CPPROG**
operations, tracing **CPREF**
overhead in CP, reducing **CPPROG**
real interrupts **CPPROG**
reduction, VTAM **SFPROG**
tape **CMSPROG**
tapes **CMSPROG**
virtual machines **CPPROG**
VM SNA support
 processing **SFPROG**
Input/Output Configuration Program
 use with single processor mode **REL5GDE**
I/O operand
 of **INDICATE** command **CPREF**
 of **TRACE** command **CPREF**
IB operand
 of **QUERY** command **CPREF**
 of **SET** command **CPREF**
IBM BASIC INTRO
IBM BASIC/VM INST

IBM Enhanced Connectivity Facilities macros
ADENTRY SRPI
 assembly messages (MNOTEs) **SRPI**
 syntax **SRPI**
CPRB SRPI
CSMRETCD (IBM Enhanced Connectivity Facilities
 return code) **SRPI**
 assembly messages 1
 syntax **SRPI**
DEENTRY SRPI
 assembly messages (MNOTEs) **SRPI**
 syntax **SRPI**
SENDREQ SRPI
 assembly messages (MNOTEs) **SRPI**
 syntax **SRPI**
IBM Enhanced Connectivity Facilities return code macro
 description (**CSMRETCD**) **SRPI**
IBM High-Accuracy Arithmetic Subroutine Library INST
IBM operand
 of **PRB** command **DIAG**
IBM PC
 See **Personal Computer (PC)**
IBM System/370 to IBM Personal Computer
 Enhanced Connectivity Facilities **MACREF**
IBM-defined user classes, reverting to CPPROG
IBM 3812 Pageprinter VM Support INST
IBMABASE (assembler server) example SRPI
IBUFF operand
 of **QUERY** command **CPREF**
 of **SET** command **CPREF**
IC/1 INST
ICA (Integrated Communications Attachment)
 coding **RDEVICE** macro **PLNGDE**
ICS control statement
 See include control section (ICS) loader control statement
ID card to submit job to CMS batch facility CMSUG
ID CARD, CP, example CMSREF
ID operand
 of **SYSTIME** macro **PLNGDE**
IDENT operand
 of **IUCV** directory control statement **PLNGDE**
identical files, testing for **CMSLOT**
identification of CMS files **PLNGDE**
identification bits for
 licensed programs **SFPROG**
identification numbers, message
 displaying **SYSMSG**
identifier
 See file identifier
IDENTIFY
 VMCF function **SFPROG**
 VMCF protocol **SFPROG**
IDENTIFY command CMSLOT, PRIMER
 description **CMSREF**
 display user information **CMSREF**
 FIFO option **CMSREF**
 LIFO option **CMSREF**
 STACK option **CMSREF**
 TYPE option **CMSREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

IDENTIFY macro GCSREF, PLNGDE
 description GCSREF
 entry parameter GCSREF
 ep parameter GCSREF
 eploc parameter GCSREF
IDENTIFY macro (SVC 41) CMSPROG
 identify processor address
 AP/MP environment CPPROG
Identify System Service INTRO, REL5GDE, TSAFREF
 answer data
 answer area TSAFREF
 connecting to *IDENT TSAFREF
 severing the *IDENT connection TSAFREF
 authorizing virtual machine to
 connect to TSAFREF
 connect format TSAFREF
 connecting to
 *IDENT TSAFREF
 do a revoke TSAFREF
 resource manager TSAFREF
IUCV
 *IDENT TSAFREF
 syntax TSAFREF
 local system resource table TSAFREF
 multiple connections to TSAFREF
 passing requests to TSAF TSAFREF
 processing requests to manage a resource TSAFREF
 responsibilities TSAFREF
 revoking
 requests to TSAF TSAFREF
 resource TSAFREF
 resources in merging collections TSAFREF
 your own resources TSAFREF
SEND format TSAFREF
 sever reason codes TSAFREF
 severing connection to TSAFREF
 using the *CRM path TSAFREF
IDENTIFYed entry point DIAG
 identifying
 macro libraries CMSPROG
 macro libraries to search in CMS/DOS CMSPROG
 master catalog for VSAM in CMS/DOS CMSPROG
 multivolume VSAM files in CMS/DOS CMSPROG
 multivolume VSAM files in OS CMSPROG
 VSAM master catalog in OS CMSPROG
 identifying users SPIREF
IEBPTPCH utility program to
 create CMS files from tapes created by CMSUG
IEBUPDTE utility program to
 create CMS files from tapes created by CMSUG
IEHMOVE utility program to
 create CMS files from tapes created by CMSUG
IF command APGDE
IF instruction SPIREF
 description of SPIUG
 ELSE keyword SPIUG
 THEN keyword SPIUG
IF subcommand
 of TESTCOB command APGDE
 of TESTFORT command APGDE
IGN option of ASSGN command CMSREF
 with DUMMY data sets CMSREF
 ignoring case difference CMSLOT, XEDIT
 ignoring characters in a target XEDIT
IHASDWA macro GCSREF
 description GCSREF
 dsect parameter GCSREF
IIP (ISAM Interface Program) CMSPROG
IIPS INST
IJSYSCL ddname defined in CMS/DOS CMSPROG
IJSYSCL defining in CMS/DOS CMSREF
IJSYSCT ddname CMSPROG
IJSYSCT defined CMSREF
 in CMS/DOS CMSREF
IJSYSRL ddname defined in CMS/DOS CMSPROG
IJSYSRL defining in CMS/DOS CMSREF
IJSYSSL ddname defined in CMS/DOS CMSPROG
IJSYSSL defining in CMS/DOS CMSREF
IJSYSUC defined CMSREF
 in CMS/DOS CMSREF
 image library, 3800 PLNGDE
IMAGE operand
 of RDEVICE macro PLNGDE
 of START command CPREF
IMAGE option
 of EXTRACT XEDIT
 of QUERY XEDIT
 of SET XEDIT
 of TRANSFER XEDIT
IMAGE subcommand
 image symbol editor for GDDM INTRO
IMAGELIB service program
 description CPPROG
IMAGEMOD command
 format and description CPPROG
 modifying 3800 named system CPPROG
IMESCAPE option
 of CMS QUERY command CMSREF
 of CMS SET command CMSREF
IMMBLOK macro CMSPROG
IMMCMD
 command
 CLEAR operand CMSREF
 description CMSREF
 QUERY operand CMSREF
 SET operand CMSREF
 STATUS operand CMSREF
 operand of NUCXLOAD command CMSREF
IMMCMD macro CMSPROG
 See also MACREF
 clearing Immediate commands MACREF
 CLR operand MACREF
 complex list format MACREF
 declaring Immediate commands MACREF
 ERROR = operand MACREF
 execute format MACREF
 EXIT = operand MACREF
 list format MACREF
 NAME = operand MACREF
 QRY operand MACREF
 querying Immediate commands MACREF
 SET operand MACREF
 standard format MACREF
 UWORD = operand MACREF
IMMED operand of NETWORK
 command CPREF
 immediate commands
 canceling CMSREF
 created by user CMSPROG
 creating CMSREF
 entering on display terminal CMSUG
 HI (Halt Interpretation) SPIREF
 in GCS GCSREF
 summary CMSREF
 TE (Trace End) SPIREF

- TS (Trace Start) **SPIREF**
using with System Product Interpreter
programs **CMSUG**
- IMPCMSCP option
of **EXTRACT XEDIT**
of **QUERY XEDIT**
of **SET XEDIT**
of **TRANSFER XEDIT**
- IMPCP operand of CMS SET command, setting **CMSUG**
IMPCP option
of CMS QUERY command **CMSREF**
- imperative macros **CMSPROG**
- IMPEX operand of CMS SET command, usage **CMSUG**
IMPEX option
of CMS QUERY command **CMSREF**
- implementation details **SPIREF**
implied
affinity **CPPROG**
CP function
query status of **CMSREF**
CP function, SET IMPCP, usage **CMSUG**
EXEC function
query status of **CMSREF**
EXEC function, SET IMPEX, usage **CMSUG**
semicolons **SPIREF**
transmission to CMS/CP **XEDIT**
- IMPORT access method services function **CMSPROG**
importing VSAM data sets **CMSPROG**
imprecise numeric comparison **SPIREF**
- IMSG operand
of SET command **CPREF**
- IN predicate of SQL **APGDE**
in-queue **CPPROG**
virtual machines **CPPROG**
- in-store execution of EXECs **SPIREF**
inactive pages, storage of **CPPROG**
- INArea operand of SCREEN
command **CPREF**
- INCLUDE command **APGDE, REL5GDE**
creating program modules **CMSPROG**
defined **INTRO**
description **CMSREF**
examples **CMSREF**
following LOAD command **CMSREF**
identify TXTLIBs to be searched **CMSREF**
issuing **CMSPROG**
options
AUTO **CMSREF, CMSPROG**
CLEAR **CMSREF, CMSPROG**
DUP **CMSPROG, CMSREF**
HIST **CMSREF, CMSPROG**
INV **CMSREF**
LIBE **CMSPROG, CMSREF**
MAP **CMSREF**
NOAUTO **CMSREF**
NOCLEAR **CMSREF**
NODUP **CMSREF**
NOHIST **CMSREF**
NOINV **CMSREF**
NOLIBE **CMSREF**
NOMAP **CMSREF**
NOREP **CMSREF**
- NOTYPE **CMSREF**
ORIGIN **CMSPROG, CMSREF**
REP **CMSREF**
RESET **CMSPROG, CMSREF**
RLDSAVE **CMSPROG, CMSREF**
SAME **CMSREF**
START **CMSREF**
TYPE **CMSREF**
- VSE linkage editor control statement
specifying in **CMSPROG**
- include control section (ICS)
loader control statement **CMSREF**
- INCLUDE directory control statement **PLNGDE**
INCLUDE operand
of MONITOR command **CPREF**
- INCLUDE SQLCA command of SQL **APGDE**
INCLUDE statement of SQL
COBOL **APGDE**
FORTRAN **APGDE**
- inclusive OR operator **SPIREF**
- INCORR operand of STAT command **DIAG**
INCORROUT FAILURE code (keyword definition) **DIAG**
increase output files **CPREF**
increasing
accuracy in calculations **SPIUG**
virtual machine storage **CMSUG**
- increment operand
of CHAIN subcommand **DIAG**
of LOCATE (UP) subcommand **DIAG**
- indefinite loops **SPIREF**
See also looping program
- indentation during tracing **SPIREF**
indenting text **CMSUG**
- INDEX function **SPIREF, SPIUG**
- INDEX nn operand
for LOADVFCB command **CPREF**
- INDEX operand
of LOADBUF command **CPREF**
- Indexed Sequential Access Method (ISAM) **CPREF**
INDICATE command **CMSUG, CPPROG, CPREF, DIAG**
class A **CPREF**
class E **CPREF**
class G **CPREF**
defined **INTRO**
described **CPREF**
operands
* **CPREF**
ALL **CPREF**
DPA **CPREF, CPPROG**
FAVORED **CPREF**
I/O **CPREF**
LOAD **CPPROG, CPREF**
LOAD command responses **CPREF**
PAGING **CPREF**
POSITION **CPPROG, CPREF**
QUEUES **CPREF**
USER **CPPROG, CPREF**
USER command **CPPROG, OPGDE, APGDE**
USER command responses **CPREF**
userid **CPREF**
WAIT **CPREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- performance measurement **PLNGDE**
- responses **CPREF**
- usage notes **CPREF**
- INDICATE** instruction **PRGDE**
- indicating program execution (BLIP) **TERMREF**
- indicators
 - of system load **CPPROG**
- indirect evaluation of data **SPIREF**
- inequality, testing of **SPIREF**
- INF FAILURE** code (keyword definition) **DIAG**
- INF** operand of **STAT** command **DIAG**
- infinite loops **APGDE, SPIREF**
- See also looping program
- checklist for reporting
 - in a virtual machine **PRGDE**
 - in CP **PRGDE**
 - in RSCS **PRGDE**
- finding cause
 - in a virtual machine **PRGDE**
 - in CP **PRGDE**
 - in RSCS **PRGDE**
- symptoms of **PRGDE**
- Info Center/1 **INST**
- information abbreviated **SPIUG**
- information message display **XEDITUG**
 - in typewriter mode **XEDITUG**
- information sources that describe VM's condition **PRGDE**
- informational messages controlling receipt **CPREF**
- inhibition of commands
 - with **TRACE** instruction **SPIREF**
- INIT** command **RGOS**
- INIT** option
 - of **GLOBALV** command **CMSREF**
- INIT** statement in **ISPF** panels **APGDE**
- initial installation procedure
 - allocate remaining system volumes **INST**
 - backup **INST**
 - build new CP nucleus **INST**
 - checklist **INST**
 - complete **CUSTOMER PROFILE** **INST**
 - create CMS nucleus **INST**
 - designate volumes as CP-owned **INST**
 - format
 - DASD volumes **INST**
 - remaining base CP minidisks **INST**
 - install
 - EREP** **INST**
 - GCS** **INST**
 - IPL**
 - and define starter system **INST**
 - new CP **INST**
 - load
 - CMS nucleus generation profile **INST**
 - CP object code **INST**
 - installation tools and profiles **INST**
 - IPCS** **INST**
 - source code **INST**
 - system definition files **INST**
 - system generation tools **INST**
 - system **HELP** files **INST**
 - TSAF** **INST**
 - print the system definition files **INST**
 - related procedures **INST**
 - required materials **INST**
 - restore starter system to disk **INST**
 - shut down Starter System CP **INST**
- tailor
 - CMS nucleus generation profile **INST**
 - SPGEN PROFILE** **INST**
 - system definition files **INST**
 - update **SYSTEM NETID** file **INST**
- initial program load
 - See **IPL** (initial program load)
- initial setting of PF keys **XEDIT, XEDITUG**
- initial tabs, displaying **PRIMER**
- initialization **PLNGDE**
 - attached processor system **OPGDE**
 - disk **CPPROG**
 - mass storage system (MSS) **OPGDE**
 - messages **OPGDE**
 - multiprocessor system **OPGDE**
 - of arrays **SPIREF**
 - of compound variables **SPIREF**
 - system **OPGDE**
- initialization accounting record **TSAFREF**
- initializing
 - CMS **INTRO**
 - from a SNA terminal **GCSREF**
 - DASD volumes **RGOS**
 - servers
 - assembler **SRPI**
 - REXX** and **EXEC 2** (**SRPI** macro) **SRPI**
 - the programmable operator **SFPROG**
- INITIATE**
 - logical device support facility function **SFPROG**
- initiating
 - GCS** dumps **DIAG**
 - Pass-Through sessions **INTRO**
 - VM/SP HPO operation **OPGDE**
- INMOVE** default for **MOVEFILE**
 - command ddname **CMSREF**
- INPMOD** option
 - of **EXTRACT** **XEDIT**
- INPUT**
 - console to Format/Allocate
 - program **CPPROG**
 - option of **CMS QUERY** command **CMSREF**
 - practice exercise using **XEDITUG**
 - spooled card **OPGDE**
 - subcommand (see **INPUT** subcommand)
- input area **TERMREF**
- input buffer, terminal **INTRO**
- input card to Format/Allocate
 - program **CPPROG**
- INPUT** command **PRIMER**
 - of **ISQL** **APGDE**
 - to add text from edit mode **CMSLOT**
 - to enter input mode **CMSLOT**
- INPUT** control statement
 - of **DDR** (DASD Dump Restore) **CPPROG**
- input device **INTRO**
- input files, altering
 - external attributes **CPREF**
- input inhibited light **PRIMER**
- INPUT** line **XEDITUG**
- input mode **APGDE, XEDITUG**
 - entered using **INPUT** **XEDIT**
 - entered using **REPLACE** **XEDIT**
 - entering subcommand in **XEDIT**
 - entering using **INPUT** **CMSLOT, PRIMER**
 - getting out of **CMSLOT, PRIMER**
 - on display terminal in linemode **CMSUG**
 - on typewriter terminal **XEDITUG**
 - screen layout in **PRIMER, XEDIT**

- using PF keys in **XEDIT**
- when in full screen **XEDIT** environment **CMSUG**
- INPUT** option in **SET CMSLOT**
- input spool file manipulation
 - with **DIAGNOSE** code X'14' **SFPROG**
- INPUT** subcommand **XEDIT**
 - of **XEDIT** command **APGDE**
 - to enter input mode **XEDITUG**
 - on typewriter terminal **XEDITUG**
 - to enter line in typewriter mode **XEDITUG**
 - used to enter data in **XEDIT CMSUG** with **DBCS** strings **XEDIT**
- input zone **PRIMER, XEDITUG**
 - area of screen **XEDIT**
 - changing size of **XEDIT, XEDITUG**
- input/output (I/O)
 - See I/O (input/output)
- Input/Output Configuration Program (IOCP) **PLNGDE**
- inqueue time
 - average spent in
 - compared with early releases **CPPROG**
- INRedisp** operand of **SCREEN** command **CPREF**
- INS MODE** key **APGDE**
- INSERT** command of **SQL APGDE**
- INSERT** function **SPIREF**
- insert key
 - using in power typing **XEDIT**
 - using with **SET NULLS ON XEDIT**
- insert mode
 - key in **XEDIT PRIMER, XEDITUG**
 - practice exercise using **XEDITUG**
 - leaving **PRIMER**
- INSERT** statement **CMSPROG** of **SQL APGDE**
- inserting
 - a blank line **XEDITUG**
 - a file
 - in typewriter mode **XEDITUG**
 - part of **XEDITUG**
 - part of, example **XEDITUG**
 - whole file **XEDITUG**
 - whole file, example **XEDITUG**
 - a string into another **SPIREF**
 - a whole file, using **GET CMSLOT**
 - characters
 - in input mode **XEDITUG**
 - in power typing mode **XEDITUG**
 - using **CINSERT XEDIT, XEDITUG**
 - in typewriter mode **XEDITUG**
 - using **PA2** key **XEDIT, XEDITUG**
 - using **SET NULLS ON XEDIT, XEDITUG**
 - using the insert mode key **XEDITUG**
- data
 - from another file **XEDITUG, CMSLOT, PRIMER**
 - from another file in typewriter mode **XEDITUG** into a file
 - using **GET XEDIT**
 - using **PUT XEDIT**
 - using **PUTD XEDIT**
 - using **CINSERT XEDITUG**
 - using **CINSERT** in typewriter mode **XEDITUG**
- lines
 - in a file being edited **CMSUG**
 - using **I** (prefix subcommand) **XEDIT**
 - using **INPUT XEDITUG**
 - using **PUT XEDIT**
 - using **PUTD XEDIT**
- in typewriter mode **XEDITUG**
- one line using **INPUT XEDIT**
- part of a file
 - using **GET CMSLOT, XEDIT**
 - using **GET** and **PUT CMSLOT, XEDIT**
 - using **PUTD XEDIT**
- words
 - in a line **CMSLOT, PRIMER**
 - using **CINSERT XEDITUG**
 - using **CINSERT** in typewriter mode **XEDITUG**
- installation
 - discontiguous shared segment (**CMSINST**) **REL5GDE**
 - existing VM system procedure
 - build new CP nucleus **INST**
 - complete **CUSTOMER PROFILE INST**
 - create new CMS nucleus **INST**
 - create stand-alone service utility tape **INST**
 - format new system minidisks **INST**
 - install **GCS INST**
 - load **IPCS INST**
 - load source code **INST**
 - load system **HELP** files **INST**
 - load **TSAF INST**
 - load **VM/SP** product tape **INST**
 - modify current system directory **INST**
 - related procedures **INST**
 - save **CMS INST**
 - tailor **DMKRIO INST**
 - tailor **DMKSNT INST**
 - tailor **DMKSYS INST**
 - tailor **SPGEN PROFILE INST**
 - tailor system directory **INST**
 - update **SYSTEM NETID** file **INST**
 - first level **INST**
 - Merged Product Tape
 - organizing materials **INST**
 - overview **REL5GDE**
 - pre-installation requirements **INST**
 - procedures **REL5GDE**
 - CMS** files, deleted **REL5GDE**
 - control blocks, new and changed **REL5GDE**
 - execs, deleted **REL5GDE**
 - execs, new and changed **REL5GDE**
 - macros, new and changed **REL5GDE**
 - modules, new and changed **REL5GDE**
 - new and changed **CMS** files **REL5GDE**
 - second level **INST**
 - starter system procedure
 - allocate remaining system volumes **INST**
 - backup **INST**
 - build new CP nucleus **INST**
 - checklist **INST**
 - complete **CUSTOMER PROFILE INST**
 - create **CMS** nucleus **INST**
 - designate volumes as CP-owned **INST**
 - format **DASD** volumes **INST**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- format remaining base CP minidisks **INST**
 - install EREP **INST**
 - install GCS **INST**
 - IPL and define starter system **INST**
 - IPL new CP **INST**
 - load CMS nucleus generation profile **INST**
 - load CP object code **INST**
 - load installation tools and profiles **INST**
 - load IPCS **INST**
 - load source code **INST**
 - load system definition files **INST**
 - load system generation tools **INST**
 - load system HELP files **INST**
 - load TSAF **INST**
 - print the system definition files **INST**
 - related procedures **INST**
 - required materials **INST**
 - restore starter system to disk **INST**
 - shut down Starter System CP **INST**
 - tailor CMS nucleus generation profile **INST**
 - tailor SPGEN PROFILE **INST**
 - tailor system definition files **INST**
 - update SYSTEM NETID file **INST**
 - system national language **INST**
 - build new CMS nucleus **INST**
 - build new CP nucleus **INST**
 - build new GCS nucleus **INST**
 - contents of
 - national language feature tape **INST**
 - create new GCS configuration file **INST**
 - load language files from tape to disk **INST**
 - tools and profiles
 - ITASK EXEC **INST**
 - SPLOAD EXEC **INST**
 - SPLOAD PROFILE **INST**
 - UTILITY EXEC **INST**
 - types
 - initial installation **INST**
 - migration **INST**
 - VM/SP HPO
 - 3704/3705 control program **INST**
 - applying PTFs to load library **INST**
 - coding macro instructions **INST**
 - completing Stage 1
 - assembly procedure **INST**
 - completing Stage 2
 - generation procedure **INST**
 - defining macro and text libraries **INST**
 - invoking ARNGEND EXEC **INST**
 - invoking EXEC procedure created by GEN3705 **INST**
 - invoking INSTEP EXEC **INST**
 - loading control program **INST**
 - loading 3704/3705 control program
 - distribution tape **INST**
 - logging on VM/SP HPO system **INST**
 - logging on VM/SP HPO through 3704/3705 **INST**
 - saving control program image on disk **INST**
 - setting up CMS virtual machine **INST**
 - testing control program **INST**
- Installation Discontiguous Shared Segment (DCSS)
 - CMSPROG**
 - discontinuing **CMSUG**
 - use of **CMSUG**
 - using IPL command to link **CMSUG**
 - Installation Verification Procedure (IVP)
 - See IVP (Installation Verification Procedure)
- installing
 - a server
 - SRPI macro (REXX and EXEC 2) **SRPI**
 - assembler **SRPI**
 - CMS batch machine **CMSPROG**
 - national languages on VM **SFPROG**
 - PMX **SFPROG**
 - programmable operator **SFPROG**
 - VM/IS **INTRO**
 - VM/SP
 - starter system **INTRO**
 - using existing system **INTRO**
- INSTEP EXEC
 - loading from 3704/3705
 - control program tape **INST**
 - procedure **INST**
- INSTID operand of DEFNUC macro **PLNGDE**
- INSTR (keyword definition) **DIAG**
- INSTRUCT event type
 - of PER command **CPREF**
- INSTRUCT operand
 - of TRACE command **CPREF**
- instruction
 - See DIAGNOSE instruction
- instruction tracing vector **APGDE, CPPROG**
- instruction, macro **INTRO**
- instructions
 - ADDRESS SPIREF, SPIUG**
 - altering
 - with LOAD command **CMSREF**
 - ARG SPIREF, SPIUG**
 - CALL SPIREF, SPIUG**
 - description of **SPIUG**
 - DO SPIREF, SPIUG**
 - DO FOREVER SPIUG**
 - DO WHILE SPIUG**
 - DROP SPIREF, SPIUG**
 - EXIT SPIREF, SPIUG**
 - groups of **SPIUG**
 - IF SPIREF, SPIUG**
 - INTERPRET SPIREF, SPIUG**
 - ITERATE SPIREF, SPIUG**
 - LEAVE SPIREF, SPIUG**
 - NOP SPIREF, SPIUG**
 - NUMERIC SPIREF**
 - NUMERIC DIGITS, SPIUG**
 - NUMERIC FUZZ SPIUG**
 - OPTIONS SPIREF**
 - PARSE SPIREF**
 - PARSE ARG SPIUG**
 - PARSE PULL SPIUG**
 - PARSE VALUE SPIUG**
 - PARSE VAR SPIUG**
 - PROCEDURE SPIREF, SPIUG**
 - PULL SPIREF, SPIUG**
 - PUSH SPIREF, SPIUG**
 - QUEUE SPIREF, SPIUG**
 - RETURN SPIREF, SPIUG**
 - SAY SPIREF, SPIUG**
 - SELECT SPIREF, SPIUG**
 - SIGNAL SPIREF, SPIUG**
 - TRACE SPIREF, SPIUG**
 - UPPER SPIREF, SPIUG**
- INSTSEG operand of DEFNUC macro **PLNGDE**
- INSTSEG option of CMS QUERY command **CMSREF**
- INSTSIM class monitor records **CPPROG**
- INSTSIM operand of MONITOR command **CPREF**
- integer **SPIUG**

- integer arithmetic **SPIREF**
- INTEGER** data type in SQL
 - COBOL APGDE**
 - FORTRAN APGDE**
- integer division
 - definition **SPIREF**
 - description of **SPIREF**
 - operator **SPIREF, SPIUG**
- Integrated Communications Attachment (ICA)**
 - coding **RDEVICE** macro **PLNGDE**
- Integrated System (VM/IS) INTRO**
- integrity
 - data **INTRO**
 - data, during editor session **INTRO**
 - power failure **INTRO**
 - SQL data base **INTRO**
 - system, when changing command access **CPPROG**
- inter-collection communication
- Inter-User Communications Vehicle (IUCV)**
 - See **IUCV (Inter-User Communications Vehicle)**
- interactive **CPPROG, REL5GDE**
 - applications **APGDE, REL5GDE**
 - bias shift
 - queue 1 virtual machine **CPREF**
 - buffer
 - controlling amount of pageable storage used for **CPPROG**
 - pageable storage **CPPROG**
 - menus **INTRO**
 - swap queue
 - time controls **CPREF**
 - users
 - maximum percentage of pageable storage set **CPREF**
 - virtual machine classification **REL5GDE**
- interactive debug **APGDE, SPIREF**
 - See also **TRACE** instruction
 - COBOL APGDE**
 - debug file **APGDE**
 - FORTRAN APGDE**
 - VS FORTRAN APGDE**
- Interactive Interface**
 - PF** key overrides **RGOS**
 - using with **CMS RGOS**
- Interactive Instructional Presentation System INST**
- interactive mode of **BASIC PRIMER**
- interactive problem control system (**IPCS**) **CMSREF, INTRO, TERMREF**
 - See also **IPCS (interactive problem control system)**
 - commands summary **DIAG**
 - data files
 - customer profile **DIAG**
 - IPCS** load map **DIAG**
 - PRBnnnnn aaaaaaa** **DIAG**
 - PRBnnnnn dump** **DIAG**
 - PRBnnnnn report** **DIAG**
 - statal local **DIAG**
 - summary record **DIAG**
 - symptom summary **DIAG**
 - data flow **DIAG**
 - DUMPSCAN** subcommands summary **DIAG**
 - functional overview **DIAG**
 - introduction **DIAG**
 - major functions
 - problem and data management **DIAG**
 - problem diagnosis **DIAG**
 - problem reporting **DIAG**
 - usage
 - A-disk space management **DIAG**
 - CMS** load map (**CMSNUC MAP**) **DIAG**
 - completing customer profile **DIAG**
 - conversion considerations **DIAG**
 - CONVERT** command **DIAG**
 - CONVIPCS EXEC** **DIAG**
 - CP** load map (**CPNUC MAP**) **DIAG**
 - debugging a dump **DIAG**
 - GCS** load map (**GCSNUC MAP**) **DIAG**
 - generating load map **DIAG**
 - generating problem report **DIAG**
 - hard-copy of **APAR** **DIAG**
 - hard-copy of dump **DIAG**
 - IPCS** load map **DIAG**
 - operating procedures **DIAG**
 - other load maps **DIAG**
 - preliminary considerations **DIAG**
 - recognizing duplicate problems **DIAG**
 - supplementary data **DIAG**
 - TSAF** load map (**TSAF MAP**) **DIAG**
 - typical operating sequence **DIAG**
 - updating problem report **DIAG**
- Interactive Productivity Facility (IPF) INST, INTRO**
- Interactive SQL (ISQL) INTRO**
- Interactive System Productivity Facility (ISPF) APGDE, INST, INTRO**
 - breakpoints **APGDE**
 - browse option **APGDE**
 - commands **APGDE**
 - ISPSTART** **APGDE**
 - PRINT** **APGDE**
 - PRINT-HI** **APGDE**
 - dialog test option **APGDE**
 - dialog testing **APGDE**
 - dialogs **APGDE**
 - error handling **APGDE**
 - ERRORS** setting **APGDE**
 - EXECs** and **APGDE**
 - file tailoring output libraries **APGDE**
 - file tailoring services **APGDE**
 - file tailoring skeletons **APGDE**
 - function trace option **APGDE**
 - functions **APGDE**
 - functions option **APGDE**
 - HELP** panels **APGDE**
 - invoking **APGDE**
 - ISPEXEC** **APGDE**
 - libraries **APGDE**
 - LOADLIBs** **APGDE**
 - log option **APGDE**
 - message definition **APGDE**
 - message libraries **APGDE**
 - messages **APGDE**
 - panel libraries **APGDE**
 - panel option **APGDE**
 - panel services **APGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- panels **APGDE**
- PDF **APGDE**
 - libraries **APGDE**
- prototyping applications **APGDE**
- requirements using **APGDE**
- SELECT service **APGDE**
- services **APGDE**
- skeleton libraries **APGDE**
- skeletons **APGDE**
- table input libraries **APGDE**
- table output libraries **APGDE**
- table services **APGDE**
- tables **APGDE**
- tables option **APGDE**
- traces option **APGDE**
- TXTLIBs **APGDE**
- variable services **APGDE**
- variable trace option **APGDE**
- variables option **APGDE**
- Interactive System Productivity/Program Development Facility **INST**
- interactive, defined **INTRO, TERMREF**
- interface
 - GCS (group control system) **GCSREF**
 - shared VTAM **GCSREF**
- interface files, IPCS **DIAG**
- interfaces
 - system **SPIREF**
 - to external routines **SPIREF**
 - to variables **SPIREF**
- internal
 - CP functions
 - changing privilege classes **CPPROG**
- internal control block
 - generating **PLNGDE**
- internal directories **APGDE**
- internal functions
 - See also internal routines
 - description of **SPIREF**
 - return from **SPIREF**
 - variables in **SPIREF**
- internal override file **PLNGDE**
- internal pointer variables
 - generating with **SYSLOCS PLNGDE**
- internal print file duplication
 - 3800 printer **CPREF**
- internal routine invoking **SPIREF**
- internal routines
 - functions **SPIUG**
 - subroutines **SPIUG**
- internal trace table
 - CP **DIAG, PRGDE**
 - obtaining a copy of **PRGDE**
 - GCS **DIAG**
 - size **PLNGDE**
 - TSAF **DIAG**
- internal tracing facilities, GCS **DIAG**
- INTERPRET instruction **SPIREF, SPIUG**
- interpreter **SPIUG**
 - See also System Product Interpreter
- interpreter date and version **SPIREF**
- interpreting command formats **PRIMER**
- interpreting executable statements **EXEX2**
- interpretive execution of data **SPIREF**
- interrupt
 - APPC/VM **TSAFREF**
 - external console **CPPROG**
 - interval timer **CPPROG**
 - real I/O **CPPROG**
- interrupt, external
 - functions controlling **SFPROG**
 - IUCV **SFPROG**
 - avoiding **SFPROG**
 - control **SFPROG**
 - enabling or disabling **SFPROG**
 - message **SFPROG**
- interrupt handler
 - APPC **TSAFREF**
 - connection complete **TSAFREF**
 - connection pending **TSAFREF**
 - disabling for **TSAFREF**
 - enabling for **TSAFREF**
 - function complete **TSAFREF**
 - message pending **TSAFREF**
 - missing **CPPROG**
 - SENDREQ **TSAFREF**
 - SEVER **TSAFREF**
- interrupt handler, DMSITI module **CMSPROG**
- interrupt handling **CPPROG**
 - attached processor
 - real I/O interrupts **CPPROG**
 - synchronous interrupts **CPPROG**
 - external **CPPROG**
 - I/O interrupts **CPPROG**
 - machine check interrupts **CPPROG**
 - MP (multiprocessor)
 - real I/O interrupts **CPPROG**
 - synchronous interrupts **CPPROG**
 - program interrupts **CPPROG**
 - SVC **CPPROG**
- interrupting
 - infinite loops **REL5GDE**
 - when using full-screen CMS **REL5GDE**
 - program execution **CMSUG, SPIREF**
- interruption handling
 - external interruptions monitored **CPREF**
 - I/O interrupts **CPREF**
 - machine check interruptions monitored **CPREF**
 - simulated I/O interruptions **CPREF**
 - SVC interruptions monitored **CPREF**
 - unstack I/O
 - monitored in CP internal trace table **CPREF**
- interruptions **CPREF**
 - clearing from a virtual machine **CPREF**
 - handling
 - I/O (input/output) **CPPROG**
 - range of external codes **CPREF**
 - signaling on display terminal **CMSUG**
 - simulating attention **CPREF**
 - simulating external **CPREF**
 - specifying virtual device-end **CPREF**
 - tracing **CPREF**
- interrupts
 - CMS macros for handling **CMSPROG**
 - DMSIOW module **CMSPROG**
 - DMSITE module **CMSPROG**
 - DMSITI module **CMSPROG**
 - DMSITP module **CMSPROG**
 - DMSITS module **CMSPROG**
 - external interrupts **CMSPROG**
 - input/output interrupts **CMSPROG**
 - machine check interrupts **CMSPROG**
 - printer interrupts **CMSPROG**
 - program interrupts **CMSPROG**
 - punch interrupts **CMSPROG**

- reader interrupts **CMSPROG**
 real I/O **CPPROG**
 SVC
 SVC interrupts **CMSPROG**
 terminal interrupts **CMSPROG**
 user-controlled device interrupts **CMSPROG**
- INTERVAL** operand
 of **MONITOR** command **CPREF**
- interval timer **CPPROG, RGOS**
 at initialization **OPGDE**
 described **OPGDE**
 interrupt **CPPROG**
- interval timer assist
 part of **ECPS** **OPGDE**
- interval values
 default
 MIH (missing interrupt handler) **CPPROG**
 MIH (missing interrupt handler)
 determining **CPPROG**
 missing interrupt
 changing **CPPROG**
- INTMC** (machine check interrupt code) **DIAG**
INTO statement of **SQL** **APGDE**
INTPR (program interrupt code) **DIAG**
 introduction **EXEC2, SYMSG**
 to operational control of the system **OPGDE**
- introduction to **GCS** **GCSREF**
 introduction to operational control **OPGDE**
- introduction to running
 MVS under **VM/SP HPO** **RGOS**
 VM under **VM** **RGOS**
 VSE under **VM** **RGOS**
- introduction to **XEDIT** **CMSLOT, PRIMER**
- INTSVC** (**SVC** interrupt code) **DIAG**
INTSVC for **SVC** handling routine
 CMS SVCs **CMSPROG**
 internal linkage **SVC** **CMSPROG**
- INV** option
 of **INCLUDE** command **CMSREF**
 of **LOAD** command **CMSREF**
- investigating
 migration problems **CPPROG**
- invoking
 built-in functions **SPIREF**
 DDR (**DASD** Dump Restore)
 as a stand-alone program **CPPROG**
 under **CMS** **CPPROG**
 IUCV functions **SFPROG**
 programmable operator facility **SFPROG**
 automatically **SFPROG**
 commands **SFPROG**
 manually **SFPROG**
 routines **SPIREF**
 System Product Editor **CMSUG**
 System Product Interpreter **EXECs** **CMSUG**
 the **CMS** batch facility **OPGDE**
 VMCF functions **SFPROG**
 VSAPL on display terminal **CMSUG**
- invoking a compiler **PRIMER**
 invoking a program **PRIMER**
 invoking an **EXEC** **PRIMER**
 invoking assembler **H** **INTRO**
- invoking the editor **XEDITUG**
 in typewriter mode **XEDITUG**
- IOBLOK**
 unstack
 monitored in **CP** internal trace table **CPREF**
- IOCP** (Input/Output Configuration Program) **PLNGDE**
- IOSECT** (I/O interrupt work area) **DIAG**
- IPARML** **DSECT** **TSAFREF**
- IPCS** (interactive problem control system) **CMSREF, CPPROG, INTRO, PLNGDE, PRGDE, REL5GDE, TERMREF**
 commands summary **DIAG**
 complete **CUSTOMER PROFILE**
 existing **VM** system procedure **INST**
 Starter System procedure **INST**
 control blocks, new and changed **REL5GDE**
 conversion considerations **PLNGDE**
 CONVIPCS EXEC **PLNGDE**
 copy files, new **REL5GDE**
 data files
 customer profile **DIAG**
 IPCS load map **DIAG**
 PRBnnnnn aaaaaaaa **DIAG**
 PRBnnnnn dump **DIAG**
 PRBnnnnn report **DIAG**
 statall local **DIAG**
 summary record **DIAG**
 symptom summary **DIAG**
 data flow **DIAG**
 DUMPSCAN subcommands summary **DIAG**
 enhancements
 diagnosing a **TSAF** dump **REL5GDE**
 DUMPSCAN scroll support **REL5GDE**
 MAP command enhancement **REL5GDE**
 functional overview **DIAG**
 general description **INST**
 introduction **DIAG, PLNGDE**
 load object code from product tape
 existing **VM** system procedure **INST**
 Starter System procedure **INST**
 machine requirements **PLNGDE**
 macros, new and changed **REL5GDE**
 major functions
 problem and data management **DIAG**
 problem diagnosis **DIAG**
 problem reporting **DIAG**
 migration considerations **REL5GDE**
 module splits **REL5GDE**
 modules changed **REL5GDE**
 modules new **REL5GDE**
 modules to regenerate after service **INST**
 programming requirements **PLNGDE**
 publications **TERMREF**
 return codes **SYMSG**
 source file identifier, **DMMSP** **CNTRL** **INST**
 storage requirements
 calculating **DASD** space **PLNGDE**
 external storage **PLNGDE**
 text files **INST**
 usage
 A-disk space management **DIAG**
 CMS load map (**CMSNUC** **MAP**) **DIAG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- completing customer profile **DIAG**
- conversion considerations **DIAG**
- CONVERT command **DIAG**
- CONVIPCS EXEC **DIAG**
- CP load map (CPNUC MAP) **DIAG**
- debugging a dump **DIAG**
- GCS load map (GCSNUC MAP) **DIAG**
- generating load map **DIAG**
- generating problem report **DIAG**
- hard-copy of APAR **DIAG**
- hard-copy of dump **DIAG**
- IPCS load map **DIAG**
- operating procedures **DIAG**
- other load maps **DIAG**
- preliminary considerations **DIAG**
- recognizing duplicate problems **DIAG**
- supplementary data **DIAG**
- TSAF load map (TSAF MAP) **DIAG**
- typical operating sequence **DIAG**
- updating problem report **DIAG**
- IPCS (interactive problem control system) commands
 - APAR command **DIAG**
 - DUMPSCAN command **DIAG**
 - + and - subcommand **DIAG**
 - &name **DIAG**
 - ? subcommand **DIAG**
 - AREGS subcommand **DIAG**
 - ARIOBLOK subcommand **DIAG**
 - C subcommand **DIAG**
 - CHAIN subcommand **DIAG**
 - CMS subcommand **DIAG**
 - CMSPOINT subcommand **DIAG**
 - CORTABLE subcommand **DIAG**
 - DISPLAY subcommand **DIAG**
 - DOSPOINT subcommand **DIAG**
 - DUMPID subcommand **DIAG**
 - END subcommand **DIAG**
 - FDISPLAY subcommand **DIAG**
 - G subcommand **DIAG**
 - HELP subcommand **DIAG**
 - HX subcommand **DIAG**
 - IPCSMAP subcommand **DIAG**
 - IUCV subcommand **DIAG**
 - LOCATE (UP) subcommand **DIAG**
 - MAPA subcommand **DIAG**
 - MAPN subcommand **DIAG**
 - MREGS subcommand **DIAG**
 - MRIOBLOK subcommand **DIAG**
 - OSPOINT subcommand **DIAG**
 - PRINT subcommand **DIAG**
 - QUIT subcommand **DIAG**
 - REGS subcommand **DIAG**
 - REUSE subcommand **DIAG**
 - RIOBLOK subcommand **DIAG**
 - SCROLL subcommand **DIAG**
 - SYMP subcommand **DIAG**
 - TACTIVE subcommand **DIAG**
 - TLOADL subcommand **DIAG**
 - TRACE subcommand **DIAG**
 - TSAB subcommand **DIAG**
 - USERMAP subcommand **DIAG**
 - VIOBLOK subcommand **DIAG**
 - VMBLOK subcommand **DIAG**
 - VMLOADL subcommand **DIAG**
 - DUMPSCAN TRACE TSAFREF
 - FDISPLAY TSAFREF
 - IPCSDUMP command **DIAG**
 - MAP command **DIAG**
- notational convention **DIAG**
- PRB command **DIAG**
- PROB command **DIAG**
- PRTDUMP TSAFREF
- PRTDUMP command **DIAG**
- STAT command **DIAG**
- summary **DIAG**
- IPCS (VM/370 Interactive Problem control program)
 - CPPROG
 - IPCS command summary **DIAG**
 - IPCS commands
 - IPCSDUMP OPGDE
 - IPCS DUMPSCAN subcommands summary **DIAG**
 - IPCS interface files **DIAG**
 - IPCS updating **INST**
 - IPCS variables
 - FEDFEXSW **DIAG**
 - HEXAD **DIAG**
 - PRINTONE **DIAG**
 - REUSEAD **DIAG**
 - SCROLAD **DIAG**
 - SCROLLEN **DIAG**
 - SCROLUAD **DIAG**
 - IPCSDUMP
 - command (IPCS) OPGDE
 - IPCSDUMP command
 - description **DIAG**
 - error message **DIAG**
 - format **DIAG**
 - functions provided **DIAG**
 - keywords used in PRBnnnnn report **DIAG**
 - problem report generation **DIAG**
 - response **DIAG**
 - sample initiation **DIAG**
 - symptom record generation **DIAG**
 - usage
 - CP dump **DIAG**
 - general **DIAG**
 - partial dump **DIAG**
 - IPCSMAP subcommand of DUMPSCAN command
 - description **DIAG**
 - error message **DIAG**
 - format **DIAG**
 - functional category **DIAG**
 - response **DIAG**
 - sample output **DIAG**
 - usage **DIAG**
- IPF (Interactive Productivity Facility) **INTRO**
- IPFSERV **INST**
- IPL (initial program load) APGDE, CPPROG, REL5GDE,
 - TERMREF
 - and the NAMESYS macro REL5GDE
 - and the System Profile REL5GDE
 - automatic APGDE
 - command APGDE
 - device, replacing directory entry SFPROG
 - effect on 3880 CPPROG
 - entering CMS environment CMSUG
 - how to automate for VSE/SP 2.1 guest RGOS
 - linking Installation DCSS CMSUG
 - monitor considerations CPPROG
 - MVS virtual machine RGOS
 - directory control statement RGOS
 - EXEC procedure RGOS
 - preferred guest RGOS
 - V = V or V = R guest RGOS
 - new parameter REL5GDE
 - of an operating system CPREF

RAS improvements **REL5GDE**
 second-level VM system **RGOS**
 directory control statement **RGOS**
 stopping **CPREF**
 suppressing automatic **CPREF**
 VMSAVE option **CPPROG**
 VSE virtual machine **RGOS**
 Device Support Facility **RGOS**
 directory control statement **RGOS**
 EXEC procedure **RGOS**
 IPL CMS command **CMSLOT, PRIMER**
 IPL command **CMSUG, CPREF, REL5GDE, PLNGDE**
 BATCH parameter **CMSPROG**
 described **CPREF**
 description of **CMSPROG**
 for named systems **CPREF**
 format of **CMSPROG**
 NOSPROF parameter **CMSPROG, REL5GDE**
 operands
 ATTN CPREF
 CLEAR CPREF
 cylno CPREF
 nnnnnn CPREF
 NOCLEAR CPREF
 PARM CPREF
 PMA CPREF
 PMAV CPPROG, CPREF
 STOP CPREF
 systemname CPREF
 vaddr CPREF
 responses **CPREF**
 SAVESYS parameter **CMSPROG**
 usage notes **CPREF**
 IPL directory control statement
 operands
 PARM PLNGDE
 IPL of stand-alone dump facility **DIAG**
 IPL performance using saved system **CMSPROG**
 IPL, automatic **CMSLOT**
 IPLADDR operand
 of DEFNUC macro **PLNGDE**
 IPLCYL0 operand
 of DEFNUC macro **PLNGDE**
 IS NULL predicate of SQL **APGDE**
 ISAM
 CMS restriction **CMSPROG**
 CMS/DOS restriction **CMSPROG**
 ISAM (Indexed Sequential Access Method) **CPREF**
 ISAM Interface Program (IIP) **PLNGDE**
 ISAM Interface Program (IIP) **CMSPROG**
 ISAM operand
 of **OPTION**
 directory control statement **PLNGDE**
 of SET command **CPREF**
 ISAM option
 defining in directory **PLNGDE**
 ISPEXEC **APGDE**
 ISPEXEC command **APGDE**
 ISPF (Interactive System Productivity Facility)
 APGDE, INST, INTRO
 breakpoints **APGDE**
 browse option **APGDE**
 commands **APGDE**
 ISPSTART APGDE
 PRINT APGDE
 PRINT-HI APGDE
 dialog test option **APGDE**
 dialog testing **APGDE**
 dialogs **APGDE**
 error handling **APGDE**
 ERRORS setting **APGDE**
 EXECs and **APGDE**
 file tailoring output libraries **APGDE**
 file tailoring services **APGDE**
 file tailoring skeletons **APGDE**
 function trace option **APGDE**
 functions **APGDE**
 functions option **APGDE**
 HELP panels **APGDE**
 invoking **APGDE**
 ISPEXEC APGDE
 libraries **APGDE**
 LOADLIBs APGDE
 log option **APGDE**
 message definition **APGDE**
 message libraries **APGDE**
 messages **APGDE**
 panel libraries **APGDE**
 panel option **APGDE**
 panel services **APGDE**
 panels **APGDE**
 PDF APGDE
 libraries **APGDE**
 prototyping applications **APGDE**
 requirements using **APGDE**
 SELECT service **APGDE**
 services **APGDE**
 skeleton libraries **APGDE**
 skeletons **APGDE**
 table input libraries **APGDE**
 table output libraries **APGDE**
 table services **APGDE**
 tables **APGDE**
 tables option **APGDE**
 traces option **APGDE**
 TXTLIBs APGDE
 variable services **APGDE**
 variable trace option **APGDE**
 variables option **APGDE**
 ISPF panels **APGDE**
 ISPF/PDF INST
 ISPFFILE libraries **APGDE**
 ISPLINK APGDE
 ISPLLIB APGDE
 ISPLNK APGDE
 ISPLMLIB libraries **APGDE**
 ISPLPLIB libraries **APGDE**
 ISPLSLIB libraries **APGDE**
 ISPSTART command **APGDE**
 ISPTABL libraries **APGDE**
 ISPTLIB libraries **APGDE**
 ISPVM INST
 ISPXLIB APGDE

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- ISQL APGDE**
 commands
 INPUT APGDE
 testing APGDE
- ISQL (Interactive SQL) INTRO**
 issuing commands PLNGDE
 to CMS SPIUG
 to CP SPIUG
 to the given subcommand environment EXEX2
 to the host system EXEX2
- issuing CP commands to
 first-level VM RGOS
 VSE virtual machine RGOS
- italic type PRIMER
- ITASK command CMSUG**
- ITASK EXEC REL5GDE**
 command format INST
 function INST
 messages INST
 options INST
- ITERATE instruction SPIUG**
 See also DO instruction
 description SPIREF
 use of variable on SPIREF
- ITRACE PRGDE**
- ITRACE command DIAG, GCSREF**
 all operand GCSREF
 description GCSREF
 end operand GCSREF
 group operand GCSREF
 gtrace operand GCSREF
 off operand GCSREF
 sup operand GCSREF
- IUCV (Inter-User Communication Vehicle)**
CPPROG, PLNGDE, REL5GDE, SFPROG
 *CRM directory entry TSAFREF
 ACCEPT function TSAFREF
 ALLOW directory entry TSAFREF
 APPC/VM REL5GDE
 APPC/VM program interface REL5GDE
 authorizing communication path PLNGDE
 basic communication functions SFPROG
 CMS SFPROG
 CMS, between two virtual machines SFPROG
 communications
 between virtual machines INTRO
 DASD block I/O system service SFPROG
 error logging system service SFPROG
 example SFPROG
 message system service SFPROG
 monitored in CP internal trace table CPREF
 signal system service SFPROG
 spool system service SFPROG
 using control paths SFPROG
 using data in a buffer SFPROG
 using data in a parameter list SFPROG
 with CP system services SFPROG, INTRO
 with DASD Block I/O SFPROG
- CONNECT function TSAFREF**
 connection complete SFPROG
 connection pending SFPROG
 connection quiesced SFPROG
 connection resumed SFPROG
 connection severed SFPROG
 connections, specifying maximum number PLNGDE
 control paths SFPROG
 DASD block I/O system service, use SFPROG
 defined GCSREF
 description INTRO
 differences from APPC/VM TSAFREF
 DCB/BFR function TSAFREF
 DESCRIBE function TSAFREF
 enhanced support in CMS REL5GDE
 entry of CP internal trace table DIAG
 Error Logging System Service, use SFPROG
 external interrupt SFPROG
 avoiding SFPROG
 control SFPROG
 enabling or disabling SFPROG
 message SFPROG
 functional terminology SFPROG
 functions
 See IUCV functions
 functions controlling external interrupts SFPROG
 functions provided with GCS PLNGDE
 introduction SFPROG
 invoking SFPROG
 IUCV functions for APPC/VM REL5GDE
 macro description SFPROG
 Message All System Service SFPROG
 message complete SFPROG
 message pending SFPROG
 Message System Service use SFPROG
 messages SFPROG
 data transfer SFPROG
 identification SFPROG
 migration considerations REL5GDE
 parameters, specifying SFPROG
 paths SFPROG
 control SFPROG
 programmable operator SFPROG
 QUERY function TSAFREF
 references to other publications REL5GDE
 RTRVBFR function TSAFREF
 receiving messages
 from the special message facility SFPROG
 security considerations SFPROG
 SEND function TSAFREF
 SETCMASK function TSAFREF
 SETMASK function TSAFREF
 sequence of functions SFPROG
 signal system service
 use SFPROG
 type X'07' entry DIAG
 SNA environment use SFPROG
 special message facility SFPROG
 Spool System Service, use SFPROG
 structure of the SNA environment PLNGDE
 support for MVS guest RGOS
 support in GCS, enhancement REL5GDE
 system services
 TESTCMPL function TSAFREF
 TESTMSG function TSAFREF
 trace table entries SFPROG
 field definitions SFPROG
 formats SFPROG
 suppressing SFPROG
 two-way SEND TSAFREF
 usability enhancement REL5GDE
 virtual machine communication facility PLNGDE
- IUCV directory control statement operands**
 *CCS PLNGDE
 *CRM PLNGDE
 *LOGREC PLNGDE
 *SIGNAL PLNGDE
 *SPL PLNGDE

ALLOW PLNGDE
 ANY PLNGDE
 GLOBAL PLNGDE
 IDENT PLNGDE
 LOCAL PLNGDE
 MSGLIMIT PLNGDE
 PRIORITY PLNGDE
 RESANY PLNGDE
 REVOKE PLNGDE
 IUCV functions SFPROG
 ACCEPT SFPROG
 parameter list format SFPROG
 using SFPROG
 CONNECT SFPROG
 parameter list format SFPROG
 to the SPOOL system service SFPROG
 using SFPROG
 DECLARE BUFFER, using SFPROG
 parameter list format SFPROG
 DESCRIBE SFPROG
 parameter list format SFPROG
 using SFPROG
 PURGE
 parameter list format SFPROG
 using SFPROG
 QUERY, using SFPROG
 QUIESCE SFPROG
 parameter list format SFPROG
 using SFPROG
 RECEIVE SFPROG
 parameter list format SFPROG
 using SFPROG
 REJECT SFPROG
 parameter list format SFPROG
 using SFPROG
 REPLY SFPROG
 parameter list format SFPROG
 using SFPROG
 RESUME SFPROG
 parameter list format SFPROG
 using SFPROG
 RETRIEVE BUFFER, using SFPROG
 SEND SFPROG
 parameter list format SFPROG
 to the DASD block I/O system service SFPROG
 to the signal system service SFPROG
 to the SPOOL system service SFPROG
 using SFPROG
 SET CONTROL MASK SFPROG
 parameter list format SFPROG
 using SFPROG
 SET MASK SFPROG
 parameter list format SFPROG
 using SFPROG
 SEVER SFPROG
 parameter list format SFPROG
 using SFPROG
 system services SFPROG
 DASD block I/O SFPROG
 error logging SFPROG
 message SFPROG
 message all SFPROG
 signal SFPROG
 SNA console communication services SFPROG
 spool SFPROG
 terminology SFPROG
 TEST COMPLETION SFPROG
 parameter list format SFPROG
 using SFPROG
 TEST MESSAGE, using SFPROG
 IUCV subcommand of DUMPSCAN command
 description DIAG
 error messages DIAG
 format DIAG
 functional category DIAG
 response DIAG
 sample output DIAG
 usage DIAG
 IUCVCOM macro GCSREF, REL5GDE
 accept parameter GCSREF
 code parameter GCSREF
 connect parameter GCSREF
 description GCSREF
 error parameter GCSREF
 execute format GCSREF
 exit parameter GCSREF
 list address format GCSREF
 list format GCSREF
 mf parameter GCSREF
 name parameter GCSREF
 path parameter GCSREF
 prmlist parameter GCSREF
 purge parameter GCSREF
 query parameter GCSREF
 quiesce parameter GCSREF
 receive parameter GCSREF
 reject parameter GCSREF
 rep parameter GCSREF
 reply parameter GCSREF
 resume parameter GCSREF
 send parameter GCSREF
 sever parameter GCSREF
 uword parameter GCSREF
 IUCVINI macro GCSREF, REL5GDE
 clr parameter GCSREF
 description GCSREF
 error parameter GCSREF
 execute format GCSREF
 exit parameter GCSREF
 list address format GCSREF
 list format GCSREF
 mf parameter GCSREF
 name parameter GCSREF
 priv parameter GCSREF
 rep parameter GCSREF
 set parameter GCSREF
 uword parameter GCSREF
 IVP (Installation Verification Procedure)
 CMS functions tested INST
 CP functions tested INST
 format IVPM1 minidisk INST
 format IVPM2 minidisk INST
 interpret test results INST
 other functions tested INST

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

overview **INST**
procedure
 using **IVPM1 INST**
 using **IVPM2 INST**
requirements **INST**
variation using one terminal **INST**
verifying CP and CMS **INST**

IVPM1 PLNGDE
 format **IVPM1 minidisk INST**
 requirements **INST**
IVPM2 PLNGDE
 format **IVPM2 minidisk INST**
 requirements **INST**
IX/370 handshaking feature PLNGDE

J

job control cards (/JOB) **CMSPROG**
 job control language equivalent in CMS **CMSPROG**
 jobname for job sent to CMS batch facility
 specifying **CMSUG**
 used to identify spool files **CMSUG**
 jobs
 for CMS batch facility, submitting **CMSUG**
 submitting
 under CMS **RGOS**
 using **SUBVSE EXEC RGOS**
 join a line at cursor **PRIMER**
JOIN macro **XEDIT**
 example of **XEDIT**
 with **DBCS** strings **XEDIT**
JOIN subcommand of **XEDIT** command **APGDE**
 joining
 a group **PLNGDE**
 collections **TSAFREF**

files **XEDITUG**
 in typewriter mode **XEDITUG**
 lines **XEDITUG**
 at column number **XEDIT**
 at column pointer **XEDIT**
 at cursor **XEDIT**
 with strings inserted **XEDIT**
JOURNAL operand
 of **QUERY** command **CPREF**
 of **SET** command **CPREF**
 of **SYSJRL** macro **PLNGDE**
 journaling
 accounting records **CPPROG**
 LOGON
 AUTOLOG, **LINK** commands **CPPROG**
 journalizing facility **SYSJRL** macro **PLNGDE**
JULIAN option of **DATE** function **SPIREF**
 jumping through your program **SPIUG**
 justified left **SPIUG**
 justified words
 left-justified **EXEX2**
 right-justified **EXEX2**
JUSTIFY function **SPIREF**

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K

keeping

messages in a file **PRIMER**
 warnings in a file **PRIMER**
KEY option of **CMS QUERY**
 command **CMSREF**
 key protection **PLNGDE**
 keyboards **APGDE, TERMREF**
 for PC **TERMREF**
 function keys **TERMREF**
 F1-F10 keys **TERMREF**
 numeric keys **TERMREF**
 typewriter keys **TERMREF**
 layout **PRIMER**
 lock **TERMREF**
 with special features **TERMREF**
KEYLEN option of **FILEDEF** command **CMSREF**
 keys **TERMREF**
 See also particular devices
 ATTN INST
 back tab **PRIMER**
 BACKSPACE CMSLOT
 BREAK CMSLOT
 changing storage **CPPROG**
 character **APGDE**
 CLEAR APGDE
 CNCL APGDE
 control **APGDE, TERMREF**
 control keys for PC **TERMREF**
 cursor **TERMREF**
 screen management **TERMREF**
 controlling program function **CPREF**
 cursor
 control **APGDE**
 movement **PRIMER**
 positioning **TERMREF**
 DEL APGDE
 DMSEXS macro **CMSPROG**
 DMSKEY macro **CMSPROG**
 ENTER CMSLOT, INST
 ERASE EOF APGDE, PRIMER

ERASE INPUT APGDE
 extended storage **REL5GDE**
 for program function (PF) **INTRO**
 function keys for PC **TERMREF**
INS MODE APGDE
 keyboard for PC **TERMREF**
LOCK CMSLOT, PRIMER
 new-line **PRIMER**
 null entry **INST**
 numeric keys for PC **TERMREF**
PA1 APGDE
PA2 APGDE
 PF (program function) **APGDE, TERMREF,**
 TERMREF
 printing storage **CPREF**
PSW CMSPROG
 screen management **APGDE, TERMREF**
SHIFT CMSLOT, PRIMER
 storage
 changing **CPPROG**
 displaying **CPREF**
 storage protection **CMSPROG**
 supported processors **REL5GDE**
 tab **PRIMER**
 that signal the system **INST**
 to delete characters **PRIMER**
 typewriter keys for PC **TERMREF**

keywords

See also instructions
 conflict with commands **SPIREF**
 mixed case **SPIREF**
 of DO instruction
 END SPIUG
 of IF instruction
 ELSE SPIUG
 THEN SPIUG
 of SELECT instruction
 END SPIUG
 OTHERWISE SPIUG
 THEN SPIUG
 WHEN SPIUG
 reservation of **SPIREF**
 to manipulate program stack **SPIUG**
 translations of **CMSUG**
 used in PRBnnnnn report **DIAG**

L

- L border command **PRIMER**
- L operand of DCP command **CPREF**
- LABEL control statement **CPPROG**
- label information area
 - CMS/DOS PLNGDE**
- label of AUTOSAVE files **PRIMER**
- label off processing, tapes **CMSUG**
- LABEL option
 - of **FORMAT** command **CMSREF**
 - of **LISTFILE** command **CMSREF**
- label processing, general description **CMSUG**
- label requirements
 - FB-512 DASD OPGDE**
- LABELDEF
 - command
 - CHANGE** option **CMSREF**
 - CLEAR** operand **CMSREF**
 - CRDTE** operand **CMSREF**
 - description **CMSREF**
 - EXDTE** operand **CMSREF**
 - FID** operand **CMSREF**
 - FSEQ** operand **CMSREF**
 - GENN** operand **CMSREF**
 - GENV** operand **CMSREF**
 - NOCHANGE** option **CMSREF**
 - PERM** option **CMSREF**
 - SEC** operand **CMSREF**
 - VOLID** operand **CMSREF**
 - VOLSEQ** operand **CMSREF**
 - description **CMSUG**
 - in **CMS/DOS** tape label processing **CMSUG**
 - in tape processing **CMSUG**
 - operand of **CMS QUERY** command **CMSREF**
 - standard labels **CMSUG**
 - use of **CMSUG**
- labeling
 - a line **XEDITUG**
 - CMS** disk labels **PLNGDE**
 - DASD** volumes **CPPROG**
 - minidisks **PLNGDE**
- labels
 - as targets of **CALL SPIREF**
 - as targets of **SIGNAL SPIREF**
 - description of **EXEC2, SPIREF, SPIUG**
 - DOS** disks **CMSPROG**
 - duplicate **SPIREF**
 - example **EXEX2**
 - in a **CALL** instruction **SPIUG**
 - in **INTERPRET** instruction **SPIREF**
 - OS VSAM** disks, determining for **AMSERV CMSPROG**
 - performance **EXEX2**
 - search **EXEX2**
 - search algorithm **SPIREF**
 - using **VSAM** tapes in **CMS/DOS CMSPROG**
 - using **VSAM** tapes in **OS CMSPROG**
 - writing on **CMS** disks **CMSUG**
- LABOFF (label off) processing **CMSUG**
- LABOFF operand of **FILEDEF** command **CMSREF**
- LANG operand of **OPTION**
 - directory control statement **PLNGDE**
- LANG option **REL5GDE**
 - automatically setting your virtual machine to a specified language **REL5GDE**
 - defining in directory **PLNGDE**
- LANGADD function
 - adding **LANGBLKs** to language block chain **MACREF**
 - language control block **MACREF**
- LANGBLK macro **CMSPROG**
- LANGFIND function
 - language control block **MACREF**
 - locating **LANGBLKs** on language block chain **MACREF**
- LANGGCTL filetype usage in **CMS CMSUG**
- LANGGEN command **CMSREF, CMSUG, REL5GDE, SFPROG**
 - control file **SFPROG**
 - example **SFPROG**
 - updating **SFPROG**
 - format **SFPROG**
- LANGID operand
 - of **DEFNUC** macro **PLNGDE**
 - of **NAMELANG** macro **PLNGDE**
- LANGLEV operand of **DEFNUC** macro **PLNGDE**
- LANGLIST option of **CMS**
 - QUERY** command **CMSREF**
- LANGMAP filetype usage in **CMS CMSUG**
- LANGMCTL filetype usage in **CMS CMSUG**
- LANGMERG command **CMSREF, CMSUG, REL5GDE, SFPROG**
 - combining all **CMS** language files into one file **REL5GDE**
 - control file **SFPROG**
 - example **SFPROG**
 - format **SFPROG**
- language control block **MACREF**
 - LANGADD** function **MACREF**
 - LANGFIND** function **MACREF**
- language files for **CP** and **CMS REL5GDE**
 - combining **REL5GDE**
 - creating **REL5GDE**
 - reserving **DASD** space for **REL5GDE**
 - saving **REL5GDE**
- LANGUAGE option of **CMS**
 - QUERY** command **CMSREF**
- language processors **INTRO**
- language statements
 - in **EXEC 2** language **CMSUG**
 - in **REXX** language
 - for **System Product Interpreter CMSUG**
- language structure and syntax **SPIREF**
- language support
 - See **National Language Support (NLS)**
- languages **REL5GDE**
 - automatically specifying another language using the **LANG** option **REL5GDE**
 - CMS** command **CMSPROG**
 - displaying a list
 - of valid languages you can set **REL5GDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- national **SFPROG**
 - adding information
 - for an application **SFPROG**
 - defined in **DMSGP ASSEMBLE INST**
 - deleting **SFPROG**
 - application information **SFPROG**
 - displaying messages in other **SYMSG**
 - feature tape **SFPROG**
 - installing on VM **SFPROG**
 - LANGGEN** command **SFPROG**
 - LANGMERG** command **SFPROG**
 - loading the files
 - from tape to disk **SFPROG**
 - saving files for CP and CMS **SFPROG**
 - setting, **DIAGNOSE** code X'CS' **SFPROG**
 - update user directory entries for **SFPROG**
- other than English
 - issuing commands in **PLNGDE**
- specifying another language **REL5GDE**
 - using the **SET LANGUAGE** command **REL5GDE**
- support for **REL5GDE**
- supported **SRPI**
 - by CMS **PLNGDE**
- large files split into smaller files **CMSUG**
- last command, re-executing **CMSLOT**
- last in/last out
 - See **LIFO**
- last line of file, moving
 - current line to **CMSLOT**
- LAST** output field of **STAT** command **DIAG**
- last subcommand
 - advancing line pointer and repeating **XEDIT**
 - displaying **XEDIT**
 - reexecuting **XEDIT**
- LASTCMND** field **DIAG**
- LASTEXEC** field **DIAG**
- LASTLOR** option
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
 - of **SET XEDIT**
- LASTMSG** option
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
 - of **TRANSFER XEDIT**
- lastpage operand
 - of **LOCK** command **CPREF**
 - of **UNLOCK** command **CPREF**
- LASTPOS** function **SPIREF, SPIUG**
- laying out virtual storage **PLNGDE**
- layout of display screen **TERMREF**
- LDRTBLS** option of CMS
 - QUERY** command **CMSREF**
- LDSF** (Logical Device Support Facility)
 - introduction **PLNGDE**
- LDT** statement of **TXTLIB** member **APGDE**
- leading blank removal with
 - STRIP** function **SPIREF**
- leading zeros
 - adding with the **RIGHT** function **SPIREF**
 - example **EXEX2**
 - removal with **STRIP** function **SPIREF**
 - removing **EXEX2**
- learning to use **XEDIT** **CMSLOT, PRIMER**
- leased line **TERMREF**
- LEAVE** instruction **SPIUG**
 - See also **DO** instruction
 - description of **SPIREF**
 - use of variable on **SPIREF**
- LEAVE** operand
 - of **DETACH** command **CPREF**
 - of **SPTAPE** command **CPREF**
- LEAVE** option of **FILEDEF** command **CMSREF**
- leaving
 - CMS subset environment **CMSUG**
 - CMS/DOS environment **CMSUG**
 - debug environment **CMSUG**
 - input mode **CMSUG**
 - the signal system service **SFPROG**
 - XEDIT** environment **CMSUG**
- leaving
 - a group **PLNGDE**
 - full-screen CMS **PRIMER**
 - insert mode **PRIMER**
 - loops **SPIUG**
 - your program **SPIREF, SPIUG**
- LEFT XEDITUG**
- LEFT** command of **DMS/CMS** **APGDE**
- LEFT** function **SPIREF, SPIUG**
- left shift **XEDIT**
- LEFT** subcommand **XEDIT**
 - example of **XEDIT**
 - with **DBCS** strings **XEDIT**
- left-justified **EXEC2, SPIUG**
- LENGTH** function **SPIREF, SPIUG**
- LENGTH** option
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
 - of **TRANSFER XEDIT**
- LENGTH** parameter (**APPC**)
 - of **RECEIVE_AND_WAIT** **TSAFREF**
 - of **SEND_DATA** **TSAFREF**
- lengths
 - limits **EXEX2**
 - message **TSAFREF**
 - of CMS ready message, changing **CMSUG**
 - of words, finding **EXEX2**
- less than operator (<) **SPIREF, SPIUG**
- less than or equal operator (<=) **SPIREF**
- less than or greater than operator (<>) **SPIREF**
- less than 16 megabyte constraint relief **REL5GDE**
- LET** option of **LKED** command **APGDE, CMSREF**
- Level One Support Center **INST**
- levels of headings **CMSLOT**
- LGLOPR**
 - See also programmable operator facility
 - action routine **SFPROG**
 - command **SFPROG**
 - statement **SFPROG**
- Lhexloc operand
 - of **STCP** command **CPREF**
- Lhexloc1 operand
 - of **DCP** command **CPREF**
- LIBE** option
 - of **INCLUDE** command **CMSREF**
 - of **LKED** command **CMSREF**
 - of **LOAD** command **CMSREF**
- LIBMAC** option of **ASSEMBLE** command **CMSREF**
- LIBNAME** option
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
- LIBPDS** statement of **MACLIBs** **APGDE**
- libraries **APGDE**
 - CMS/DOS **CMSPROG**
 - COBOL subroutine **INTRO**
 - copying modules from **CMSPROG**
 - creating **APGDE**

- defining **APGDE**
- DOS core image **CMSPROG**
- DOS libraries in CMS/DOS **CMSPROG**
- DOS/VSE source statement used in CMS **CMSPROG**
- FORTRAN subroutine **INTRO**
- ISPF
 - concatenating **APGDE**
 - ISPF FILE **APGDE**
 - ISPF LIB **APGDE**
 - ISPF LIB **APGDE**
 - ISPF LIB **APGDE**
 - ISPF TABL **APGDE**
 - ISPF TABL **APGDE**
 - message **APGDE**
 - panel **APGDE**
 - skeleton **APGDE**
 - table input **APGDE**
 - table output **APGDE**
- ISPF/PDF **APGDE**
- load **APGDE**
- LOADLIB **APGDE**
- MACLIBs in EXECs **APGDE**
- macro **APGDE**
 - compressing **APGDE**
 - displaying members of **APGDE**
 - examining contents of **APGDE**
 - extracting a member of **APGDE**
 - manipulating members of **APGDE**
 - printing members of **APGDE**
 - system **APGDE**
- members **APGDE**
- needed for programs **PRIMER**
- OS, macro libraries
 - See macro libraries, OS
- PDF **APGDE**
- PL/I subroutine **INTRO**
- programs, CMS/DOS **CMSPROG**
- system macro libraries for CMS **PLNGDE**
- text **APGDE**
 - adding members to **APGDE**
 - deleting members of **APGDE**
 - replacing members of **APGDE**
- TXTLIBs **APGDE**
 - in EXECs **APGDE**
- types
 - LOADLIBs **CMSPROG**
 - MACLIBs **CMSPROG**
 - TXTLIBs **CMSPROG**
- using directories **CMSPROG**
- volumes for CMS/DOS directory entries **CMSPROG**
- VSE
 - assigning logical units **CMSREF**
 - obtain information about **CMSREF**
- VSE core image
 - defining IJSYSCL **CMSREF**
 - fetching phases from **CMSREF**
- VSE procedure
 - copying procedures from **CMSREF**
 - displaying directories **CMSREF**
 - displaying procedures from **CMSREF**
 - printing procedures from **CMSREF**
 - punching procedures from **CMSREF**
- VSE relocatable
 - assigning SYSRLB **CMSREF**
 - copying modules from **CMSREF**
 - defining IJSYSRL **CMSREF**
 - displaying modules from **CMSREF**
 - link-editing modules from **CMSREF**
 - printing modules from **CMSREF**
 - punching modules from **CMSREF**
- VSE source statement
 - copying macros from **CMSREF**
 - defining IJSYSSL **CMSREF**
- library **REL5GDE**
 - reorganization **REL5GDE**
 - services **APGDE**
 - structure of VSE/SP 2.1 **RGOS**
- LIBRARY
 - loader control statement **CMSREF**
 - option, of CMS QUERY command **CMSREF**
- LIBTYPE option
 - of EXTRACT **XEDIT**
 - of QUERY **XEDIT**
- license requirements **REL5GDE**
- licensed program
 - COBOL **INTRO**
 - defined **INTRO**
 - Directory Maintenance **INTRO**
 - Display Management System (DMS/CMS) **INTRO**
 - Document Composition Facility (DCF) **INTRO**
 - FORTRAN **INTRO**
 - FORTRAN Interactive Debug **INTRO**
 - Graphical Data Display Manager (GDDM) **INTRO**
 - High Performance Option (HPO) **INTRO**
 - IBM BASIC **INTRO**
 - identification bits **SFPROG**
 - interactive problem control system (IPCS) **INTRO**
 - Interactive Productivity Facility (IPF) **INTRO**
 - Pass-Through Facility **INTRO**
 - PL/I **INTRO**
 - Professional Office System (PROFS) **INTRO**
 - Remote Spooling Communications Subsystem (RSCS)
 - Networking **INTRO**
 - service provided **INTRO**
 - SQL/Data System **INTRO**
 - with QMF **INTRO**
 - VS APL **INTRO**
- LIFO (last-in/first-out) **EXEC2, SPIUG, APGDE**
- operand
 - option
 - of IDENTIFY command **CMSREF**
 - of NAMEFIND command **CMSREF**
 - of NUCXMAP command **CMSREF**
 - of RDR command **CMSREF**
 - stacking **SPIREF**
- LIKE predicate of SQL **APGDE**
- LIMCT option of FILEDEF command **CMSREF**
- LIMIT operand
 - of MONITOR command **CPREF**
 - of SET command **CPREF**
 - of SYSACNT macro **PLNGDE**
 - of SYSMON macro **PLNGDE**
- limitations of CMS IUCV **SFPROG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- limits for column pointer movement defined **XEDIT**
- limits for EXEC 2 files in CMS **EXEX2**
- limits for line pointer movement defined **XEDIT**
- line code, determining
 - for 3270s **PLNGDE**
- line editing characters **TERMREF**
- line editing symbols,
 - controlling **CPREF**
- line end character **XEDITUG**
 - defining **XEDIT**
 - recognizing **XEDIT**
 - used in power typing **XEDIT**
- line length
 - controlling at your terminal **CPREF**
 - of terminal **SPIREF**
- line location information **PRIMER**
- LINE** macro for 3704/3705 control program **INST**
- line mode **CMSUG**
 - editing in **XEDIT**
 - support with ASCII **REL5GDE**
- line name
 - assigning using .xxxx (prefix subcommand) **XEDIT**
 - assigning using SET POINT **XEDIT**
 - deleting **XEDIT**
 - specifying target as **XEDIT**
 - target as **XEDITUG**
 - example of **XEDITUG**
- line numbers
 - displaying **XEDIT, XEDITUG**
 - renumbering **XEDIT**
 - setting on **PRIMER**
 - specifying target as **XEDIT**
 - used in COPY command **CMSLOT**
 - used in GET command **CMSLOT**
 - used in MOVE command **CMSLOT**
 - used in SORT command **CMSLOT**
- LINE** operand
 - of **CLUSTER** macro **PLNGDE**
 - of **DEFINE** command **CPREF**
- LINE** option
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
 - of **TRANSFER XEDIT**
- line pointer **XEDITUG**
 - advancing
 - using a target **XEDIT**
 - using **BOTTOM XEDIT**
 - using **DOWN XEDIT**
 - using **NEXT XEDIT**
 - advancing and repeating last subcommand **XEDIT**
 - controlling movement of when string not found **XEDIT**
 - effect of SET STAY on **XEDIT**
 - in typewriter mode **XEDITUG**
 - moved by target **XEDITUG**
 - movement
 - defining limits **XEDIT**
 - moving
 - to last file line **XEDIT**
 - to TOF **XEDIT**
 - up **XEDIT**
 - using / (prefix subcommand) **XEDIT**
- Line Timeout feature **TERMREF**
- line width of terminal **SPIREF**
- line wrapping, automatic **XEDIT, XEDITUG**
- line-mode display **TERMREF**
- line-number editing
- Line = **XEDITUG**
- LINECOUN** option
 - of **ASSEMBLE** command **CMSREF**
 - of **PRINT** command **CMSREF**
- LINEDEL** operand of **TERMINAL** command **CPREF**
- LINEDIT** macro **APGDE, CMSPROG**
 - See also **MACREF**
 - BUFFA** operand **MACREF**
 - COMP** operand **MACREF**
 - converting decimal values
 - to EBCDIC **MACREF**
 - to hexadecimal **MACREF**
 - DISP** operand **MACREF**
 - displaying
 - conversion results at terminal **MACREF**
 - lines contained in buffer **MACREF**
 - multiple blanks **MACREF**
 - parameter lists **MACREF**
 - DOT** operand **MACREF**
 - execute format **MACREF**
 - indicating message substitution **MACREF**
 - list format **MACREF**
 - MAXSUBS** operand **MACREF**
 - MF** operand **MACREF**
 - multiple substitution lists **MACREF**
 - passing lines to CP **MACREF**
 - period placement **MACREF**
 - RENT** operand **MACREF**
 - specifying
 - message text **MACREF**
 - substitution length **MACREF**
 - substitutions **MACREF**
 - standard format **MACREF**
 - SUB** operand **MACREF**
 - TEXT** operand **MACREF**
 - TEXT=** operand **MACREF**
 - TEXTA** operand **MACREF**
- LINEDIT** operand of **SET** command **CPREF**
- LINEDIT** parameter of **SET** command **TERMREF**
- LINEMODE** subcommand
- LINEND** operand
 - of **TERMINAL** command **CPREF**
- LINEND** option
 - of **EXTRACT XEDIT**
 - of **QUERY CMSREF, XEDIT**
 - of **SET XEDIT**
 - of **TRANSFER XEDIT**
- LINENUM** option of **NAMEFIND** command **CMSREF**
- LINERD** macro **APGDE, CMSPROG, REL5GDE**
 - See also **RDTERM** macro
 - ATTREST** operand **MACREF**
 - CASE** operand **MACREF**
 - COL** operand **MACREF**
 - complex list format **MACREF**
 - DATA** operand **MACREF**
 - ERROR** operand **MACREF**
 - execute format **MACREF**
 - LINE** operand **MACREF**
 - list format **MACREF**
 - LOGICAL** operand **MACREF**
 - PAD** operand **MACREF**
 - PROMPT** operand **MACREF**
 - reading lines of input
 - from terminal **MACREF**
 - specifying buffer address **MACREF**
 - standard format **MACREF**
 - TRANS** operand **MACREF**

- TYPE operand **MACREF**
 VNAME operand **MACREF**
 WAIT operand **MACREF**
 writing prompt information **MACREF**
- lines
- adding **PRIMER**
 - copying **PRIMER**
 - deleting **PRIMER**
 - deleting at terminal before entering **CMSUG**
 - duplicating **PRIMER**
 - error rate **TSAFREF**
 - from a program retrieved with **SOURCELINE SPIREF**
 - inserting words into **PRIMER**
 - low-speed communication,
 - connecting previously unconnected **CPREF**
 - mode of CMS editor **CMSREF**
 - moving **PRIMER**
 - performance **TSAFREF**
 - recovering **PRIMER**
 - speed **TSAFREF**
- LINES** operand
- of **QUERY** command **CPREF**
 - of **QUERY VIRTUAL** command **CPREF**
- LINESIZE** function **SPIREF**
- LINESIZE** operand
- of **TERMINAL** command **CPREF**
- LINEWRT** macro **APGDE, CMSPROG, REL5GDE**
- ALARM** operand **MACREF**
- COL** operand **MACREF**
- COLOR** operand **MACREF**
- complex list format **MACREF**
- DATA** operand **MACREF**
- displaying lines of
- output at terminal **MACREF**
- ERROR** operand **MACREF**
- execute format **MACREF**
- EXTHI** operand **MACREF**
- HILITE** operand **MACREF**
- LINE** operand **MACREF**
- list format **MACREF**
- NOCR** operand **MACREF**
- PRIOR** operand **MACREF**
- PROTECT** operand **MACREF**
- PSS** operand **MACREF**
- standard format **MACREF**
- VNAME** operand **MACREF**
- link
- command, sharing minidisks **PLNGDE**
 - command (CP), use in file
 - sharing and access **PLNGDE**
 - DDP defined **INTRO**
 - journaling function status set **CPREF**
- LINK** (OS macro) **APGDE**
- link accounting record **TSAFREF**
- LINK** batch job statement **INTRO**
- LINK** command **CMSLOT, CMSUG, CPPROG, CPREF, PLNGDE, PRIMER**
- access mode passwords **CPREF**
 - accessing disks after **CMSREF**
 - batch job restrictions **CPREF**
- described **CPREF**
- example of use **INTRO**
- format in job for CMS
- batch facility **CMSUG**
- linking to other user's disks **CMSUG**
- operands
- mode **CPREF**
 - PASS** = password **CPREF**
 - userid **CPREF**
 - vaddr1 **CPREF**
- password suppression **CPPROG**
- responses **CPREF**
- usage notes **CPREF**
- 2305 restrictions **CPREF**
- LINK** directory control statement **PLNGDE**
- MVS guest **RGOS**
 - preferred machine assist **PLNGDE**
 - VM/VSE **RGOS**
- link edit
- in CMS/DOS **CMSPROG**
 - modules from DOS relocatable libraries **CMSPROG**
 - output **CMSPROG**
 - specifying control statements **CMSPROG**
 - TEXT files **CMSPROG**
- LINK** journaling
- accounting records **CPPROG**
- LINK** macro **GCSREF, PLNGDE**
- de parameter **GCSREF**
 - description **GCSREF**
 - ep parameter **GCSREF**
 - eploc parameter **GCSREF**
 - execute format **GCSREF**
 - id parameter **GCSREF**
 - list format **GCSREF**
 - mf parameter **GCSREF**
 - param parameter **GCSREF**
 - sf parameter **GCSREF**
 - vl parameter **GCSREF**
- LINK** macro (SVC 6) **CMSPROG**
- LINK** operand of **SET** command **CPREF**
- link-editing
- in CMS/DOS **CMSREF**
 - modules from VSE relocatable libraries **CMSREF**
 - TEXT files in storage **CMSREF**
- linkage
- conventions **APGDE**
 - OS control statements
 - supported by **TXTLIB** command **CMSPROG**
- linkage editor
- control statements
 - VSE supported in CMS/DOS **CMSREF**
- map
- created by DOS/VSE linkage editor **CMSPROG**
 - option of VSE **ACTION** control
 - statement, effect in CMS/DOS **CMSPROG**
- linkage registers **APGDE, GCSREF**
- linkctl operand of **FDISPLAY** subcommand **DIAG**
- linkdef operand of **FDISPLAY** subcommand **DIAG**
- LINKDMK**, used to install MSS **PLNGDE**
- linking **CMSLOT, PRIMER**
- a device to your virtual machine **CPREF**
 - CMS disks **PLNGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- command (CMS), usage **PLNGDE**
- Installation Discontiguous Shared Segment (DCSS) **CMSUG**
- to other user's disks **CMSUG**
- to virtual disks **CPREF**
- to your own disks **CMSUG**
- LINKPROC**, used to install MSS **PLNGDE**
- links listing users with current **CPREF**
- LINKS** operand of **QUERY** command **CPREF**
- links, **TSAF TSAFREF**
 - adding (ADD LINK) **TSAFREF**
 - ATTACH** command **TSAFREF**
 - DEDICATE** command **TSAFREF**
 - deleting (DELETE LINK) **TSAFREF**
 - inoperational **TSAFREF**
 - performance of **TSAFREF**
 - querying **TSAFREF**
 - supported **TSAFREF**
- LIOCS** routines supported by CMS/DOS **CMSPROG**
- LISP PLNGDE**
- list format (MF=L)
 - CMSIUCV** macro **SFPROG**
 - HNDIUCV** macro **SFPROG**
- List of Names
 - entry in a names file **CMSLOT**
 - preparing a note for **CMSLOT**
- LIST** option
 - of **ASSEMBLE** command **CMSREF**
 - of **DEFAULTS** command **CMSREF**
 - of **GLOBALV** command **CMSREF**
 - of **LKED** command **CMSREF, APGDE**
 - of **LOADLIB** command **CMSREF**
 - of **OPTION** command **CMSREF**
- LIST** subcommand
 - of **TESTCOB** command **APGDE**
 - of **TESTFORT** command **APGDE**
- LISTBREAKS** subcommand
 - of **TESTFORT** command **APGDE**
 - of **TESTCOB** command **APGDE**
- LISTCAT** access methods services function **CMSPROG**
- LISTCPDS** filetype usage in CMS **CMSUG**
- LISTCRA** access methods services function **CMSPROG**
- LISTDS** command
 - description **CMSREF**
 - examples **CMSREF**
 - EXTENT** option **CMSREF**
 - FORMAT** option **CMSREF**
 - FREE** option **CMSREF**
 - listing
 - DOS files **CMSPROG**
 - extents occupied by VSAM files **CMSPROG**
 - free space extents **CMSPROG**
 - OS and DOS disks **CMSPROG**
 - OS and DOS files **CMSPROG**
 - PDS** option **CMSREF**
 - used with OS data sets **CMSPROG**
- LISTFILE** command **APGDE, SPIUG**
 - ALLOC** option **CMSREF**
 - APPEND** option **CMSREF**
 - ARGS** option **CMSREF**
 - BLOCKS** option **CMSREF**
 - DATE** option **CMSREF**
 - description **CMSREF**
 - EXEC** option **APGDE, CMSREF**
 - FIFO** option **CMSREF**
 - FMODE** option **CMSREF**
 - FNAME** option **CMSREF**
 - FORMAT** option **CMSREF**
- FTYPE** option **CMSREF**
- HEADER** option **CMSREF**
- LABEL** option **CMSREF**
- LIFO** option **CMSREF**
- NOHEADER** option **CMSREF**
- STACK** option **CMSREF**
- TRACE** option **CMSREF**
- used to list your disk files **CMSUG**
- XEDIT** option **CMSREF**
- LISTFREQ** command **APGDE**
- LISTFREQ** subcommand
 - of **TESTFORT** command **APGDE**
- listing
 - information
 - about CMS files **CMSUG**
 - about disks **CMSUG**
 - about your terminal **CMSUG**
 - about your virtual machine **CMSUG**
 - requested **CMSUG**
 - information about **MACLIB** members **CMSPROG**
 - input/output assignments **CMSPROG**
 - listing members of a **MACLIB** **CMSPROG**
 - logical unit assignments in CMS/DOS **CMSPROG**
 - MACLIB** members **CMSPROG**
 - members of **MACLIB**
 - your files **PRIMER**
- LISTING** files **APGDE, INTRO**
 - changing filename **CMSPROG**
 - created by **AMSERV** command **CMSPROG**
 - created by assembler
 - output filemode **CMSPROG**
 - and language processors **CMSUG**
 - created by **ESERV** command **CMSPROG**
 - FORTRAN** **APGDE**
- LISTING** filetype **CMSLOT, PRIMER**
 - created by access method services **CMSREF**
 - created by **ASSEMBLE** command **CMSREF**
 - controlling **CMSREF**
 - created by **ESERV** program **CMSREF**
 - printing **CMSREF**
 - usage in CMS **CMSUG**
- LISTIO** command **CMSPROG**
 - A** option **CMSREF**
 - ALL** option **CMSREF**
 - APPEND** option **CMSREF**
 - description **CMSREF**
 - EXEC** option **CMSREF**
 - listing device assignments **CMSPROG**
 - PROG** option **CMSREF**
 - STAT** option **CMSREF**
 - SYS** option **CMSREF**
 - SYSxxx** option **CMSREF**
 - UA** option **CMSREF**
- lists **SPIREF**
 - address **TSAFREF**
 - address format **GCSREF**
 - definition **PRIMER**
 - format **GCSREF**
 - of books **SRPI**
 - of files, saving **PRIMER**
 - of people
 - sending file to **CMSLOT**
 - sending note to **CMSLOT**
 - ordered **PRIMER**
 - simple **PRIMER**
 - tags **PRIMER, CMSLOT**
 - definition list **CMSLOT**
 - ordered list **CMSLOT**

simple list **CMSLOT**
 unordered list **CMSLOT**
 unordered **PRIMER**
LISTX option of **OPTION** command **CMSREF**
LIST38PP filetype usage in **CMS** **CMSUG**
LIST3800 filetype usage in **CMS** **CMSUG**
LIST3820 filetype usage in **CMS** **CMSUG**
 literal patterns in parsing **SPIUG**
 literal string, evaluating **EXEX2**
LKED command **APGDE**
 ALIGN2 option **CMSREF**
 description **CMSPROG**, **CMSREF**
 DISK option **CMSREF**
 LET option **CMSREF**
 LIBE option **CMSREF**
 LIST option **CMSREF**
 MAP option **CMSREF**
 NAME option **CMSREF**
 NCAL option **CMSREF**
 NE option **CMSREF**
 NOPRINT option **CMSREF**
 NOTERM option **CMSREF**
 OL option **CMSREF**
 OVLY option **CMSREF**
 PRINT option **CMSREF**
 REFR option **CMSREF**
 RENT option **CMSREF**
 REUS option **CMSREF**
 SIZE option **CMSREF**
 specifying input to **CMSPROG**
 TERM option **CMSREF**
 usage **CMSREF**
 using **CMSPROG**
 XCAL option **CMSREF**
 XREF option **CMSREF**
LKEDIT (filetype) **APGDE**
LKEDIT filetype usage in **CMS** **CMSUG**
LNKLMT operand of **SYSJRL** macro **PLNGDE**
LNKUID operand of **SYSJRL** macro **PLNGDE**
Lnnn operand of **QUERY** command **CPREF**
LOAD **XEDITUG**
 CMS base code
 existing VM system procedure **INST**
 Starter System procedure **INST**
 CMS nucleus generation profile
 existing VM system procedure **INST**
 starter system procedure **INST**
 CMS system code
 existing VM system procedure **INST**
 Starter System procedure **INST**
 command
 See **LOAD** command
 CP object code
 existing VM system procedure **INST**
 starter system procedure **INST**
 environments of **VM/SP HPO** **CPPROG**
 EREP **INST**
 existing VM system procedure
 CMS base code **INST**
 CMS system code **INST**
 CP object code **INST**
 installation tools and profiles **INST**
 sample system definition files **INST**
 system generation tools **INST**
 GCS interface code
 existing VM system procedure **INST**
 Starter System procedure **INST**
 GCS object code
 existing VM system procedure **INST**
 Starter System procedure **INST**
 HELP files
 existing VM system procedure **INST**
 Starter System procedure **INST**
 indicators **CPPROG**
 installation tools and profiles
 existing VM system procedure **INST**
 starter system procedure **INST**
 IPCS
 Starter System procedure **INST**
 list
 requirements **CPPROG**
 SPB card **CPPROG**
 Merged Product Tape
 national language files **INST**
 option of **DISK** command **CMSREF**
 source code
 existing VM system procedure **INST**
 Starter System procedure **INST**
 starter system procedure
 CMS **INST**
 CMS nucleus generation profile **INST**
 CP object code **INST**
 EREP **INST**
 GCS **INST**
 HELP files **INST**
 installation tools and profiles **INST**
 IPCS **INST**
 source code **INST**
 system definition files **INST**
 system generation tools **INST**
 system definition files
 existing VM system procedure **INST**
 starter system procedure **INST**
 system generation tools
 existing VM system procedure **INST**
 starter system procedure **INST**
 3704/3705 control program files **INST**
LOAD command **APGDE**, **CMSLOT**, **DIAG**, **PRIMER**
 creating program modules **CMSPROG**
 defined **INTRO**
 description **CMSREF**
 duplicate **CSECTs** **CMSREF**
 enhancement **REL5GDE**
 example of use **INTRO**
 executing program using **CMSREF**
 HIST option **CMSREF**
 identify **TXTLIBs** to be searched **CMSREF**
 INV option **CMSREF**
 issuing **CMSPROG**
 LIBE option **CMSREF**
 loading **TEXT** files **CMSPROG**
 options
 AUTO **CMSPROG**, **CMSREF**
 CLEAR **CMSREF**, **CMSPROG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- DUP CMSPROG, CMSREF
- HIST CMSPROG
- LIBE CMSPROG
- MAP CMSREF
- NOAUTO CMSREF
- NOCLEAR CMSREF
- NODUP CMSREF
- NOHIST CMSREF
- NOINV CMSREF
- NOLIBE CMSREF
- NOMAP CMSREF
- NOREP CMSREF
- NOTYPE CMSREF
- ORIGIN CMSPROG, CMSREF
- REP CMSREF
- RESET CMSREF., CMSPROG
- RLDSAVE CMSPROG, CMSREF
- START CMSREF, CMSPROG, APGDE
- TYPE CMSREF
- used with GENMOD command CMSREF
- load key, simulation of CPREF
- load libraries APGDE, PLNGDE
- load lists
 - attached processor system PLNGDE
 - in DMS/CMS APGDE
 - multiprocessor system PLNGDE
- LOAD macro GCSREF, PLNGDE
 - de parameter GCSREF
 - description GCSREF
 - ep parameter GCSREF
 - eploc parameter GCSREF
 - OS macro APGDE
 - related parameter GCSREF
- LOAD macro (SVC 8) CMSPROG
- load maps APGDE, DIAG
 - CMS
 - CMSNUC MAP DIAG
 - print INST
 - save on disk INST
 - CMS, read onto disk INST
 - contents INST
 - CP
 - CPNUC MAP DIAG
 - print INST
 - save on disk INST
 - created by CMS loader CMSPROG
 - creating CMSREF, TSAFREF
 - with INCLUDE command CMSREF
 - with LOAD command CMSREF
 - displaying CMSREF
 - file for IPCS DIAG
 - GCS (GCSNUC MAP) DIAG
 - generated by GENMOD command CMSREF
 - generation DIAG
 - invalid card images in CMSREF
 - of MODULE files, displaying CMSREF
 - produced by LOAD and INCLUDE
 - commands CMSPROG
 - replace card images in CMSREF
 - undefined external names INST
- LOAD operand
 - of INDICATE command CPREF, CPPROG
 - of NETWORK command CPREF
 - of SPTAPE command CPREF
 - SADUMP operand CPREF
- load point, specifying CMSREF
- LOAD subcommand XEDIT
 - within the profile macro XEDIT
- LOADBUF command CMSUG, CPPROG, CPREF, INTRO
 - described CPREF
 - operands
 - FCB CPREF
 - FOLD CPREF
 - INDEX CPREF
 - name CPREF
 - raddr CPREF
 - UCS CPREF
 - VER CPREF
 - responses CPREF
 - usage notes CPREF
- LOADCMD command GCSREF
 - description GCSREF
- loader APGDE
 - CMS CMSREF
 - control statements CMSPROG, APGDE
 - ENTRY statement CMSREF
 - include control section (ICS)
 - statement CMSREF
 - LIBRARY statement CMSREF
 - loader terminate (LDT)
 - statement CMSREF
 - replace (REP) statement CMSREF
 - set location counter (SLC)
 - statement CMSREF
 - Set Page Boundary (SPB) statement CMSREF
 - controlling the CMS loader CMSPROG
 - generating new loader INST
 - loading new loader INST
 - location in storage INST
 - naming new loader INST
 - program
 - changing device addresses INST
 - load map INST
 - updating INST
 - wait conditions INST
 - punching
 - copy of new loader INST
 - copy of old loader INST
 - loader text files INST
 - search order
 - for unresolved references CMSREF
 - tables
 - CMS storage requirements PLNGDE
 - displaying number of CMSREF
 - in CMS CMSPROG
 - terminate (LDT)
 - control statement usage CMSPROG
 - loader control statement CMSREF
 - updating loader program INST
 - wait conditions SYMSMSG
 - wait state codes SYMSMSG
- Loader Termination statement
 - of TXTLIB member APGDE
- loading
 - an operating system CPREF, TERMREF
 - and saving DCSS CPPROG
 - by named system CPREF
 - character sets XEDIT
 - CMS into your virtual machine CMSUG
 - core image phases
 - into storage for execution CMSPROG
 - DCSS (discontiguous saved segments) CPPROG
 - dumps TSAFREF
 - dynamic APGDE
 - EXECs into storage CMSUG

- Forms Control Buffer (FCB) **RGOS**
 GCS modules **PLNGDE**
 GCS supervisor, the **PLNGDE**
 modules **GCSREF**
 national language files for CP and CMS **SFPROG**
 programs into storage **CMSPROG**
 suppressing automatic **CPREF**
 system by block address **CPREF**
 Universal Character Set Buffer (UCB) **RGOS**
 3704/3705 Communications Controller **OPGDE**
 3704/3705 control program **OPGDE**
 EP considerations **OPGDE**
 SRPI macro responsibilities **SRPI**
 assembler **SRPI**
 DCSS considerations **SRPI**
 discontinuous saved segments **SFPROG**
 dynamically (SRPI macro) **SRPI**
 what the SRPI does **SRPI**
EXECLOAD command
 for SRPI macro servers **SRPI**
NUCXLOAD command **SRPI**
 pre-loading
 assembler **SRPI**
 REXX and EXEC 2 **SRPI**
 REXX and EXEC 2 (SRPI macro) **SRPI**
 3800 named system with
 DIAGNOSE code X'74' **SFPROG**
- LOADLIB**
 command **APGDE**
 COMPRESS option **CMSREF**
 COPY option **CMSREF**
 description **CMSREF**
 DISK option **CMSREF**
 EXCLUDE SYSIN control statement **CMSREF**
 LIST option **CMSREF**
 MODIFY option **CMSREF**
 PRINT option **CMSREF**
 REPLACE option **CMSREF**
 SELECT SYSIN control statement **CMSREF**
 TERM option **CMSREF**
 option
 of CMS QUERY command **CMSREF**
 of GLOBAL command **CMSREF**
- LOADLIB** (filetype) **APGDE**
LOADLIB filetype usage in CMS **CMSUG**
LOADLIBs **APGDE, CMSPROG**
 CMS
 compressing with
LOADLIB command **CMSREF**
 copying with **LOADLIB** command **CMSREF**
 creating with **LKED** command **CMSREF**
 executing a load module from **CMSREF**
 listing with **LOADLIB** command **CMSREF**
 for ISPF **APGDE**
- loadlists
 for **VMFLOAD INST**
 requirements **INST**
- LOADMOD** command **CMSPROG**
 CMS/DOS considerations **CMSREF**
 description **CMSREF**
- LOADSYS** function **SFPROG**
- LOADTBL** command
 programmable operator **SFPROG**
- LOADVFCB** command **CMSUG, CPREF**
 described **CPREF**
 operands
 FCB **CPREF**
 INDEX nn **CPREF**
 name **CPREF**
 vaddr **CPREF**
 responses **CPREF**
 usage notes **CPREF**
- LOC** operand of **SYSTIME** macro **PLNGDE**
 local locks **PLNGDE, CPPROG**
LOCAL operand of **IUCV**
 directory control statement **PLNGDE**
 local resource
 access to **TSAFREF**
 control statements for **TSAFREF**
 how *IDENT handles **TSAFREF**
 how *IDENT handles requests **TSAFREF**
 identifying **TSAFREF**
 revoking **TSAFREF**
 revoking your own **TSAFREF**
- local stack **APGDE**
 local 3270 support **PLNGDE**
 locally attached terminal **TERMREF**
- LOCATE** **XEDITUG**
LOCATE (UP) subcommand of **DUMPSCAN** command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
 sample output **DIAG**
 usage **DIAG**
- LOCATE** command **CMSUG, CPREF, DIAG**
 described **CPREF**
 description of **CMSLOT**
 operands
 raddr **CPREF**
 userid **CPREF**
 vaddr **CPREF**
 responses **CPREF**
 used in **FILELIST CMSLOT**
 using in **FILELIST PRIMER**
 using in **XEDIT PRIMER**
- LOCATE** subcommand of **XEDIT** command **APGDE, XEDIT**
 with DBCS strings **XEDIT**
- locating
 a phrase in a string **SPIREF**
 a string in another string **SPIREF**
 a word in a string of words **EXEX2**
 CP control blocks in storage **DIAG**
 data
 using a target **XEDITUG**
 using **ALL XEDIT**
 using **CLOCATE XEDIT, XEDITUG**
 in typewriter mode **XEDITUG**
 using **LOCATE CMSLOT, XEDIT**
 server name, search order **SRPI**
 starting column of a word in another word **EXEX2**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- location information **PRIMER**
 - in full-screen CMS **CMSUG**
- LOCATION** option of CMS
- QUERY** command **CMSREF**
- LOCK** command **CMSUG**, **CPPROG**, **CPREF**, **RGOS**
 - described **CPREF**
 - operands
 - firstpage **CPREF**
 - lastpage **CPREF**
 - MAP** **CPREF**
 - SYSSPOOL** **CPREF**
 - SYSTEM** **CPREF**
 - userid **CPREF**
 - responses **CPREF**
- LOCK** key **CMSLOT**, **PRIMER**
- LOCK** macro **CPPROG**
 - condition codes **CPPROG**
- locked pages option **CPPROG**, **OPGDE**
- locked shared pages, attached
 - processor restriction **OPGDE**
- locking
 - function **DIAG**, **PLNGDE**
 - hierarchy **CPPROG**
 - structure **CPPROG**
 - the terminal keyboard **CMSUG**
- locks
- locks
 - defer **CPPROG**
 - dispatch list **CPPROG**
 - dispatcher request queue **CPPROG**
 - free storage **CPPROG**
 - global system **CPPROG**
 - I/O (input/output) **CPPROG**
 - keyboard **TERMREF**
 - keyboard, shift **TERMREF**
 - real storage management **CPPROG**
 - run list **CPPROG**
 - spin **CPPROG**
 - monitored in CP internal
 - trace table **CPREF**
 - timer request queue **CPPROG**
 - VMBLOK** **CPPROG**
- LOCKSAVE** (**LOCK** macro save area) **DIAG**
- LOCKWD** macro **GCSREF**, **PLNGDE**
 - acquire parameter **GCSREF**
 - description **GCSREF**
 - lock parameter **GCSREF**
 - release parameter **GCSREF**
 - test parameter **GCSREF**
- lockword **DIAG**
- LOG** command, programmable operator **SFPROG**
- LOG** control record, ZAP program
 - format **INST**
 - functions **INST**
 - usage notes **INST**
- log files **PRIMER**, **SFPROG**
 - See also programmable operator facility
 - updating **CMSPROG**
- log messages **TERMREF**
- log on, what happens until a user's
 - first transaction executes **CPPROG**
- LOG** option
 - of **NOTE** command **CMSREF**
 - of **RECEIVE** command **CMSREF**
 - of **SENDFILE** command **CMSREF**
- log option in ISPF **APGDE**
- LOG** service of ISPF **APGDE**
- log, TSAF console **TSAFREF**
- LOG_DATA** parameter (**APPC**)
 - of **DEALLOCATE** **TSAFREF**
 - of **SEND_ERROR** **TSAFREF**
- LOGFILE** option of CMS
 - QUERY** command **CMSREF**
- logging of
 - messages **CMSUG**, **PRIMER**
 - warnings **CMSUG**, **PRIMER**
- logging off **APGDE**, **CMSLOT**, **PRIMER**, **TERMREF**
 - VM/SP** **CMSUG**
- logging on **APGDE**, **CMSLOT**, **PRIMER**, **TERMREF**
 - a virtual machine **CPREF**
 - SNA** terminals **TERMREF**
 - to **VM/SP**
 - at a 3270-type terminal **CMSUG**
 - at other types of terminals **CMSUG**
 - VCNA** **TERMREF**
 - virtual machine **CPREF**
 - VSCS** **TERMREF**
- LOGGING** statement **SFPROG**
 - See also programmable operator facility
- logic element **TERMREF**
- logical
 - character delete symbol **CMSUG**
 - escape symbol **CMSUG**
 - line delete symbol **CMSUG**
 - line editing symbols
 - defining **CMSUG**
 - overriding **CMSUG**
 - line end symbol **CMSUG**
 - line extended **XEDIT**
 - record length defined **XEDIT**
 - record length of CMS file
 - defaults used by CMS editor **CMSREF**
 - screen **XEDIT**
 - swapping **CPPROG**
 - tab stops defined **XEDIT**
 - units
 - assigning **CMSREF**
 - ignoring assignments **CMSREF**
 - listing **CMSREF**
 - unassigning **CMSREF**
 - unassigning in CMS/DOS **CMSREF**
- logical bit operations
 - BITAND** **SPIREF**
 - BITOR** **SPIREF**
 - BITXOR** **SPIREF**
- logical connections **TERMREF**
- logical device facility
 - host limit relief **REL5GDE**
 - described **REL5GDE**
 - modules, new and changed **REL5GDE**
 - subfunctions **PLNGDE**
 - support **REL5GDE**
 - ATTACH** command **REL5GDE**
 - DETACH** command **REL5GDE**
 - DISABLE** command **REL5GDE**
 - DISCONN** command **REL5GDE**
 - ENABLE** command **REL5GDE**
 - LOGOFF** command **REL5GDE**
 - SET PFnn COPY** command **REL5GDE**
- logical device support facility (**LDSF**) **SFPROG**
 - description **SFPROG**
 - implementing via
 - DIAGNOSE** code X'7C' **SFPROG**
 - introduction **PLNGDE**

- logical editing symbols
 - altering **CPREF**
 - controlling use of **CPREF**
 - replacing directory entry **SFPROG**
- logical line editing characters **TERMREF**
- logical operations **SPIREF**
- logical operator **SFPROG**, **SPIUG**
 - action routine **SFPROG**
 - assigning, releasing, replacing **SFPROG**
 - command **SFPROG**
 - compared to the CP system operator **SFPROG**
 - default **SFPROG**
 - NCCF or NetView **SFPROG**
 - statement **SFPROG**
- logical record
 - definition **TSAFREF**
 - figure **TSAFREF**
 - length **TSAFREF**, **XEDITUG**
 - of **FILEDEF** command **CMSPROG**
 - multiple **APPC/VM** messages **TSAFREF**
- logical screens, multiple **XEDITUG**
- logical units, assigning in **CMS/DOS** **CMSPROG**
- logical units of work in **SQL** **APGDE**
- logically connected terminal **CPREF**
- LOGLMT** operand of **SYSJRL** macro **PLNGDE**
- LOGLOC** operand of **SYSJRL** macro **PLNGDE**
- LOGMSG** operand
 - of **QUERY** command **CPREF**
 - of **SET** command **CPREF**
- logo **PRIMER**, **TERMREF**
- logo screen
 - logging on from **CMSUG**
 - size definition **REL5GDE**
- logoff **CPPROG**, **REL5GDE**, **TERMREF**
 - forcing it for any system user **CPREF**
- LOGOFF** command **APGDE**, **CMSLOT**, **CMSUG**, **CPREF**, **PRIMER**, **REL5GDE**, **TERMREF**
 - described **CPREF**
 - operands
 - FORCE** **CPPROG**
 - HOLD** **CPREF**
 - responses **CPREF**
 - usage notes **CPREF**
- logon **CPPROG**, **REL5GDE**
 - affinity setting effect **CPREF**
 - automatic **OPGDE**
 - console for
 - MVS** guest **RGOS**
 - VSE** virtual machine **RGOS**
 - enhancements **REL5GDE**
 - control blocks, new and changed **REL5GDE**
 - described **REL5GDE**
 - macros, new and changed **REL5GDE**
 - modules, new and changed **REL5GDE**
 - error messages **TERMREF**
 - from the logo screen **REL5GDE**
 - control blocks, new and changed **REL5GDE**
 - macros, new and changed **REL5GDE**
 - modules, new and changed **REL5GDE**
 - journaling function status set **CPREF**
 - logo **PRIMER**
 - manual **OPGDE**
 - message **CMSLOT**
 - automatic **OPGDE**
 - manipulating with **SET** command **CPREF**
 - procedure **CMSLOT**, **TERMREF**
 - hiding your password during **CPREF**
 - LOGON** command **APGDE**, **CMSLOT**, **CMSUG**, **CPPROG**, **CPREF**, **PRIMER**, **TERMREF**
 - described **CPREF**
 - operands
 - NOIPL** **CPREF**
 - password **CPREF**
 - userid **CPREF**
 - password suppression **CPPROG**
 - responses **CPREF**
 - to contact **VM/SP** **CMSUG**
 - usage notes **CPREF**
 - LOGON** journaling
 - accounting records **CPPROG**
 - LOGON** operand of **SET** command **CPREF**
 - LOGREC** area
 - getting starting address **SFPROG**
 - reading **SFPROG**
 - LOGUID** operand of **SYSJRL** macro **PLNGDE**
 - LOKSAVE** (**DMKLOK** save area) **DIAG**
 - LONG** option of **NOTE** command **CMSREF**
 - LONG** option in **NOTE** command **CMSLOT**
 - LONG** option of the **NOTE** command **PRIMER**
 - LONG** **VARCHAR** data type in **SQL**
 - COBOL** **APGDE**
 - LONG** **VARGRAPH** data type in **SQL**
 - COBOL** **APGDE**
 - lookaside
 - buffer **EXEX2**
 - buffering **SPIREF**
 - looking at
 - a reader file **PRIMER**
 - another user's files **PRIMER**
 - messages and warnings again **PRIMER**
 - VM/SP** through windows **PRIMER**
 - LOOP FAILURE** code (keyword definition) **DIAG**
 - LOOP** operand of **STAT** command **DIAG**
 - looping **EXEX2**
 - condition in virtual machine **DIAG**
 - looping programs **DIAG**
 - halting **SPIREF**
 - tracing **SPIREF**
 - loops **DIAG**
 - See also **DO** instruction
 - See also looping program
 - active **SPIREF**
 - conditional **SPIUG**
 - control variable **SPIUG**
 - description of **SPIUG**
 - DO FOREVER** instruction **SPIUG**
 - DO UNTIL** instruction **SPIUG**
 - DO WHILE** instruction **SPIUG**
 - execution model **SPIREF**
 - infinite (see loops, infinite)
 - ITERATE** instruction **SPIUG**
 - LEAVE** instruction **SPIUG**
 - leaving **SPIUG**
 - modification of **SPIREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

L

- repetitive **SPIREF**, **SPIUG**
- skipping instructions **SPIUG**
- termination of **SPIREF**
- loops, infinite
 - checklist for reporting
 - in a virtual machine **PRGDE**
 - in CP **PRGDE**
 - in RSCS **PRGDE**
 - finding cause in a virtual machine **PRGDE**
 - finding cause in CP **PRGDE**
 - finding cause in RSCS **PRGDE**
 - symptoms of **PRGDE**
- low address protection **CPPROG**
- LOWCASE** option
 - of **ASSGN** command **CMSREF**
 - of **COPYFILE** command **CMSREF**
 - of **FILEDEF** command **CMSREF**
- lower case symbols **SPIREF**
- LOWERCAS XEDITUG**
- LOWERCAS** subcommand **XEDIT**
 - example of **XEDIT**
 - with DBCS strings **XEDIT**
- lowercase, translating characters to **XEDIT**
- lowercase letters
 - translating to uppercase
 - with **COPYFILE** command **CMSREF**
 - with **PRINT** command **CMSREF**
 - words and symbols **CPREF**
- LOWERCASE** subcommand
 - of **XEDIT** command **APGDE**
- LOWSAVE** (debug save area) **DIAG**
- LPREFIX** in typewriter mode **XEDITUG**
- LPREFIX** subcommand **XEDIT**
 - example of **XEDIT**
- lprt** operand
 - of **BACKSPAC** command **CPREF**
 - of **DRAIN** command **CPREF**
 - of **FLUSH** command **CPREF**
 - of **QUERY** command **CPREF**
 - of **REPEAT** command **CPREF**
 - of **SEND** command **CPREF**
 - of **SPACE** command **CPREF**
 - of **START** command **CPREF**
 - of **VARY** command **CPREF**
- LRECL** attribute, example of use **INTRO**
- LRECL** option
 - of **COPYFILE** command **CMSREF**, **CMSUG**
 - of **EDIT** command **CMSREF**
 - of **EXTRACT XEDIT**
 - of **FILEDEF** command **APGDE**, **CMSREF**
 - of **QUERY XEDIT**
 - of **SET XEDIT**
 - of **TRANSFER XEDIT**
- LSCREEN** option
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
 - of **TRANSFER XEDIT**
- LU generated responses **TSAFREF**
- LU_NAME** parameter (**APPC**)
 - of **ALLOCATE TSAFREF**
- luname, explained **CPREF**

M

- M border command **PRIMER**
- M prefix command **PRIMER**
- M prefix subcommand **XEDIT, XEDITUG**
 - example of **XEDIT**
 - practice exercise using **XEDITUG**
 - of **XEDIT** command **APGDE**
- MACHEXIT** macro **GCSREF, PLNGDE**
 - clr parameter **GCSREF**
 - description **GCSREF**
 - ep parameter **GCSREF**
 - error parameter **GCSREF**
 - execute format **GCSREF**
 - list address format **GCSREF**
 - list format **GCSREF**
 - mf parameter **GCSREF**
 - name parameter **GCSREF**
 - set parameter **GCSREF**
 - uword parameter **GCSREF**
- machine check
 - during start-up **CPPROG**
 - in CP internal trace table **CPREF**
 - interrupt **CPPROG**
 - Vector Facility **CPPROG**
- machine check handler (MCH)
 - error recording **OPGDE**
- machine check interrupts **CMSPROG**
- machine code **CMSREF**
- machine configuration
 - requesting information **CPREF**
- machine exits **PLNGDE**
- MACLIB**
 - library
 - See macro libraries
 - member
 - See member of a **MACLIB**
- MACLIB** command **APGDE**
 - ADD** function **CMSPROG**
 - ADD** option **CMSREF**
 - COMP** function **CMSPROG**
 - COMP** option **CMSREF**
 - DEL** function **CMSPROG**
 - DEL** option **CMSREF**
 - description **CMSPROG, CMSREF**
 - DISK** option **CMSREF**
 - example **CMSPROG**
 - FIFO** option **CMSREF**
 - GEN** function **CMSPROG**
 - GEN** option **CMSREF**
 - LIFO** option **CMSREF**
 - MAP** function **CMSPROG**
 - MAP** option **CMSREF**
 - PRINT** option **CMSREF**
 - reading files created by **ESERV** program **CMSREF**
 - REP** function **CMSPROG**
 - REP** option **CMSREF**
- STACK** option **CMSREF**
- TERM** option **CMSREF**
- using **CMSPROG**
- XEDIT** option **CMSREF**
- MACLIB** option
 - of **CMS QUERY** command **CMSREF**
 - of **GLOBAL** command **CMSREF**
- MACLIST** command
 - description **CMSREF**
 - listing members of a **MACLIB** **CMSPROG**
 - sample screen **CMSPROG**
 - setting defaults **CMSREF**
 - using **CMSPROG**
- MACREF**
 - See **VM/SP CMS Macros and Functions Reference**
- MACRO**
 - files created by **ESERV** program **CMSREF**
 - filetype **APGDE**
 - invalid records handled by **MACLIB** command **CMSREF**
 - filetype usage in **CMS** **CMSUG**
 - adding to **MACLIBs** **CMSREF**
 - subcommand **XEDITUG**
- macro check, overriding with **COMMAND XEDIT**
- macro instruction
 - See macros
- macro language **XEDITUG**
- macro libraries **APGDE**
 - adding a member **CMSPROG**
 - adding **COPY** files **CMSPROG**
- CMS**
 - adding to **CMSREF**
 - commands that recognize **MACLIBs** **CMSPROG**
 - compacting members of **CMSREF**
 - creating **CMSREF**
 - deleting members of **CMSREF**
 - display information
 - about members in **CMSREF**
 - printing members **CMSREF**
 - punching members **CMSREF**
 - replacing members of **CMSREF**
 - CMS** commands that recognize **MACLIBs** **CMSPROG**
 - compressing **APGDE, CMSPROG**
 - copying
 - members **CMSPROG**
 - OS COBOL** files from **APGDE**
 - VSE** macros **INST**
 - creating **CMSPROG**
 - deleting a member **CMSPROG**
 - displaying members of **APGDE**
 - examining contents of **APGDE**
 - example **CMSPROG**
 - extracting a member **CMSPROG**
 - extracting a member of **APGDE** files
 - creating **CMSREF**
 - displaying names of **MACLIBs** to be searched **CMSREF**
 - distributed with **CMS** system **CMSREF**
 - specifying for assembly or compilation **CMSREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

filetype APGDE
 compressing APGDE
 displaying members of APGDE
 examining contents of APGDE
 manipulating members of APGDE
 printing members of APGDE
 usage in CMS CMSUG
 system APGDE
 finding out about MACLIB members CMSPROG
 for ISPF APGDE
 GEN3705 INST
 identifying for assembly CMSREF
 in CMS CMSPROG
 in EXECs APGDE
 LIBPDS statement APGDE
 listing contents CMSPROG
 listing information about members CMSPROG
 MAC3705 INST
 manipulating members CMSPROG
 manipulating members of APGDE
 moving members into other files CMSPROG
 OBJ3705 INST
 OS
 concatenating CMSREF
 using in CMS CMSREF
 printing members of APGDE
 querying in CMS/DOS CMSPROG
 replacing a member CMSPROG
 system APGDE, CMSPROG
 updating with VMFMAC INST
 using CMSPROG
 VSE assembler language
 restricted use in CMS/DOS CMSPROG
 VSE, copying macros from CMSREF
 3704/3705 control program INST
 3704/3705, assembly INST
 MACRO option
 of EXTRACT XEDIT
 of QUERY XEDIT
 of SET XEDIT
 of TRANSFER XEDIT
 MACRO subcommand XEDIT
 macros APGDE, SPIUG
 ABEND GCSREF
 ABNEXIT CMSPROG
 ACB GCSREF
 APPCVM TSAFREF
 ATTACH GCSREF
 AUTHCALL GCSREF, PLNGDE
 AUTHNAME GCSREF, PLNGDE
 AUTHUSER GCSREF
 BLDL GCSREF
 BUILD, 3704/3705 control program INST
 CALL GCSREF
 CHAP GCSREF
 CHECK GCSREF
 CLOSE GCSREF
 CMDSI GCSREF
 CMS CMSPROG, TSAFREF
 CMSIUCV SFPROG
 HNDEXT (use in sample program) TSAFREF
 HNDIUCV SFPROG
 WAITECB (use in sample program) TSAFREF
 COMMD CPPROG
 CONFIG GCSREF
 CONTENTS GCSREF, PLNGDE
 CP
 IUCV, description SFPROG
 CSB, 3704/3705 control program INST
 CVT GCSREF
 data management PLNGDE
 DCB GCSREF
 DCBD GCSREF
 declarative CMSPROG
 definition and example INTRO
 definitions
 in assembler listing CMSREF
 in MACRO files CMSREF
 DEFNUC PLNGDE
 DELETE GCSREF
 DEQ GCSREF
 descriptions
 ADDEENTRY SRPI
 CPRB SRPI
 CSMRETC D SRPI
 DELENTY SRPI
 SENDREQ SRPI
 DETACH GCSREF
 DMSEXS CMSPROG
 DMSFREE CMSPROG
 DMSFRES CMSPROG
 DMSFRET CMSPROG
 DMSKEY CMSPROG
 DOS macro libraries under CMS PLNGDE
 editor SPIREF
 ENDREQ GCSREF
 enhanced
 NAMESYS REL5GDE
 PRINTL REL5GDE
 RDCARD REL5GDE
 ENQ GCSREF
 ERASE GCSREF
 ESTAE GCSREF
 examples CMSPROG
 EXECCOM GCSREF
 exit scheduling PLNGDE
 EXLST GCSREF
 FCB (forms control buffer) CPPROG
 FLS GCSREF
 FOB (font offset buffer) CPPROG
 FOBCCW CPPROG
 for performing I/O PLNGDE
 for specifying exits PLNGDE
 formats
 execute format GCSREF
 in GCS GCSREF
 list address format GCSREF
 list format GCSREF
 standard format GCSREF
 formatting conventions GCSREF
 FREEMAIN GCSREF, PLNGDE
 FSCB CMSPROG
 GCS (group control system) TSAFREF
 GCS supported PLNGDE
 GCSLEVEL GCSREF
 GENCB GCSREF
 GENEND, 3704/3705 control program INST
 GENIO GCSREF, PLNGDE
 GET GCSREF
 GETMAIN CMSPROG, CPPROG,
 GCSREF, PLNGDE
 GETMAIN/FREEMAIN (SVC 10) CMSPROG
 GROUP, 3704/3705 control program INST
 grouping into families PLNGDE

GTRACE GCSREF
HNDEXT CMSPROG
IDENTIFY GCSREF
IHASDWA GCSREF
 imperative **CMSPROG**
 in **XEDIT**
 argument string **XEDITUG**
 avoiding name conflicts **XEDITUG**
 containing **SET** options
 creating **XEDIT**
 controlling search order for **XEDIT**
 creating **XEDITUG**
 cursor position **XEDITUG**
 definition of **XEDITUG**
 deoptimizing **XEDIT**
 examples of **XEDITUG**
 executing **XEDITUG**
 executing alphanumeric macro name **XEDIT**
 executing without subcommand or synonym check **XEDIT**
 optimizing **XEDIT**
 file identifier **XEDITUG**
 handling blocks **XEDITUG**
 information passed **XEDITUG**
 list of optimized **XEDIT**
 prefix **XEDITUG**
 profile **XEDITUG**
 removing copy from storage **XEDIT**
 reserving a line for use by **XEDIT**
 search order specified **XEDITUG**
 scanning format of **XEDIT**
 source string **XEDITUG**
 subcommands used in **XEDITUG**
 XEDIT prefix macro **XEDITUG**
IUCV SFPROG, TSAFREF
ACCEPT SFPROG
 advantages of using **SFPROG**
CONNECT SFPROG
DECLARE BUFFER SFPROG
DESCRIBE SFPROG
PURGE SFPROG
QUERY SFPROG
QUIESCE SFPROG
RECEIVE SFPROG
REJECT SFPROG
REPLY SFPROG
RESUME SFPROG
RETRIEVE BUFFER SFPROG
SEND SFPROG
SET CONTROL MASK SFPROG
SET MASK SFPROG
SEVER SFPROG
 terminology **SFPROG**
TEST COMPLETION SFPROG
TEST MESSAGE SFPROG
IUCV communication PLNGDE
IUCVCOM GCSREF
IUCVINI GCSREF
LINE, 3704/3705 control program INST
LINK GCSREF
 list of **CMSPROG**
LOAD GCSREF
LOCK CPPROG
 lock controlling **PLNGDE**
LOCKWD GCSREF, PLNGDE
MACHEXIT GCSREF, PLNGDE
 manipulating disk files **CMSPROG**
MODCB GCSREF
 module loading **PLNGDE**
NAMELANG PLNGDE
NAMENCP CPPROG, PLNGDE
NAMESYS CPPROG, PLNGDE
NAME3800 CPPROG, PLNGDE
 new and changed **REL5GDE**
 APPLMSG REL5GDE
 CMSDEV REL5GDE
 CONSOLE REL5GDE
 DEFNUC REL5GDE
 DETACH command REL5GDE
 for alternate nucleus support **REL5GDE**
 for alternate tape drive support **REL5GDE**
 for alternate userid support **REL5GDE**
 for **APPC/VM REL5GDE**
 for **ASCII support REL5GDE**
 for **Central Message Facility REL5GDE**
 for **CMS Session Services REL5GDE**
 for **CMS support of APPC/VM REL5GDE**
 for **CMSDEV macro REL5GDE**
 for **Collection Resource Management**
 and **Identify System Services REL5GDE**
 for **Enhanced Connectivity**
 Facilities REL5GDE
 for **Error Logging System Services REL5GDE**
 for **Error Recording Enhancements REL5GDE**
 for **execs in storage REL5GDE**
 for **extended data stream support for**
 VM/Pass-Through Facility REL5GDE
 for **GLOBAL command REL5GDE**
 for **HELP facility REL5GDE**
 for **installation and service REL5GDE**
 for **IPCS changes REL5GDE**
 for **IPCS support for TSAF REL5GDE**
 for **LOGON from logo screen REL5GDE**
 for **LOGON/LOGOFF enhancements REL5GDE**
 for **migration of CMS commands and modules to**
 the CMS nucleus REL5GDE
 for **National Language Support REL5GDE**
 for **OS Simulation Standard Label Tape**
 Processing Exits REL5GDE
 for **Paging Storage Enhancements REL5GDE**
 for **Parsing Facility REL5GDE**
 for **PRINTL macro REL5GDE**
 for **programming changes REL5GDE**
 for **Protected Application**
 Environment REL5GDE
 for **RDCARD macro REL5GDE**
 for **remote and VM/VTAM**
 terminals support REL5GDE
 for **shared storage access REL5GDE**
 for **spool file compression support REL5GDE**
 for **spool file limit enhancements REL5GDE**
 for **SPOOL system service REL5GDE**
 for **storage management and tuning**
 enhancements REL5GDE
 for **system profile REL5GDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

for TSAF support REL5GDE
 for vector facility use
 restrictions REL5GDE
 for 3422 support REL5GDE
 LINERD REL5GDE
 LINEWRT REL5GDE
 NAMELANG REL5GDE
 NOTE GCSREF
 OPEN CMSPROG, GCSREF
 OS APGDE, CMSPROG
 OS macro libraries under CMS PLNGDE
 OS simulation CMSPROG
 PGLOCK GCSREF, PLNGDE
 PGULOCK GCSREF, PLNGDE
 POINT GCSREF
 POST GCSREF
 PSPACE INST
 PUT GCSREF
 RCHANNEL CPPROG, PLNGDE
 RCTLUNIT CPPROG, PLNGDE
 RDEVICE CPPROG
 coding for remote 3270s PLNGDE
 coding for 3704/3705/3725
 communications controller PLNGDE
 coding for 3800 image library PLNGDE
 coding for 3880 storage subsystem PLNGDE
 READ GCSREF
 resource sharing PLNGDE
 RETURN GCSREF
 RIOGEN PLNGDE
 RPL GCSREF
 SAM CMSPROG
 SAVE GCSREF
 SCHEDEX GCSREF, PLNGDE
 SDUMP GCSREF
 SEGMENT GCSREF
 SETRP GCSREF
 SHOWCB GCSREF
 SIGNAL CPPROG
 STIMER GCSREF
 storage key checking PLNGDE
 storage securing PLNGDE
 STRINIT CMSPROG
 subtask adding and discarding PLNGDE
 supervisor CMSPROG
 SWITCHVM CPPROG
 SWITCHVM CPPROG
 SYNADAF GCSREF
 SYNADRLS GCSREF
 SYNCH GCSREF
 SYSACNT CPPROG, PLNGDE
 SYSCOR CPPROG, PLNGDE
 SYSFCN PLNGDE
 SYSFORM PLNGDE
 SYSID PLNGDE
 SYSJRL CPPROG
 SYSLOCS PLNGDE
 SYSMIH CPPROG, PLNGDE
 SYSMON CPPROG, PLNGDE
 SYSOPR PLNGDE
 SYSOWN PLNGDE
 SYSPAG CPPROG, PLNGDE
 SYSPLAS PLNGDE
 SYSRES PLNGDE
 System Product Editor APGDE
 SYSTEME PLNGDE
 SYSXSTOR CPPROG, PLNGDE
 task priority assigning PLNGDE

 task synchronizing PLNGDE
 TASKEXIT GCSREF
 TESTCB GCSREF
 TIME GCSREF
 timer management PLNGDE
 TRANS macro CPPROG
 TSO macro libraries under CMS PLNGDE
 TTIMER GCSREF
 UCC CPPROG
 UCCCCW CPPROG
 UCS (universal character set) CPPROG
 UCSCCW CPPROG
 using CMSPROG
 VALIDATE GCSREF
 VSAM file processing PLNGDE
 VSAM, supported under CMS CMSPROG
 VSE assembler language
 macros supported in CMS CMSPROG
 VSE macro libraries under CMS PLNGDE
 VSE macros supported by CMS/DOS CMSPROG
 WAIT GCSREF
 WRITE GCSREF
 WTO GCSREF
 WTOR GCSREF
 XCTL GCSREF
 3704/3705/3725
 communications controllers PLNGDE
 MAC3705 macro library INST
 magnetic tape
 control units supported
 by VM/SP HPO PLNGDE, REL5GDE
 device INTRO
 devices supported
 by VM/SP HPO PLNGDE, REL5GDE
 VM under VM RGOS
 VM/VSE RGOS
 magnetic tape subsystem IBM 3422 REL5GDE
 CMS support REL5GDE
 CP support REL5GDE
 MAIN operand of SET command CPREF
 main storage
 See real resource
 main storage protection, defined PLNGDE
 main user area APGDE
 main variables exceptions in SQL FORTRAN APGDE
 MAINHIGH CMSPROG
 MAINT PLNGDE
 suggested configuration for updating INST
 virtual machine for updating INST
 maintenance example hardware
 maintenance directory entry PLNGDE
 MAINTLVL (keyword definition) DIAG
 MAKEBUF command APGDE, SPIUG
 description CMSREF
 return code effect on
 &ERROR statement CMSREF
 making copies of output files CPREF
 management
 directory CPPROG
 of data DIAG
 of problems DIAG
 managing
 a resource TSAFREF
 files CMSLOT
 timer services PLNGDE

- manipulating
 - spool files **CPREF**
 - members of a **MACLIB CMSPROG**
 - the program stack **SPIUG**
- mantissa **SPIUG**
- manual invocation
 - of the programmable operator **SFPROG**
- manual logon operator **OPGDE**
- MANUAL** operand of **START** command **CPREF**
- manual, VM/SP
 - See abstracts of VM/SP manuals
- manuals **REL5GDE**
 - that you receive with the product tape **REL5GDE**
- MAP**
 - filetype **APGDE**
 - created by **DOSLIB** command **CMSREF**
 - created by **DSERV** command **CMSREF**
 - created by **LOAD** command **CMSREF**
 - created by **MACLIB** command **CMSREF**
 - option
 - of **DOSLIB** command **CMSREF**
 - of **GENMOD** command **CMSREF**
 - of **INCLUDE** command **CMSREF**
 - of **LKED** command **CMSREF**
 - of **LOAD** command **CMSREF**
 - of **MACLIB** command **CMSREF**
 - storage allocations **OPGDE**
- MAP** command
 - description **DIAG**
 - enhancement **REL5GDE**
 - error message **DIAG**
 - format **DIAG**
 - of **DMS/CMS** **APGDE**
 - response **DIAG**
 - usage
 - CMS** dump **DIAG**
 - CP** dump **DIAG**
 - GCS** dump **DIAG**
 - general **DIAG**
 - other dumps **DIAG**
 - TSAF** dump **DIAG**
- map compressing routine **DIAG**
- MAP** files
 - created by **DOSLKED** command **CMSPROG**
 - created by **DSERV** command **CMSPROG**
 - PRELOAD** utility program **INST**
- map filetype usage in **CMS** **CMSUG**
- MAP** function
 - of **MACLIB** command **APGDE**
 - DISK** option **APGDE**
 - PRINT** option **APGDE**
 - TERM** option **APGDE**
 - of **TXTLIB** command **APGDE**
 - DISK** option **APGDE**
 - PRINT** option **APGDE**
 - TERM** option **APGDE**
- MAP** operand of **LOCK** command **CPREF**
- MAP** option
 - of **GENMOD** command **DIAG**
 - of **LKED** command **APGDE**
 - of **LOAD** command **DIAG**
- map, **TSAF** load **TSAFREF**
- MAPA** subcommand of **DUMPSCAN** command
 - description **DIAG**
 - error message **DIAG**
 - format **DIAG**
 - functional category **DIAG**
 - response **DIAG**
 - sample output **DIAG**
 - usage **DIAG**
- MAPN** subcommand of **DUMPSCAN** command
 - description **DIAG**
 - error message **DIAG**
 - format **DIAG**
 - functional category **DIAG**
 - response **DIAG**
 - sample output **DIAG**
 - usage **DIAG**
- mapping
 - between **APPC/VM** and **APPC**
 - parameters and conditions **TSAFREF**
 - summary **TSAFREF**
 - virtual to real storage **INTRO**
- maps
 - created by **DOSLIB** command **CMSREF**
 - created by **GENMOD** command **CMSREF**
 - created by **LOAD** command **CMSREF**
 - created by **MACLIB** command **CMSREF**
 - linkage editor in **CMS/DOS** **CMSREF**
- markup **CMSLOT, PRIMER**
- MASK** event-type of **PER** command **CPREF**
- mask line
 - changing **XEDIT**
 - defining **XEDIT**
- MASK** option
 - of **EXTRACT** **XEDIT**
 - of **QUERY** **XEDIT**
 - of **SET** **XEDIT**
 - of **TRANSFER** **XEDIT**
- MASK** parameter
 - of **SETCMASK** **TSAFREF**
 - of **SETMASK** **TSAFREF**
- masking password
 - during logon **CPREF**
 - using **TERMINAL** command **CPREF**
- mass storage control (**MSC**)
 - channel interfaces **PLNGDE**
 - communicating with **OPGDE**
 - introduction **PLNGDE**
- Mass Storage Facility **PLNGDE**
- mass storage system (**MSS**) **CPPROG**
 - See also **MSS** (mass storage system)
 - communication **SFPROG**
 - communication device
 - defining **PLNGDE**
 - communicator program **PLNGDE**
 - CP** automatic volume demount **OPGDE**
 - CP** automatic volume mount **OPGDE**
 - creating **MSS** volumes **PLNGDE**
 - devices
 - time intervals set and monitored **CPREF**
 - error messages **OPGDE**
 - generating **PLNGDE**
 - generating **CP** to support 3850 **PLNGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- hardware supported **PLNGDE**
- initialization **OPGDE**
- mass storage control table **PLNGDE**
- mount and demount processing **SFPROG**
- OS/VS1 jobs **PLNGDE**
- OS/VS2 jobs **PLNGDE**
- restrictions **PLNGDE**
- specifying a partition **OPGDE**
- master catalog (VSAM)
 - identifying (OS VSAM) **CMSREF**
 - identifying in CMS/DOS **CMSREF**
 - sharing **CMSPROG**
- master file directory **CMSUG**
 - contents of **CMSREF**
 - suppressing updating after **RENAME** command **CMSREF**
 - updating entries in **CMSREF**
 - updating on disk **CMSREF**
- matrix of IBM Enhanced Connectivity Facilities
 - return codes and macros **SRPI**
- matrix of return codes and macros **SRPI**
- MAX** function **SPIREF**, **SPIUG**
 - of SQL **APGDE**
- MAXCONN** directory option **TSAFREF**
- MAXCONN** operand of **OPTION**
 - directory control statement **PLNGDE**
- MAXCONN** option defining in directory **PLNGDE**
- MAXDEV** operand of **OPTION**
 - directory control statement **PLNGDE**
- MAXDEV** option, defining in directory **PLNGDE**
- MAXIMIZE WINDOW** command **CMSUG**
 - description **CMSREF**
 - format **CMSREF**
 - messages **CMSREF**
 - operands
 - = (equal sign) **CMSREF**
 - wname **CMSREF**
 - summary **CMSREF**
 - usage notes **CMSREF**
- maximum data items on minidisk **INTRO**
- maximum storage size **INTRO**
- MAXPP** operand
 - of **QUERY** command **CPREF**
 - of **SET** command **CPREF**
- MAXSIZE** operand of **SET** command **CPREF**
- MAXWSS** operand
 - of **QUERY** command **CPREF**
 - of **SET** command **CPREF**
- MCALL** option of **ASSEMBLE** command **CMSREF**
- MCKOPSW** (CMS machine check old PSW) **DIAG**
- MCOPSW** (machine check old PSW) **DIAG**
- MCU** (Multisystem Communication Unit) **CPPROG**
- MDISK**
 - control statement **INTRO**
 - sharing minidisks **PLNGDE**
 - use with 3380 **CPPROG**
 - definition **INST**
 - directory control statement **PLNGDE**
 - example **PLNGDE**
 - MVS guest **RGOS**
 - operands: T-DISK **PLNGDE**
 - VM/VSE **RGOS**
- MDR** (Miscellaneous Date Records) **REL5GDE**
- measuring
 - system performance **CPPROG**
- member of a **MACLIB**
 - changing name **XEDIT**
 - editing **XEDIT**
- MEMBER** option
 - of **EXTRACT XEDIT**
 - of **FILEDEF** command **APGDE**, **CMSREF**, **CMSPROG**
 - of **PRINT** command **APGDE**, **CMSREF**
 - of **PUNCH** command **CMSREF**
 - of **QUERY XEDIT**
 - of **TYPE** command **APGDE**
 - of **XEDIT XEDIT**
- MEMO** filetype **CMSUG**
 - for documentation **CMSUG**
- Memo to Users, printing **INST**
- memory
 - accessing **SPIREF**
 - finding upper limit of **SPIREF**
- memos **INTRO**
- menu
 - changing **CMSUG**
 - component **CMSUG**
 - creating **CMSUG**
 - example, of creation **CMSUG**
 - for **HELP PRIMER**, **XEDIT**
 - full screen **SPIUG**
 - for interactive environment **INTRO**
 - for tasks **CMSUG**, **XEDIT**
- menu input field (ZCMD) **APGDE**
- merge **XEDITUG**
 - definition **INST**
 - multiple PTFs, example **INST**
 - single PTF, example **INST**
- merge disk, definition **INST**
- merge log
 - contents **INST**
 - definition **INST**
 - example **INST**
- MERGE** subcommand
 - of **XEDIT** command **APGDE**, **XEDIT**
 - example of **XEDIT**
- merging collection
 - resource management in **TSAFREF**
 - revoking resources in **TSAFREF**
- merging sets of lines **XEDIT**
- message all system service **REL5GDE**, **SFPROG**
- message class indicator in full-screen CMS **CMSUG**
- message complete external interrupt, IUCV **SFPROG**
- MESSAGE** command **CMSUG**, **CPPROG**, **CPREF**
 - class A, B **CPREF**
 - class Any **CPREF**
 - described **CPREF**
 - operands
 - * **CPREF**
 - ALL CPREF**
 - msgtext **CPREF**
 - OPERATOR CPREF**
 - userid **CPREF**
 - responses **CPREF**
 - usage notes **CPREF**
- message facility, invoking **MACREF**
 - using **APPLMSG** macro **MACREF**
- MESSAGE FAILURE** code (keyword definition) **DIAG**
- MESSAGE** function of **SPOOL** system service **SFPROG**
- message **HELP CMSUG**
- message identification **XEDIT**
- message identifier for VM **REL5GDE**
 - displaying **SYMSMG**
 - modules, new and changed **REL5GDE**
- message libraries (ISPMLIB) **APGDE**

message line **PRIMER**
 changing location **XEDITUG**
 defining display features **XEDITUG**
 location on screen **XEDITUG**
MESSAGE LOGFILE CMSUG, PRIMER
 message number
 description of **SYSMSG**
 displaying **SYSMSG**
MESSAGE operand of **HELP** command **CMSREF**
 message output format
 programmable operator **SFPROG**
 message pending interrupt **TSAFREF**
 format **TSAFREF**
 IUCV **SFPROG**
 message repository **MACREF, REL5GDE**
 accessing messages **REL5GDE**
 compiling using the **GENMSG** command **REL5GDE**
 making it available using the
 SET LANGUAGE command **REL5GDE**
 retrieving a message from **MACREF**
 TSAF TSAFREF
 files
 creating **CMSPROG**
 creating **HELP** files **CMSPROG**
 creating your own messages **CMSPROG**
 rules for creating **CMSPROG**
 using **CMSPROG**
 using dictionary substitution **CMSPROG**
 using substitution **CMSPROG**
 for **CMS**
 updating **SFPROG**
 for **CP SFPROG**
 DASD space for **SFPROG**
 saving **SFPROG**
 updating **SFPROG**
 updating **SFPROG**
 files for an existing language **SFPROG**
 message repositories **SFPROG**
Message status notice PRIMER
message syntax conventions SYSMSG
Message System Service INTRO, SFPROG
MESSAGE virtual screen **PRIMER**
MESSAGE window **PRIMER**
 dropping **CMSUG**
 popping **CMSUG**
 using to edit names file **CMSUG**
 viewing messages **CMSUG**
 messages **APGDE**
 abbreviations used in **SYSMSG**
 after **IPL TERMREF**
 after **LOGOFF TERMREF**
 after logon **TERMREF**
 CMS ready message **TERMREF**
 console
 after **VM/SP HPO** initialization **OPGDE**
 controlling display of **XEDITUG**
 controlling informational **CPREF**
 controlling transmission of **CPREF**
 controlling whether you receive them **CMSUG**
 CP SYSMSG
 creating **CMSPROG**
 data transfer, IUCV **SFPROG**
 definition **TSAFREF**
 definition of **PRIMER**
 display controlled by **SET MSGMODE XEDITUG**
 display in message line
 using **EMSG XEDITUG**
 using **MSG XEDITUG**
 displayed in command line **XEDITUG**
 displayed when logging on **CMSUG**
 displaying at terminal **SYSMSG**
 displaying in command line **XEDITUG**
 displaying in other languages **SYSMSG**
 displaying on editor screen **XEDITUG**
 DMKMSS
 mass storage system **OPGDE**
 DMSEXE085E EXEX2
 DMSEXE175E EXEX2
 DMSEXE255T EXEX2
 DROP ... TERMREF
 error **TERMREF, XEDITUG, SPIREF**
 after **SET PF TERMREF**
 during logon **TERMREF**
 examples **TERMREF**
 NOT ACCEPTED TERMREF
 UNKNOWN ... TERMREF
 Vector Facility **APGDE**
 finding out the length **TSAFREF**
 for virtual machine users **OPGDE**
 format of **SYSMSG**
 from **CMS** batch facility **CMSUG**
 graphic **TERMREF**
 graphic status **TERMREF**
 handling error **CPREF**
 hardware and program status **OPGDE**
 high-priority
 transmitting **CPREF**
 identification, IUCV **SFPROG**
 identifiers
 message number **SYSMSG**
 module code **SYSMSG**
 prefix **SYSMSG**
 severity code **SYSMSG**
 text of **SYSMSG**
 type code **SYSMSG**
 in full-screen **CMS CMSUG**
 in output display area **TERMREF**
 in status area **TERMREF**
 in typewriter mode **XEDITUG**
 information **XEDITUG**
 issued from a macro **XEDITUG**
 IUCV **SFPROG**
 length of pending **TSAFREF**
 lengths **TSAFREF**
 log file for **PRIMER**
 logging **CMSUG**
 logon **OPGDE**
 MIH CPPROG
 network **PRIMER**
 preventing receipt of **CMSLOT**
 RCTLUNIT macro
 channel errors **PLNGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

RDEVICE macro
 control unit errors **PLNGDE**
 unit record errors **PLNGDE**
 receiving special **CPREF**
 receiving warning **CPREF**
 replying to **PLNGDE, GCSREF**
 return codes **EXEX2**
 reviewing **PRIMER**
 sending **CMSLOT, PRIMER**
 before logging on **TERMREF**
 to other users **CPREF**
 to other virtual machine users **CMSUG**
 to system operator **CPREF, INTRO**
 to the operator **CPREF, PLNGDE**
 severity of **XEDIT**
 size **TSAFREF**
 special **SYMSG**
 spooling, to a DASD file **TERMREF**
 status **PRIMER, PRIMER**
 status messages **TERMREF**
 suppressing
 FILE NOT FOUND SPIUG
 from CMS commands **SPIUG**
 from CP commands **SPIUG**
 syntax conventions **SYMSG**
 abbreviations **SYMSG**
 system **INTRO**
 System Product Editor **SYMSG**
 to system operator
 SVC 76 OPGDE
 translated **SYMSG**
 transmitting **TERMREF**
 turning off **PRIMER**
 versus input **TERMREF**
VIRTUAL MACHINE/SYSTEM PRODUCT TERMREF
 warning **PRIMER**
 example **XEDITUG**
 issued by **QUIT XEDIT**
 when display screen is full **CMSUG**
 without special headers
 sent to users **CPREF**
XEDIT, displaying **SPIUG**
 3088 **CPPROG**
 3880 **CPPROG**
 3880 hardware error **CPPROG**
 messages and codes, responses
ASMGEND INST
CMSGEND INST
 during CMS generation **INST**
ITASK INST
PRELOAD INST
SNTMAP INST
SPGEN INST
SPLOAD INST
UTILITY INST
VMFASM INST
VMFDOS INST
VMFLKED INST
VMFLOAD INST
VMFMAC INST
VMFMERGE INST
VMFNLS INST
VMFPLC2 INST
VMFREMOV INST
VMFTXT INST
VMFZAP INST
VSEVSAM INST

MF=L parameter
 expanding the macro with **TSAFREF**
 of **ACCEPT** function **TSAFREF**
 of **CONNECT** **TSAFREF**
 of **DCLBFR** **TSAFREF**
 of **RECEIVE** **TSAFREF**
 of **SENDCNF** **TSAFREF**
 of **SENDCNFD** **TSAFREF**
 of **SENDDATA** **TSAFREF**
 of **SENDERR** **TSAFREF**
 of **SETCMASK** **TSAFREF**
 of **SETMASK** **TSAFREF**
 of **SEVER** **TSAFREF**
 of **TESTCML** **TSAFREF**
MFASAVE (DMKMCT save area) **DIAG**
 Mhexloc operand of **STCP** command **CPREF**
 Mhexloc1 operand of **DCP** command **CPREF**
 migrate, selecting the next
 virtual machine to **CPPROG**
MIGRATE command **CMSUG, CPPROG, CPREF**
 described **CPREF**
 example of use **INTRO**
 operands
 * **CPREF**
 userid **CPREF**
 responses **CPREF**
 migrating spool files **INST, REL5GDE**
 migration
 aids from previous releases **REL5GDE**
 compatibilities and incompatibilities
 APPC/VM support **REL5GDE**
 Central Message Facility **REL5GDE**
 CMS session services **REL5GDE**
 DETACH command enhancement **REL5GDE**
 IDENTIFY command **REL5GDE**
 IPCS enhancement **REL5GDE**
 LOGON/LOGOFF enhancement **REL5GDE**
 message changes affecting programmable operator
 routing tables **REL5GDE**
 National Language Support **REL5GDE**
 NUCON changes **REL5GDE**
 Parsing Facility **REL5GDE**
 SPOOL file compression support **REL5GDE**
 system profile **REL5GDE**
 considerations
 APPC/VM **REL5GDE**
 AUTOLOG command **REL5GDE**
 Central Message Facility **REL5GDE**
 CMS Session Services **REL5GDE**
 FORCE command **REL5GDE**
 Help facility **REL5GDE**
 IUCV **REL5GDE**
 LOGON command **REL5GDE**
 modified scheduler algorithms **REL5GDE**
 National Language Support **REL5GDE**
 Paging Storage **CPPROG**
 Parsing Facility **REL5GDE**
 performance changes **REL5GDE**
 QUERY command **REL5GDE**
 spool files **REL5GDE**
 storage management **REL5GDE**
 System Product Editor **REL5GDE**
 to **VM/SP HPO** Release 5 **REL5GDE**
 tuning support **REL5GDE**
 when changing command access **CPPROG**
 XEDIT environment **REL5GDE**
 demand page **CPPROG**

existing VM system procedure
 build new CP nucleus INST
 complete CUSTOMER PROFILE INST
 create new CMS nucleus INST
 create stand-alone service
 utility tape INST
 format new system minidisks INST
 install GCS INST
 load IPCS INST
 load source code INST
 load system HELP files INST
 load TSAF INST
 load VM/SP product tape INST
 modify current system directory INST
 related procedures INST
 save CMS INST
 tailor DMKRIO INST
 tailor DMKSNT INST
 tailor DMKSYS INST
 tailor SPGEN PROFILE INST
 tailor system directory INST
 update SYSTEM NETID file INST
 from EDIT to XEDIT XEDIT
 of CMS commands and modules
 to the CMS nucleus REL5GDE
 control blocks, execs, macros, modules
 new and changed REL5GDE
 operation CPPROG
 over
 problems related to CPPROG
 page CPPROG
 establishing a hierarchy CPPROG
 managing CPPROG
 problems
 investigating CPPROG
 summary of CPPROG
 process INTRO
 rate too high CPPROG
 rate too high CPPROG
 rates CPPROG
 routines
 page/swap table, beginning CPREF
 setting the age criterion for CPPROG
 specifying how full paging areas
 must be before CPPROG
 spool file INST
 swap set CPPROG
 under
 problems related to CPPROG
 MIH (missing interrupt handler) CPPROG
 changing interval values CPPROG
 default interval values CPPROG
 determining interval values CPPROG
 devices
 supported PLNGDE
 monitored CPPROG
 diagnostic aids CPPROG
 macro notes CPPROG
 messages CPPROG
 trace table CPPROG
 VM/SP HPO system's
 error recording area CPPROG
 macro notes CPPROG
 status CPPROG
 system error recording area CPPROG
 timer intervals PLNGDE
 trace table CPPROG
 use of CPPROG
 MIH operand of OPTION directory
 control statement PLNGDE
 MIH option, defining in directory PLNGDE
 MIN function SPIREF
 of SQL APGDE
 MIN operand of MONITOR command CPREF
 minidisk
 link mode
 replacing directory entry SFPROG
 multiple password
 replacing directory entry SFPROG
 read password
 replacing directory entry SFPROG
 write password
 replacing directory entry SFPROG
 minidisks CPPROG, APGDE
 See also disks
 access to INTRO
 accessing APGDE
 allocating for VTOC PLNGDE
 alternate tracks PLNGDE
 3340 PLNGDE
 3375/3380 PLNGDE
 concept INTRO
 counting cylinders on CMSREF
 defective tracks, 3375/3380 PLNGDE
 defining PLNGDE
 in directory PLNGDE
 in directory, examples PLNGDE
 primary access mode PLNGDE
 definition of CMSUG
 description INTRO
 devices containing limits to detaching CPREF
 directory overlapping extents PLNGDE
 error recovery support PLNGDE
 example PLNGDE
 of use and definition PLNGDE
 extents CMSPROG
 file directory of CMSPROG
 formatting APGDE, PLNGDE
 how defined INTRO
 I/O (input/output) CPPROG
 information, obtaining MACREF
 initialization, OS and VSE PLNGDE
 initializing INTRO
 with DSF RGOS
 labeling PLNGDE
 linking PLNGDE
 maximum data items INTRO
 MDISK control statement PLNGDE
 multiple access PLNGDE
 planning PLNGDE
 restriction on using
 EXPORT/IMPORT with VSAM CMSPROG
 restrictions PLNGDE
 shared, EDF R/O CMSPROG

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

sharing **INTRO**
 access modes **PLNGDE**
 by MVS guest **RGOS**
 by VM/VSE **RGOS**
 passwords **PLNGDE**
 virtual machines **PLNGDE**
 temporary **CMSPROG, PLNGDE**
 transporting to OS system
 after using with CMS VSAM **CMSPROG**
 using with VSAM data sets **CMSPROG**
VTOC PLNGDE
 3340, using DDR utility **PLNGDE**
 3344, using DDR utility **PLNGDE**
MINIMIZE WINDOW command **CMSUG**
 description **CMSREF**
 format **CMSREF**
 messages **CMSREF**
 operands
 = (equal sign) **CMSREF**
 wname **CMSREF**
 summary **CMSREF**
 usage notes **CMSREF**
 minimum configurations
 CMS PLNGDE
 VM/SP HPO PLNGDE
 minimum working set size,
 how to control the setting of **CPPROG**
MINNUMSS operand
 of **QUERY** command **CPREF**
 of **SET** command **CPREF**
 minus operator **SPIUG**
 minus sign used to **LOCATE** backward **CMSLOT**
 minutes calculated from midnight **SPIREF**
MINWS operand
 of **QUERY** command **CPREF**
 of **SET** command **CPPROG, RGOS**
MISC operand of **SYSMIH** macro **PLNGDE**
 Miscellaneous Data Records (MDR) **REL5GDE**
 miscellaneous devices, shared
 or nonshared VCU mode **PLNGDE**
 missing interrupt handler (MIH) **CPPROG**
 devices supported **PLNGDE**
 missing interruption monitoring
 SYSMIH macro **PLNGDE**
 mistakes, correcting **PRIMER**
MITIME operand
 of **QUERY** command **CPREF**
 of **SET** command **CPREF**
 mixed case **CMSLOT, PRIMER**
 data **EXEX2**
 specified **XEDIT**
 mixed environment
 use of the programmable operator **SFPROG**
MIXED option in **SET CASE CMSLOT, PRIMER**
MLhexloc operand
 of **STCP** command **CPREF**
MLhexloc1 operand
 of **DCP** command **CPREF**
MLOGIC option of **ASSEMBLE** command **CMSREF**
MM prefix command **PRIMER**
 mnemonics, Vector Facility instructions
 response to tracing **CPREF**
 tracing **CPREF**
 mnote responses **SYMSMG**
MNOTES
 MIH (missing interrupt handler) **CPPROG**
 SYSXSTOR macro **PLNGDE**
 3088 **CPPROG**
 3880 **CPPROG**
 MN000 monitor records **CPPROG**
 MN001 monitor records **CPPROG**
 MN002 monitor records **CPPROG**
 MN003 monitor records **CPPROG**
 MN004 monitor records **CPPROG**
 MN005 monitor records **CPPROG**
 MN006 monitor records **CPPROG**
 MN007 monitor records **CPPROG**
 MN097 monitor records **CPPROG**
 MN098 monitor records **CPPROG**
 MN099 monitor records **CPPROG**
 MN10n monitor records **CPPROG**
 MN20n monitor records **CPPROG**
 MN30X monitor records **CPPROG**
 MN300 monitor records **CPPROG**
 MN301 monitor records **CPPROG**
 MN303 monitor records **CPPROG**
 MN304 monitor records **CPPROG**
 MN305 monitor records **CPPROG**
 MN400 monitor records **CPPROG**
 MN401 monitor records **CPPROG**
 MN500 monitor records **CPPROG**
 MN600 monitor records **CPPROG**
 MN602 monitor records **CPPROG**
 MN603 monitor records **CPPROG**
 MN604 monitor records **CPPROG**
 MN605 monitor records **CPPROG**
 MN606 monitor records **CPPROG**
 MN607 monitor records **CPPROG**
 MN700 monitor records **CPPROG**
 MN802 monitor records **CPPROG**
 MODCB macro (VSAM) **GCSREF**
 a parameter **GCSREF**
 acb parameter **GCSREF**
 address parameter **GCSREF**
 area parameter **GCSREF**
 arealen parameter **GCSREF**
 arg parameter **GCSREF**
 bufnd parameter **GCSREF**
 bufni parameter **GCSREF**
 bufsp parameter **GCSREF**
 ddname parameter **GCSREF**
 description **GCSREF**
 ecb parameter **GCSREF**
 eodad parameter **GCSREF**
 exlst parameter **GCSREF**
 jrnad parameter **GCSREF**
 keylen parameter **GCSREF**
 l parameter **GCSREF**
 lerad parameter **GCSREF**
 macrf parameter **GCSREF**
 marea parameter **GCSREF**
 mlen parameter **GCSREF**
 modify an exit list
 at execution time **GCSREF**
 modify certain fields
 in an ACB **GCSREF**
 in an RPL **GCSREF**
 n parameter **GCSREF**
 nxtpl parameter **GCSREF**
 optcd parameter **GCSREF**
 passwd parameter **GCSREF**
 reclen parameter **GCSREF**
 rpl parameter **GCSREF**
 strno parameter **GCSREF**
 synad parameter **GCSREF**

- MODCB macro instruction** GCSREF
MODCB operand notation GCSREF
MODE
 edit and input CMSUG
 setting with CP TERMINAL command CMSUG
 switching CMSUG
mode defined TERMREF
MODE operand
 of LINK command CPREF
 of MONITOR command CPREF
 of SET command CPREF
 of SPTAPE command CPREF
 of TERMINAL command CPREF
mode switching TERMREF
MODE_NAME parameter (APPC)
 of ALLOCATE TSAPREF
MODEL operand
 of RDEVICE macro PLNGDE
 of SYSID macro PLNGDE
 of TERMINAL macro PLNGDE
MODEL statement in ISPF panels APGDE
Model 138 Display Console TERMREF
Model 148 Display Console TERMREF
Model 158 Display Console TERMREF
Model 168 Display Console TERMREF
models
 classes, types, and features of devices
 (DIAGNOSE code X'24') SFPROG
 device SFPROG
 3704/3705 communications controllers PLNGDE
modem TERMREF
modes
 of input APGDE
 of operation for MVS guest RGOS
MODIFY macro XEDIT
 example of XEDIT
MODIFY name operand
 of CHANGE command CPREF
 of SPOOL command CPREF
MODIFY operand of CHANGE command CPREF
MODIFY option of LOADLIB command CMSREF
MODIFY TABS XEDITUG
modifying
 a file, precautions when SPIUG
 channel program SFPROG
 CMS files, commands to use CMSUG
 DLCS file REL5GDE
 for National Language Support REL5GDE
 SET values XEDIT
 spooling control options CPREF
 storage CPREF
 tab settings XEDITUG
 virtual device attributes CPREF
 3800 named system CPPROG
MODMAP command DIAG
 described CMSREF
modulator/demodulator TERMREF
MODULE (keyword definition) DIAG
module and command migration
 to the CMS nucleus REL5GDE
module code, description of SYMSMG
MODULE file INTRO
 creating CMSREF
 debugging CMSREF
 executing with RUN command CMSREF
 format CMSREF
 generating CMSREF
 loading into storage for execution CMSREF
 mapping CMSREF
 VSE, link-editing CMSREF
MODULE filetype usage in CMS CMSUG
MODULE keyword of SYMP subcommand DIAG
modules
 and EXPLAIN files for VM/VSE Interface RGOS
 CMS
 creating from text files INST
 loading INST
 regenerating from updated
 source INST
 utility source programs INST
 when to regenerate INST
 CP, address where loaded INST
 DMSABN CMSPROG
 DMSINA CMSPROG
 DMSINT CMSPROG
 DMSIOW CMSPROG
 DMSITE CMSPROG
 DMSITI CMSPROG
 DMSITP CMSPROG
 DMSITS CMSPROG
 DMSPAG CMSPROG
 DOS/VSE relocatable
 copying into CMS files CMSPROG
 generating PRIMER
 IPCS
 regenerating from updated IPCS text files INST
 load map DIAG
 regeneration requirements INST
 relocatable
 link-editing in CMS/DOS CMSPROG
 updating with VMFASM INST
 VSE, link-editing CMSREF
MODULEs with ISPF APGDE
modules, changed
 CMS and XEDIT REL5GDE
 COMPARE command REL5GDE
 CP REL5GDE
 DETACH command REL5GDE
 for alternate nucleus support REL5GDE
 for alternate tape drive support REL5GDE
 for alternate userid support REL5GDE
 for APPC/VM REL5GDE
 for ASCII support REL5GDE
 for Central Message Facility REL5GDE
 for CMS Session Services REL5GDE
 for CMS support of APPC/VM REL5GDE
 for CMSDEV macro REL5GDE
 for Collection Resource Management and
 Identify System Services REL5GDE
 for Enhanced Connectivity Facilities REL5GDE
 for Error Logging System Services REL5GDE
 for Error Recording Enhancements REL5GDE
 for execs in storage REL5GDE

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- for Extended Data Stream Support for VM/Pass-Through Facility **REL5GDE**
- for FORMAT command **REL5GDE**
- for GLOBAL command **REL5GDE**
- for HELP facility **REL5GDE**
- for installation and service **REL5GDE**
- for IPCS changes **REL5GDE**
- for IPCS support for TSAF **REL5GDE**
- for Logical Device Host Limit Relief **REL5GDE**
- for LOGON from logo screen **REL5GDE**
- for LOGON/LOGOFF enhancements **REL5GDE**
- for message identifier enhancements **REL5GDE**
- for migration of CMS commands and modules to the CMS nucleus **REL5GDE**
- for National Language Support **REL5GDE**
- for OS Simulation Standard Label Tape Processing Exits **REL5GDE**
- for Paging Storage Enhancements **REL5GDE**
- for Parsing Facility **REL5GDE**
- for PRINTL macro **REL5GDE**
- for programming changes **REL5GDE**
- for Protected Application Environment **REL5GDE**
- for RDCARD macro **REL5GDE**
- for remote and VM/VTAM terminals **REL5GDE**
- for scheduler algorithms **REL5GDE**
- for shared storage access **REL5GDE**
- for spool file compression support **REL5GDE**
- for spool file limit enhancements **REL5GDE**
- for SPOOL system service **REL5GDE**
- for storage management and tuning enhancements **REL5GDE**
- for system profile **REL5GDE**
- for TSAF support **REL5GDE**
- for TXTLIB command enhancement **REL5GDE**
- for VALIDATE command **REL5GDE**
- for vector facility use restrictions **REL5GDE**
- for 3380 support **REL5GDE**
- for 3422 support **REL5GDE**
- for 3480 volume serial error recording **REL5GDE**
- IPCS **REL5GDE**
- IPCS, for National Language Support **REL5GDE**
- modules, deleted
 - CMS **REL5GDE**
 - CP **REL5GDE**
 - for HELP facility **REL5GDE**
 - for National Language Support **REL5GDE**
- modules, new
 - CMS and XEDIT **REL5GDE**
 - COMPARE command **REL5GDE**
 - CP **REL5GDE**
 - DETACH command **REL5GDE**
 - for alternate nucleus support **REL5GDE**
 - for alternate tape drive support **REL5GDE**
 - for alternate userid support **REL5GDE**
 - for APPC/VM **REL5GDE**
 - for ASCII support **REL5GDE**
 - for Central Message Facility **REL5GDE**
 - for CMS Session Services **REL5GDE**
 - for CMS support of APPC/VM **REL5GDE**
 - for CMSDEV macro **REL5GDE**
 - for Collection Resource Management and Identify System Services **REL5GDE**
 - for Enhanced Connectivity Facilities **REL5GDE**
 - for Error Logging System Services **REL5GDE**
 - for Error Recording Enhancements **REL5GDE**
 - for execs in storage **REL5GDE**
- for Extended Data Stream Support for VM/Pass-Through Facility **REL5GDE**
- for FORMAT command **REL5GDE**
- for GLOBAL command **REL5GDE**
- for HELP facility **REL5GDE**
- for installation and service **REL5GDE**
- for IPCS changes **REL5GDE**
- for IPCS support for TSAF **REL5GDE**
- for Logical Device Host Limit Relief **REL5GDE**
- for LOGON from logo screen **REL5GDE**
- for LOGON/LOGOFF enhancements **REL5GDE**
- for message identifier enhancements **REL5GDE**
- for migration of CMS commands and modules to the CMS nucleus **REL5GDE**
- for National Language Support **REL5GDE**
- for OS Simulation Standard Label Tape Processing Exits **REL5GDE**
- for Paging Storage Enhancements **REL5GDE**
- for Parsing Facility **REL5GDE**
- for PRINTL macro **REL5GDE**
- for programming changes **REL5GDE**
- for Protected Application Environment **REL5GDE**
- for RDCARD macro **REL5GDE**
- for remote and VM/VTAM terminals **REL5GDE**
- for scheduler algorithms **REL5GDE**
- for shared storage access **REL5GDE**
- for spool file compression support **REL5GDE**
- for spool file limit enhancements **REL5GDE**
- for SPOOL system service **REL5GDE**
- for storage management and tuning enhancements **REL5GDE**
- for system profile **REL5GDE**
- for TSAF support **REL5GDE**
- for TXTLIB command enhancement **REL5GDE**
- for VALIDATE command **REL5GDE**
- for vector facility restrictions **REL5GDE**
- for 3380 support **REL5GDE**
- for 3422 support **REL5GDE**
- for 3480 VOLSER **REL5GDE**
- IPCS **REL5GDE**
- modules, split
 - CMS **REL5GDE**
 - CP **REL5GDE**
 - for ASCII support **REL5GDE**
 - for HELP facility **REL5GDE**
 - for IPCS changes **REL5GDE**
 - for OS Simulation Standard Label Tape Processing Exits **REL5GDE**
 - IPCS **REL5GDE**
- monitor
 - class eight records CPPROG MN802 CPPROG
 - class five records CPPROG MN500 CPPROG
 - class four records CPPROG MN401 CPPROG
 - class one records MN10n CPPROG
 - class seven records CPPROG MN700 CPPROG
 - class six records CPPROG MN600 CPPROG MN602 CPPROG MN603 CPPROG MN604 CPPROG MN605 CPPROG MN606 CPPROG MN607 CPPROG

- class three records
 - MN30X CPPROG
 - MN300 CPPROG
 - MN301 CPPROG
 - MN303 CPPROG
 - MN304 CPPROG
 - MN305 CPPROG
 - MN400 CPPROG
- class two records
 - MN20n CPPROG
- class zero records
 - MN000 CPPROG
 - MN001 CPPROG
 - MN002 CPPROG
 - MN003 CPPROG
 - MN004 CPPROG
 - MN005 CPPROG
 - MN006 CPPROG
 - MN007 CPPROG
 - MN097 CPPROG
 - MN098 CPPROG
 - MN099 CPPROG
- codes for tape header, trailer,
and data suspension CPPROG
- collection mechanism CPPROG
- considerations CPPROG
 - because of differences in scheduler CPPROG
- DASTAP class records CPPROG
- data
 - Vector Facility CPPROG
 - volume and overhead CPPROG
- functions, CP commands used CPREF
- INSTSIM class records CPPROG
- monitor classes CPPROG
- output CPPROG
- PERFORM class records CPPROG
 - record header CPPROG
- RESPONSE class records CPPROG
- responses to special tape conditions CPPROG
- SCHEDULE class records CPPROG
- SEEKS class records CPPROG
- support for Paging Storage CPPROG
- SWAP class records CPPROG
- SYSPROF class records CPPROG
- tape format and content CPPROG
- USER class records CPPROG
- Monitor Analysis Program INST
- MONITOR command CMSUG, CPPROG, CPREF,
DIAG
 - classes CPPROG
 - defined INTRO
 - described CPREF
 - operands
 - ALL CPREF
 - AUTODISK CPREF
 - BUFFS CPREF
 - CLOSE CPREF
 - CPTRACE CPREF
 - DASTAP CPREF
 - DELETE CPREF
 - DISPLAY CPREF
 - ENABLE CPREF
 - EXCLUDE CPREF
 - FOR CPREF
 - FROM CPREF
 - INCLUDE CPREF
 - INSTSIM CPREF
 - INTERVAL CPREF
 - LIMIT CPREF
 - MIN CPREF
 - MODE CPREF
 - NONE CPREF
 - NOSTOP CPREF
 - OFF CPREF
 - ON CPREF
 - PERFORM CPREF
 - raddr CPREF
 - RESPONSE CPREF
 - SAMPLE CPREF
 - SCHEDULE CPREF
 - SEC CPREF
 - SEEKS CPREF
 - SPOOL CPREF
 - START CPREF
 - STOP CPREF
 - SWAP CPREF
 - SYSPROF CPREF
 - TAPE CPREF
 - TIME CPREF
 - USER CPREF
 - performance measurement PLNGDE
 - responses CPREF
 - usage notes CPREF
- MONITOR START command DIAG
- monitoring
 - and service support facility (MSSF)
 - See also MSSF (monitoring and service support facility)
 - MSSFCALL instruction PLNGDE
 - SCPINFO command PLNGDE
 - missed interruptions CPREF
 - recommendations CPPROG
 - MONTH option of DATE function SPIREF
 - MORE status notice APGDE, CMSUG, PRIMER
and HOLDING condition, SNA handling SFPROG
 - MOREHELP command CMSUG, REL5GDE
 - description CMSREF
 - format CMSREF
 - messages CMSREF
 - operands
 - ALL CMSREF
 - BRIEF CMSREF
 - DESCRIPT CMSREF
 - DETAIL CMSREF
 - ERRORS CMSREF
 - FORMAT CMSREF
 - NOTES CMSREF
 - OPTIONS CMSREF
 - PARMS CMSREF
 - RELATED CMSREF
 - summary CMSREF
 - usage notes CMSREF
- MOVE command CMSLOT
of DMS/CMS APGDE

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- MOVE** in typewriter mode **XEDITUG**
- MOVE** subcommand of **XEDIT** command **APGDE, XEDIT**
example **XEDIT**
- moveable head preferred paging area
managing migration **CPPROG**
- MOVEFILE** command **APGDE, REL5GDE**
and **MACLIB** members **APGDE**
copying
 CMS files from tapes created by **CMSUG**
 OS data sets **CMSPROG**
 tape files **CMSUG**
default device attributes **CMSREF**
description **CMSREF, CMSUG**
examples **CMSREF**
extracting a member from a **MACLIB** **CMSPROG**
PDS option **CMSPROG, CMSREF**
reading files from virtual card reader **CMSUG**
use of **CMSUG**
used with **OS** data sets **CMSPROG**
- moving
 block of lines **XEDIT**
 CMS files, commands to use **CMSUG**
 cursor **CPPROG**
 to command line **XEDITUG**
 to specified location **XEDITUG**
 display right or left **XEDITUG**
 forward in a file **XEDIT**
 lines **CMSLOT, PRIMER, XEDITUG**
 in typewriter mode **XEDITUG**
 using **M** prefix subcommand **XEDIT, XEDITUG**
 through a file **PRIMER**
 using **BACKWARD** **XEDITUG**
 using **BOTTOM** **XEDITUG**
 using **BOTTOM** in typewriter mode **XEDITUG**
 using **DOWN** **XEDITUG**
 using **DOWN** in typewriter mode **XEDITUG**
 using **FORWARD** **XEDITUG**
 using **MOVE** **XEDIT**
 using **PF** keys **XEDITUG**
 using **TOP** **XEDITUG**
 using in typewriter mode **XEDITUG**
 using **UP** **XEDITUG**
 using **UP** in typewriter mode **XEDITUG**
 windows **PRIMER**
- MP** (multiprocessing systems)
 improving performance of **CPPROG**
- MP** (multiprocessor mode) **DIAG**
- MP** (multiprocessor system)
 generating **PLNGDE**
- MP** (multiprocessor)
 affinity **CPPROG**
 configuring I/O **CPPROG**
 environment **CPPROG**
 fetching and storing **CPPROG**
 how the dispatch lists work in **CPPROG**
 identify processor address **CPPROG**
 locks **CPPROG**
 mode **CPPROG**
 prefixing **CPPROG**
 real I/O interrupts **CPPROG**
 serializing of functions **CPPROG**
 shared segments **CPPROG**
 signaling **CPPROG**
 SIGNAL macro **CPPROG**
 storage **CPPROG**
 synchronous interrupts **CPPROG**
 time-of-day clock **CPPROG**
 virtual machine I/O management **CPPROG**
- MP** operand
 of **SYSCOR** macro **PLNGDE**
 coding to generate multiprocessor **PLNGDE**
- MP**-generated **VM/SP HPO** systems **RGOS**
- MREGS** subcommand of **DUMPSCAN** command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
 sample output **DIAG**
 usage **DIAG**
- MRIOBLOK** subcommand of **DUMPSCAN** command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
 sample output **DIAG**
 usage **DIAG**
- MSG XEDITUG**
- MSG** operand
 of **SET** command **CPREF**
 of **STAT** command **DIAG**
- MSG** option in **SET** **CMSLOT**
- MSG** subcommand **XEDIT**
- MSGID** (keyword definition) **DIAG**
- MSGLIMIT** operand of **IUCV**
 directory control statement **PLNGDE**
- MSGLINE** option
 of **EXTRACT** **XEDIT**
 of **QUERY** **XEDIT**
 of **SET** **XEDIT**
- MSGMODE** command of **DMS/CMS** **APGDE**
- MSGMODE** option
 of **EXTRACT** **XEDIT**
 of **QUERY** **XEDIT**
 of **SET** **XEDIT**
 of **TRANSFER** **XEDIT**
- MSGNOH** command **CMSUG, CPREF**
 described **CPREF**
 operands
 * **CPREF**
 ALL **CPREF**
 msgtext **CPREF**
 OPERATOR **CPREF**
 userid **CPREF**
 responses **CPREF**
 usage notes **CPREF**
- msgtext
 described **CPREF**
 operand
 for **MESSAGE** command **CPREF**
 of **MESSAGE** command **CPREF**
 of **MSGNOH** command **CPREF**
 of **SMSG** command **CPREF**
 of **WARNING** command **CPREF**
- MShexloc** operand of **STCP** command **CPREF**
- MSS** (mass storage system) **SFPROG**
 cylinder faults, **VM/SP HPO** processing **CPPROG**
 defining
 devices **CPREF**
 virtual volumes **CPREF**
 mount and demount processing **CPPROG**
 mount processing, asynchronous **CPPROG**
 VM/SP HPO access **CPPROG**

- volumes
 - backup copies **CPPROG**
 - I/O management **CPPROG**
- MSSF** (monitoring and service support facility) **CPPROG**
- MSSF SCPINFO** command **SFPROG**
- MSSFCALL SFPROG**
 - SCPINFO** command **SFPROG**
- MThexloc1** operand of **DCP** command **CPREF**
- MULT** option
 - in **CMS/DOS CMSPROG**
 - of the **DLBL** command **CMSPROG**, **CMSREF**
- multi-write access of minidisks **PLNGDE**
- multiple
 - access, defined **INTRO**
 - alternate console selection
 - argument passing **SPIREF**
 - channel errors **DIAG**
 - clauses on a line **SPIUG**
 - copy printing, 3800 printer **CPPROG**
 - DCBs PLNGDE**
 - extents **CMSPROG**
 - files
 - displaying **XEDIT**, **XEDITUG**
 - editing **XEDIT**, **XEDITUG**, **PRIMER**
 - editing, illustration of **XEDITUG**
 - ending editing sessions for **XEDITUG**
 - on one screen **XEDITUG**
 - on one screen, example of **XEDITUG**
 - quitting **XEDIT**
 - input files
 - with **COPYFILE** command **CMSREF**
 - logical screens
 - defining **XEDIT**, **XEDITUG**
 - example of **XEDITUG**
 - output files
 - with **COPYFILE** command **CMSREF**
 - with **RENAME** command **CMSREF**
 - resources **TSAFREF**
 - samples **TSAFREF**
 - service record files, 3033AP **PLNGDE**
 - shadow tables
 - enabling **CPREF**
 - option, **SET** command **INTRO**
 - support **CPPROG**
 - specifying **CMSREF**
 - specifying in **CMS/DOS CMSREF**
 - string parsing **SPIREF**
 - subcommands entered on command line **XEDIT**
 - updates
 - CTL** option of **XEDIT** command **CMSPROG**
 - using **UPDATE** command **CMSPROG**
 - users, reserve page frames for them **CPREF**
 - views
 - of different files **XEDITUG**
 - of different files, example of **XEDITUG**
 - of files **PRIMER**
 - of same file **XEDITUG**
 - of same file, example of **XEDITUG**
 - of same file, making changes in **XEDITUG**
 - order of processing in **XEDITUG**
 - virtual machine groups **PLNGDE**
 - write access of minidisks **PLNGDE**
 - Multiple Virtual Storage/System Product (**MVS/SP**) **CPPROG**
 - multiplication **SPIUG**
 - definition **SPIREF**
 - operator **SPIREF**, **SPIUG**
 - multiplying numbers **EXEX2**
 - multiprocessor
 - considerations for **MVS** guest **RGOS**
 - definition **INST**, **RGOS**
 - displaying load **CPREF**
 - examine real storage **SFPROG**
 - special code in **CP CPPROG**
 - multiprocessor (**MP**) **CPPROG**
 - See also **MP** (multiprocessor)
 - multiprocessor mode, recovery management **OPGDE**
 - multiprocessor mode (**MP**) **DIAG**
 - multiprocessor system
 - COPY OPTIONS PLNGDE**
 - displaying real storage **CPREF**
 - generating **PLNGDE**
 - initialization **OPGDE**
 - load list **PLNGDE**
 - modules **PLNGDE**
 - performance measurement **PLNGDE**
 - restarting **OPGDE**
 - specifying **MP** initialization
 - SYSCOR** macro **PLNGDE**
 - system identification
 - SYSID** macro **PLNGDE**
 - System/370** Extended Feature **PLNGDE**
 - multiprocessor system (**MP**)
 - See **MP** (multiprocessor system)
 - MultiSystem Communication Unit (**MCU**) **CPPROG**
 - coding **RDEVICE** macro **PLNGDE**
 - overview **PLNGDE**
 - planning considerations **PLNGDE**
 - processors supported **PLNGDE**
 - multitasking in **GCS**
 - assigning priority **PLNGDE**
 - coordinating tasks **PLNGDE**
 - defined **PLNGDE**
 - exit routines, defining **PLNGDE**
 - task family tree diagram **PLNGDE**
 - terminating tasks **PLNGDE**
 - multivolume
 - data sets, displaying volumes
 - on which they reside **CMSREF**
 - extents **CMSPROG**
 - tape processing
 - See end-of-volume, processing
 - multivolume **VSAM** extents
 - identifying with **DLBL** command **CMSREF**
 - in **CMS/DOS CMSREF**
 - maximum number of disks **CMSREF**
 - in **CMS/DOS CMSREF**
 - rules for specifying **CMSREF**
 - in **CMS/DOS CMSREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

MVS

functions simulated **PLNGDE**
 support enabled or disabled **CPREF**

MVS guest

allocating real storage **RGOS**
 alternate path support **RGOS**
 analyzing performance of **RGOS**
 AP-generated system **RGOS**
 cross memory processing **RGOS**
 DASD address considerations **RGOS**
 DASD sharing overview **RGOS**
 DIAGNOSE code support **RGOS**
 DMKRIO general considerations **RGOS**
 dumps **RGOS**
 error recording and analysis **RGOS**
 generating CP for performance **RGOS**
 hardware for DASD sharing **RGOS**
 IUCV support **RGOS**
 MP-generated system **RGOS**
 multiprocessing considerations **RGOS**
 multiprocessor environment **RGOS**
 operator console **RGOS**
 performance, enhancing with CP commands **RGOS**
 preferred machine assist **RGOS**
 problem determination **RGOS**
 production systems **RGOS**
 real storage above 16 Mb **RGOS**
 reserve/release summary **RGOS**
 shadow tables **RGOS**
 sharing minidisks **RGOS**
 single processor mode **RGOS**
 stage 1 I/O console **RGOS**
 stand-alone dump **RGOS**
 stand-alone dump restrictions **RGOS**
 storage considerations, V=R **RGOS**
 tape definitions **RGOS**
 trace table **RGOS**
 TSO when running under VM/SP HPO **RGOS**
 uniprocessor environment **RGOS**
 UP-generated system **RGOS**
 V=R configuration **RGOS**
 V=V configuration **RGOS**
 virtual address rules **RGOS**
 virtual machine options
 BMX RGOS
 ECMODE RGOS
 PMA RGOS
 REALTIMER RGOS

STFIRST **RGOS**

VIRT=REAL RGOS

XMEM RGOS

370E RGOS

MVS/SP (Multiple Virtual Storage/System Product)

control switch assist **REL5GDE**
 preferred machine assist **REL5GDE**
 cross memory assist **REL5GDE**
 cross memory services **CPPROG**
 efficiency of communication **CPPROG**
 extended storage support **REL5GDE**
 guest running with 3380 DASDs,
 improving the performance of **CPPROG**
 page fault assist **CPPROG**
 page fault processing **REL5GDE**
 preferred machine assist **REL5GDE**
 simulation extensions **CPPROG**
 single processor mode **REL5GDE**
 support **CPPROG**

 common segment facility **CPPROG**

ECPS CPPROG

 low address protection **CPPROG**

 special MVS instruction

 operations **CPPROG**

 System/370 Extended Facility **CPPROG**

V=R virtual machine recovery **REL5GDE**

MVS/system extensions support

 common segment facility **CPPROG**

 enabling **CPPROG**

 low address protection **CPPROG**

 requirements **PLNGDE**

 special operations

 and instructions **CPPROG**

 System/370 Extended Facility

 processors supported **PLNGDE**

 System/370 Extended Feature

 processors supported **PLNGDE**

MVS/System Product Support

 cross memory **PLNGDE**

 preferred machine assist **PLNGDE**

 requirements **PLNGDE**

 single processor mode **PLNGDE**

 System/370 Extended Facility

 processors supported **PLNGDE**

 System/370 Extended Feature

 processors supported **PLNGDE**

V=R recovery **PLNGDE**

N

n described **CPREF**
 n operand of STORE command **CPREF**
 N-select **CPPROG**
 NAME control record, ZAP program
 format **INST**
 function **INST**
 options **INST**
 Name entry in a names file **CMSLOT**
 name of file, changing **PRIMER**
 name operand
 of CHANGE command **CPREF**
 of CLOSE command **CPREF**
 of LOADBUF command **CPREF**
 of LOADVFCB command **CPREF**
 NAME option of LKED command **CMSREF**
 name substitution
 examples **EXEX2**
 steps **EXEX2**
 named segments
 finding, loading, purging **SFPROG**
 named system **CPPROG**
 creating
 3800 printing subsystem **PLNGDE**
 loading by **CPREF**
 saving or loading a 3800 **SFPROG**
 NAMEFIND command
 description **CMSREF**
 FIFO option **CMSREF**
 FILE option **CMSREF**
 LIFO option **CMSREF**
 LINENUM option **CMSREF**
 NAMES file format **CMSREF**
 NAMES file tags **CMSREF**
 SIZE option **CMSREF**
 smple names file **CMSREF**
 STACK option **CMSREF**
 START option **CMSREF**
 TYPE option **CMSREF**
 XEDIT option **CMSREF**
 NAMELANG macro **PLNGDE, REL5GDE**
 format **PLNGDE**
 operands
 LANGID **PLNGDE**
 NLSPGCT **PLNGDE**
 NLSSTRT **PLNGDE**
 NLSVOL **PLNGDE**
 NAMENCP macro
 for 37XX control program **CPPROG**
 format **PLNGDE**
 operands
 CPNAME **PLNGDE**
 CPSIZE **PLNGDE**
 CPTYPE **PLNGDE**
 SYSPGCT **PLNGDE**
 SYSSTRT **PLNGDE**
 SYSVOL **PLNGDE**

names
 of EXECs **SPIREF**
 of functions **SPIREF**
 of programs **SPIREF**
 of subroutines **SPIREF**
 of variables **SPIREF**
 NAMES command **CMSLOT, PRIMER**
 description **CMSREF**
 example of use **INTRO**
 nickname **CMSREF**
 PF keys on NAMES menu **CMSREF**
 sample NAMES screen **CMSREF**
 names file
 avoiding conflicts of macro **XEDITUG**
 changing an entry within **PRIMER**
 creating **CMSLOT, PRIMER**
 definition of **PRIMER**
 deleting an entry from **PRIMER**
 displaying **PRIMER**
 edited with MESSAGE window **CMSUG**
 editing **CMSLOT**
 finding information in **PRIMER**
 NAMES filetype usage in CMS **CMSUG**
 NAMES operand of QUERY command **CPREF**
 NAMES option in QUERY **CMSLOT**
 NAMESYS **PLNGDE**
 NAMESYS macro **CMSPROG, CPPROG, PLNGDE, REL5GDE**
 creating a DCSS for CMS language files **REL5GDE**
 format **PLNGDE**
 operands
 PARMRGS **PLNGDE**
 PROTECT **PLNGDE**
 RCVRID **PLNGDE**
 SAVESEQ **PLNGDE**
 SYSBLOK **PLNGDE**
 SYSCYL **PLNGDE**
 SYSHRSG **PLNGDE**
 SYSNAME **PLNGDE**
 SYSPGCT **PLNGDE**
 SYSPGNM **PLNGDE**
 SYSSIZE **PLNGDE**
 SYSSTRT **PLNGDE**
 USERID **PLNGDE**
 VMGROUP **PLNGDE**
 VSYSADR **PLNGDE**
 VSYSRES **PLNGDE**
 NAME3800 macro **CPPROG**
 format **PLNGDE**
 operands
 CPNAME **PLNGDE**
 SYSPGCT **PLNGDE**
 SYSSTRT **PLNGDE**
 SYSVOL **PLNGDE**
 naming
 a line **XEDITUG**
 using .xxxx (prefix subcommand) **XEDIT**
 using SET POINT **XEDIT**
 a virtual screen **XEDIT**
 a window **XEDIT**
 CMS files **CMSUG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- conventions for HELP files **CMSUG**
- user commands **CMSUG**
- variables **SPIUG**
- NARROW** operand of **SYSFORM** macro **PLNGDE**
- National Language Support (NLS)
 - and HELP **REL5GDE**
 - and the Central Message Facility **REL5GDE**
 - and the Parsing Facility **REL5GDE**
 - checking command syntax **REL5GDE**
 - CP control blocks, new and changed **REL5GDE**
 - CP loadlists, changed **REL5GDE**
 - CP macros, new and changed **REL5GDE**
 - CP modules, deleted **REL5GDE**
 - environmental considerations **REL5GDE**
 - execs, new and changed **REL5GDE**
 - introduction **PLNGDE**
 - IPCS module, changed **REL5GDE**
 - issuing commands in languages
 - other than English **PLNGDE**
 - making other languages available **REL5GDE**
 - making your own message repository **REL5GDE**
 - migration considerations **REL5GDE**
 - new and changed
 - CMS macros and control blocks **REL5GDE**
 - CMS modules **REL5GDE**
 - CP modules **REL5GDE**
 - overview **REL5GDE**
 - references to other publications **REL5GDE**
 - using other languages **REL5GDE**
- national languages **SFPROG, SYSMSG**
- issuing commands in **PLNGDE**
- special hardware **PLNGDE**
- system
 - defined in **DMSNGP ASSEMBLE INST**
- native GCS services **PLNGDE**
- native languages
 - See languages, national
- native mode **CPPROG**
 - changing to it from **VM/SP HPO CPREF**
 - switching to or from **CPPROG**
- native SNA
 - See SNA (Systems Network Architecture)
 - See Systems Network Architecture (SNA)
- NBFILE** option
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
 - of **TRANSFER XEDIT**
- NBSCOPE** option
 - of **EXTRACT XEDIT**
- NCAL** option of **LKED** command **CMSREF**
- NCCF** (Network Communications Control Facility)
 - INTRO, REL5GDE**
 - and the programmable operator facility **SFPROG**
 - logging **NCCF** messages **SFPROG**
 - logical operator **SFPROG**
 - interface with Programmable Operator Facility
 - in a single system **OPGDE**
 - Message Exchange (PMX) **OPGDE**
 - NCCF** operator as the logical
 - operator **OPGDE**
 - operator **OPGDE**
 - single system with **NCCF OPGDE**
 - operator **SFPROG**
 - command authorization **SFPROG**
 - QUERY** command authorization **SFPROG**
 - routing messages to **SFPROG**
 - operator station **SFPROG**
 - PMX SFPROG**
- PROP** command **INTRO**
 - programmable operator **INTRO**
 - use with programmable operator **OPGDE**
 - when stopping programmable operator **SFPROG**
- NCP INST**
 - and **PEP** sharing **SFPROG**
 - structure of the SNA environment **PLNGDE**
- NCPDUMP**
 - updating **INST**
 - using to update 3704/3705 dump program **INST**
- NCPDUMP** command **DIAG**
- NCPDUMP** service program **DIAG**
 - updating **INST**
- ncpname** operand of **NETWORK** command **CPREF**
- NE** option of **LKED** command **APGDE, CMSREF**
- NEEDINFO** operand
 - of **PRB** command **DIAG**
 - of **STAT** command **DIAG**
- negation
 - of logical values **SPIREF**
 - of numbers **SPIREF**
- neighbor operand of **FDISPLAY** subcommand **DIAG**
- nesting
 - described **CPREF**
 - EXEC** procedures
 - of control structures **SPIREF**
- NETLOG**
 - file **CMSLOT**
 - filetype **PRIMER**
 - use in CMS **CMSUG**
- NetView **INST, PLNGDE, REL5GDE**
 - and the programmable operator facility **SFPROG**
 - logging NetView messages **SFPROG**
 - logical operator **SFPROG**
 - operator **SFPROG**
 - command authorization **SFPROG**
 - QUERY** command authorization **SFPROG**
 - operator station **SFPROG**
 - PMX SFPROG**
 - when stopping programmable operator **SFPROG**
- NETWORK** command **CMSUG, CPREF, DIAG**
 - class A **CPREF**
 - class B **CPREF**
 - described **CPREF**
 - (CP)
 - LOAD** operand usage **OPGDE**
- operands
 - ACTIVE CPREF**
 - ALL CPREF**
 - AS CPREF**
 - ATTACH CPREF**
 - AUTO CPREF**
 - bytecount **CPREF**
 - DETACH CPREF**
 - DISABLE CPREF**
 - DISPLAY CPREF**
 - DUMP CPREF**
 - ENABLE CPREF**
 - END CPREF**
 - FREE CPREF**
 - FROM CPREF**
 - hexloc **CPREF**
 - IMMED CPREF**
 - LOAD CPREF**
 - ncpname CPREF**
 - OFF CPREF**
 - OFFLINE CPREF**
 - ONLINE CPREF**

- POLLDLAY CPREF**
QUERY CPREF
raddr CPREF
resid CPREF
SHUTDOWN CPREF
TO CPREF
userid CPREF
vaddr CPREF
VARY CPREF
responses CPREF
usage for remote 3270 CPREF
usage notes CPREF
3270 resource identification CPREF
- network**
component INTRO
DDP defined INTRO
defined TERMREF
dump operations DIAG
messages PRIMER
status notice PRIMER
- Network Communications Control Facility (NCCF)**
See NCCF
- Network control program (NCP) INST**
See NCP
- Network control program Basic Transmission Unit (NCP BTU)**
monitored in CP internal trace table CPREF
- NETWORK LOAD command**
format INST
function INST
how it works INST
using to load 3704/3705
Emulation Program (EP) INST
- NETWORK operand**
of DEDICATE directory control
statement PLNGDE
- NETWORK virtual screen PRIMER**
- NETWORK window PRIMER**
- never-call function, specifying**
in CMS TEXT file CMSREF
- new-line key PRIMER**
- NEWDATE option**
of COPYFILE command CMSREF
of RECEIVE command CMSREF
- NEWFILE option of COPYFILE command CMSREF**
- NEXT subcommand XEDIT**
example of XEDIT
of TESTCOB command APGDE
of TESTFORT command APGDE
- NFIND subcommand XEDIT**
with DBCS strings XEDIT
- NFINDUP subcommand XEDIT**
with DBCS strings XEDIT
- NFU**
See NFINDUP subcommand
- Nhexloc operand**
of STCP command CPREF
- Nhexloc1 operand**
of DCP command CPREF
- nicknames PRIMER**
assigned in NAMES file CMSREF
entry in a names file CMSLOT
- used in NOTE command CMSLOT, PRIMER**
used in SENDFILE command CMSLOT, PRIMER
used in TELL command CMSLOT
- NL operand of FILEDEF command CMSREF**
NL processing for tapes
See no label processing
- NLhexloc operand of STCP command CPREF**
NLhexloc1 operand of DCP command CPREF
NLS
See National Language Support
- NLSPGCT operand of NAMELANG macro PLNGDE**
NLSSSTR operand of NAMELANG macro PLNGDE
NLSVOL operand of NAMELANG macro PLNGDE
- nn operand of ECHO command CPREF**
nn SEC/MIN/HRs operand, SLEEP command CPREF
nnn operand of REPEAT command CPREF
nnnn operand of DISPLAY subcommand DIAG
nnnnn operand of DUMPSCAN command DIAG
nnnnn operand of PRB command DIAG
nnnnn operand of STAT command DIAG
nnnnnn operand of IPL command CPREF
no label processing CMSUG
- NOACK option**
of NOTE command CMSREF
of SENDFILE command CMSREF
- NOALIGN option of ASSEMBLE command CMSREF**
NOALOGIC option of ASSEMBLE command CMSREF
- NOAUTO option**
of INCLUDE command CMSREF
of LOAD command CMSREF
- NOCC option of PRINT command CMSREF**
- NOCHANGE option**
of DLBL command CMSREF
of FILEDEF command CMSREF
of LABELDEF command CMSREF
- NOCLEAR operand of IPL command CPREF**
NOCLEAR option
of INCLUDE command CMSREF
of LOAD command CMSREF
of XEDIT command used in EXEC procedure CMSUG
- NOCOMMENTS option**
of EXECUPDT command CMSREF
of EXECUPDT command CMSREF
- NOCONT operand of SPOOL command CPREF**
- node CMSLOT**
central site requirement INTRO
defined INTRO
displayed PRIMER
entry in a names file CMSLOT
id TSAFREF
Pass-Through INTRO
- NODECK option**
of ASSEMBLE command CMSREF
of OPTION command CMSREF
- NODISK option of ACCESS command CMSREF**
NODISP option of EDIT command
NODUMP option of OPTION command CMSREF
- NODUP option**
of INCLUDE command CMSREF
of LOAD command CMSREF
- NOEOF operand of SPOOL command CPREF**
NOEOV option of FILEDEF command CMSREF

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- NOERASE** option of **FORMAT** command **CMSREF**
NOERRS option of **OPTION** command **CMSREF**
NOESD option of **ASSEMBLE** command **CMSREF**
NOFILELIST option of **FILELIST** command **CMSREF**
NOFORM option of **PRTDUMP** command **DIAG**
NOHEADER option
 of **LISTFILE** command **CMSREF**
 of **PUNCH** command **CMSREF**
NOHEX option of **PRTDUMP** command **DIAG**
NOHISTORY option of **EXECUPDT** command **CMSREF**
NOHOLD of **CHANGE** command **CPREF**
NOHOLD operand
 of **CHANGE** command **CPREF**
 of **CLOSE** command **CPREF**
 of **QUERY** command **CPREF**
 of **SPOOL** command **CPREF**
 of **SPTAPE** command **CPREF**
NOINV option
 of **INCLUDE** command **CMSREF**
 of **LOAD** command **CMSREF**
NOIPL operand of **LOGON** operand **CPREF**
NOLIBE option
 of **INCLUDE** command **CMSREF**
 of **LOAD** command **CMSREF**
NOLIBMAC option of **ASSEMBLE** command **CMSREF**
NOLIST option
 of **ASSEMBLE** command **CMSREF**
 of **OPTION** command **CMSREF**
NOLISTX option of **OPTION** command **CMSREF**
NOLOG option **REL5GDE**
 of **NOTE** command **CMSREF**
 of **RECEIVE** command **CMSREF**
 of **SENDFILE** command **CMSREF**
NOLOG password **OPGDE**
NOMAP option
 of **GENMOD** command **CMSREF**
 of **INCLUDE** command **APGDE**
 of **LOAD** command **APGDE, CMSREF**
 of **PRTDUMP** command **DIAG**
NOMCALL option of **ASSEMBLE** command **CMSREF**
NOMLOGIC option of **ASSEMBLE** command **CMSREF**
non-recoverable machine check **DIAG**
non-VM operating systems
 establishing contact with **TERMREF**
no-wrap file **DIAG**
nondedicated
 devices **CPPROG**
 terminal definitions **RGOS**
NONDISP option
 of **EXTRACT XEDIT**
 of **QUERY CMSREF, XEDIT**
 of **SET XEDIT**
 of **TRANSFER XEDIT**
nondisplayable character
 defining character used in place of **XEDIT**
 translation tables **TERMREF**
nondisruptive transition
 See dynamic SCP transition
NONE operand of **MONITOR** command **CPREF**
noninteractive **CPPROG**
 users making more storage available **CPREF**
nonpaging application **CPPROG**
nonprivileged program **REL5GDE**
nonreenterable program save areas **GCSREF**
nonreentrant code **MACREF**
 generating, using **LINEDIT** macro **MACREF**
nonrelocatable modules, creating **CMSPROG**
nonrelocatable modules in CMS **CMSREF**
nonresident pages **CPPROG**
nonrunnable virtual machine
 what CP does with **CPPROG**
nonshared VCU mode
 miscellaneous devices **PLNGDE**
 tape devices **PLNGDE**
 TDISK space **PLNGDE**
 terminals **PLNGDE**
 unit record devices **PLNGDE**
nonstandard
 label processing, tapes **CMSUG**
 label routine, writing **CMSUG**
 labelled tapes, defining **CMSUG**
NONUM option of **ASSEMBLE** command **CMSREF**
NOOBJECT option of **ASSEMBLE** command **CMSREF**
NOP instruction **SPIREF, SPIUG**
NOPRINT option
 of **ASSEMBLE** command **CMSREF**
 of **LKED** command **CMSREF**
NOPRINT option of **LKED** command **APGDE**
noprof **APGDE**
NOPROF option of **ACCESS** command **CMSREF**
 to suppress execution of **PROFILE EXEC CMSUG**
NOPROMPT option of **COPYFILE** command **CMSREF**
NOQ2 operand
 of the **SET QDROP OFF** command **CPPROG**
NOQ3 operand
 of the **SET QDROP OFF** command **CPPROG**
NOREAL option of **PRTDUMP** command **DIAG**
NORENT option of **ASSEMBLE** command **CMSREF**
NOREP option
 of **INCLUDE** command **CMSREF**
 of **LOAD** command **CMSREF**
NORETURN operand of **QVM** command **CPREF**
NORLD option of **ASSEMBLE** command **CMSREF**
normal task termination **PLNGDE**
normal wait state codes **SYSMSG**
NORUN operand of **TRACE** command **CPREF**
NORUN option of **PER** command **CPREF**
NOSAVE option of **ACCESS** command **CMSREF**
NOSEP operand of **START** command **CPREF**
NOSID option of **EXECUPDT** command **CMSREF**
NOSPECS option of **COPYFILE** command **CMSREF**
NOSPROF parameter **REL5GDE**
 of the **IPL** command **REL5GDE**
NOSTMT option of **ASSEMBLE** command **CMSREF**
NOSTOP operand of **MONITOR** command **CPREF**
NOSTR option of **GENMOD** command **CMSREF**
NOSYM option of **OPTION** command **CMSREF**
NOSYS operand of **CHANGE** command **CPREF**
NOT ACCEPTED
 terminal status **APGDE**
 status notice **PRIMER**
 status on display screen **CMSUG**
not enough
 PG space defined **CPPROG**
 PP space defined **CPPROG**
not finding text
 using **NFIND XEDIT**
 using **NFINDUP XEDIT**
not equal operator (\neq) **SPIREF**
not equal operator (\neq) **SPIREF**
not exactly equal operator (\neq) **SPIREF**
not exactly equal operator (\neq) **SPIREF**
not greater than operator (\ngtr) **SPIREF, SPIUG**
not less than operator (\nless) **SPIREF**
NOT operator **SPIREF, SPIUG**
not ready status, simulating **CPREF**

NOT symbol used in string target **XEDIT, XEDITUG**
notation

conventions **CMSREF, CPREF, DIAG, EXEX2**
for **HELP CMSUG**
engineering **SPIREF**
scientific **SPIREF**

NOTE command **APGDE, CMSLOT, PRIMER**

ACK option **CMSREF**
ADD option **CMSREF**
CANCEL option **CMSREF**
CC option **CMSREF**
description **CMSREF**
LOG option **CMSREF**
LONG option **CMSREF**
NOACK option **CMSREF**
NOLOG option **CMSREF**
NONOTEBOOK option **CMSREF**
NOTEBOOK option **CMSREF**
PF key settings **CMSREF**
PROFILE option **CMSREF**
REPLACE option **CMSREF**
sending a note **CMSREF**
SHORT option **CMSREF**

NOTE macro **CMSPROG**

BSAM GCSREF
dcb address parameter **GCSREF**
description **GCSREF**

NOTE option of **SENDFILE** command **CMSREF**

Notebook entry in a names file **CMSLOT**

NOTEBOOK

file **CMSLOT, PRIMER**
filetype use in **CMS CMSUG**

NOTEBOOK option

of **NOTE** command **CMSREF**
of **RECEIVE** command **CMSREF**

NOTERM operand of **SPOOL** command **CPREF**

NOTERM option

of **ASSEMBLE** command **CMSREF**
of **LKED** command **CMSREF**
of **OPTION** command **CMSREF**

NOTERM option of **LKED** command **APGDE**

notes

canceling **CMSLOT**
continuing **CMSLOT, PRIMER**
creating **PRIMER**
definition of **PRIMER**
keeping copies of **PRIMER**
on **EXEC 2 EXEX2**
 &LOOP statement **EXEX2**
 &TRACE ALL EXEX2
assignment statement **EXEX2**
closing loops **EXEX2**
conditional phrases **EXEX2**
embedded blanks **EXEX2**
evaluation of **&DATE** and **&TIME EXEX2**
label search **EXEX2**
leading zeros **EXEX2**
numbers **EXEX2**
plus signs **EXEX2**
program stack **EXEX2**
recursive execution **EXEX2**
reserved words **EXEX2**

termination **EXEX2**

truncation column **EXEX2**

preparing **CMSLOT**

receiving **CMSLOT, PRIMER**

sending **CMSLOT, PRIMER**

sending complimentary copies of **PRIMER**

to a list of people **PRIMER**

typing **PRIMER**

NOTES option of **DETAIL HELP CMSUG**

NOTEST option of **ASSEMBLE** command **CMSREF**

notices, status **PRIMER**

NOTIFY function of **SPOOL** system service **SFPROG**

NOTRANS operand

of **SET** command **CPREF, CPPROG**

NOTRC option of **PRINT** command **CMSREF**

NOTREADY command **CMSUG, CPREF**

described **CPREF**

operand

vaddr **CPREF**

responses **CPREF**

usage notes **CPREF**

NOTRUNC option **COPYFILE** command **CMSREF**

NOTYPE option

of **COPYFILE** command **CMSREF**

of **ERASE** command **CMSREF**

of **INCLUDE** command **CMSREF**

of **LOAD** command **CMSREF**

of **RDR** command **CMSREF**

of **RENAME** command **CMSREF**

of **SENDFILE** command **CMSREF**

NOTYPING flag cleared before

error messages **SPIREF**

NOUPDATE option of **EXECUPDT** command **CMSREF**

NOUPDIRT option of **RENAME** command **CMSREF**

NOVALUE condition

on **SIGNAL** instruction **SPIREF**

use of **SPIREF**

NOVF operand of **OPTION** directory

control statement **PLNGDE**

NOVF option, defining in directory **PLNGDE**

NOVIRT option of **PRTDUMP** command **DIAG**

NOXREF option

of **ASSEMBLE** command **CMSREF**

of **OPTION** command **CMSREF**

NOYFLAG option of **ASSEMBLE** command **CMSREF**

NO3800 operand of **START** command **CPREF**

NShexloc operand of **STCP** command **CPREF**

NSL (nonstandard label) processing **CMSUG**

NSL operand of **FILEDEF** command **CMSREF**

NThexloc1 operand of **DCP** command **CPREF**

NUCALPHA CMSPROG

NUCEXT Function

See also **MACREF**

ENDCMD attribute **MACREF**

linkage conventions **MACREF**

nucleus extensions **MACREF**

nucleus storage **MACREF**

NUCXDROP command **MACREF**

NUCXLOAD command **MACREF**

NUCXMAP command **MACREF**

PLISTs MACREF

PURGE and **RESET** service calls **MACREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- register contents upon entry **MACREF**
SYSTEM and **SERVICE** attributes **MACREF**
- nucleus
 building
 considerations, VM/VSE **RGOS**
 VM under VM **RGOS**
- CMS CMSPROG**
 adding segment for Y-disk directory
 (Y-STAT) **INST**
 alternate placement **INST**
 building after applying service **INST**
 building after loading national
 language files **INST**
 load map **INST**
 regenerating or resaving **INST**
- CP**
 building after applying service **INST**
 building after loading national
 language files **INST**
 DASD requirements **PLNGDE**
 defining **SYSNUC OPGDE**
 definition **OPGDE**
DMKSYS ASSEMBLE file **OPGDE**
 end of resident nucleus address **INST**
FRET Trap option **INST**
 IPL procedure improvements **OPGDE**
 planning **OPGDE**
 protecting spool files **OPGDE**
 real storage requirements **PLNGDE**
 reducing its size **PLNGDE**
 virtual = real option **INST**
- extensions **MACREF**
 cancel an extension **CMSREF**
ENDCMD option **MACREF**
IMMCMD option **MACREF**
 installation **CMSREF**
 obtain information about **CMSREF**
 system **MACREF**
 user **MACREF**
- free storage
 allocating **CMSPROG**
 description of **CMSPROG**
- GCS**
 alternate placement **INST**
 building after loading national
 language files **INST**
- load map **DIAG**
 definition of **PRGDE**
 example of **PRGDE**
 information contained in **PRGDE**
 obtaining a **PRGDE**
 obtaining one in **RSCS PRGDE**
- nucleus
 definition **OPGDE**
 planning **OPGDE**
 protecting spool files **OPGDE**
- protection feature
 displaying status of **CMSREF**
 regeneration requirements **INST**
 support, alternate **CPROG**
- NUCMAP**
 definition of **PRGDE**
 example of **PRGDE**
 information contained in **PRGDE**
 obtaining a **PRGDE**
 obtaining one in **RSCS PRGDE**
- NUCOMEGA CMSPROG**
NUCON (nucleus constant area) **DIAG**
 holds **EXECFLAG** byte **SPIREF**
NUCON changes **REL5GDE**
NUCON macro **CMSPROG**
NUCSIGMA CMSPROG
NUCXDROP command **MACREF**
 description **CMSREF**
NUCXDROP for explicit server unload **SRPI**
NUCXLOAD
 loading servers via **SRPI**
 used by **SRPI** macro **SRPI**
NUCXLOAD command **CMSUG**, **MACREF**
 description **CMSREF**
ENDCMD operand **CMSREF**
IMMCMD operand **CMSREF**
PUSH operand **CMSREF**
SERVICE operand **CMSREF**
SYSTEM operand **CMSREF**
NUCXMAP command **MACREF**
 description **CMSREF**
FIFO option **CMSREF**
LIFO option **CMSREF**
STACK option **CMSREF**
- null
 clauses **SPIREF**, **SPIUG**
 entry **INST**
 instruction
 See **NOP** instruction
- line
 entering to determine environment **CMSUG**
 input data from terminal **CMSUG**
 to resume program execution
 to resume after attention interruption **CMSUG**
 when entering **VSAM** extents **CMSREF**
 when entering **VSAM** extents
 in **CMS/DOS CMSREF**
- operand
 of **QUERY** command **CPREF**
 of **SET** command **CPREF**
- statement **EXEX2**
 strings **SPIREF**
- NULLKEY XEDITUG**
NULLKEY option
 of **SET PAn XEDIT**
 of **SET PFn XEDIT**
- NULLS** command of **DMS/CMS APGDE**
NULLS option
 of **EXTRACT XEDIT**
 of **QUERY XEDIT**
 of **SET XEDIT**
 of **TRANSFER XEDIT**
- nulls used to replace trailing blanks **XEDIT**
- NUM** data type **EXEX2**
- NUMBER** command of **DMS/CMS APGDE**
 number of copies
 spool file attribute **OPGDE**
 number of files being edited **XEDITUG**
 number of printed copies, specifying **CMSLOT**
 number operand of + or - subcommand **DIAG**
- NUMBER** option
 of **ASSEMBLE** command **CMSREF**
 of **EXTRACT XEDIT**
 of **QUERY XEDIT**
 of **SET XEDIT**
 of **TRANSFER XEDIT**
- numbering of disks **PRIMER**
- numbers
 arithmetic on **SPIREF**
 checking with **DATATYPE SPIREF**

comparing **SPIUG**
comparison of **SPIREF**
definition **SPIREF**
description of **SPIREF**
determining the sign **SPIUG**
dividing **EXEX2**
exponential notation **SPIUG**
fixed point **SPIUG**
floating point **SPIUG**
formatting for display **SPIREF**
in **DO** instruction **SPIREF**
in prefix area, setting on **PRIMER**
multiplying **EXEX2**
power of **SPIUG**
range **EXEX2**

range of **SPIUG**
rounding **SPIUG**
size and treatment **EXEX2**
truncating **SPIREF**, **SPIUG**
types of **SPIUG**
use in the language **SPIREF**
whole **SPIUG**
numeric
instruction **SPIREF**
option of **PARSE** instruction **SPIREF**
settings saved during subroutine calls **SPIREF**
NUMERIC DIGITS instruction **SPIUG**
NUMERIC FUZZ instruction **SPIUG**
numerical order sorting **CMSLOT**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.



- object code
 - definition **INST**
 - how service **INST**
 - overview **INST**
 - service: emergency fixes using ZAPs **INST**
- object deck
 - assembler, generating **CMSREF**
- object directory **REL5GDE**
- object files for a national language **SFPROG**
- object modules **APGDE**
 - loading **APGDE**
 - nonrelocatable **APGDE**
 - page boundaries **INST**
 - relocatable **APGDE**
- OBJECT** option of **ASSEMBLE** command **CMSREF**
- object program, defined **INTRO**
- object-maintained, definition **INST**
- OBJ3705** macro library **INST**
- obliterating a file **PRIMER**
- OBR** (3480 Outboard Records) **REL5GDE**
- obtaining
 - a VM/SP HPO dump, preferred machine assist **RGOS**
 - storage **PLNGDE**
 - the MSS communicator program **PLNGDE**
- of **ALLOCATE** **TSAFREF**
- OFF** operand
 - of **ADSTOP** command **CPREF**
 - of **CACHE** command **CPREF**
 - of **MONITOR** command **CPREF**
 - of **NETWORK** command **CPREF**
 - of **SET** command **CPREF**
 - of **SPMODE** command **CPREF**
 - of **SPOOL** command **CPREF**
 - of **START** command **CPREF**
 - of **TRACE** command **CPREF**
- off operand of **PRINT** subcommand **DIAG**
- OFF** subcommand
 - of **TESTCOB** command **APGDE**
 - of **TESTFORT** command **APGDE**
- office task program product
 - DCF** **INTRO**
 - GDDM** **INTRO**
 - PROFS** **INTRO**
- OFFLINE** operand
 - of **NETWORK** command **CPREF**
 - of **QUERY** command **CPREF**
 - of **VARY** command **CPREF, CPPROG**
- offsetting text **CMSUG**
- OGL** **INST**
- OL** option of **LKED** command **APGDE, CMSREF**
- OLD** option of **SENDIFLE** command **CMSREF**
- OLDDATE** option
 - of **COPYFILE** command **CMSREF**
 - of **DISK LOAD** command **CMSREF**
 - of **RECEIVE** command **CMSREF**
- OLTSEP** **INST, PLNGDE**
- ON** operand
 - of **CACHE** command **CPREF**
 - of **MONITOR** command **CPREF**
 - of **SET** command **CPREF**
 - of **SPMODE** **CPREF**
- on operand of **PRINT** subcommand **DIAG**
- online information **PRIMER**
- ONLINE** operand
 - of **NETWORK** command **CPREF**
 - of **VARY** command **CPREF, CPPROG**
- open a spool file with **DIAGNOSE** code **X'BC'** **SFPROG**
- OPEN** macro **CMSPROG**
 - BSAM/QSAM** **GCSREF**
 - dcb address parameter **GCSREF**
 - description **GCSREF**
 - input parameter **GCSREF**
 - mf parameter **GCSREF**
 - output parameter **GCSREF**
 - updat parameter **GCSREF**
 - execute format **GCSREF**
 - list format **GCSREF**
 - OS simulation **CMSUG**
 - VSAM** **GCSREF**
 - acb address parameter **GCSREF**
 - description **GCSREF**
- OPEN** operand of **STAT** command **DIAG**
- OPEN** statement of **SQL** **APGDE**
- OPEN/OPENJ** macro (**SVC 19/22**) **CMSPROG**
- OPENIBM** operand of **STAT** command **DIAG**
- opening CMS files **CMSPROG**
- OPENUSER** operand of **STAT** command **DIAG**
- OPER** operand of **SYSFCN** macro **PLNGDE**
- operand notation
 - for **GENCB** **GCSREF**
 - for **MODCB** **GCSREF**
 - for **SHOWCB** **GCSREF**
 - for **TESTCB** **GCSREF**
- operand, target as **XEDITUG**
- operands **CPREF**
 - command **CMSREF**
- operating procedures **OPGDE**
 - second-level VM system **RGOS**
 - VSE virtual machine **RGOS**
- operating system **TERMREF**
 - executing **INTRO**
 - guest under VM/SP **INTRO**
 - shared DASD **INTRO**
- Operating System (OS)
 - See OS (Operating System)
- operating systems
 - initial program load **CPREF**
 - loading **CPREF**
 - passing parameters at IPL **CPREF**
 - passing parameters to **CPREF**
 - performance characteristics **PLNGDE**
 - performance guidelines **PLNGDE**
 - that execute under VM/SP HPO **PLNGDE**
 - using reserve/release **PLNGDE**
 - virtual machine, example of
 - directory entry **PLNGDE**
 - of hardware maintenance
 - directory entry **PLNGDE**
 - of system dump directory entry **PLNGDE**
 - virtual machine assist **PLNGDE**
- operation **PLNGDE**
 - tracing results **SPIREF**
- operation exception
 - ACCEPT** **TSAFREF**
 - CONNECT** **TSAFREF**
 - DCLBFR** **TSAFREF**
 - DESCRIBE** **TSAFREF**
 - QUERY** **TSAFREF**
 - RECEIVE** **TSAFREF**
 - RTRVBFR** **TSAFREF**

- SENDCNF TSAFREF
 SENDCNFD TSAFREF
 SENDDATA TSAFREF
 SENDERR TSAFREF
 SENDREQ TSAFREF
 SETCMASK TSAFREF
 SETMASK TSAFREF
 SEVER TSAFREF
 TESTCMLP TSAFREF
 TESTMSG TSAFREF
 operational control OPGDE
 introduction OPGDE
 operations OPGDE
 DASD CPPROG
 initiating VM/SP HPO OPGDE
 OPERATNS INST, PLNGDE
 operator
 arithmetic SPIREF
 as special characters SPIREF
 comparison SPIUG
 comparative SPIREF
 concatenation SPIREF
 considerations, SNA SFPROG
 console, MVS guest RGOS
 directory entry, example PLNGDE
 functions
 spooling OPGDE
 information area TERMREF
 issuing CP AUTOLOG command RGOS
 list of SPIUG
 logical SFPROG, SPIREF, SPIUG
 NCCF station SFPROG
 NetView station SFPROG
 precedence (priorities) of SPIREF
 prefix SPIUG
 priority of SPIUG
 responsibilities
 for spooling OPGDE
 sending messages to CPREF
 using parentheses SPIUG
 OPERATOR INST
 OPERATOR operand
 of MESSAGE command CPREF
 of MSGNOH command CPREF
 of WARNING command CPREF
 OPERFORM operand of SYSFORM macro PLNGDE
 OPTCD option of FILEDEF command CMSREF
 optimizing compiler, PL/I INTRO
 optimizing macro XEDIT
 OPTION
 command CMSPROG
 DECK option CMSREF
 description CMSREF
 DUMP option CMSREF
 ERRS option CMSREF
 LIST option CMSREF
 LISTX option CMSREF
 NODECK option CMSREF
 NODUMP option CMSREF
 NOERRS option CMSREF
 NOLIST option CMSREF
 NOLISTX option CMSREF
 NOSYM option CMSREF
 NOTERM option CMSREF
 NOXREF option CMSREF
 SYM option CMSREF
 TERM option CMSREF
 XREF option CMSREF
 48C option CMSREF
 60C option CMSREF
 option, of CMS QUERY command CMSREF
 OPTION directory control statement PLNGDE
 MVS guest RGOS
 operands
 ACCT PLNGDE
 AFFINITY PLNGDE
 BMX PLNGDE
 COMSRV PLNGDE
 CONCEAL PLNGDE
 CPUID PLNGDE
 DIAG98 PLNGDE
 ECMODE PLNGDE
 ISAM PLNGDE
 LANG PLNGDE
 MAXCONN PLNGDE
 MAXDEV PLNGDE
 MIH PLNGDE
 NOVF PLNGDE, REL5GDE
 PMA PLNGDE
 REALTIMER PLNGDE
 SVCACCL PLNGDE
 SVCOFF PLNGDE
 VCUNOSHR PLNGDE
 VIRT=REAL PLNGDE
 VMSAVE PLNGDE
 XMEM PLNGDE
 370E PLNGDE
 VM under VM RGOS
 VM/VSE RGOS
 optional feature program products
 changing logon passwords for usersids INST
 considerations for installing INST
 formatting and allocating volumes INST
 information about INST
 installation INST
 considerations INST
 overview INST
 procedure INST
 installation overview INST
 list of INST
 product directory information INST
 reference manuals INST
 reorganizing DASD space INST
 setting up directory for INST
 shared segment information INST
 usersids INST
 options
 command CMSREF
 for DOS/VS COBOL compiler in CMS/DOS
 querying CMSREF
 for DOS/VS COBOL compiler
 specifying CMSREF
 LOAD and INCLUDE commands
 retaining CMSREF

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

performance **INTRO**
 affinity **CPPROG**
 assignment of **OPGDE**
 favored execution **CPPROG, OPGDE**
 locked pages **CPPROG, OPGDE**
 multiple shadow table support **CPPROG**
 preferred machine assist **OPGDE**
 priority **CPPROG, OPGDE**
 queue drop elimination **CPPROG, OPGDE**
 reserved page frames **CPPROG, OPGDE**
 shadow table bypass **CPPROG**
 virtual machine **CPPROG**
 virtual machine assist feature **CPPROG**
 virtual=real **CPPROG, OPGDE**
 VM/SP HPO **OPGDE**
 setting page migration **CPPROG**
OPTIONS instruction **SPIREF**
OPTIONS option of **DETAIL HELP CMSUG**
OP1 INST
OR operand of **SET** command **CPREF**
OR operator **SPIUG**
OR symbol used in string target **XEDIT, XEDITUG**
OR, logical
 exclusive **SPIREF**
 inclusive **SPIREF**
ORDER BY clause of **SQL APGDE**
ORDER command **CMSUG, CPREF**
 batch machine output **INTRO**
 class D **CPREF**
 class G **CPREF**
 described **CPREF**
 description **CMSUG**
 example of use **INTRO**
 operands
 * **CPREF**
 CLASS CPREF
 DEST CPREF
 dest1 **CPREF**
 dest2 **CPREF**
 FORM CPREF
 FORM form **CPREF**
 PRINTER CPREF
 PUNCH CPREF
 READER CPREF
 spoolid **CPREF**
 SYSTEM CPREF
 userid **CPREF**
 responses **CPREF**
 selecting files for processing **CMSUG**
 usage notes **CPREF**
 order of
 evaluation **SPIUG**
 functions in **CMS IUCV SFPROG**
 functions in **IUCV SFPROG**
 precedence **SPIUG**
 processing with multiple screens **XEDITUG**
ORDER operand of **SYSPAG** macro **PLNGDE**
 ordered list **CMSLOT, PRIMER**
ORDERED option of **DATE** function **SPIREF**
 ordering additional copies of publications **REL5GDE**
 ordering information
 product tape feature numbers **REL5GDE**
 starter system feature numbers **REL5GDE**
 ordinary application **REL5GDE**
ORIGIN option
 of **FETCH** command **CMSREF**
 of **INCLUDE** command **CMSREF**
 of **LOAD** command **CMSREF**
 origin for debug environment
ORing character strings together **SPIREF**
OS (Operating System)
 access method support **CMSPROG**
 cleanup **CMSUG**
 CMS support for **CMSPROG**
 compilers, **CMS** usage **CMSPROG**
 data management simulation **CMSPROG**
 data sets **CMSPROG**
 defining in **CMS CMSREF**
 listing information **CMSREF**
 disks
 compatibility with **DOS** disks **CMSPROG**
 determining free space **CMSPROG**
 extents **CMSPROG**
 formatting using **DSF CMSPROG**
 using with **AMSERV CMSPROG**
 disks, accessing **CMSREF**
 environment, resetting **CMSREF**
 files
 handling files on **CMS** disks **CMSPROG**
 handling files on **OS** disks **CMSPROG**
 formatted files **CMSPROG**
 FORTRAM IV PLNGDE
 FREEMAIN macro **CMSPROG**
 GETMAIN macro **CMSPROG**
 Indexed Sequential Access Method (**ISAM**)
 CPREF
 initializing minidisks **PLNGDE**
 linkage editor control statements
 linkage editor control statement
 ALIAS statement **CMSPROG**
 assigning entry point names **CMSPROG**
 ENTRY statement **CMSPROG**
 NAME statement **CMSPROG**
 read by **TXTLIB** command **CMSPROG**
 SETSSI card **CMSPROG**
 macro libraries used in assembly **CMSREF**
 macro libraries for **CMS PLNGDE**
 macro simulation **CMSPROG**
 macros **CMSPROG, APGDE**
 ABEND CMSPROG
 ATTACH CMSPROG
 BLDL CMSPROG
 BSP CMSPROG
 CHAP CMSPROG
 CHECK CMSPROG
 CHKPT CMSPROG
 CLOSE/TCLOSE CMSPROG
 DCB CMSPROG
 DELETE CMSPROG
 DEQ CMSPROG
 DETACH CMSPROG
 DEVTYPE CMSPROG
 ENQ CMSPROG
 EXIT/RETURN CMSPROG
 EXTRACT CMSPROG
 FEOV CMSPROG
 FIND CMSPROG
 FREEDBUF CMSPROG
 FREEMAIN CMSPROG
 GET CMSPROG
 GETMAIN (SVC 4) CMSPROG
 GETMAIN/FREEMAIN CMSPROG
 GETPOOL/FREEPOOL CMSPROG
 IDENTIFY CMSPROG
 LINK CMSPROG
 LOAD CMSPROG

NOTE CMSPROG
OPEN/OPENJ CMSPROG
PGRlse CMSPROG
POINT CMSPROG
POST CMSPROG
PUT CMSPROG
PUTX CMSPROG
RDJFCB CMSPROG
READ CMSPROG
RESTORE CMSPROG
SNAP CMSPROG
SPIE CMSPROG
STAE CMSPROG
STAX CMSPROG
STIMER CMSPROG
STOW CMSPROG
SYNADAF CMSPROG
SYNADRLS CMSPROG
TCLEARQ CMSPROG
TGET/TPUT CMSPROG
TIME CMSPROG
TRKBAL CMSPROG
TTIMER CMSPROG
WAIT CMSPROG
WRITE CMSPROG
WTO/WTOR CMSPROG
XCTL CMSPROG
XDAP CMSPROG
 option of GENMOD command **CMSREF**
 partitioned data sets
 See partitioned data sets (PDS)
 reading data sets **CMSPROG**
 services **PLNGDE**
 simulated
 data sets **CMSPROG**
 OS supervisor calls **CMSPROG**
 simulation
 in CMS **CMSPROG**
 end-of-tape processing **CMSUG**
 supervisor calls **CMSPROG**
 support under CMS **PLNGDE**
 tape volume switching **CMSPROG**
 terminal sessions **CMSPROG**
TXTLIBs CMSPROG
 utility programs to create CMS files
 from tapes created by **CMSUG**
OS Simulation Standard Label Tape Processing Exits
REL5GDE
 DMSTVI interface routine **REL5GDE**
 execs, new and changed **REL5GDE**
 FILEDEF command **REL5GDE**
 LABELDEF command **REL5GDE**
 macros, new and changed **REL5GDE**
 modules, new and changed **REL5GDE**
 modules, split **REL5GDE**
OS/VS COBOL PLNGDE
 Compiler **APGDE**
OS/VSAM macros
 ACB **CMSPROG**
 CHECK **CMSPROG**
 ENDREQ **CMSPROG**
 ERASE **CMSPROG**
 OSMACRO MACLIB **APGDE, CMSPROG**
 OSMACRO1 MACLIB **APGDE, CMSPROG**
 OSPOINT subcommand of DUMPSCAN command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
 sample output **DIAG**
 usage **DIAG**
OSRUN
 description **CMSREF**
 PARM keyword **CMSREF**
OSRUN command APGDE, CMSPROG.
 GCSREF, PLNGDE
 description **GCSREF**
 member operand **GCSREF**
 parm operand **GCSREF**
OSVSAM MACLIB APGDE, CMSPROG
OTHERWISE clause
 See SELECT instruction
OTHERWISE keyword SPIUG
OUTarea operand of SCREEN command CPREF
Outboard Records (OBR), 3480 REL5GDE
OUTMOVE default for MOVEFILE
 command ddname **CMSREF**
output
 cancelled from terminal **TERMREF**
 controlling the filename **CMSPROG**
 devices **INTRO**
 for stand-alone dump facility **DIAG**
 restricted in CMS/DOS **CMSPROG**
 display area **TERMREF**
 files
 altering external attributes **CPREF**
 halting **CPREF**
 holding **CPREF**
 increasing number **CPREF**
 placing current files in HOLD status **CPREF**
 produced by ASSEMBLE command **CMSPROG**
 purging **CPREF**
 forcing to be single spaced **CPREF**
 format **SPIUG**
 from CMS batch facility **CMSUG**
 from virtual console, spooling **CMSUG**
 incorrect or unexpected
 checklist for reporting **PRGDE**
 dealing with **PRGDE**
 described **PRGDE**
 examples **PRGDE**
 in RSCS **PRGDE**
 linkage edit CMS DOSLIBs **CMSPROG**
 listings from AMSERV command **CMSPROG**
 monitor **CPPROG**
 printed access method service listing **CMSPROG**
 records, sequencing **CMSPROG**
 repositioning **CPREF**
 restarting **CPREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

spool files **OPGDE**
changing classes **CPREF**
classes **OPGDE**
spooling classes
defining with RDEVICE macro **PLNGDE**
OUTPUT control statement
of DDR (DASD Dump Restore) **CPPROG**
OUTPUT operand of SYSACNT macro **PLNGDE**
over migration, problems related to **CPPROG**
overflow
allocation rates **CPPROG**
arithmetic **SPIREF**
rate too high **CPPROG**
overhead, CP (control program)
reducing for I/O **CPPROG**
OVERLAY function **SPIREF, SPIUG**
overlay structures
description **CMSPROG**
dynamic load **CMSPROG**
example **CMSPROG**
prestructured **CMSPROG**

OVERLAY subcommand of XEDIT command **APGDE, XEDIT**
overlying
a string onto another **SPIREF**
characters
using **COVERLAY XEDIT**
using **OVERLAY XEDIT**
one string onto another **SPIUG**
OVERRIDE control statement **CPPROG**
override files **CPPROG, REL5GDE**
allocating space for **PLNGDE**
override space **PLNGDE**
Oversize option **REL5GDE**
of CMS PRINT command **REL5GDE**
OVLY option
of COPYFILE command **CMSREF**
of LKED command **CMSREF, APGDE**
OVRD space, allocating **PLNGDE**
OWN operand of CACHE command **CPREF**
owning a resource **TSAFREF**
multiple resources **TSAFREF**

P

- P border command **PRIMER**
- P prefix command **PRIMER**
- P prefix subcommand **XEDIT, XEDITUG**
 - practice exercise using **XEDITUG**
 - of **XEDIT** command **APGDE**
- PA key **TERMREF**
- PACK option
 - of **COPYFILE CMSREF**
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
 - of **SET XEDIT**
 - of **TRANSFER XEDIT**
- packed file
 - defining record format for **XEDIT**
 - inserting **XEDIT**
 - specifying **XEDIT**
- packing a string with **X2C SPIREF**
- page
 - allocating, **FB-512 DASD CPPROG**
 - bias, maximum calculated **CPREF**
 - boundaries, object modules **INST**
 - contiguous storage
 - discontiguous storage **SFPROG**
 - exceptions, effects of **CPPROG**
 - fault assist
 - MVS/SP (Multiple Virtual Storage/System Product) CPPROG**
 - fault processing
 - use with **MVS/SP REL5GDE**
 - fixed-head requests **CPREF**
 - forcing **CPREF**
 - frames **CPPROG, INTRO, CPPROG**
 - reserved **CPPROG**
 - unlocking those previously locked **CPREF**
 - interchange techniques
 - extended storage support **CPPROG**
 - locking **CPPROG, CPREF**
 - management **CMSPROG**
 - migration **CPPROG, INTRO**
 - activity, displaying **CPPROG**
 - demand **CPPROG**
 - description **PLNGDE**
 - detecting and correcting problems
 - related to **CPPROG**
 - managing **CPPROG**
 - operation **CPPROG**
 - paging hierarchy **PLNGDE**
 - selecting the next virtual machine
 - for page migration **CPPROG**
 - setting options and parameters **CPPROG**
 - migration activity
 - displaying **CPPROG**
 - migration hierarchy
 - establishing **CPPROG**
 - of storage **INTRO**
 - recording, **FB-512 DASD CPPROG**
 - reserve
 - frames for multiple users **CPREF**
 - performance option setting **CPREF**
 - reserved **CPPROG**
 - residency decision **CPPROG**
 - SPB card **CPPROG**
 - storage of relatively inactive **CPPROG**
 - swapping **CPREF**
 - table **CPPROG**
 - tables **CPPROG**
 - versus swap decision **CPPROG**
 - PAGE (keyword definition) DIAG**
 - Page Printer Formatting Aid **INST**
 - page/swap table, migration routines **CPREF**
 - pageable CP nucleus, locking **CPREF**
 - pageable module, identify and locate **DIAG**
 - pageable storage
 - amount used for interactive buffer
 - controlling **CPPROG**
 - for interactive buffer
 - maximum percentage set **CPREF**
 - setting amount for interactive buffer **CPREF**
 - pages operand of **BACKSPAC** command **CPREF**
 - PAGEX** operand of **SET** command **CPREF**
 - paging **CPPROG**
 - activity, how to reduce **CPPROG, RGOS**
 - areas, specifying how full
 - before migration **CPPROG**
 - bias **CPPROG**
 - by demand **CPPROG**
 - considerations **CPPROG**
 - DASD** requirements **PLNGDE**
 - description **INTRO**
 - hash table complex (**HASHTAB**) **CMSPROG**
 - hierarchy **CPPROG, PLNGDE**
 - correction **PLNGDE**
 - evaluation **PLNGDE**
 - structure **CPPROG**
 - structure, problems related to **CPPROG**
 - hyperblock mapping table (**HYPMAP**) **CMSPROG**
 - information, requesting **CPREF**
 - load, calculating feedback variables for **CPPROG**
 - media **CPPROG**
 - overview **INTRO**
 - performance considerations **PLNGDE**
 - preferred **DASD** area **INTRO**
 - preferred system devices
 - Paging Storage **CPPROG**
 - 3880 Storage Control System **CPPROG**
 - storage **CPPROG**
 - support for **VSE/SP 2.1** guests **RGOS**
 - using a 3880 Model 13 or Model 23 for **CPPROG**
 - using the **SYSPAG** macro to control **CPPROG**
 - using the **SYSXSTOR** macro to control **CPPROG**
 - variables
 - how to display and set **CPPROG**
 - ways to control **CMSPROG**
 - PAGING** operand
 - of **INDICATE** command **CPREF**
 - of **QUERY** command **CPREF, CPPROG**
 - of **SET** command **CPREF, CPPROG**

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- Paging Storage**
 allocating
 SYSPAG macro **PLNGDE**
 SYSXSTOR macro **PLNGDE**
 considerations **CPPROG**
 copyfiles, new and changed **REL5GDE**
 definition **REL5GDE**
 description **PLNGDE**
 determining the amount of **CPPROG**
 diagnostic aids **CPPROG**
 displaying **CPPROG**
 enhancements **REL5GDE**
 SYSPAG macro **REL5GDE**
 SYSXSTOR macro **REL5GDE**
 macros, new and changed **REL5GDE**
 migration considerations **CPPROG**
 monitor support **CPPROG**
 modules, new and changed **REL5GDE**
 SYSPAG macro **CPPROG, REL5GDE**
 SYSXSTOR macro **CPPROG, REL5GDE**
 using DDR with **CPPROG**
 using the SYSPAG macro **CPPROG**
 using the SYSXSTOR macro **CPPROG**
- PAn** option
 of **EXTRACT XEDIT**
 of **QUERY XEDIT**
 of **SET XEDIT**
- panel**
 definitions (ISPF) **APGDE**
 formatter in **DMS/CMS APGDE**
HELP INTRO
 interactive **INTRO**
 libraries (ISPLIB) **APGDE**
 manager in **DMS/CMS APGDE**
 name in **DMS/CMS APGDE**
 name screen **APGDE**
 option in **ISPF APGDE**
 size screen **APGDE**
- PANEL** command of **DMS/CMS APGDE**
PANEL parameter of **ISPSTART** command **APGDE**
PANELID command **APGDE**
- panels**
 See **ISPF**
- paragraph tag **CMSLOT, PRIMER**
 parameter addressability **TSAFREF**
 parameter communication architecture **APGDE**
 parameter lists **EXEC2, GCSREF, APGDE, CMSPROG, SRPI**
 extended **SPIREF, SPIREF, CMSPROG, SRPI**
 for accessing variables **SPIREF**
- APPC/VM**
CONNECT TSAFREF
RECEIVE TSAFREF
SENDCNF TSAFREF
SENDCNFD TSAFREF
SENDDATA TSAFREF
SENDERR TSAFREF
SENDREQ TSAFREF
SEVER TSAFREF
- for invoking EXECs **SPIREF**
 for invoking external routines **SPIREF**
 pointer to **CPRB SRPI**
 tokenized **CMSPROG, SRPI**
- IUCV**
ACCEPT SFPROG, TSAFREF
CONNECT SFPROG
DCLBFR TSAFREF
DECLARE BUFFER SFPROG
- DESCRIBE SFPROG, TSAFREF**
 parameter list data **SFPROG**
PURGE SFPROG
QUERY TSAFREF
QUIESCE SFPROG
RECEIVE SFPROG
REJECT SFPROG
REPLY SFPROG
RESUME SFPROG
RTRVBFR TSAFREF
SEND SFPROG
SET CONTROL MASK SFPROG
SET MASK SFPROG
SETCMASK TSAFREF
SETMASK TSAFREF
SEVER SFPROG
TEST COMPLETION SFPROG
TESTCML TSAFREF
TESTMSG TSAFREF
- passed by **RUN** command **CMSREF**
 tokenized **SPIREF**
 using **FSCB CMSPROG**
VMCPARM SFPROG
- parameters**
APPC
 on **ALLOCATE TSAFREF**
 on **CONFIRM TSAFREF**
 on **CONFIRMED TSAFREF**
 on **DEALLOCATE TSAFREF**
 on **RECEIVE_AND_WAIT TSAFREF**
 on **REQUEST_TO_SEND TSAFREF**
 on **SEND_DATA TSAFREF**
 on **SEND_ERROR TSAFREF**
- changing
SET SRM PGFULL CPPROG
SET SRM PGMTLIM CPPROG
- extended **APGDE**
IUCV, specifying **SFPROG**
 passing to virtual operating system **CPREF**
 setting page migration **CPPROG**
 tokenized **APGDE**
- parent disk**
 of read-only extension **CMSREF**
 of read-only extension **CMSUG**
- parentheses SPIUG**
 adjacent to blanks **SPIREF**
 before option list **CMSREF**
 in expressions **SPIREF**
 in function calls **SPIREF**
 in parsing templates **SPIREF**
- PARM** keyword of **OSRUN** command **CMSREF**
PARM operand
 of **IPL** command **CPREF**
 of **IPL** directory control statement **PLNGDE**
- PARMRGS** operand of **NAMESYS**
 macro **PLNGDE, REL5GDE**
- PARMS** option of **DETAIL HELP CMSUG**
- PARSE ARG** instruction **SPIUG**
PARSE instruction **SPIREF, SPIUG**
PARSE macro **XEDIT**
PARSE PULL instruction **SPIUG**
PARSE VALUE instruction **SPIUG**
PARSE VAR instruction **SPIUG**
- PARSECMD** command **CMSUG, REL5GDE**
 description **CMSREF**
 format **CMSREF**
 messages **CMSREF**

operands
 APPLID CMSREF
 NOTYPE CMSREF
 STRING CMSREF
 TYPE CMSREF
 uniqueid **CMSREF**
 usage notes **CMSREF**
PARSECMD macro CMSPROG, REL5GDE
 APPLID operand MACREF
 complex list format **MACREF**
 EPLIST operand MACREF
 ERROR operand MACREF
 execute format **MACREF**
 list format **MACREF**
 MSGBUFF operand MACREF
 MSGDISP operand MACREF
 parsing command arguments **MACREF**
 PLIST operand MACREF
 standard format **MACREF**
 TRANSL operand MACREF
 translating command arguments **MACREF**
 TYPCALL operand MACREF
 UNIQUID operand MACREF
Parser Validation Code Table MACREF
PARSERCB macro CMSPROG
 expansion **MACREF**
 generating a DSECT
 for **PARSECMD** control block **MACREF**
PARSERUF macro CMSPROG
 expansion **MACREF**
 generating a mapping
 to parser interface **MACREF**
 parsing **SPIREF**
 arguments **SPIUG**
 command arguments **MACREF**
 commands **REL5GDE**
 CONVERT COMMANDS command **REL5GDE**
 defining command syntax for **REL5GDE**
 DLCS REL5GDE
 from a REXX or EXEC 2 exec **REL5GDE**
 PARSECMD command **REL5GDE**
 data when you are prompted **SPIUG**
 definition **SPIREF**
 expressions **SPIUG**
 facility **CMSPROG**
 migration considerations **REL5GDE**
 overview **REL5GDE**
 references to other publications **REL5GDE**
 general rules **SPIREF**
 introduction **SPIREF**
 literal patterns **SPIREF**
 multiple strings **SPIREF**
 patterns **SPIREF**
 positional patterns **SPIREF**
 selecting words **SPIREF**
 templates
 in ARG instruction **SPIREF**
 in PARSE instruction **SPIREF**
 in PULL instruction **SPIREF**
 use of a period **SPIUG**
 using literal patterns **SPIUG**
 using patterns **SPIUG**
 variable patterns **SPIREF**
 variables **SPIUG**
 words **SPIUG**
 partition, specifying in OS/VS1 system **OPGDE**
 partition size specified for execution
 in CMS/DOS **CMSPROG**
 partitioned data set (PDS)
 copying into CMS files **CMSPROG**
 specifying members with **FILEDEF**
 command **CMSPROG**
 partitioned data sets(PDS)
 CMS, limited support **PLNGDE**
 copying files into CMS files **CMSREF**
 copying into partitioned data sets **CMSREF**
 displaying member names **CMSREF**
 listing members of **CMSREF**
 simulated, CMS supported **PLNGDE**
 partitioned processing mode **CPPROG, REL5GDE**
 partner, communication
 See communication partner
 PASS option of PER Command **CPREF**
 Pascal/VS **INST**
 Pass-Through Facility **INST, INTRO**
 See also VM/Pass-Through Facility
 restrictions imposed by **XEDIT**
 use with logical device support **PLNGDE**
 pass-through for MVS guest **RGOS**
 PASS= password operand of **LINBK**
 command **CPREF**
 passing
 arguments **EXEX2**
 control **GCSREF**
 global variables between EXECs
 with **GLOBALV CMSUG**
 parameters to virtual operating system **CPREF**
 requests to TSAF virtual machine **TSAFREF**
 PASSMOD EXEC
 after running **INST**
 before running **INST**
 command format **INST**
 entering userids on command line **INST**
 invoking **INST**
 running in line mode **INST**
 running in panel mode **INST**
 PASSTHRU, using with VSE/SP 2.1 **RGOS**
 PASSTHRU command **INTRO**
 password **APGDE, REL5GDE**
 accepted **TERMREF**
 access mode **CPREF**
 auto-deactivation of restricted **CPPROG**
 defining for VSAM catalogs **CMSPROG**
 for logging on **CMSLOT**
 for sharing files **CMSLOT**
 for VSAM catalogs in CMS/DOS **CMSPROG**
 for VSAM catalogs in OS **CMSPROG**
 for your virtual machine **CMSUG**
 hiding during logon procedure **CPREF**
 invalid format
 on commandline precaution **CPREF**
 masking **CPREF**
 NOLOG OPGDE

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- not accepted **TERMREF**
operand
of AUTOLOG command **CPREF**
of LOGON operand **CPREF**
protected resource, defined **PLNGDE**
readshare **INTRO**
replacing directory entry **SFPROG**
required **TERMREF**
restricted list **INST, PLNGDE**
security **TERMREF**
sharing minidisks **PLNGDE**
supplying on LINK command line **CMSUG**
suppression **CPREF**
on command line **CMSUG, CPPROG**
suppression facility
SYSJRL macro **PLNGDE**
unauthorized **PLNGDE**
verification through the LOGON command **CPREF**
- path operand of FDISPLAY subcommand **DIAG**
- PATHID** parameter
of ACCEPT function **TSAFREF**
of RECEIVE **TSAFREF**
of SENDCNF **TSAFREF**
of SENDCNFD **TSAFREF**
of SENDDATA **TSAFREF**
of SENDERR **TSAFREF**
of SENDREQ **TSAFREF**
of SEVER **TSAFREF**
of TESTCMPL **TSAFREF**
- paths
*CRM **TSAFREF**
APPC/VM communications **TSAFREF**
between SNA console and virtual machine **GCSREF**
dispatcher, summary bits **CPPROG**
IUCV, control **SFPROG**
speed of **TSAFREF**
to a DASD **CPPROG**
- PATHS** operand of QUERY command **CPREF**
- patterns
in parsing **SPIREF**
used in parsing **SPIUG**
- PA1** program function key **APGDE, CPPROG, PRIMER, SFPROG, XEDIT**
in full-screen CMS **CMSUG**
to enter CP environment **CMSUG**
with DIAGNOSE code X'58' **SFPROG**
with the programmable operator facility **SFPROG**
with VSCS or VCNA **SFPROG**
- PA2** key **APGDE, SFPROG, XEDITUG**
in HELP **CMSUG**
in the CMS window **PRIMER**
in XEDIT **PRIMER**
practice exercise using **XEDITUG**
used instead of SET NULLS ON **XEDIT**
- PB** operand
of QUERY command **CPREF**
of SET command **CPREF**
- PC BOND INST**
PC File Transfer **INST**
PCF (Problem Control Facility) **INTRO**
- PCI** operand
of QUERY command **CPREF**
of SET command **CPREF**
- PD** option of DSERV command **CMSREF**
- PDM INST**
- PDS** (partitioned data sets)
See partitioned data sets (PDS)
- PDS** option
of LISTDS command **CMSREF**
of MOVEFILE command **CMSREF**
- PEEK** command **CMSLOT**
description **CMSREF**
DISCARD command used with PEEK **CMSREF**
example of use **INTRO**
PF key settings **CMSREF**
PROFILE option **CMSREF**
- peeking at a reader file **CMSLOT, PRIMER**
- pending interrupt, message **TSAFREF**
- pending list **XEDITUG**
- pending notice **PRIMER**
'. . . .' pending **XEDIT, XEDITUG**
'< <' pending... **XEDIT**
'> >' pending... **XEDIT**
'''' pending **XEDIT, XEDITUG**
'C' or 'CC' pending... **XEDIT, XEDITUG**
'D' or 'DD' pending... **XEDIT, XEDITUG**
'F' pending... **XEDIT, XEDITUG**
'M' or 'MM' pending **XEDITUG**
'P' pending... **XEDIT, XEDITUG**
'XX' pending... **XEDIT**
cancelling **XEDITUG**
defining display features **XEDITUG**
location on screen **XEDITUG**
- PENDING** option
of EXTRACT **XEDIT**
of SET **XEDIT**
- people using computer, displaying **PRIMER**
- PEP**
and NCP sharing **SFPROG**
structure of the SNA environment **PLNGDE**
- PER** (Program Event Recording Facility) **PRGDE**
- PER** command **APGDE, CMSUG, CPREF, DIAG, RGOS**
CMD option **DIAG**
COUNT subcommand **DIAG**
debugging **CPREF**
described **CPREF**
description **INTRO**
event types **CPREF**
BRANCH **CPREF**
INSTRUCT **CPREF**
STORE **CPREF**
- GUESTR** option **DIAG**
GUESTV option **DIAG**
monitoring events **CPREF**
- operands
DAT option **CPREF**
DATOFF option **CPREF**
GUESTR option **CPREF**
GUESTV option **CPREF**
- options
APPEND **CPREF**
BOTH **CPREF**
CMD **CPREF**
COUNT **CPREF**
DAT **CPREF**
DATOFF **CPREF**
FROM **CPREF**
GUESTR **CPREF**
GUESTV **CPREF**
NORUN **CPREF**
PASS **CPREF**
PRINTER **CPREF**
RANGE **CPREF**

- RUN CPREF**
STEP CPREF
TERMINAL CPREF
 responses **CPREF**
 selectivity **CPREF, DIAG**
 storage alteration **CPREF**
 storage alteration tracing **DIAG**
 sub-commands
 APPEND CPREF
 COUNT CPREF
 END CPREF
 GET CPREF
 SAVE CPREF
 TABLE CPREF
 suspending **CPREF, DIAG**
 table **CPREF**
 terminating **CPREF, DIAG**
 trace elements
 changing options **CPREF**
 changing specific trace elements **CPREF**
 merging **CPREF**
 traceback table **CPREF**
 traceset **CPREF**
 tracing interrupts **DIAG**
 usage notes **CPREF**
 using **CPREF**
PER operand of **QUERY** command **CPREF**
PERFORM
 class monitor records **CPPROG**
 data collection class **PLNGDE**
PERFORM FAILURE code (keyword definition) **DIAG**
PERFORM operand
 of **MONITOR** command **CPREF**
 of **STAT** command **DIAG**
PERFORM subcommand of **TESTCOB** command **APGDE**
 performance **REL5GDE**
 analysis for MVS guest **RGOS**
 APPC/VM TSAFREF
 applications **TSAFREF**
 characteristics **PLNGDE**
 commands to improve **TSAFREF**
 considerations **TSAFREF, SPIREF**
 coding **DMKSYS** macros **PLNGDE**
 Extended Storage Support **PLNGDE**
 heavy I/O production **PLNGDE**
 installations with large number
 of CMS users **PLNGDE**
 read-only minidisks **PLNGDE**
 second-level VM **RGOS**
 using automatic monitoring facilities **PLNGDE**
 using fixed head devices for paging **PLNGDE**
 VSE virtual machine **RGOS**
 data collection, **SYSMON** macro **PLNGDE**
 degradation **TSAFREF**
 enhancement, with CP commands **RGOS**
 enhancements as a result of Release 5 **REL5GDE**
 control block alignment **REL5GDE**
 dispatcher queue scanning **REL5GDE**
 processor-local queues **REL5GDE**
 enhancements for dyadic processors **CPPROG**
 Extended Control-Program Support **PLNGDE**
 for mixed mode foreground/background
 systems **CPPROG**
 for time-shared multibatch
 virtual machines **CPPROG**
 guidelines **CPPROG, PLNGDE**
 line **TSAFREF**
 measurement **CPPROG**
 measurement and analysis
 MONITOR command **PLNGDE**
 SYSMON macro **PLNGDE**
 mixed mode foreground/background systems **CPPROG**
 MVS cross memory services **PLNGDE**
 MVS/System Extensions support **PLNGDE**
 MVS/System Extensions support
 processors supported **PLNGDE**
 MVS/System Product
 support **PLNGDE**
 virtual machine **PLNGDE**
 of an MVS or CMS guest running
 with 3380 DASDs **CPPROG**
 of remote paths **TSAFREF**
 of system, monitoring it **CPREF**
 options **PLNGDE, INTRO**
 AFFINITY OPGDE
 affinity **CPPROG**
 assignment **OPGDE**
 dynamic SCP transition
 to or from native mode **CPPROG**
 Extended Control-Program Support **OPGDE**
 favored execution **OPGDE, CPPROG**
 hardware assist **OPGDE**
 locked pages **OPGDE**
 locked pages **CPPROG**
 multiple shadow table support **CPPROG**
 preferred machine assist **OPGDE**
 priority **CPPROG, OPGDE**
 queue drop elimination **OPGDE, CPPROG**
 reserved page frames **CPPROG, OPGDE**
 setting **CPREF**
 shadow table bypass **CPPROG**
 single processor mode **CPPROG**
 virtual machine **CPPROG**
 virtual machine assist feature **CPPROG, OPGDE**
 virtual=real **OPGDE, CPPROG**
 VM/SP HPO **OPGDE**
 preferred machine assist **PLNGDE**
 shadow table bypass assist **PLNGDE**
 single processor mode **PLNGDE**
 sluggish
 dealing with **PRGDE**
 described **PRGDE**
 SMART, using **RGOS**
 using VSE/SP 2.1 dialogs to monitor **RGOS**
 variables that may change **REL5GDE**
 virtual machine assist **PLNGDE**
 VMMAP, using **RGOS**
 workload factors
 second-level VM **RGOS**
 VSE virtual machine **RGOS**
 period
 as a placeholder in parsing **SPIUG, SPIREF**
 causing substitution in variable names **SPIREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- in compound symbols **SPIUG**
- in numbers **SPIREF**
- PERM** option
 - of **DLBL** command **CMSREF**
 - of **FILEDEF** command **APGDE**, **CMSREF**, **CMSPROG**
 - of **LABELDEF** command **CMSREF**
- permanent
 - command destination change **SPIREF**
 - file definitions **CMSREF**
 - storage **CMSLOT**, **PRIMER**
 - virtual disks **CPREF**
- Personal Computer (PC) **TERMREF**
 - color display **TERMREF**
 - keyboard **TERMREF**
 - monochrome display **TERMREF**
 - publications **TERMREF**
 - video display **TERMREF**
- Personal Computer Bond **INST**
- Personal Computer Enhanced Connectivity Facilities **REL5GDE**
- Personal Computer Host Server **INST**
- PF (program function) keys **INTRO**, **APGDE**, **TERMREF**
 - ? **CMSUG**
 - All **CMSUG**
 - assigning a sequence of subcommands to **XEDIT**
 - Backward **CMSUG**
 - Brief **CMSUG**
 - changing settings of **XEDITUG**
 - Clocate **CMSUG**
 - controlling **CPREF**
 - controlling function **CPREF**
 - Cursor **CMSUG**
 - default settings
 - on **NAMES** menu **CMSREF**
 - on **NOTE** menu **CMSREF**
 - on **PEEK** screen **CMSREF**
 - on **RDRLIST** screen **CMSREF**
 - on **SENDFILE** menu **CMSREF**
 - defining meaning for **XEDIT**
 - definition area in full-screen **CMS CMSUG**
 - displaying settings of **XEDITUG**
 - displaying **XEDIT** settings of **PRIMER**
 - Forward **CMSUG**
 - Help **CMSUG**
 - in full-screen **CMS**
 - Backward **CMSUG**
 - Clear Top **CMSUG**
 - Cursor **CMSUG**
 - Filelist **CMSUG**
 - Forward **CMSUG**
 - Help **CMSUG**
 - Left **CMSUG**
 - Pop Msg **CMSUG**
 - Quit **CMSUG**
 - Rdrlist **CMSUG**
 - Right **CMSUG**
 - in the **CMS** window **PRIMER**
 - in **WM** environment
 - Backward **CMSUG**
 - Clear **CMSUG**
 - Copy **CMSUG**
 - Drop **WM CMSUG**
 - Forward **CMSUG**
 - Help **CMSUG**
 - Left **CMSUG**
 - Maximize **CMSUG**
 - Restore **CMSUG**
 - Retrieve **CMSUG**
 - Right **CMSUG**
 - Top **CMSUG**
 - initial settings of **XEDITUG**
 - Morehelp **CMSUG**
 - on **FILELIST** screen **PRIMER**
 - on the **NOTE** screen **PRIMER**
 - on the **PEEK** screen **PRIMER**
 - overrides when using Interactive Interface **RGOS**
 - PC, IBM **TERMREF**
 - PF Key **CMSUG**
 - PF1 key
 - in **NAMES PRIMER**
 - in **NOTEs PRIMER**
 - in the **CMS** window **PRIMER**
 - in **XEDIT PRIMER**
 - PF2 key
 - in **FILELIST PRIMER**
 - in **NAMES PRIMER**
 - in **NOTEs PRIMER**
 - in the **CMS** window **PRIMER**
 - PF3 key
 - in **NAMES PRIMER**
 - in **NOTEs PRIMER**
 - in the **CMS** window **PRIMER**
 - in the **WM** window **PRIMER**
 - in **XEDIT PRIMER**
 - PF4 key
 - in **FILELIST PRIMER**
 - in **HELP PRIMER**
 - in **NAMES PRIMER**
 - in **NOTEs PRIMER**
 - in the **CMS** window **PRIMER**
 - in the **WM** window **PRIMER**
 - in **XEDIT PRIMER**
 - PF5 key
 - in **FILELIST PRIMER**
 - in **NAMES PRIMER**
 - in **NOTEs PRIMER**
 - in the **CMS** window **PRIMER**
 - PF6 key
 - in **FILELIST PRIMER**
 - in **NAMES PRIMER**
 - in **NOTEs PRIMER**
 - in the **CMS** window **PRIMER**
 - PF7 key
 - in **NAMES PRIMER**
 - in **NOTEs PRIMER**
 - in the **CMS** window **PRIMER**
 - in the **WM** window **PRIMER**
 - in **XEDIT PRIMER**
 - PF8 key
 - in **NAMES PRIMER**
 - in **NOTEs PRIMER**
 - in the **CMS** window **PRIMER**
 - in the **WM** window **PRIMER**
 - in **XEDIT PRIMER**
 - PF9 key
 - in **NAMES PRIMER**
 - in **NOTEs PRIMER**
 - in **RDRLIST PRIMER**
 - in the **CMS** window **PRIMER**
 - in **XEDIT PRIMER**
 - PF10 key
 - in **NAMES PRIMER**
 - in **NOTEs PRIMER**
 - in the **CMS** window **PRIMER**
 - in the **WM** window **PRIMER**

- PF11 key
 in FILELIST **PRIMER**
 in NAMES **PRIMER**
 in NOTES **PRIMER**
 in RDRLIST **PRIMER**
 in the CMS window **PRIMER**
 in the WM window **PRIMER**
 in XEDIT **PRIMER**
- PF12 key
 in NAMES **PRIMER**
 in NOTES **PRIMER**
 in the CMS window **PRIMER**
 in XEDIT **PRIMER**
- Print **CMSUG**
 Quit **CMSUG**
 Related **CMSUG**
 removing meaning from **XEDIT**
 Return **CMSUG**
 setting **CMSUG**
 COPY function **CMSUG**
 in PROFILE EXEC **CMSUG**
 to retrieve previous line entered **CMSUG**
 toggling between keys **CMSUG**
 Top **CMSUG**
 used in SCHANGE **XEDIT**
 using **XEDITUG, CMSUG**
 in FILELIST **CMSUG**
 in input mode **XEDIT**
 to send notes **CMSUG**
 when composing a note **CMSUG**
 when receiving files when in RDRLIST **CMSUG**
- PFn subcommand **XEDIT**
- PFnn operand
 of QUERY command **CPREF**
 of SET command **CPREF**
- PFn option
 of EXTRACT **XEDIT**
 of QUERY **XEDIT**
 of SET **XEDIT**
 of TRANSFER **XEDIT**
- PG space not enough defined **CPPROG**
- PGFULL operand
 of QUERY command **CPREF**
 of SET command **CPREF**
- PGLOCK macro **GCSREF, PLNGDE**
 description **GCSREF**
 reg parameter **GCSREF**
- PGM parameter of ISPSTART command **APGDE**
 PGMACT operand of QUERY command **CPREF**
 PGMOPSW (program old PSW) **DIAG**
 PGMSECT (program check interrupt work area) **DIAG**
 PGMSTAT operand
 of QUERY command **CPREF**
 of SET command **CPREF**
- PGMTLIM operand
 of QUERY command **CPREF**
 of SET command **CPREF**
- PGRLSE macro (SVC 112) **CMSPROG**
 PGULOCK macro **GCSREF, PLNGDE**
 description **GCSREF**
 reg parameter **GCSREF**
- phase library
 clearing to zeros **CMSREF**
CMD/DOS CMSREF
 deleting phases from **CMSREF**
- phases
 executing in CMS/DOS **CMSREF**
 in VSE core image libraries
 obtaining information about **CMSREF**
- Phone entry in a names file **CMSLOT**
- phrase **SPIUG**
 highlighting tags **PRIMER**
- physical
 connections **TERMREF**
 record, CMS **PLNGDE**
 swap in **CPPROG**
 swap out **CPPROG**
 swapping **CPPROG**
- PIP parameter (APPC)
- PL/I **PLNGDE, PRIMER**
 compiling programs under CMS **PLNGDE**
 debugging aid **INTRO**
 description **INTRO**
 optimizing compiler example **INTRO**
- PL/I Comp and Lib **INST**
 PL/I Optimizing Compiler and Libraries **INST**
 PL/I Transient Library **INST**
 placeholder, period, in parsing **SPIUG**
- planning
 CMS Nucleus Generation Profile **INST**
 DASD requirements **INST**
 for the alternate CP nucleus **PLNGDE**
 for VM/SP
 device configuration **INTRO**
 preparing system files **INTRO**
 storage requirement **INTRO**
- GCS
 configuration file **INST**
 defining authorized users **PLNGDE**
 storage requirements **INST**
 system directory entry **INST**
 system name table entry **INST**
 information **REL5GDE**
 installation procedure
 initial installation **INST**
 migration **INST**
- model **INTRO**
 national languages **INST**
 SPGEN PROFILE **INST**
 Starter System configuration **INST**
 System Definition Files
 CP system control file **INST**
 forms control buffer file **INST**
 real I/O configuration file **INST**
 system directory **INST**
 system logo file **INST**
 system name table **INST**
 308X Processor Complex **INST**
 3090 Processor Complex **INST**
- PLIOPT command, defined **INTRO**
- Plist **APGDE**
 See parameter lists

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- PLIST** (parameter list) **CMSPROG, SRPI**
See parameter lists
- PLU** (programmer logical units)
assigned in **CMS/DOS CMSPROG**
- plus operator **SPIUG**
- plus signs
example **EXEX2**
removing **EXEX2**
- PMA** operand
of **IPL** command **CPREF**
of **OPTION** directory control statement **PLNGDE**
- PMA** option
defining in directory **PLNGDE**
for **MVS** guest **RGOS**
- PMAY** operand of **IPL** command **CPPROG, CPREF**
- PMX** (**PROP/NCCF** Message Exchange) **SFPROG**
See also programmable operator facility
using with programmable operator **OPGDE**
- POINT** macro **CMSPROG**
BSAM GCSREF
block address parameter **GCSREF**
dcb address parameter **GCSREF**
description **GCSREF**
- VSAM GCSREF**
description **GCSREF**
rpl parameter **GCSREF**
- POINT** option
of **EXTRACT XEDIT**
of **QUERY XEDIT**
of **SET XEDIT**
of **TRANSFER XEDIT**
- POLLDELAY** operand of **NETWORK** command **CPREF**
- POP WINDOW** command **CMSUG, PRIMER, REL5GDE**
description **CMSREF**
format **CMSREF**
messages **CMSREF**
operands
* (asterisk) **CMSREF**
n **CMSREF**
WM **CMSREF**
wname **CMSREF**
summary **CMSREF**
usage notes **CMSREF**
- popping a window **PRIMER**
- POS** function **SPIREF, SPIUG**
- position
last occurrence of a string **SPIREF**
of a word in a string of words **EXEX2**
of character using **INDEX SPIREF**
- POSITION** operand of **INDICATE** command **CPREF**
- POSITION WINDOW** command **CMSUG**
description **CMSREF**
format **CMSREF**
messages **CMSREF**
operands
pscol **CMSREF**
psline **CMSREF**
wname **CMSREF**
summary **CMSREF**
usage notes **CMSREF**
- positioning windows **PRIMER**
- POST** macro **GCSREF, PLNGDE**
completion code parameter **GCSREF**
description **GCSREF**
ecb address parameter **GCSREF**
related parameter **GCSREF**
resource **PLNGDE**
- POST** macro (**SVC 2**) **CMSPROG**
- poster, **CP** internal trace table **DIAG**
- pound sign as default line end character **XEDIT**
- POWER** command **PRIMER**
- power
failure, data protection **INTRO**
of a number **SPIUG**
off
considerations for 3380 **CPPROG**
vs. logoff
with 3270 terminal **CPREF**
typing **PRIMER**
causing a break in data typed in **XEDIT**
entering data with **XEDIT**
using a line end character **XEDIT**
using the insert key **XEDIT**
- typing mode
example of **XEDITUG**
inserting characters in **XEDITUG**
typing data in **XEDITUG**
using line end character in **XEDITUG**
- POWERINP XEDITUG**
description **INTRO**
practice exercise using **XEDITUG**
subcommand of **XEDIT** command **APGDE**
- POWERINP** subcommand **XEDIT**
used with windowing support **XEDIT**
using a line end character **XEDIT**
- powers of ten in numbers **SPIREF**
- PP** space not enough defined **CPPROG**
- PPFA INST**
- PQUIT** subcommand **XEDIT**
practice exercise **XEDITUG**
- PRB** command
description **DIAG**
error message **DIAG**
format **DIAG**
response **DIAG**
usage **DIAG**
- PRBnnnnn aaaaaaaa** file **DIAG**
- PRBnnnnn conslog** **DIAG**
- PRBnnnnn dump** file **DIAG**
- PRBnnnnn** operand of **PRTDUMP** **DIAG**
- PRBnnnnn report** **DIAG**
- PRBnnnnn report** file **DIAG**
- PRBnnnnn trace** **DIAG**
- PRB00003** report file with status updates added **DIAG**
- pre-filling line with mask **XEDIT**
- pre-loading servers, assembler **SRPI**
- pre-paging **CPPROG**
- precedence
of characters **SPIUG**
of operators **SPIREF**
operators **SPIUG**
- preceding line as destination **XEDIT**
- precision of arithmetic **SPIREF**
- predefined functions **EXEX2**
&CONCAT OF **EXEX2**
&CONCATENATION OF **EXEX2**
&DATATYPE OF **EXEX2**
&DIV OF **EXEX2**
&DIVISION OF **EXEX2**
&LEFT OF **EXEX2**
&LENGTH OF **EXEX2**
&LITERAL OF **EXEX2**
&LOCATION OF **EXEX2**
&MULT OF **EXEX2**
&MULTIPLICATION OF **EXEX2**
&PIECE OF **EXEX2**

&POSITION OF EXEX2
&RANGE OF EXEX2
&RIGHT OF EXEX2
&STRING OF EXEX2
&SUBSTR OF EXEX2
&TRANS OF EXEX2
&TRANSLATION OF EXEX2
&TRIM OF EXEX2
&TYPE OF EXEX2
&WORD OF EXEX2
 format of EXEX2
 reserved words EXEX2

predefined variables
& EXEX2
0 EXEX2
&ARGSTRING EXEX2
&BLANK EXEX2
&CMDSTRING EXEX2
&COMLINE EXEX2
&DATE EXEX2
&DEPTH EXEX2
&FILEMODE EXEX2
&FILENAME EXEX2
&FILETYPE EXEX2
&FROM EXEX2
&INDEX EXEX2
&LINE EXEX2
&LINENUM EXEX2
&LINK EXEX2
&N EXEX2
&RC EXEX2
&RETCODE EXEX2
&TIME EXEX2
&1 &2 ... EXEX2
 description of EXEX2
 reserved words EXEX2

preferred
 auxiliary files CMSPROG
 channels
 definition of RGOS
 improving performance RGOS
 DASD area INTRO
 filetypes CMSPROG
 guest REL5GDE
 level updating CMSPROG
 machine assist
 See preferred machine assist
 MVS guest
 IPL, how to RGOS
 special directory considerations RGOS
 paging area CPPROG
 allocating maximum value CPREF
 system paging REL5GDE
 Paging Storage CPPROG
 3880 Storage Control System CPPROG
 3880 Storage Subsystem PLNGDE

preferred machine assist feature CPPROG, REL5GDE
 attaching virtual devices CPREF
 benefits from guest survival RGOS
 channel usage CPPROG
 configuration examples RGOS
 considerations CPPROG

considerations when using RGOS
 DEDICATE directory control statement PLNGDE
 definition of RGOS
 description OPGDE
 device usage examples CPPROG
 directory PLNGDE
 directory entry RGOS
 documentation CPPROG
 DMKRIO PLNGDE
 enabling CPREF
 events that preferred machine assist
 intercepts CPPROG
 Extended Storage Support PLNGDE
 external interrupts CPPROG
 guest CPPROG
 how it works RGOS
 LINK directory control statement PLNGDE
 MVS/SP recovery REL5GDE
 OPTION statement PLNGDE
 optional on the 3033 processor CPPROG
 performance PLNGDE
 privileged instructions CPPROG
 problem determination RGOS
 processor requirements REL5GDE
 PSW restart, using RGOS
 resetting CPPROG
 resetting virtual machine CPREF
 restrictions CPREF, PLNGDE
 general RGOS
 on CP commands CPPROG
 shadow tables, controlling RGOS
 standard on the 308x processor CPPROG
 standard on the 3090 processor CPPROG
 storage above 16 MB CPPROG
 with control switch assist extensions CPPROG
 machine assist guest
 generating a false AP system for CPPROG
 machine assist with control switch assist
 DIAGNOSE codes supported CPPROG
 SYSCOR macro, RMSIZE operand PLNGDE
 T-DISK in directory PLNGDE
 turning off CPREF
 use with dynamic SCP transition REL5GDE
 use with Extended Storage Support PLNGDE
 use with single processor mode REL5GDE
 virtual machine with affinity set
 for target processor CPREF
 with ATTACH command CPREF
 with control switch assist extensions CPPROG
 with DEFINE command CPREF
 with SET AFFINITY command CPREF
 with VARY PROC OFF command CPREF

prefix area APGDE
 changing location or display XEDITUG
 example of XEDITUG
 controlling display XEDIT
 defining display features XEDITUG
 entering subcommands in XEDIT
 in XEDIT PRIMER
 location on screen XEDITUG
 numbers, setting on PRIMER
 resetting XEDIT

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- simulate in typewriter mode **XEDITUG**
using **LPREFIX** to simulate **XEDIT**
- prefix commands
/ command **PRIMER**
" command **PRIMER**
A command **PRIMER**
C command **PRIMER**
CC command **PRIMER**
D command **PRIMER**
DD command **PRIMER**
F command **PRIMER**
M command **PRIMER**
MM command **PRIMER**
P command **PRIMER**
resetting **PRIMER**
where to type **PRIMER**
- prefix macros
assigning a synonym **XEDITUG**
current line positioning **EXEX2**
description of **EXEX2**
examples of **XEDITUG**
list of **XEDIT**
menu display of **XEDIT**
rules for entering **XEDIT**
sample of **EXEX2**
writing **EXEC2, XEDITUG**
- prefix operators **SPIUG**
- PREFIX** option
of **EXTRACT XEDIT**
of **QUERY XEDIT**
of **SET XEDIT**
of **TRANSFER XEDIT**
- prefix register, definition of **RGOS**
- prefix storage area (PSA) **DIAG**
definition of **RGOS**
finding its value **CPREF**
- prefix subcommands
.xxxx **XEDIT, XEDITUG**
/ **XEDIT, XEDITUG**
" **XEDIT**
A **XEDITUG**
example of **XEDIT, XEDITUG**
C **XEDIT, XEDITUG**
canceling **XEDITUG**
D **XEDIT, XEDITUG**
example of **XEDITUG**
defined **XEDITUG**
defining synonym for **XEDIT**
E **XEDIT**
F **XEDIT, XEDITUG**
example of **XEDITUG**
list of **XEDITUG**
I **XEDIT**
list of **XEDIT**
M **XEDIT, XEDITUG**
example of **XEDITUG**
menu display of **XEDIT**
of **XEDIT** command **APGDE**
P **XEDIT, XEDITUG**
practice exercise using **XEDITUG**
removing from screen **XEDIT**
rules for entering **XEDIT**
SCALE **XEDIT**
SI **XEDITUG**
example of **XEDITUG**
TABL **XEDIT**
where to enter **XEDITUG**
- PREFIXA DIAG**
- PREFIXB DIAG**
prefixes
description of **SYMSMG**
identifying sets of files
with **ACCESS** command **CMSREF**
with **LISTFILE** command **CMSREF**
- prefixing **CPPROG**
AP/MP environment **CPPROG**
definition of **RGOS**
- pregenerated supervisors for **VSE/SP 2.1 RGOS**
- PRELOAD**, utility program
command format **INST**
function **INST**
input **INST**
messages **INST**
output **INST**
MAP file **INST**
TEXT file **INST**
reformatting **TEXT** files **INST**
- premature EOF defined **PRIMER**
- PREPAGE** operand
of **QUERY** command **CPREF**
of **SET** command **CPREF**
- preparing **CPPROG**
PREPARE command **CPPROG**
PREPARE facility of **SQL/DS INTRO**
PREPARE_TO_RECEIVE, **APPC** verb
- preparing
first-level VM system **RGOS**
guest **VSE** virtual machine **RGOS**
host VM system for **VM/VSE RGOS**
jobs for **CMS** batch facility **CMSUG**
second-level VM system **RGOS**
system files **INTRO**
- preprocessor for **SQL/DS INTRO**
- prerequisite change, definition **INST**
- PRESENT**
logical device support facility function **SFPROG**
- PRESERVE XEDITUG**
PRESERVE subcommand **XEDIT**
preserving editing variables **XEDITUG**
Press **ENTER** to view more data
(status notice) **PRIMER**
- prestructured overlays **CMSPROG**
- presumed command destinations **SPIREF**
- PREVCMND** field **DIAG**
- prevent regression **INST**
- preventive service **INST**
definition **INST**
description **INST**
example **INST**
object code **INST**
source code **INST**
tape format **INST**
- PREVEXEC** field **DIAG**
- previous release, migration from **REL5GDE**
- PREVMSG** (keyword definition) **DIAG**
- primary console, disabling **OPGDE**
- primary system operator **REL5GDE**
described **CPREF, OPGDE**
description **OPGDE**
operator privilege class **REL5GDE**
- PRIME** operand of **SYSCOR** macro **PLNGDE**
- prime subpool **CPPROG**
- Primer **EXEX2**
&**CASE** control statement **EXEX2**
&**LOOP** control statement **EXEX2**
assignment statements **EXEX2**

- conditional statements **EXEX2**
- embedded blanks **EXEX2**
- file arguments **EXEX2**
- function of EXEC 2 language **EXEX2**
- implementation of editor macros **EXEX2**
- labels **EXEX2**
- looping **EXEX2**
- return codes **EXEX2**
- translating to uppercase **EXEX2**
- user interaction **EXEX2**
- variables
 - evaluation **EXEX2**
 - names **EXEX2**
- Primer for CMS SPIUG
- PRINT
 - access methods services function **CMSPROG**
 - belt **CPREF**
 - buffers
 - See print buffers
 - chain **CPREF**
 - command **APGDE, CMSLOT, PRIMER**
 - and MACLIB members **APGDE**
 - CC option **CMSREF**
 - description **CMSREF**
 - for ISPF **APGDE**
 - HEX option **CMSREF**
 - LINECOUN option **CMSREF**
 - MEMBER option **CMSREF, APGDE**
 - NOCC option **CMSREF**
 - NOTRC option **CMSREF**
 - OVERSIZE option **CMSREF, REL5GDE**
 - overview **REL5GDE**
 - references to other publications **REL5GDE**
 - to print CMS files **CMSUG**
 - TRC option **CMSREF**
 - UPCASE option **CMSREF**
 - control statement
 - of DDR (DASD Dump Restore) **CPPROG**
 - sample output of DDR program **CPPROG**
 - option
 - of AMSERV command **CMSREF**
 - of ASSEMBLE command **CMSREF**
 - of DOSLIB command **CMSREF**
 - of DOSLKED command **CMSREF**
 - of DSERV command **CMSREF**
 - of EXECIO command **CMSREF**
 - of LKED command **CMSREF, APGDE**
 - of LOADLIB command **CMSREF**
 - of MACLIB command **CMSREF**
 - of MACLIB command, MAP function **APGDE**
 - of PSERV command **CMSREF**
 - of RSERV command **CMSREF**
 - of SCRIPT command **CMSLOT, PRIMER**
 - of SPOOL command **CMSLOT**
 - of TXTLIB command **APGDE**
 - sample system definition files
 - existing VM system procedure **INST**
 - Starter System procedure **INST**
 - subcommand of DUMPSCAN command
 - description **DIAG**
 - error message **DIAG**
 - format **DIAG**
 - functional category **DIAG**
 - response **DIAG**
 - sample output **DIAG**
 - usage **DIAG**
 - train **CPREF**
 - print buffers **CPPROG**
 - adding new images **CPPROG**
 - LOADBUF command **CPPROG**
 - print chain image **CPPROG**
 - UCB macro **CPPROG**
 - UCBCCW macro **CPPROG**
 - UCC, examples **CPPROG**
 - UCCCCW macro **CPPROG**
 - UCS (universal character set)
 - examples **CPPROG**
 - macro **CPPROG**
 - 1403 **CPPROG**
 - 3211 **CPPROG**
 - UCSB (Universal Character Set Buffer)
 - associative fields **CPPROG**
 - examples **CPPROG**
 - UCSCCW macro **CPPROG**
 - print file requirements for 3800 printer **CPREF**
 - Print Services Access Facilities **INST**
 - Print Services Access Facility/VM (PSAF/VM) **REL5GDE**
 - Print Services Facility/VM (PSF/VM) **REL5GDE**
 - Print Services Facility/VM Base **INST**
 - Print Services Facility/VM 3800 **INST**
 - Print Services Facility/VM 3820 **INST**
 - PRINT-HI command for ISPF **APGDE**
 - printed
 - copies, specifying number of **CMSLOT**
 - output, controlling **RGOS**
 - printer external attribute buffer manipulation
 - virtual **SFPROG**
 - PRINTER operand
 - of CHANGE command **CPREF**
 - of CLOSE command **CPREF**
 - of DEFINE command **CPREF**
 - of DRAIN command **CPREF**
 - of FREE command **CPREF**
 - of HOLD command **CPREF**
 - of ORDER command **CPREF**
 - of PURGE command **CPREF**
 - of QUERY command **CPREF**
 - of SPOOL command **CPREF**
 - of SPTAPE command **CPREF**
 - of START command **CPREF**
 - of TRACE command **CPREF**
 - of TRANSFER command **CPREF**
 - PRINTER option
 - of ASSGN command **CMSREF**
 - of FILEDEF command **CMSREF**
 - of PER command **CPREF**
 - printer spool
 - copying contents of
 - using PF key **XEDIT**
 - PRINTER subcommand of TRAPRED command **DIAG**
 - printers
 - considerations for 3203-5 **RGOS**
 - DIAGNOSE codes for **REL5GDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- error, SVC 199 services **DIAG**
 repositioning output **CPREF**
 restarting output **CPREF**
 specifying forms controls for virtual **CPREF**
 spooled virtual **INTRO**
 virtual **INTRO**
- files
 altering attributes of virtual **CPREF**
 produced by job running in batch
 virtual machine **CMSUG**
 querying status of **CMSUG**
 spooling **CMSUG**
- format, stand-alone dump **DIAG**
 forms, specifying, **SYSFORM** macro **PLNGDE**
 interrupts **CMSPROG**
 output **DIAG**
 selecting a specific one for spool files **REL5GDE**
 separator, spool printer output **OPGDE**
 support enhancements **REL5GDE**
- PRINTER** device type **APGDE**
- printing
 a file **CMSLOT**, **PRIMER**
 a **MACLIB** member **CMSPROG**
 access method services listings **CMSPROG**
 CMS dump file **DIAG**
 CMS files **CMSUG**
 contents of virtual machine components **CPREF**
 extended control registers **CPREF**
 first level storage **CPREF**
 floating-point registers **CPREF**
 general registers **CPREF**
 HELP files **CMSUG**
 lines **EXEX2**
 multiple copies **CMSUG**
 Paging Storage **CPPROG**
 Program Status Word (PSW) **CPREF**
 storage locations **CPREF**
 tape dump **DIAG**
 TSAF dumps **TSAFREF**
 virtual storage **CPREF**
 keys **CPREF**
- PRINTL** macro **APGDE**, **REL5GDE**
 See also **MACREF**
 CC= operand **MACREF**
 CMSDEV= operand **MACREF**
 control blocks, new and changed **REL5GDE**
~~FORM= operand MACREF~~
 FORM= operand **MACREF**
 macros, new and changed **REL5GDE**
 modules, new and changed **REL5GDE**
 new parameters **REL5GDE**
 printing multiple records **MACREF**
 specifying device characteristics **MACREF**
 TRC= operand **MACREF**
 writing lines to virtual printer **MACREF**
- PRINTL** macro description **CMSPROG**
PRINTL macro usage **CMSPROG**
PRINTONE **DIAG**
- priority
 assigning with **CHAP** **PLNGDE**
 CURSOR subcommand **XEDIT**
 deadline **CPPROG**
 ID number **PLNGDE**
 messages **SFPROG**
 of execution **CPPROG**
 operator's virtual machine **INTRO**
 performance option **CPPROG**, **OPGDE**
 prefix subcommands and macros **XEDIT**
 set for specific user **CPREF**
 spooled file **INTRO**
 user **CPPROG**
 virtual machine **INTRO**
- priority
 of characters **SPIUG**
 of operators **SPIUG**
- PRIORITY** operand
 of IUCV directory control statement **PLNGDE**
 of **QUERY** command **CPREF**
 of **SET** command **CPREF**, **CPPROG**, **OPGDE**
- PRIORITY**, **CP SET** command **RGOS**
- PRIV** operand
 of **SYSFCN** macro **PLNGDE**
 of **TRACE** command **CPREF**
- private libraries
 See libraries, **VSE**
- PRIVATE NOTEBOOK** **CMSLOT**
- private storage in **GCS** **PLNGDE**
- privilege classes **CPPROG**, **INTRO**, **REL5GDE**
 assigning
 more than 8 **PLNGDE**
 to commands and **DIAGNOSE** codes **CPPROG**
 associating with commands and users **CPPROG**
 changing
 for internal **CP** functions **CPPROG**
 the definition of **CPPROG**
 classes for **CP** commands **CMSUG**
 defining
 for a virtual machine **CPPROG**
 eight or fewer **CPPROG**
 more than 8 **PLNGDE**, **CPPROG**
 described **CPREF**, **OPGDE**
 documentation considerations **CPPROG**
 for **CP** commands, defined **CPREF**, **OPGDE**
 replacing directory entry **SFPROG**
 restructuring **PLNGDE**
- privileged command **INTRO**
 privileged instructions, tracing **CPREF**
 privileged program **REL5GDE**
- PRMLIST** parameter
 of **ACCEPT** function **TSAFREF**
 of **CONNECT** **TSAFREF**
 of **DCLBFR** **TSAFREF**
 of **DESCRIBE** **TSAFREF**
 of **RECEIVE** **TSAFREF**
 of **SENDCNF** **TSAFREF**
 of **SENDCNFD** **TSAFREF**
 of **SENDDATA** **TSAFREF**
 of **SENDERR** **TSAFREF**
 of **SENDREQ** **TSAFREF**
 of **SETCMASK** **TSAFREF**
 of **SETMASK** **TSAFREF**
 of **SEVER** **TSAFREF**
 of **TESTCMPL** **TSAFREF**
- PROB** command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 response
 existing problem **DIAG**
 new problem **DIAG**
 sample session **DIAG**
 usage **DIAG**
PROB output field of **STAT** command **DIAG**

problem

analysis, synopsis of CP commands used **CPREF**
determination
 See problem determination
diagnosis
 See problem diagnosis
inquiry data sheet **DIAG**
management **DIAG**
number **DIAG**
 assignment **DIAG**
report
 file (PRBnnnnn REPORT) **DIAG**
 generation **DIAG**
 updating **DIAG**
reporting **DIAG, INTRO**
state **PLNGDE, CPPROG**
Problem Control Facility (PCF) **INTRO**
problem determination
 CP
 control blocks for MVS guest **RGOS**
 procedures **SYMSMG**
 trace table for MVS guest **RGOS**
 general user action **SYMSMG**
 MVS guest, for **RGOS**
 preferred machine assist, when using **RGOS**
 problem solving for MVS guest **RGOS**
 second-level VM system **RGOS**
 service aids for MVS guest **RGOS**
 system operator action **SYMSMG**
 trace table recording facility
 for MVS **RGOS**
 trace table, MVS **RGOS**
 VSE/SP virtual machine **RGOS**
problem diagnosis **DIAG, INTRO**
dumps **TSAFREF**
 creating **TSAFREF**
 diagnosing **TSAFREF**
 displaying **TSAFREF**
 displaying trace records **TSAFREF**
 formatting trace records **TSAFREF**
 loading **TSAFREF**
 printing **TSAFREF**
 system trace data **TSAFREF**
 external tracing **TSAFREF**
 trapping entries (CPTRAP) **TSAFREF**
 viewing CPTRAP data **TSAFREF**

problems

ABENDs PRGDE
 where in VM they occur **PRGDE**
basic categories **PRGDE**
infinite loops **PRGDE**
migration
 investigating **CPPROG**
modifications made to VM **PRGDE**
related to
 over migration **CPPROG**
 paging hierarchy structure **CPPROG**
 under migration **CPPROG**
types **DIAG**
wait states **PRGDE**
 disabled **PRGDE**
 enabled **PRGDE**

hard **PRGDE**

interrupts associated with **PRGDE**
soft **PRGDE**
PROC files, creating in CMS/DOS **CMSREF**
PROC operand
 of **ATTACH** command **CPREF**
 of **DETACH** command **CPREF**
 of **SET** command **CPREF**
PROC statement in ISPF panels **APGDE**
PROCAL INST
PROCEDURE instruction **SPIREF**
 description of **SPIUG**
 EXPOSE keyword **SPIUG**
procedures
 automated **INTRO**
 DOS/VSE, copying into CMS
 files **CMSPROG**
 operating **OPGDE**
 VSE, copying into CMS files **CMSREF**
PROCESS operand of **QUERY** command **CPREF**
processing
 batch jobs
 under CMS **INTRO**
 VM Batch Subsystem **INTRO**
 descriptions, SNA **SFPROG**
 GCS commands **PLNGDE**
 special messages **CPREF**
 spool files **PLNGDE**
 tapes
 BLP CMSUG
 LABOFF CMSUG
 NL CMSUG
 NSL CMSUG
 with multiple screens, order of **XEDITUG**
 processing unit, central **INTRO**
Processor Recovery Management Support
 channel check handler (CCH) **OPGDE**
 machine check handler (MCH) **OPGDE**
 processor **OPGDE**
processors **TERMREF**
 command language **INTRO**
 desirable features **PLNGDE**
 determining attached or main **CPREF**
 determining operating mode **CPREF**
 displaying use and contention for it **CPREF**
 dyadic **PLNGDE, REL5GDE**
 features
 RSCS PLNGDE
 hardware assist **OPGDE**
 id **TSAFREF**
 history, recent **CPPROG**
 identifying **CPREF**
 local queues **CPPROG**
 required features **PLNGDE**
 requirements
 cross memory services **REL5GDE**
 preferred machine assist **REL5GDE**
 VM/SP HPO **REL5GDE**
 3033 Extension Feature Enhancement **REL5GDE**
 resources **CPPROG**
 how allocated **CPPROG**
 restrictions **PLNGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- setting identification **CPREF**
- setting single processor mode **CPREF**
- sharing usage **INTRO**
- supported by VM/SP HPO **PLNGDE**
- time
 - affect of system resources on a virtual machine's share of **CPPROG**
 - providing specified percentage **CPREF**
- time allocation **INTRO**
- timer **CPPROG**
- use **CPPROG**
- use of, displaying **RGOS**
- VM/SP HPO running different types **RGOS**
- processor-local queues **REL5GDE**
- PROCESSR** operand
 - of **QUERY** command **CPREF**
 - of **VARY** command **CPREF**
- PROD LEVEL** file
 - example **INST**
 - update messages **INST**
- PRODBM INST**
- product directory information for optional feature program products **INST**
- Product Parameter File
 - contents **INST**
 - definition **INST**
 - example **INST**
 - keyword values **INST**
 - usage by
 - VMFMERGE INST**
 - VMFREMOV INST**
 - VMFZAP INST**
- product tape
 - contents **INST**
 - feature numbers **REL5GDE**
 - file layout **INST**
 - loading during system generation **INST**
 - tape layout **REL5GDE**
- products
 - required **SRPI**
 - supported **SRPI**
- Professional Office System (**PROFS**) **INST, INTRO, REL5GDE**
- Applications Support Feature **INST**
- profile
 - creating **PLNGDE**
 - description **PLNGDE**
 - example **PLNGDE**
 - invoking **PLNGDE**
- macro
 - not executing **XEDIT**
 - specifying macro name **XEDIT**
 - used to prompt for options in **XEDIT**
 - using **LOAD** in **XEDIT**
- PROFILE EXEC** file **CMSLOT**
- PROFILE XEDIT** file **CMSLOT**
- PROFILE** directory control statement **PLNGDE**
- PROFILE EXECs** **INTRO, TERMREF, APGDE**
- creating **CMSUG**
- description **CMSUG**
- file **CMSLOT, PRIMER, TERMREF**
- CMS/DOS VSAM user **CMSPROG**
- OS VSAM user **CMSPROG**
- IPLing
 - MVS virtual machines **RGOS**
 - VM/VSE **RGOS**
- sample, using REXX language **CMSUG**
- suppressing execution **CMSUG, CMSREF**
- TSAF TSAFREF**
- use to make EXECs storage-resident **CMSUG**
- profile for **XEDIT**, creating **PRIMER**
- PROFILE GCS** **INTRO, PLNGDE**
- profile macro in **XEDIT**
- definition of **XEDITUG**
- example of **XEDITUG**
- PROFILE** option
 - of **NOTE** command **CMSREF**
 - of **PEEK** command **CMSREF**
 - of **RDRLIST** command **CMSREF**
- PROFILE** option of **SCRIPT** command **CMSLOT, PRIMER**
- profile samples
 - SPGEN INST**
 - SPLOAD INST**
- PROFILE XEDIT SPIUG**
- file, creating **CMSLOT**
- profiles
 - directory **CPPROG**
 - PROFPK**, formatting **INST**
 - PROFS** (Professional Office System) **INST, INTRO**
 - PROFS ASF INST**
 - PROG** option of **LISTIO** command **CMSREF**
- program
 - compilation and execution with **RUN** command **CMSREF**
 - compiling **CMSLOT, PRIMER**
 - correcting **SPIUG**
 - creating **CMSLOT, PRIMER**
 - debugging **APGDE**
 - definition of **PRIMER**
 - description of **SPIUG**
 - designing **SPIUG**
 - developing **CMSPROG**
 - development aid, **COBOL** **INTRO**
 - entry point
 - selection during **CMS**
 - loader processing **CMSREF**
 - specifying **CMSREF**
 - executing **CMSPROG**
 - exceptions **DIAG**
 - See also addressing exception
 - See also operation exception
 - See also protection exception
 - See also specification exception
- ACCEPT TSAFREF**
- CONNECT TSAFREF**
- DCLBFR TSAFREF**
- DESCRIBE TSAFREF**
- QUERY TSAFREF**
- RECEIVE TSAFREF**
- RTRVBFR TSAFREF**
- SEND CNF TSAFREF**
- SEND CNFD TSAFREF**
- SEND DATA TSAFREF**
- SENDERR TSAFREF**
- SENDREQ TSAFREF**
- SETCMASK TSAFREF**
- SETMASK TSAFREF**
- SEVER TSAFREF**
- TESTCMPL TSAFREF**
- TESTMSG TSAFREF**
- executing **APGDE**
- execution **APGDE**
- halting
 - in CMS/DOS **CMSREF**
 - indicator (**BLIP**) **TERMREF**

- with INCLUDE command **CMSREF**
- with LOAD command **CMSREF**
- function (PF) keys
- See PF (program function) keys
- input and output files, identifying **CMSPROG**
- interrupts **CMSPROG**
 - problem state **CPPROG**
 - supervisor state **CPPROG**
 - type X'04' entry **DIAG**
- interruption monitored in CP
 - internal trace table **CPREF**
- leaving **SPIUG**
- libraries **CMSPROG, APGDE**
 - needed for **PRIMER**
- load, initial **CPREF**
- loading into storage with INCLUDE
 - command **CMSREF**
- loops **DIAG**
- management **PLNGDE**
- modules, creating **CMSPROG**
- object **INTRO**
- product **INTRO**
- requirements **REL5GDE**
- retrieving lines with SOURCELINE **SPIREF**
- retrieving name of **SPIREF**
- running **CMSLOT, PRIMER**
- sample resource **TSAFREF**
 - ACCEPT function **TSAFREF**
 - CONNECT function **TSAFREF**
 - DCLBFR function **TSAFREF**
 - DESCRIBE function **TSAFREF**
 - RECEIVE function **TSAFREF**
 - RTRVBFR function **TSAFREF**
 - SENDATA function **TSAFREF**
 - SETCMASK function **TSAFREF**
 - SETMASK function **TSAFREF**
 - SEVER function **TSAFREF**
 - TESTCMLP function **TSAFREF**
 - TESTMSG function **TSAFREF**
- sample user **TSAFREF**
 - CONNECT function **TSAFREF**
 - DCLBFR function **TSAFREF**
 - RECEIVE function **TSAFREF**
 - RTRVBFR function **TSAFREF**
 - SENDATA function **TSAFREF**
 - SEVER function **TSAFREF**
- services **REL5GDE**
- source **INTRO**
- specifying virtual partition size **CMSPROG**
- stack
 - See program stack
- stack buffer, clearing **CMSREF**
- starting **PLNGDE, GCSREF**
- states **CPPROG**
- status messages **OPGDE**
- stopping **PLNGDE, GCSREF**
- update tape (PUT) **INTRO**
- updating, with XEDIT UPDATE option **CMSPROG**
- written in REXX language for
 - System Product Interpreter **CMSUG**
- program check debugging **DIAG**
- Program Development Facility
 - See ISPF, PDF
- Program Directory **INST**
- Program Event Recording Facility (PER) **PRGDE**
- PROGRAM operand of TRACE command **CPREF**
- program stack **APGDE, PLNGDE, INTRO**
 - &ERROR statement **APGDE**
 - &READ command for EXEC or EXEC2 **APGDE**
 - &STACK FIFO command **APGDE**
 - &STACK LIFO command **APGDE**
 - &BEGSTACK **EXEX2**
 - &STACK **EXEX2**
 - as a queue **SPIUG**
 - as a stack **SPIUG**
- buffer
 - creating **CMSREF**
 - eliminating **CMSREF**
 - using WAITRD function to read lines from **CMSREF**
- description of **EXEC2, SPIUG**
- determining number of lines in **CMSREF**
- DROPBUF command **APGDE**
- extensions (buffers) **SPIUG**
- MAKEBUF command **APGDE**
- PULL command **APGDE**
- PUSH command **APGDE**
- putting data onto **SPIUG**
- QUEUE command **APGDE**
- QUEUED command **APGDE**
- SENTRIES command **APGDE**
- STACK command **APGDE**
- taking data from **SPIUG**
 - using **APGDE, EXEC2, SPIUG**
- program status word (PSW) **APGDE**
 - See PSW (program status word)
- Program Support Representative (PSR) **DIAG**
- Program Temporary Fix (PTF)
 - See PTF (Program Temporary Fix)
- Program Update Tape (PUT)
 - See PUT (Program Update Tape)
- program, licensed
 - See licensed program
- programmable operator facility **CPPROG, INTRO, REL5GDE, SFPROG**
 - abend **SFPROG**
 - action routine interface
 - call interface **SFPROG**
 - parameter interface **SFPROG**
 - action routines **SFPROG**
 - DMSPOL **SFPROG**
 - DMSPOR **SFPROG**
 - DMSPOS **SFPROG**
 - error message and response handling **SFPROG**
 - EXEC **SFPROG**
 - handling console I/O **SFPROG**
 - supplied **SFPROG**
 - writing **SFPROG**
- assigning a logical operator **SFPROG**
- authorization **SFPROG**
- command subset **INTRO**
- commands **SFPROG**
 - CMD **SFPROG**
 - FEEDBACK **SFPROG**

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- GET SFPROG
- LGLOPR SFPROG
- LOADTBL SFPROG
- LOG SFPROG
- QUERY SFPROG
- SET SFPROG
- STOP SFPROG
- communication
 - checking SFPROG
 - with the network SFPROG
- debug mode SFPROG
- default SFPROG
- ensuring a complete log SFPROG
- environments
 - distributed VM SFPROG
 - mixed SFPROG
 - single system SFPROG
- examples of communicating
 - distributed environment SFPROG
 - local environment SFPROG
 - mixed environment SFPROG
- exit EXECs
 - communication error SFPROG
 - interface SFPROG
 - log error SFPROG
 - PROPHCHK EXEC SFPROG
 - PROPLGER EXEC SFPROG
 - PROPPCHK EXEC SFPROG
- feedback file INTRO, SFPROG
- helpful hints SFPROG
- how it works INTRO
- initializing SFPROG
- installing SFPROG
 - CMSGEND EXEC SFPROG
 - PMX SFPROG
- invoking SFPROG
 - automatically SFPROG
 - commands SFPROG
 - manually SFPROG
 - PROPPROF EXEC SFPROG
 - PROPST EXEC SFPROG
- issuing commands SFPROG
- LGLOPR SFPROG
 - action routine SFPROG
 - command SFPROG
 - default SFPROG
 - sample command entries in RTABLE SFPROG
 - statement SFPROG
- log file SFPROG
 - logging NCCF or NetView messages SFPROG
- logical operator SFPROG
 - action routine SFPROG
 - assigning, releasing, replacing SFPROG
 - command SFPROG
 - default SFPROG
 - NCCF or NetView SFPROG
 - statement SFPROG
- message format
 - distributed SFPROG
 - local SFPROG
- message output format SFPROG
- NCCF or NetView logical operator SFPROG
- NCCF PROP command INTRO
- overview SFPROG
 - flow of operation SFPROG
 - how it works SFPROG
 - in a distributed VM system SFPROG
 - in a mixed environment SFPROG
- in a single system SFPROG
- logical operator SFPROG
- partial routing table SFPROG
- PMX SFPROG
 - abend SFPROG
 - installing SFPROG
 - starting SFPROG
 - stopping SFPROG
- PROP command INTRO
- PROPEPIF EXEC SFPROG
- PROPLIB LOADLIB SFPROG
- PROPPROF EXEC SFPROG
- PROPRTCV SFPROG
- PROPST EXEC INTRO
- QUERY command authorization
 - for an NCCF operator SFPROG
- register conventions
 - for invoking an action routine SFPROG
- relationship with RSCS Networking SFPROG
- releasing a logical operator SFPROG
- replacing a logical operator SFPROG
- restricting SFPROG
 - authorization by nodeid SFPROG
 - authorization by userid and nodeid SFPROG
 - command use SFPROG
- routing entries
 - to filter responses to commands SFPROG
- routing messages SFPROG
- routing table INTRO, REL5GDE, SFPROG
 - converting SFPROG
 - entry formats and statements SFPROG
 - tailoring SFPROG
 - use SFPROG
- routing table (RTABLE) SFPROG
- routing table entries SFPROG
 - specifying routing texts SFPROG
- routing table statements
 - HOSTCHK SFPROG
 - LGLOPR SFPROG
 - LOGGING SFPROG
 - order of SFPROG
 - PROPCHK SFPROG
 - ROUTE SFPROG
 - TEXTSYM SFPROG
- shortcuts SFPROG
- starting SFPROG
- stopping SFPROG
 - PROPEPIF EXEC SFPROG
- tasks SFPROG
 - tasks performed INTRO
 - uncontrolled authorization SFPROG
 - use in a distributed environment OPGDE
 - use in a distributed VM system SFPROG
 - use in a mixed environment SFPROG
 - use in a single system OPGDE, SFPROG
 - user's view INTRO
- virtual machine SFPROG
 - with IUCV SFPROG
 - with NCCF SFPROG
 - command authorization SFPROG
 - routing messages to SFPROG
 - with NetView SFPROG
 - routing messages to SFPROG
- Programmable Operator/NCCF Message Exchange (PMX) SFPROG
 - See also programmable operator facility
- programmable operator modules, updating INST

- programmed symbol sets, defining
 - with SET COLOR XEDITUG
 - with SET CTLCHAR XEDITUG
 - with SET RESERVED XEDITUG
- programmer logical units
 - for job catalogs CMSREF
 - listing assignments for in CMS/DOS CMSREF
 - restrictions for R and T CMSREF
 - valid assignments in CMS/DOS CMSREF
- programming SPIUG
 - changes
 - control blocks, new and changed REL5GDE
 - macros, new and changed REL5GDE
 - modules, new and changed REL5GDE
 - languages supported by CMS PLNGDE
 - problem diagnosis INTRO
 - requirements REL5GDE
 - restrictions SPIREF
 - style SPIREF
 - techniques, examples EXEX2
- project control INTRO
- projected working set CPPROG
- PROMAIL INST
- PROMPT option of COPYFILE command CMSREF
- PROMPT operand of TERMINAL command CPREF
- PROMPT operand of MAP command DIAG
- prompting user for data SPIUG
- prompting, in an EXEC CMSLOT
- proofreading documents using PROFS INTRO
- PROP
 - See programmable operator facility
- PROP command INTRO
- PROP/NCCF Message Exchange, using
 - with programmable operator OPGDE
- PROPCHK statement SFPROG
 - See also programmable operator facility
- PROPEPIF EXEC SFPROG
- PROPHCHK EXEC SFPROG
- PROPLGER EXEC SFPROG
- PROPLIB LOADLIB SFPROG
- PROPPCHK EXEC SFPROG
- PROPPROF EXEC SFPROG
- PROPRTCV, for converting routing tables SFPROG
- PROPST EXEC INTRO
- PROTECT operand of NAMESYS macro PLNGDE
- PROTECT option of CMS QUERY command CMSREF
- protected application environment CMSUG,
 - REL5GDE, TSAFREF
 - control blocks, new and changed REL5GDE
 - DIAGNOSE code X'B0' SFPROG
 - macros, new and changed REL5GDE
 - modules, new and changed REL5GDE
- protected shared segment CPPROG
- protected QUIT XEDIT
- protecting
 - files from being accessed CMSUG
 - storage PLNGDE
 - variables SPIREF
 - your files CMSLOT, PRIMER
- protection keys CPPROG
- protection exception
 - ACCEPT TSAFREF
- CONNECT TSAFREF
- DCLBFR TSAFREF
- DESCRIBE TSAFREF
- RECEIVE TSAFREF
- SEND CNF TSAFREF
- SEND CNFD TSAFREF
- SEND DATA TSAFREF
- SENDERR TSAFREF
- SENDREQ TSAFREF
- SETCMASK TSAFREF
- SETMASK TSAFREF
- SEVER TSAFREF
- TESTCMPL TSAFREF
- protocol
 - PMX communication SFPROG
 - VMCF SFPROG
 - IDENTIFY SFPROG
 - SEND SFPROG
 - SEND/RCV SFPROG
 - SENDX SFPROG
- prototyping
 - algorithms APGDE
 - interactive applications APGDE
- provide 3480 tape volume serial number
 - DIAGNOSE code X'D0' SFPROG
- providing a save area GCSREF
- PRTDUMP command DIAG
 - description DIAG
 - error message DIAG
 - format DIAG
 - IPCS TSAFREF
 - response DIAG
 - usage DIAG
- PSA (prefix storage area) CPPROG, DIAG
 - control block DIAG
- PSAF INST
- PSAVE subcommand XEDIT
- PSERV command
 - description CMSREF
 - description of CMSPROG
 - DISK option CMSREF
 - PRINT option CMSREF
 - PUNCH option CMSREF
 - TERM option CMSREF
 - using CMSPROG
- pseudo page fault processing, VM/VS handshaking CPREF
- pseudo random number function of RANDOM SPIREF
- pseudo timer CPPROG
 - DIAGNOSE CPPROG
 - DIAGNOSE code X'0C' SFPROG
 - Start I/O CPPROG
- pseudonumbers, for ordering publications REL5GDE
 - mixed mode REL5GDE
 - supplementary
 - abstracts REL5GDE
 - supplementary publications
 - abstracts REL5GDE
- pseudo-cylinder REL5GDE
 - boundary CPPROG
 - converting FBA pages to PLNGDE
- PSF INST
- PSF operand of QUERY command CPREF

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

PSF/VM (Print Services Facility/VM) **REL5GDE**

PSF/VM Base **INST**

PSF/VM 3800 **INST**

PSF/VM 3820 **INST**

PSFMAINT **INST**

PSPACE macro

format **INST**

function **INST**

placement in module **INST**

PSR (Program Support Representative) **DIAG**

PSTOR operand of QUERY command **CPREF, CPPROG**

PSUPRS operand of SYSJRL macro **PLNGDE**

PSW (program status word) **APGDE**

changing **CPREF**

definition of **PRGDE**

displaying **CPREF**

DMSEXS macro **CMSPROG**

DMSKEY macro **CMSPROG**

in determining

enabled and disabled I/O interrupts **PRGDE**

wait state **PRGDE**

keys **CMSPROG**

printing **CPREF**

restart

preferred machine assist **RGOS**

single processor mode **RGOS**

storage protection keys **CMSPROG**

PSW Key 14 **DIAG, PLNGDE**

PSW operand

of DISPLAY command **CPREF**

of STORE command **CPREF**

PSW subcommand of DEBUG command **APGDE**

PTF (program temporary fix) **CPPROG, DIAG, REL5GDE**

apply using VMFMERGE **INST**

applying **DIAG**

to VSE/VSAM **INST**

to 3704/3705 control program **INST**

CP/CMS nucleus regeneration requirements **INST**

definition **INST**

dependent **INST**

entry

in Exclude List **INST**

in Merge Log **INST**

in Remove List **INST**

field **DIAG**

merge

multiple PTFs, example **INST**

single PTF, example **INST**

number, definition **INST**

output field of STAT command **DIAG**

part of Service Control File (SCF) **INST**

PTF

and update files **INST**

files **INST**

remove

multiple PTFs, example **INST**

single PTF, example **INST**

using VMFREMOVE **INST**

update level identifier, use

by PRELOAD command **INST**

PTFERROR operand of STAT command **DIAG**

PTFIS operand of PRB command **DIAG**

PTFON operand of PRB command **DIAG**

PTFON operand of STAT command **DIAG**

PTFRCDV operand of STAT command **DIAG**

publications **REL5GDE, TERMREF**

See also individual devices

See also VM/SP, library

abstracts **REL5GDE**

eliminated from Release 5 **REL5GDE**
for VM/SP

See abstracts of VM/SP manuals

new for Release 5 **REL5GDE**

online HELP facility **REL5GDE**

ordering additional copies **REL5GDE**

ordering for previous releases **REL5GDE**

reorganized for Release 5 **REL5GDE**

supplementary **REL5GDE**

that you receive with the product tape **REL5GDE**

publications list **SRPI**

PULL (REXX instruction) **CMSLOT, PRIMER**

PULL command **APGDE**

PULL instruction **SPIREF**

description of **SPIUG**

using **SPIUG**

PULL option of PARSE instruction **SPIREF**

PUNCH

assembler punch output ddname **CMSREF**

command

description **CMSREF**

example **CMSUG**

HEADER card format **CMSREF**

HEADER option **CMSREF**

MEMBER option **CMSREF**

NOHEADER option **CMSREF**

option

of ASSIGN command **CMSREF**

of EXECIO command **CMSREF**

of FILEDEF command **CMSREF**

of PSERV command **CMSREF**

of RSERV command **CMSREF**

repositioning output **CPREF**

restarting output **CPREF**

punch **REL5GDE**

selecting a specific one for spool files **REL5GDE**

PUNCH device type **APGDE**

punch files

altering attributes of virtual **CPREF**

produced by job running in

batch virtual machine **CMSUG**

punch interrupts **CMSPROG**

PUNCH operand

of CHANGE command **CPREF**

of CLOSE command **CPREF**

of DEFINE command **CPREF**

of DRAIN command **CPREF**

of FREE command **CPREF**

of HOLD command **CPREF**

of ORDER command **CPREF**

of PURGE command **CPREF**

of QUERY command **CPREF**

of SPOOL command **CPREF**

of SPTAPE command **CPREF**

of START command **CPREF**

of TRANSFER command **CPREF**

punch, virtual **INTRO**

PUNCHC macro **APGDE**

See also **MACREF**

description of **CMSPROG**

ERROR = operand **MACREF**

usage **CMSPROG**

writing a line to a virtual punch **MACREF**

punched files, restoring to disk **CMSREF**

punching

a MACLIB member **CMSPROG**

- CMS files **CMSUG**
 jobs to batch virtual machine **CMSUG**
 pure number
 See numbers
- PURGE**
 IUCV function **SFPROG**
 parameter list format **SFPROG**
 trace table entry format **SFPROG**
 using **SFPROG**
 SPOOL system service function **SFPROG**
- PURGE** commands **CMSUG**, **CPREF**
 described **CPREF**
 batch machine output **INTRO**
 class D **CPREF**
 class G **CPREF**
 described **CPREF**
 example of use **INTRO**
 operands
 * **CPREF**
 ALL **CPREF**
 CLASS **CPREF**
 DEST **CPREF**
 dest1 **CPREF**
 dest2 **CPREF**
 FORCE **CPREF**
 FORM **CPREF**
 FORM form **CPREF**
 PRINTER **CPREF**
 PUNCH **CPREF**
 READER **CPREF**
 spoolid **CPREF**
 SYSTEM **CPREF**
 userid **CPREF**
 responses **CPREF**
 to delete spool files **CMSUG**
 usage notes **CPREF**
- PURGE** operand
 of **CLOSE** command **CPREF**
 of **SPOOL** command **CPREF**
 of **SPTAPE** command **CPREF**
 of **START** command **CPREF**
- PURGE** option
 of **GLOBALV** command **CMSREF**
 of **RECEIVE** command **CMSREF**
- PURGE** parameter list **SRPI**
PURGE subcommand **XEDIT**
PURGESYS function **CPPROG**, **SFPROG**
- purging
 batch jobs **CMSUG**
 closed files **CPREF**
 closed spool files **CPREF**
 DCSS **CPPROG**, **SFPROG**
 spool files **CPREF**
 storage resident EXECs **SPIREF**
 the batch facility **OPGDE**
- purpose of GCS in VM/SP **GCSREF**
PUSH command **APGDE**
PUSH instruction **SPIREF**, **SPIUG**
PUSH option of **NUCXLOAD** command **CMSREF**
- PUT XEDITUG**
 in typewriter mode **XEDITUG**
 practice exercise using **XEDITUG**
- PUT** (Program Update Tape) **INTRO**, **REL5GDE**
 definition **INST**
 format **INST**
 sample layout **INST**
 system generation
 applying CP service **INST**
 updates from Level One Support Center **INST**
- PUT** command **CMSLOT**
PUT macro **CMSPROG**
QSAM GCSREF
 area address parameter **GCSREF**
 dcb address parameter **GCSREF**
 description **GCSREF**
VSAM GCSREF
 description **GCSREF**
 rpl parameter **GCSREF**
- PUT SCREEN** command **CMSUG**
 description **CMSREF**
 format **CMSREF**
 messages **CMSREF**
 option
 fn ft fm **CMSREF**
 summary **CMSREF**
 usage notes **CMSREF**
- PUT** sub-function of **GLOBALV** command **CMSREF**
PUT subcommand of **XEDIT** command **APGDE**, **XEDIT**
 example of **XEDIT**
 with DBCS strings **XEDIT**
- PUT VSCREEN** command **CMSUG**
 description **CMSREF**
 format **CMSREF**
 messages **CMSREF**
 option
 fn ft fm **CMSREF**
 fromlin **CMSREF**
 numlin **CMSREF**
 vname **CMSREF**
 summary **CMSREF**
 usage notes **CMSREF**
- PUTD** subcommand of **XEDIT** command **APGDE**, **XEDIT**
 with DBCS strings **XEDIT**
- putting
 data
 into a file **CMSLOT**
 onto the program stack **SPIUG**
 messages in a file **PRIMER**
 warnings in a file **PRIMER**
 words into variables **SPIUG**
- PUTX** macro **CMSPROG**
PVENTRY macro **CMSPROG**
 See also **PARSERCB** macro
 expansion **MACREF**
 generating DSECT for
 Parser Validation Code Table entry **MACREF**
- PVM**
 See VM/Pass-Through Facility
- PVM** dump **INTRO**
PVM help files **DIAG**
PVM MAP **DIAG**
PVMIPCS MAP **DIAG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

Q

Q classification

what CP does with CPPROG

QBE (Query By Example) INTRO

QDROP operand

of QUERY command CPREF, CPPROG

of SET command CPREF, CPPROG, OPGDE

QDROP option CPREF

QMF (Query Management Facility) INST, INTRO

QQUIT XEDITUG

in typewriter mode XEDITUG

QQUIT command CMSLOT, PRIMER

QQUIT subcommand of XEDIT command APGDE, XEDIT

QSAM PLNGDE

quantum CPPROG

QUERY

action routine SFPROG

command

See QUERY command

IUCV function SFPROG

trace table entry format SFPROG

using SFPROG

privilege class D CPREF

privilege class E CPREF

privilege class F CPREF

VECTOR command OPGDE

QUERY AUTOSAVE command PRIMER

Query By Example (QBE) INTRO

QUERY command CMSUG, CPREF, DIAG, GCSREF,

PLNGDE, TERMREF, TSAFREF

AUTOSAVE option CMSLOT

class A CPREF

class B CPREF

class C CPREF

class G CPREF

CMS

ABBREV option CMSREF

APL option CMSREF

AUTOREAD option CMSREF

BLIP option CMSREF

BORDER option CMSREF

CHARMODE option CMSREF

CMSLEVEL option CMSREF

CMSPF option CMSREF

CMSTYPE option CMSREF

CURSOR option CMSREF

description CMSREF

DISK option CMSREF

DISPLAY option CMSREF

display search order of disks CMSUG

DLBL option CMSREF

DOS option CMSREF

DOSLIB option CMSREF

DOSLNCNT option CMSREF

DOSPART option CMSREF

EXECTRAC option CMSREF

FIFO option CMSREF

FILEDEF option CMSREF

FULLREAD option CMSREF

FULLSCREEN option CMSREF

HIDE option CMSREF

how much space is on a disk CMSUG

IMESCAPE option CMSREF

IMPCP option CMSREF

IMPEX option CMSREF

INPUT option CMSREF

INSTSEG option CMSREF

KEY option CMSREF

LABELDEF option CMSREF

LANGLIST option CMSREF

LANGUAGE option CMSREF

LDRTBLS option CMSREF

LIBRARY option CMSREF

LIFO option CMSREF

LINEND option CMSREF

LOADLIB option CMSREF

LOCATION option CMSREF

LOGFILE option CMSREF

MACLIB option CMSREF

NONDISP option CMSREF

OPTION option CMSREF

OUTPUT option CMSREF

PROTECT option CMSREF

query CMS PF keys CMSUG

RDYMSG option CMSREF

REDTYPE option CMSREF

RELPAGE option CMSREF

REMOTE option CMSREF

RESERVED option CMSREF

ROUTE option CMSREF

SEARCH option CMSREF

SHOW option CMSREF

STACK option CMSREF

SYNONYM option CMSREF

SYSNAMES option CMSREF

TEXT option CMSREF

TRANSLATE option CMSREF

TXTLIB option CMSREF

UPSI option CMSREF

VSCREEN option CMSREF

WINDOW option CMSREF

WMPF option CMSREF

CP

CMS Session Services enhancements REL5GDE

CPLANG option REL5GDE

display color and extended

highlight values CMSUG

INSTSEG option REL5GDE

LANGLIST option REL5GDE

LANGUAGE option REL5GDE

query status of CP SET MSG function CMSUG

TRANSLATE option REL5GDE

defined INTRO

described CPREF

description GCSREF, CMSPROG

disk operand GCSREF

DISK option CMSLOT, PRIMER

dlbl operand GCSREF

etrace operand GCSREF

example

of use INTRO

using PSTOR operand CPPROG

filedef operand GCSREF

GCS

LOADALL REL5GDE

LOADCMD REL5GDE

LOADLIB REL5GDE

group operand GCSREF

itrace operand GCSREF

loadall operand GCSREF

loadcmd operand GCSREF

loadlib operand GCSREF

lock operand GCSREF
 MACLIBs available CMSPROG
 NAMES option CMSLOT, PRIMER

operands

* CPREF

ACTIVE CPREF
 AFFINITY CPREF
 ALL CPREF
 ATTACH CPREF
 CHANNELS CPREF
 CLASS CPREF
 CONSOLE CPREF
 CPASSIST CPREF
 CPLANG CPREF, REL5GDE
 checking the language status
 for CMS messages REL5GDE
 CPLEVEL CPREF
 CPTRAP REL5GDE
 CPUID CPREF
 CURRENT CPREF
 DASD CPREF
 DEST CPREF
 DSPSLICE CPREF
 DUMP CPREF
 FILES CPREF
 FORM CPREF
 FORM form CPREF
 FREE CPREF
 GRAF CPREF
 HOLD CPREF
 IB CPREF
 IBUFF CPREF
 JOURNAL CPREF
 LANGLIST REL5GDE
 LANGUAGE REL5GDE
 LINES CPREF
 LINKS CPREF
 Lnnn CPREF
 LOGMSG CPREF
 lprr CPREF
 MAXPP CPREF
 MAXWSS CPREF
 MINNUMSS CPREF
 MINWS CPREF
 MITIME CPPROG, CPREF
 NAMES CPREF
 NOHOLD CPREF
 null CPREF
 OFFLINE CPREF
 PAGING CPPROG, CPREF
 PATHS CPREF
 PB CPREF
 PCI CPREF
 PER CPREF
 PFnn CPREF
 PGFULL CPREF
 PGMACT CPREF
 PGMSTAT CPREF
 PGMTLIM CPREF
 PREPAGE CPREF
 PRINTER CPREF
 PRIORITY CPREF

PROCESS CPREF
 PROCESSR CPREF
 PSF CPREF
 PSTOR CPPROG, CPREF
 PUNCH CPREF
 QDROP CPPROG, CPREF
 raddr CPREF
 READER CPREF
 RESERVE CPREF
 SASSIST CPREF
 SCREEN CPREF
 SECUSER CPREF
 SET CPPROG, CPREF
 SPMODE CPREF
 spoolid CPREF
 SRM CPPROG, CPREF
 SRM PGMACT CPPROG
 STATUS CPREF
 STORAGE CPREF
 SYSHOLD CPREF
 SYSTEM CPREF
 SYSVIRT CPREF
 S370E CPREF
 TAPES CPREF
 TBL CPREF
 TDSK CPREF
 TERMINAL CPREF
 TIME CPREF
 traceset-name CPREF
 TRANSLATE REL5GDE
 UR CPREF
 USERHOLD CPREF
 userid CPREF
 USERS CPREF
 vaddr CPREF
 VECTOR CPPROG, CPREF
 VIRTUAL CPREF
 VMSAVE CPPROG, CPREF
 valid CPREF

programmable operator SFPROG

reply operand GCSREF

responses CPREF

search operand GCSREF

SEARCH option CMSLOT, PRIMER

STORAGE option CMSLOT, PRIMER

TABS option CMSLOT

userid option CMSLOT

USERS option CMSLOT, PRIMER

QUERY CPLANG command CMSUG

QUERY CPTRAP command DIAG

QUERY CPTRAP command (CP) TSAFREF

QUERY CPUID command response CPREF

QUERY DEV/FILE operand of TAG command CPREF

QUERY EXECETRAC command SPIREF

QUERY FILES command response CPREF

QUERY function of IUCV TSAFREF

 completion TSAFREF

 condition codes TSAFREF

 parameter list TSAFREF

 program exceptions TSAFREF

 return codes TSAFREF

QUERY LANGLIST command CMSUG

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

QUERY LANGUAGE command **CMSUG**
QUERY LINKS command responses **CPREF**
QUERY LOGMSG command responses **CPREF**
QUERY LRECL **XEDITUG**
Query Management Facility (QMF) **INST, INTRO**
QUERY NAMES command responses **CPREF**
QUERY operand
 of **CACHE** command **CPREF, CPPROG**
 of **NETWORK** command **CPREF**
QUERY operand of **IMMCMMD** command **CMSREF**
QUERY PF **XEDITUG**
QUERY PF command **PRIMER**
QUERY PFnn command responses **CPREF**
QUERY POINT **XEDITUG**
QUERY PRINTER command responses **CPREF**
QUERY PROCESSR command responses **CPREF**
QUERY PUNCH command responses **CPREF**
QUERY READER command responses **CPREF**
QUERY RING **XEDITUG**
QUERY SCREEN command responses **CPREF**
QUERY SECUSER command responses **CPREF**
QUERY SET command response **CPREF**
QUERY SPMODE command responses **CPREF**
QUERY SRM command **DIAG**
QUERY SRM PGMACT command **PLNGDE**
QUERY subcommand of **XEDIT** command **APGDE, XEDIT**
 options **XEDIT**
query system feature, condition, or event **DIAG**
QUERY S370E command responses **CPREF**
QUERY TABS **XEDITUG**
 in typewriter mode **XEDITUG**
 practice exercise using **XEDITUG**
QUERY TABS command **PRIMER**
QUERY TERMINAL command response **CPREF**
QUERY TIME command response **CPREF**
QUERY USERS command responses **CPREF**
QUERY VIRTUAL CHANNELS command
 response **CPREF**
QUERY VIRTUAL command, operands
 CHANNELS **CPREF**
 CONSOLE **CPREF**
 DASD **CPREF**
 GRAF **CPREF**
 LINES **CPREF**
 STORAGE **CPREF**
 TAPES **CPREF**
 UR **CPREF**
 vaddr **CPREF**
QUERY VIRTUAL CONSOLE command response **CPREF**
QUERY VIRTUAL DASD command responses **CPREF**
QUERY VIRTUAL GRAF command responses **CPREF**
QUERY VIRTUAL LINES command responses **CPREF**
QUERY VIRTUAL STORAGE command responses **CPREF**
QUERY VIRTUAL TAPES command responses **CPREF**
QUERY VIRTUAL UR command responses **CPREF**
QUERY VMSAVE command responses **CPREF**
querying information **PLNGDE**
querying spool file characteristics **CPREF**
queue
 counting lines in **SPIREF**
 delay, average **CPPROG**
described **SPIUG**
priority **CPPROG**
reading from with **PULL** **SPIREF**
slice **CPPROG**
value **CPPROG**
writing to
 with **PUSH** **SPIREF**
 with **QUEUE** **SPIREF**
QUEUE command **APGDE**
QUEUE instruction **SPIREF, SPIUG**
queue-add **CPPROG, REL5GDE**
queue-drop **CPPROG, REL5GDE**
 delay timer **CPPROG**
 elimination **OPGDE, CPPROG**
 option of **SET** command **INTRO**
 monitored in CP internal trace table **CPREF**
QUEUED command **APGDE**
QUEUED function **SPIREF**
QUEUES operand of **INDICATE** command **CPREF**
QUIESCE
 IUCV function **SFPROG**
 parameter list format **SFPROG**
 trace table entry format **SFPROG**
 using **SFPROG**
 VMCF function **SFPROG**
QUIESCE command, when not to use **RGOS**
QUIET operand of **SET** command **CPREF**
QUIT **XEDITUG**
 in typewriter mode **XEDITUG**
QUIT command **CMSLOT, PRIMER**
 of VS FORTRAN interactive debug **APGDE**
QUIT subcommand
 of **DUMPSCAN** command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
 sample output **DIAG**
 usage **DIAG**
 of **TRAPRED** command **DIAG**
 of **XEDIT** command **APGDE, XEDIT**
 protected **XEDIT**
 to terminate an edit session **CMSUG**
 unprotected **XEDIT**
 versus **QUIT** **XEDIT**
quitting multiple files **XEDIT**
quotation marks **SPIUG**
 in EXECs **PRIMER**
QUOTE parameter of **SQL** **APGDE**
quotes **SPIUG**
QVM command **CMSUG, CPREF**
described **CPREF**
operands
 NORETURN **CPREF**
 userid **CPREF**
 usage notes **CPREF**
Q1 operand
 of **SET** command **CPREF**
Q2 operand
 of **SET** command **CPREF**

R

R border command **PRIMER**
 R/O disks **PRIMER**
 R/O operand
 of ATTACH command **CPREF**
 of DEDICATE directory control statement **PLNGDE**
 R/W disks **PRIMER**
 RACF (Resource Access Control Facility) **CPPROG**,
REL5GDE
 raddr **TERMREF**
 definition **TERMREF**
 described **CPREF**
 operand
 of ARIOBLOK subcommand **DIAG**
 of ATTACH command **CPREF**
 of BACKSPAC command **CPREF**
 of CACHE command **CPREF**
 of DEFINE command **CPREF**
 of DETACH command **CPREF**
 of DISABLE command **CPREF**
 of DRAIN command **CPREF**
 of ENABLE command **CPREF**
 of FLUSH command **CPREF**
 of HALT command **CPREF**
 of LOADBUF command **CPREF**
 of LOCATE command **CPREF**
 of MONITOR command **CPREF**
 of NETWORK command **CPREF**
 of REPEAT command **CPREF**
 of RIOBLOK subcommand **DIAG**
 of SET command **CPREF**
 of SHUTDOWN command **CPREF**
 of SPACE command **CPREF**
 of START command **CPREF**
 of VARY command **CPREF**
 RANDOM function **SPIREF**, **SPIUG**
 random number function of RANDOM **SPIREF**
 range
 defining **XEDIT**
 of numbers **SPIUG**
 of operation of subcommands,
 defining **XEDITUG**
 RANGE option
 of EXTRACT **XEDIT**
 of PER command **CPREF**
 of QUERY **XEDIT**
 of SET **XEDIT**
 of TRANSFER **XEDIT**
 RAS (Reliability, Availability and Serviceability)
 enhancements
 alternate nucleus support **REL5GDE**
 CPTRAP, TRAPRED, and QUERY **REL5GDE**
 IPCS **REL5GDE**
 LOGON/LOGOFF **REL5GDE**
 SPOOL file compression support **REL5GDE**
 overview **REL5GDE**
 references to other publications **REL5GDE**
 rates, migration **CPPROG**

RC

return code
 not set during interactive debug **SPIREF**
 set by host commands **SPIREF**
 set to 0 if commands inhibited **SPIREF**
 special variable **SPIREF**, **SPIUG**
 RCHANNEL macro **CPPROG**
 example **PLNGDE**
 format **PLNGDE**
 operands
 ADDRESS **PLNGDE**
 CHTYPE **PLNGDE**
 RCHBLOK **CPREF**, **DIAG**
 creating **PLNGDE**
 generated label **PLNGDE**
 RCODE
 field of answer data **TSAFREF**
 keyword definition **DIAG**
 RCTLUNIT macro **CPPROG**
 channel errors **PLNGDE**
 coding to support the 3880
 Storage Subsystem **PLNGDE**
 configuration aid **PLNGDE**
 example **PLNGDE**
 format **PLNGDE**
 operands
 ADDRESS **PLNGDE**
 ALCH **PLNGDE**
 CUTYPE **PLNGDE**
 FEATURE **PLNGDE**
 UCW **PLNGDE**
 xxx-DEVICE feature **PLNGDE**
 using to define alternate paths **PLNGDE**
 RCUBLOK **CPREF**, **DIAG**
 addressing **PLNGDE**
 creating **PLNGDE**
 label generated **PLNGDE**
 RCVRID operand of NAMESYS macro **PLNGDE**
 RD option of DSERV command **CMSREF**
 RDCARD macro **APGDE**, **CMSPROG**, **REL5GDE**
 See also **MACREF**
 control blocks, new and changed **REL5GDE**
 ERROR= operand **MACREF**
 macros, new and changed **REL5GDE**
 modules, new and changed **REL5GDE**
 new operand **REL5GDE**
 RDAHEAD= operand **MACREF**
 reading a line from virtual reader **MACREF**
 RDEVBLOK **CPREF**, **DIAG**
 creating **PLNGDE**
 label generated **PLNGDE**
 RDEVICE macro **CPPROG**
 coding
 EP 3704/3705/3725 control program **PLNGDE**
 example **PLNGDE**
 summary of considerations for 3704/3705/3725
 control program **PLNGDE**
 to support 3800 image library **PLNGDE**
 TWX terminals **PLNGDE**
 coding
 for remote 3270s **PLNGDE**
 to support the 3880 Storage Subsystem **PLNGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- configuration aid **PLNGDE**
control unit error messages **PLNGDE**
DEVTYPE operand **PLNGDE**
examples, 3704/3705/3725 **PLNGDE**
FEATURE coding considerations **PLNGDE**
format **PLNGDE**
four-channel switch feature **PLNGDE**
operands
 ADAPTER PLNGDE
 ADDRESS PLNGDE
 ALTCU PLNGDE
 BASEADD PLNGDE
 CHARS PLNGDE
 CLASS PLNGDE
 CLUSTER PLNGDE
 CPNAME PLNGDE
 CPTYPE PLNGDE
 DEVTYPE PLNGDE
 DPMSIZE PLNGDE
 FCB PLNGDE
 FEATURE PLNGDE
 IMAGE PLNGDE
 MODEL PLNGDE
 SETADDR PLNGDE
output spooling classes, defining **PLNGDE**
subclass, defining for unsupported devices **PLNGDE**
two-channel switch feature **PLNGDE**
unit record error messages **PLNGDE**
3704/3705/3725 error messages **PLNGDE**
RDJFCB macro (SVC 64) **CMSPROG**
RDR command
 description **CMSREF**
 FIFO option **CMSREF**
 LIFO option **CMSREF**
 NOTYPE option **CMSREF**
 STACK option **CMSREF**
 use of = **CMSREF**
RDRLIST
 command **CMSLOT, PRIMER, REL5GDE**
 APPEND option **CMSREF**
 default PF key settings **CMSREF**
 description **CMSREF**
 DISCARD command
 used with **RDRLIST CMSREF**
 displaying a file **CMSREF**
 example of use **INTRG**
 EXECUTE command
 used with **RDRLIST CMSREF**
 issuing commands from **RDRLIST CMSREF**
 PROFILE option **CMSREF**
 special symbols **CMSREF**
 synonyms that sort the list **CMSREF**
environment
 discarding a file **CMSLOT**
 headings **CMSLOT**
 peeking at a file **CMSLOT**
 receiving a file **CMSLOT**
 receiving a note **CMSLOT**
 renaming a file **CMSLOT**
 replacing a file **CMSLOT**
RDTAPE macro **CMSPROG**
 See also **MACREF**
 ERROR = operand **MACREF**
 MODE = operand **MACREF**
 reading records from tape drive **MACREF**
RDTERM macro **APGDE, CMSPROG**
 See also **LINERD** macro
 See also **MACREF**
 ATTREST = operand **MACREF**
 EDIT = operand **MACREF**
 LENGTH = operand **MACREF**
 PRBUFF = operand **MACREF**
 PRLGTH = operand **MACREF**
 reading a line from terminal
 into I/O buffer **MACREF**
 TYPE = **DIRECT** operand **MACREF**
RDYMSG option of **CMS QUERY** command **CMSREF**
re-executing a command **CMSLOT**
read
 console, after a **CMS** command **CMSREF**
 inhibit **REL5GDE**
 password **CMSLOT**
 for **ISPF APGDE**
 pointers, resetting **MACREF**
 to virtual console, definition **CMSUG**
READ XEDITUG
 control card
 deleting **CMSREF**
 format of **CMSREF**
 macro **CMSPROG**
 BSAM (see **READ** macro (**BSAM**))
 execute format **GCSREF**
 list format **GCSREF**
READ functions of **SPOOL** system service **SFPROG**
 READ-SFBLOK SFPROG
 READ-SPLINK SFPROG
 READ-XAB SFPROG
READ macro (**BSAM**) **GCSREF**
 area address parameter **GCSREF**
 dcb address parameter **GCSREF**
 decb address parameter **GCSREF**
 description **GCSREF**
 length parameter **GCSREF**
 mf parameter **GCSREF**
 s parameter **GCSREF**
 sf parameter **GCSREF**
READ SCP INFORMATION service call **PLNGDE**
READ subcommand **XEDIT**
read-only
 access of minidisks **PLNGDE**
 disks **CMSLOT**
 linking to **PRIMER**
 extensions
 editing files on **CMSREF**
 releasing **CMSREF**
 using **CMSUG**
 read system dump spool file
 with **DIAGNOSE** code X'34' **SFPROG**
 read system symbol table
 with **DIAGNOSE** code X'38' **SFPROG**
read/write
 access
 of minidisks **PLNGDE**
 with **LINK** command **CPREF**
 operation **CMSPROG**
 status of disks
 controlling **CMSREF**
 displaying **CMSUG**
 in **VM/SP** directory entry **CMSUG**
 listing for disk assignments
 in **CMS/DOS CMSREF**
 querying **CMSREF**

- READCARD** command
 described **CMSREF**
 restriction in CMS batch facility **CMSUG**
 used to assign filemode numbers **CMSUG**
- reader** **CMSLOT**
 description of **PRIMER**
 discarding a file from **PRIMER**
 displaying information about **PRIMER** files
 altering attributes of virtual **CPREF**
 altering external attributes **CPREF**
 discarding **CMSLOT**
 for problem determination **CPREF**
 peeking at **CMSLOT**
 receiving **CMSLOT**
 renaming **CMSLOT**
 replacing **CMSLOT**
 holding user files in **CMSUG**
 interrupts **CMSPROG**
 peeking at **PRIMER**
 receiving a file from **PRIMER**
 receiving a note from **PRIMER**
- virtual**
 defined **INTRO**
 determine characteristics
 of next file in **CMSREF**
 handling input files **INTRO**
 information about files in **CMSREF**
 listing the files in **CMSREF**
PEEK at a file in **CMSREF**
 reading a file from **CMSREF**
 receiving a file from **CMSREF**
- READER**
 device type **APGDE**
 operand
 of **ASSGN** command restriction
 in job for CMS batch facility **CMSUG**
 of **CHANGE** command **CPREF**
 of **CLOSE** command **CPREF**
 of **DEFINE** command **CPREF**
 of **DRAIN** command **CPREF**
 of **FILEDEF** command restriction
 in job for CMS batch facility **CMSUG**
 of **ORDER** command **CPREF**
 of **PURGE** command **CPREF**
 of **QUERY** command **CPREF**
 of **SPOOL** command **CPREF**
 of **SPTAPE** command **CPREF**
 of **START** command **CPREF**
 of **TRANSFER** command **CPREF**
- option
 of **ASSGN** command **CMSREF**
 of **FILEDEF** command **CMSREF**
- reading
 an entire file continuously **CPREF**
 cards from your virtual card reader **CMSUG**
CMS
 abend dump **DIAG**
 disk files **CMSPROG** files **SPIREF**
 CP abend dumps **DIAG**
 DOS files **CMSPROG** files **SPIUG**
 lines **EXEX2**
- OS data sets **CMSPROG**
 plan **SPIUG**
 real card decks into your virtual machine **CMSUG**
 records sequentially **MACREF**
 restrictions
 OS data sets **CMSPROG**
 SAM files **CMSPROG**
 SAM files **CMSPROG**
 tapes **CMSPROG**
 the stack and console **SPIREF**
 variable length records **CMSPROG**
 VSAM tape files **CMSPROG**
- readshare password **INTRO**
 Ready; message, CPU times displayed **CMSPROG**
- READY** command **CMSUG**, **CPREF**
CP RGOS
 described **CPREF**
 operands
 vaddr **CPREF**
READY command **CPREF**
 responses **CPREF**
 usage notes **CPREF**
- ready message **APGDE**, **CMSLOT**, **PRIMER**,
TERMREF
 controlling how it is displayed **CMSUG**
 not displayed after
 #CP function is used in CMS **CMSUG**
 querying setting of **CMSREF**
 special format in **EXEC CMSREF**
- ready status removing a device from **CPREF**
 readying files for input or output **MACREF**
 real
 address **INST**, **CPPROG**
 channel program support **SFPROG**
 control blocks
 real storage requirements **PLNGDE**
 structure (see real I/O control block
 structure)
- device
 connecting to virtual machine **CPREF**
 finding CP control block addresses **CPREF**
 removing from system **CPREF**
 simulation, VM SNA support **SFPROG**
 stopping channel program **CPREF**
- I/O **PLNGDE**
 I/O configuration file
 See real I/O configuration file
- I/O interrupts **CPPROG**
 machine **CPPROG**, **INST**, **REL5GDE**
 reserve/release
 See real reserve/release
- reset button, simulating **CPREF**
- resource
 managed by CP **INTRO**
 real console **INTRO**
 real storage **INTRO**
 sharing **INTRO**
- restart button, simulating **CPREF**
- storage
 See real storage
- real I/O configuration file
CLUSTER macro **PLNGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- coding
 - BSC lines **PLNGDE**
 - 3270s **PLNGDE**
- description **INST**
- examples of VM/SP HPO system **PLNGDE**
- preparing **PLNGDE**
- RCHANNEL macro **PLNGDE**
- RCTLUNIT macro **PLNGDE**
- RDEVICE macro **PLNGDE**
- refid = zapt.control records
 - EXPAND **INST**
 - function **INST**
- RIOGEN macro **PLNGDE**
- sequence of macros **PLNGDE**
- tailoring considerations
 - existing VM system procedure **INST**
 - planning **INST**
 - Starter System procedure **INST**
- TERMINAL macro **PLNGDE**
- real I/O control block structure
 - for alternate channel specification **PLNGDE**
 - for alternate control unit specification **PLNGDE**
- real reserve/release
 - data protection
 - MVS guest **RGOS**
 - VM/VSE **RGOS**
 - dedicated paths
 - MVS virtual machine **RGOS**
 - VSE virtual machine **RGOS**
- real storage **CPPROG**
 - above 16 Mb **RGOS**
 - managing **CPPROG**
 - preferred machine assist **CPPROG**
 - allocation **INTRO**
 - amount available, specifying **RGOS**
 - calculating maximum size
 - virtual = real area **PLNGDE**
 - changing its contents **CPREF**
 - CP usage, specifying **RGOS**
 - displaying its contents **CPREF**
 - examine with DIAGNOSE code X'04' **SFPROG**
 - in attached processor environment **SFPROG**
 - in multiprocessor environment **SFPROG**
 - Extended Storage Support **PLNGDE**
 - locking selected pages **CPREF**
 - management **CPPROG**
 - lock **CPPROG**
 - swapping **CPPROG**
 - mapping to virtual **INTRO**
 - MVS V = R guest **RGOS**
 - MVS V = V guest **RGOS**
 - optimizing use of **CPPROG**
 - printing contents **CPREF**
 - requirements
 - for CP **PLNGDE**
 - for VM/SP HPO **PLNGDE**
 - saved systems, DASD requirements **PLNGDE**
 - security **INTRO**
 - SYSCOR macro **RGOS**
 - validating **PLNGDE**
- real storage management (RSM) **CPPROG**
- Real Time Monitor Program (VM/RTM) **INST**
 - analyzing performance **RGOS**
- realign data
 - example of **XEDIT**
 - sequence used to **XEDIT**
- REALTIMER
 - directory option **TSAFREF**
 - operand of OPTION directory control statement **PLNGDE**
 - option **CPPROG**
 - defining in directory **PLNGDE**
 - MVS virtual machine **RGOS**
 - VSE virtual machine **RGOS**
- reason codes, SEVER
 - Collection Resource Management System Service (*CRM) **TSAFREF**
 - Identify System Service (*IDENT) **TSAFREF**
- RECEIVE
 - area **TSAFREF**
 - command **APGDE**
 - acknowledge receipt of file **CMSREF**
 - description **CMSREF**
 - enhancement **REL5GDE**
 - example of use **INTRO**
 - LOG option **CMSREF**
 - NEWDATE option **CMSREF**
 - NOLOG option **CMSREF**
 - NOTEBOOK * option **CMSREF**
 - NOTEBOOK fn option **CMSREF**
 - OLDDATE option **CMSREF**
 - PURGE option **CMSREF**
 - REPLACE option **CMSREF**
 - STACK option **CMSREF**
 - to receive a reader file **CMSLOT**
 - to rename a reader file **CMSLOT**
 - to replace a reader file **CMSLOT**
 - function of APPC/VM
 - See RECEIVE function of APPC/VM
 - IUCV function **SFPROG**
 - parameter list format **SFPROG**
 - trace table entry format **SFPROG**
 - using **SFPROG**
 - parameter of SENDDATA **TSAFREF**
 - VMCF function **SFPROG**
 - state **TSAFREF**
- RECEIVE function of APPC/VM **TSAFREF**
 - addressing for **TSAFREF**
 - completion **TSAFREF**
 - condition codes **TSAFREF**
 - from communication partner **TSAFREF**
 - mapped with APPC **TSAFREF**
 - overview **TSAFREF**
 - parameter list **TSAFREF**
 - parameters
 - BUFFER TSAFREF**
 - BUFLen TSAFREF**
 - BUFLIST TSAFREF**
 - MF=L TSAFREF**
 - PATHID TSAFREF**
 - PRMLIST TSAFREF**
 - WAIT TSAFREF**
 - program exceptions **TSAFREF**
 - return codes **TSAFREF**
 - scenario **TSAFREF**
 - state changes **TSAFREF**
 - use in sample resource program **TSAFREF**
 - use in sample user program **TSAFREF**
- RECEIVE_AND_WAIT, APPC verb
 - abend conditions **TSAFREF**
 - mapped with APPC/VM **TSAFREF**
 - parameters **TSAFREF**
 - state changes **TSAFREF**

receiving

- a service reply
 - assembler **SRPI**
 - CPRB SRPI**
 - REXX and EXEC 2 SRPI**
- control **GCSREF**
- data **TSAFREF**
- file in reader **CMSLOT**
- files **PRIMER**
- messages **CMSLOT**
- notes **PRIMER, CMSLOT**
- signals from the signal system service **SFPROG**
- the service request
 - assembler **SRPI**
 - assembler registers at server
 - control **SRPI**
 - REXX and EXEC 2 SRPI**
- recent processor history **CPPROG**
- RECFM**
 - attribute, example of use **INTRO**
 - option
 - of **COPYFILE** command **CMSREF**
 - of **EXTRACT XEDIT**
 - of **FILEDEF** command **CMSREF, APGDE, CMSPROG**
 - of **QUERY XEDIT**
 - of **SET XEDIT**
 - of **TRANSFER XEDIT**
- reclaiming
 - files before purging **CPREF**
 - spool files **CPREF**
 - transmitted files **CPREF**
- RECOMP** option of **FORMAT** command **CMSREF**
- reconfiguring virtual machine **CPREF**
- reconnecting **TERMREF**
 - after disconnect **XEDIT**
 - an **XEDIT** session **XEDIT**
 - text terminal **TERMREF**
 - your terminal (using **LOGON**) **TERMREF**
- record format **XEDITUG**
 - defining **XEDIT**
 - DOS files **CMSPROG**
 - fixed, logical record length of **XEDIT**
 - of CMS file
 - changing **CMSREF**
 - listing **CMSREF**
 - of file, specifying **CMSREF**
 - program input and output files **CMSPROG**
 - records that can be punched **CMSREF**
 - variable, logical record length of **XEDIT**
- record length **XEDITUG**
 - default used by CMS editor **CMSREF**
 - in typewriter mode **XEDITUG**
 - modifying **CMSREF**
 - of CMS file **CMSUG**
 - changing **CMSREF**
 - listing **CMSREF**
 - maximum lengths for **PRINT** command **CMSREF**
 - specifying with **FILEDEF** command **CMSREF**
- RECORD** operand of **SET** command **CPREF**

recording

- I/O errors with **CPEREP** program **OPGDE**
- messages in a file **PRIMER**
- mode, setting
 - device **CPREF**
 - error **CPREF**
- warnings in a file **PRIMER**
- records
 - accounting **SFPROG**
 - created by user **CPPROG**
 - for **AUTOLOG, LOGON, and LINK**
 - journaling **CPPROG**
 - format for dedicated devices **CPPROG**
 - format for virtual machines **CPPROG**
 - data **INTRO**
 - maximum usable number
 - per CMS file **PLNGDE**
 - number specifying next record to be
 - accessed **MACREF**
 - sequencing **CMSPROG**
 - to be read or written, specifying **MACREF**
 - variable-length **INTRO**
- RECOVER XEDITUG**
 - command **CMSLOT, PRIMER**
 - example of **XEDITUG**
 - in typewriter mode **XEDITUG**
 - practice exercise using **XEDITUG**
 - subcommand of **XEDIT** command **APGDE**
- RECOVER** subcommand **XEDIT**
- recovering deleted lines **CMSLOT, PRIMER, XEDIT, XEDITUG**
 - in typewriter mode **XEDITUG**
- RECOVERV** command **CPPROG**
- recovery
 - CMS abend **CMSPROG**
 - features **OPGDE**
 - from system failures **OPGDE**
 - machine **PLNGDE**
 - management
 - in multiprocessor mode **OPGDE**
 - support **OPGDE**
- Recovery Management Support (RMS) **CPPROG**
- recursive calls
 - See **CALL** instruction
- recursive editing **XEDIT**
- recursive execution **EXEX2**
- red type
- redefining a character **XEDITUG**
 - in typewriter mode **XEDITUG**
- redisplay of input line for SNA terminals **SFPROG**
- redisplaying a subcommand **XEDITUG**
 - using **& XEDIT**
 - using **? XEDIT**
- REDTYPE** option of CMS **QUERY** command **CMSREF**
- reducing
 - CP overhead for virtual machine I/O **CPPROG**
 - paging activity **CPPROG, RGOS**
 - SIO operations **CPPROG**
 - virtual machine SIOs **CPPROG**
- reenterable code, usage **CPPROG**
- reenterable program save areas **GCSREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- reentrant code **MACREF**
 - generating, using **LINEDIT** macro **MACREF**
- reexecuting a subcommand **XEDITUG**
 - using = **XEDIT**
 - using **REPEAT XEDIT**
- references, unresolved
 - resolving **CMSPROG**
 - with **INCLUDE** command **CMSREF**
 - with **LOAD** command **CMSREF**
- referring to a line **XEDITUG**
- REFR** option of **LKED** command **APGDE**, **CMSREF**
- REFRESH** command **CMSLOT**, **CMSUG**
 - description **CMSREF**
 - format **CMSREF**
 - messages **CMSREF**
 - summary **CMSREF**
- REFRESH** subcommand **XEDIT**
- refreshing a **FILELIST** screen **CMSLOT**, **PRIMER**
- reg, described **CPREF**
- REG/PSW** keyword of **SYMP** subcommand **DIAG**
- regcount of **DISPLAY** command **CPREF**
- REGEQU** macro **APGDE**, **CMSPROG**
 - See also **MACREF**
 - generating a list of **EQU** statements **MACREF**
- register
 - contents after **CMS** command execution **CMSPROG**
 - restoration **CMSPROG**
 - save areas, Vector Facility **CPPROG**, **OPGDE**
 - usage **CMSPROG**
- register convention **DIAG**
- register usage **MACREF**
 - at entry to server (assembler) **SRPI**
- registers **APGDE**
 - base **GCSREF**
 - definition **PRGDE**
 - displaying
 - extended control **CPREF**
 - floating-point **CPREF**
 - general **CPREF**
 - linkage **APGDE**, **GCSREF**
 - printing
 - extended control **CPREF**
 - floating-point **CPREF**
 - general **CPREF**
 - register 15
 - return code 0 **GCSREF**
 - return code 12 **GCSREF**
 - return code 8 **GCSREF**
 - reserved in **CMS** **APGDE**
 - return code **APGDE**
 - usage, CP (control program) **CPPROG**
 - use of **PRGDE**
 - Vector Facility
 - changing the contents of **APGDE**
 - displaying **APGDE**
 - vector mask
 - displaying **APGDE**
 - vector status
 - displaying **APGDE**
- regression
 - definition **INST**
 - prevent **INST**
- REGS** subcommand of **DUMPSCAN** command
 - description **DIAG**
 - error message **DIAG**
 - format **DIAG**
 - functional category **DIAG**
 - response **DIAG**
- sample output **DIAG**
 - usage **DIAG**
- REINIT** statement in **ISPF** panels **APGDE**
- REIPL** operand of **SHUTDOWN** command **CPREF**, **CPPROG**
- REJECT**
 - IUCV** function **SFPROG**
 - parameter list format **SFPROG**
 - trace table entry format **SFPROG**
 - using **SFPROG**
 - VMCF** function **SFPROG**
- rejecting a connection **TSAFREF**
- RELATED HELP** **CMSUG**
- RELATED** task menus **XEDIT**
- relative column number
 - specifying column-target as **XEDIT**
- relative displacement
 - specifying target as **XEDIT**, **XEDITUG**
 - example of **XEDITUG**
- relative record number **CMSPROG**
- release **CCW**, definition of
 - MVS** guest **RGOS**
 - VM/VSE** **RGOS**
- RELEASE** command **APGDE**, **CMSLOT**, **GCSREF**, **PRIMER**
 - description **CMSREF**, **GCSREF**
 - DET** operand **CMSREF**, **GCSREF**
 - updating master file directory **CMSUG**
 - used with **OS** disks **CMSPROG**
- release pages with **DIAGNOSE** code **X'10'** **SFPROG**
- releasing
 - a logical operator **SFPROG**
 - LGLOPR** action routine **SFPROG**
 - LGLOPR** command **SFPROG**
 - another person's disk **PRIMER**
 - dedicated devices **CPREF**
 - disks **CMSUG**, **GCSREF**
 - read-only extensions **CMSUG**
 - storage
 - allocated by **DMSFREE** **CMSPROG**
 - allocated by **GETMAIN** **CMSPROG**
 - by **abend** **CMSPROG**
 - by an **abend** **CMSPROG**
 - by **DMSFRET** **CMSPROG**
 - by **DMSPAG** **CMSPROG**
 - by **FREEMAIN** macro **CMSPROG**
 - by the **STRINIT** macro **CMSPROG**
 - temporary disks **CPREF**
- Reliability, Availability and Serviceability (RAS)
 - enhancements
 - alternate nucleus support **REL5GDE**
 - CPTRAP**, **TRAPRED**, and **QUERY** **REL5GDE**
 - IPCS** **REL5GDE**
 - LOGON/LOGOFF** **REL5GDE**
 - SPOOL** file compression support **REL5GDE**
 - overview **REL5GDE**
 - references to other publications **REL5GDE**
- RELOAD** command of **SQL** **APGDE**
- relocatable
 - files
 - modules, link-editing in **CMS/DOS** **CMSPROG**
 - object files, loading into
 - storage for execution **CMSPROG**
 - using the **LOAD** and **START** commands **CMSPROG**
 - libraries (VSE), displaying directories of **CMSREF**
 - modules, link-editing in **CMS/DOS** **CMSREF**
 - relocation dictionary assembler **CMSREF**
 - RELPAG** option of **CMS QUERY** command **CMSREF**

- remainder **SPIUG**
 - definition **SPIREF**
 - description of **SPIREF**
 - operator **SPIREF**, **SPIUG**
- remote
 - and VM/VTAM terminals **REL5GDE**
 - control blocks, new and changed **REL5GDE**
 - macros, new and changed **REL5GDE**
 - modules, new and changed **REL5GDE**
 - attachments, 3270s, planning considerations **PLNGDE**
 - devices
 - VM under VM **RGOS**
 - VM/VSE **RGOS**
 - site, DDP defined **INTRO**
 - spooling
 - See remote spooling
 - terminals
 - connecting **CPREF**
 - using an editor **CMSUG**
 - 3270's, restrictions **PLNGDE**
- REMOTE** option
 - of **EXTRACT XEDIT**
 - of **QUERY CMSREF**, **XEDIT**
 - of **SET XEDIT**
- remote spooling
 - devices supported by VM/SP HPO **PLNGDE**
 - networks
 - receiving files **CPREF**
 - transmitting files **CPREF**
 - TAG** command **CPREF**
- Remote Spooling Communication Subsystem (RSCS)
 - See **RSCS**
- remotely attached terminal **TERMREF**
- remove
 - bad fix **INST**
 - fix-in-error **INST**
 - multiple PTFs, example **INST**
 - single PTF, example **INST**
- Remove List
 - contents **INST**
 - definition **INST**
 - example **INST**
- removing
 - closed spool files **CPREF**
 - dedicated devices **CPREF**
 - macros in virtual storage **XEDIT**
 - plus signs and leading zeros **EXEX2**
 - prefix subcommands **XEDIT**
 - real devices **CPREF**
 - spool files **CPREF**
 - virtual devices from virtual machine **CPREF**
- RENAME** command **APGDE**, **CMSLOT**, **PRIMER**
 - changing filemode numbers only **CMSUG**
 - description **CMSREF**
 - NOTYPE** option **CMSREF**
 - NOUPDIRT** option **CMSREF**
 - renaming CMS files **CMSUG**
 - TYPE** option **CMSREF**
 - UPDIRT** option **CMSREF**
- renaming
 - a file **PRIMER**
 - in reader **CMSLOT**
 - on disk **CMSLOT**
 - CMS files **CMSUG**
- RENT** option
 - of **ASSEMBLE** command **CMSREF**
 - of **LKED** command **CMSREF**, **APGDE**
- RENUM** subcommand **XEDIT**
- renumber line numbers
 - of **VSBASIC** or **FREEPORT** files **XEDIT**
- REORDER** = parameter of **SYSPAG** macro **CPPROG**
- reordering
 - automatic
 - of **SYSPAG** areas **CPPROG**
 - batch jobs **CMSUG**
 - data with **TRANSLATE** function **SPIREF**
 - spool files **CPREF**
 - the batch facility **OPGDE**
- REP** control record, **ZAP** program
 - example **INST**
 - function **INST**
 - special consideration
 - during **ZAP** processing **INST**
 - usage notes **INST**
- REP** function of **MACLIB** command **APGDE**
- REP** option
 - of **INCLUDE** command **CMSREF**
 - of **LOAD** command **CMSREF**
 - of **MACLIB** command **CMSREF**
- repair facilities **OPGDE**
- REPEAT** command **CMSUG**, **CPREF**, **INTRO**
 - described **CPREF**
 - operands
 - HOLD CPREF**
 - lprt CPREF**
 - nnn CPREF**
 - raddr CPREF**
 - responses **CPREF**
- REPEAT** subcommand **XEDIT**
- repeated substitution **SPIUG**
- repeating
 - a string with **COPIES SPIREF**
 - last command **CMSLOT**
 - last subcommand **XEDIT**
 - lines **EXEX2**
 - the display of a subcommand **XEDITUG**
 - the execution of a subcommand **XEDITUG**
 - XEDIT** commands **PRIMER**
- repetitive loops **SPIUG**
 - altering flow **SPIREF**
 - controlled repetitive loops **SPIREF**
 - exiting **SPIREF**
 - simple do group **SPIREF**
 - simple repetitive loops **SPIREF**
- repetitive output **DIAG**
- replace
 - file in reader **CMSLOT**
 - line in a file **CMSLOT**
 - option
 - of **COPYFILE** command **CMSREF**
 - of **LOADLIB** command **CMSREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- of NOTE command **CMSREF**
- of RECEIVE command **CMSREF**
- subcommand
- replace (**REP**)
 - image of statement in load map **CMSREF**
 - loader control statement **CMSREF**
- REPLACE** command **CMSLOT**
- REPLACE** in typewriter mode **XEDITUG**
- REPLACE** statement **CMSPROG**
- REPLACE** subcommand of **XEDIT** command **APGDE**, **XEDIT**
 - example of **XEDIT**
 - with DBCS strings **XEDIT**
- replacing
 - a file **PRIMER**
 - a line in typewriter mode **XEDITUG**
 - a logical operator **SFPROG**
 - LGLOPR** action routine **SFPROG**
 - LGLOPR** command **SFPROG**
 - characters
 - using **COVERLAY XEDIT**
 - using **CREPLACE XEDIT**
 - current line **XEDIT**
 - data
 - See replacing data
 - member
 - of a **MACLIB** in **CMS/DOS CMSPROG**
 - of a **MACLIB** in **OS CMSPROG**
- replacing data
 - globally **XEDITUG**
 - in typewriter mode **XEDITUG**
 - selectively **XEDITUG**
 - in typewriter mode **XEDITUG**
 - using **CHANGE XEDITUG**
 - in typewriter mode **XEDITUG**
 - using **COVERLAY XEDITUG**
 - using **CREPLACE XEDITUG**
- REPLY**
 - IUCV** function **SFPROG**
 - parameter list format **SFPROG**
 - trace table entry format **SFPROG**
 - using **SFPROG**
 - VMCF** function **SFPROG**
- REPLY** command **GCSREF**, **PLNGDE**
 - description **GCSREF**
- replying to messages **GCSREF**, **PLNGDE**
- reporting problems **DIAG**
- reporting, problem **INTRO**
- reposition data **XEDITUG**
- repositioning output **CPREF**
- repository
 - files
 - creating message **CMSPROG**
 - message **CMSPROG**
 - message **REL5GDE**
 - accessing messages **REL5GDE**
 - compiling using **GENMSG REL5GDE**
 - making it available
 - using **SET LANGUAGE REL5GDE**
 - TSAF** message **TSAFREF**
- REPRO** access method services function **CMSPROG**
- Reqby Log **INST**
 - definition **INST**
 - example **INST**
 - types of entries **INST**
- request block for accessing variables **SPIREF**
- REQUEST** command **CMSUG**, **CPREF**, **TERMREF**
 - described **CPREF**
 - responses **CPREF**
 - usage notes **CPREF**
- request confirmation
 - See **SENDCNF** function of **APPC/VM**
- request to send
 - See **SENDREQ** function of **APPC/VM**
- request-to-send interrupt **TSAFREF**
- request, status information **INTRO**
- REQUEST_TO_SEND**, **APPC** verb
 - abend conditions **TSAFREF**
 - mapped with **APPC/VM TSAFREF**
 - parameters **TSAFREF**
 - state changes **TSAFREF**
- REQUEST_TO_SEND_RECEIVED** parameter (**APPC**)
 - of **CONFIRM TSAFREF**
 - of **RECEIVE_AND_WAIT TSAFREF**
 - of **SEND_DATA TSAFREF**
 - of **SEND_ERROR TSAFREF**
- requesters, description **INTRO**
- requesting
 - information **GCSREF**
 - machine configuration **CPREF**
 - paging information **CPREF**
 - scheduling information **CPREF**
 - system status **CPREF**
- required products **SRPI**
- requirements, changing the directory **PLNGDE**
- rerunning commands **PRIMER**
- RESANY** operand of **IUCV** directory
 - control statement **PLNGDE**
- RESCOUNT** field of **SEND** data (***CRM**) **TSAFREF**
- reservation of keywords **SPIREF**
- reserve **CCW**, definition of
 - MVS** guest **RGOS**
 - VM/VSE** **RGOS**
- RESERVE** command **SFPROG**
 - CP SET** command **RGOS**
 - description **CMSREF**
 - format of **RESERVED** file **CMSREF**
 - of **CMS QUERY** command **CMSREF**
 - of **SET** command **OPGDE**
 - use with **DISKID** function **CMSREF**
- RESERVE** operand
 - of **QUERY** command **CPREF**
 - of **SET** command **CPPROG**, **CPREF**
- reserve page, frames for multiple users **CPREF**
- reserve/release
 - CCWs**
 - See reserve/release **CCWs**
 - handling reserve **CCW** **PLNGDE**
 - hardware-supported **PLNGDE**
 - restrictions
 - device sharing between real processors **PLNGDE**
 - device/minidisk sharing **PLNGDE**
 - no dynamic path selection **PLNGDE**
 - shared **DASD** **PLNGDE**
 - summary of support **PLNGDE**
 - support, virtual machine I/O management **CPPROG**
 - using with operating systems **PLNGDE**
 - virtual **PLNGDE**
 - machine simulation **PLNGDE**
- reserve/release **CCWs**
 - MVS** virtual machine
 - DASD** sharing **RGOS**
 - dedicated paths **RGOS**
 - hardware **RGOS**

- how it works **RGOS**
- real **RGOS**
- summary of support **RGOS**
- virtual **RGOS**
- VSE virtual machine
 - dedicated path **RGOS**
 - how it works **RGOS**
 - real **RGOS**
 - summary of support **RGOS**
 - virtual **RGOS**
- reserved
 - IBM class, described **CPREF**, **OPGDE**
 - line
 - displaying data on **XEDIT**
 - displaying the number of **XEDIT**
 - returning to the editor **XEDIT**
 - transferring the number of **XEDIT**
 - page frames **CPPROG**
 - option **OPGDE**
 - performance option **CPPROG**
 - page option, SET command **INTRO**
 - pages **CPPROG**
 - words
 - predefined functions **EXEX2**
 - predefined variables **EXEX2**
- RESERVED** option
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
 - of **SET XEDIT**
 - of **TRANSFER XEDIT**
- reserving
 - a line **XEDIT**
 - DASD space for the CP message file **REL5GDE**
 - using the **NAMLANG** macro **REL5GDE**
 - screen lines for use by a macro
- RESET XEDITUG**
 - command **CMSUG**, **CPREF**, **PRIMER**
 - CP **RGOS**
 - described **CPREF**
 - of **DMS/CMS APGDE**
 - operand, vaddr **CPREF**
 - responses **CPREF**
 - usage notes **CPREF**
 - key **PRIMER**, **XEDITUG**
 - to end insert mode **XEDITUG**
 - operand of **SYSTEM** command **CPREF**
 - option
 - of **INCLUDE** command **CMSREF**, **APGDE**
 - of **LOAD** command **CMSREF**, **APGDE**
 - parameter list **SRPI**
 - state **TSAFREF**
- reset button, simulating **CPREF**
- RESET** subcommand **XEDIT**
 - example of **XEDIT**
- resetting
 - a GCS machine **PLNGDE**
 - column pointer **CMSLOT**
 - OS environment **CMSREF**
 - preferred machine assist feature **CPREF**
 - the prefix area **PRIMER**
 - virtual machine **CPREF**
 - VSAM environment **CMSREF**
- resid
 - described **CPREF**
 - operand of **NETWORK** command **CPREF**
- RESID** parameter of **CONNECT TSAFREF**
- resident
 - nucleus, ending address **INST**
 - pages dumped with stand-alone
 - dump program **DIAG**
- RESOURCE** (SQL table creation authority) **APGDE**
- Resource Access Control Facility (RACF) **CPPROG**, **REL5GDE**
- RESOURCE** ID field
 - of answer data **TSAFREF**
 - of **CONNECT** request (***IDENT**) **TSAFREF**
 - of **REVOKE** request (***CRM**) **TSAFREF**
 - of **SEND** request (***IDENT**) **TSAFREF**
- resource identification codes
 - sample list **PLNGDE**
 - 3270s
 - codes **PLNGDE**
 - sample list **PLNGDE**
- resource operand of **FDISPLAY** subcommand **DIAG**
- RESOURCE** parameter (**APPC**)
 - of **CONFIRM TSAFREF**
 - of **CONFIRMED TSAFREF**
 - of **DEALLOCATE TSAFREF**
 - of **RECEIVE_AND_WAIT TSAFREF**
 - of **REQUEST_TO_SEND TSAFREF**
 - of **SEND_DATA TSAFREF**
 - of **SEND_ERROR TSAFREF**
- resource programs (sample) **TSAFREF**
 - ACCEPT** function **TSAFREF**
 - CONNECT** function **TSAFREF**
 - DCLBFR** function **TSAFREF**
 - DESCRIBE** function **TSAFREF**
 - RECEIVE** function **TSAFREF**
 - RTRVBFR** function **TSAFREF**
 - SENDDATA** function **TSAFREF**
 - SETCMASK** function **TSAFREF**
 - SETMASK** function **TSAFREF**
 - SEVER** function **TSAFREF**
 - TESTCmpl** function **TSAFREF**
 - TESTMSG** function **TSAFREF**
- resources **TSAFREF**
 - authorization to connect to **TSAFREF**
 - authorization to manage **TSAFREF**
 - coordination **PLNGDE**
 - global **TSAFREF**
 - how ***IDENT** selects a resource manager **TSAFREF**
 - identification
 - codes (see resource identification codes)
 - remote 3270 devices **CPREF**
 - management, real **INTRO**
 - identifying multiple resources **TSAFREF**
 - local **TSAFREF**
 - request to send global **TSAFREF**
 - requesting to manage, how
 - *IDENT** processes **TSAFREF**
 - revoking **TSAFREF**
 - revoking your own **TSAFREF**
 - virtual machines connecting to **TSAFREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

processor **CPPROG**
 how allocated **CPPROG**
 respecting case difference **XEDIT**
 responding to prompting messages
 from **AMSERV** in an **EXEC CMSPROG**
RESPONSE class monitor records **CPPROG**
RESPONSE operand of **MONITOR** command **CPREF**
 responses

COMMANDS command **CPREF**
COUPLE command **CPREF**
EXTERNAL command **CPREF**
 for **#CP** command **CPREF**
 for **ACNT** command **CPREF**
 for **ADSTOP** command **CPREF**
 for **ATTACH** command **CPREF**
 for **ATTN** command **CPREF**
 for **AUTOLOG** command **CPREF**
 for **BACKSPAC** command **CPREF**
 for **BEGIN** command **CPREF**
 for **CACHE** command **CPREF**
 for **CHANGE** command **CPREF**
 for **CLOSE** command **CPREF**
 for **CP** command **CPREF**
 for **CPTRAP** command **CPREF**
 for **DCP** command **CPREF**
 for **DEFINE** command **CPREF**
 for **DEFINE** commands **CPREF**
 for **DETACH** command **CPREF**
 for **DIAL** command **CPREF**
 for **DISABLE** command **CPREF**
 for **DISCONN** command **CPREF**
 for **DISPLAY** command **CPREF**
 for **DRAIN** command **CPREF**
 for **DUMP** command **CPREF**
 for **ECHO** command **CPREF**
 for **ENABLE** command **CPREF**
 for **FLUSH** command **CPREF**
 for **FORCE** command **CPREF**
 for **FREE** command **CPREF**
 for **INDICATE** command **CPREF**
 for **INDICATE LOAD** command **CPREF**
 for **INDICATE USER** command **CPREF**
 for **LINK** command **CPREF**
 for **LOADBUF** command **CPREF**
 for **LOADVFCB** command **CPREF**
 for **LOCATE** command **CPREF**
 for **LOCK** command **CPREF**
 for **LOGOFF** command **CPREF**
 for **LOGON** command **CPREF**
 for **MEGNOH** command **CPREF**
 for **MESSAGE** command **CPREF**
 for **MIGRATE** command **CPREF**
 for **MONITOR** command **CPREF**
 for **NETWORK** command **CPREF**
 for **NOTREADY** command **CPREF**
 for **ORDER** command **CPREF**
 for **PER** command **CPREF**
 for **PURGE** command **CPREF**
 for **QUERY** command **CPREF**
 for **QUERY CPUID** command **CPREF**
 for **QUERY FILES** command **CPREF**
 for **QUERY LINKS** command **CPREF**
 for **QUERY LOGMSG** command **CPREF**
 for **QUERY NAMES** command **CPREF**
 for **QUERY PFnn** command **CPREF**
 for **QUERY PROCESSR** command **CPREF**
 for **QUERY READER PRINTER,**
 and **PUNCH** command **CPREF**

for **QUERY SCREEN** command **CPREF**
 for **QUERY SECUSER** command **CPREF**
 for **QUERY SET** command **CPREF**
 for **QUERY SPMODE** command **CPREF**
 for **QUERY S370E** command **CPREF**
 for **QUERY TERMINAL** command **CPREF**
 for **QUERY TIME** command **CPREF**
 for **QUERY USERS** command **CPREF**
 for **QUERY VIRTUAL CHANNELS** command **CPREF**
 for **QUERY VIRTUAL DASD** command **CPREF**
 for **QUERY VIRTUAL GRAF** command **CPREF**
 for **QUERY VIRTUAL LINES** command **CPREF**
 for **QUERY VIRTUAL STORAGE** command **CPREF**
 for **QUERY VIRTUAL TAPES** command **CPREF**
 for **QUERY VIRTUAL UR** command **CPREF**
 for **QUERY VIRTUAL vaddr** command **CPREF**
 for **QUERY VMSAVE** **CPREF**
 for **READY** command **CPREF**
 for **REPEAT** command **CPREF**
 for **REQUEST** command **CPREF**
 for **RESET** command **CPREF**
 for **REWIND** command **CPREF**
 for **SAVESYS** command **CPREF**
 for **SCREEN** command **CPREF**
 for **SEND** command **CPREF**
 for **SHUTDOWN** command **CPREF**
 for **SLEEP** command **CPREF**
 for **SMSG** command **CPREF**
 for **SPACE** command **CPREF**
 for **SPOOL** command **CPREF**
 for **STCP** command **CPREF**
 for **STORE** command **CPREF**
 for **SYSTEM** command **CPREF**
 for **TAG** command **CPREF**
 for **TERMINAL** command **CPREF**
 for **TRACE** command **CPREF**
 for **TRANSFER** command **CPREF**
 for **UNLOCK** command **CPREF**
 for **VARY** command **CPREF**
 for **VMDUMP** command **CPREF**
 from **CMS** commands **CMSUG**
 from **VM/SP** **CMSUG**
IPL command **CPREF**
 mnotes **SYSMSG**
 monitor
 to special tape conditions **CPPROG**
 of **QUERY** command **CPREF**
 sequence indicator **CPREF**
START command **CPREF**
 to **CP** commands
 types of **CPREF**
 unnumbered **SYSMSG**
 vs.system messages **CPREF**
 responsibilities
 for spooling operator **OPGDE**
 of user for **CMS/DOS** **CMSPROG**
 restart facilities **OPGDE**
 in attached processor operations **OPGDE**
 in multiprocessor operations **OPGDE**
 restart button, simulating **CPREF**
RESTART key **RGOS**
RESTART operand of **SYSTEM** command **CPREF**
 restarting
 batch jobs **CMSUG**
 output **CPREF**
 spooling device **CPREF**
 the batch facility **OPGDE**
 virtual machine **CPREF**

RESTORE XEDITUG
 RESTORE control statement of
 DDR (DASD Dump Restore) **CPPROG**
 RESTORE macro (SVC 17) **CMSPROG**
 restore starter system to disk **INST**
 RESTORE subcommand **XEDIT**
 RESTORE WINDOW command **CMSUG**
 description **CMSREF**
 format **CMSREF**
 messages **CMSREF**
 operands
 = (equal sign) **CMSREF**
 wname **CMSREF**
 summary **CMSREF**

restoring
 editing variables **XEDITUG**
 second-level VM **RGOS**
 the screen
 after **LEFT XEDIT**
 after **RIGHT XEDIT**
 variables **SPIREF, XEDIT**

restricted password **REL5GDE**
 auto-deactivation of **CPPROG**
 list **INST**

restricting
 access to CP commands **PLNGDE**
 command use **SFPROG**

restrictions
 access method services and **VSAM**
BDAM CMSPROG
 channel
 model dependent functions **PLNGDE**
 programs **PLNGDE**
 virtual and real **PLNGDE**
 channel-to-channel adapters **PLNGDE**
CMS
 BC mode **PLNGDE**
 CMS simulation of OS **PLNGDE**
CMS/DOS PLNGDE
 displaying time **PLNGDE**
 interfaces **PLNGDE**
 OS and DOS **PLNGDE**
 OS data sets **PLNGDE**
 programs under **CMS/DOS PLNGDE**
 spooling **PLNGDE**
 system logical units **PLNGDE**
VSAM and ISAM Interface Program PLNGDE
CMS/DOS CMSPROG
CMS, saved system CMSPROG
 commands, **OPTIONS COPYFILE PLNGDE**
 conmode
 3270 **PLNGDE**
 3270 and **MVS PLNGDE**
 count-key-data devices **CPPROG**
 CP command for problem determination **RGOS**
 ddnames in OS **VSAM programs CMSPROG**
DSF for full-volume mindisk RGOS
 dynamically modified channel program **PLNGDE**
 embedded blanks in numbers **SPIREF**
 executing OS programs in **CMS CMSPROG**
 Extended Storage Support **PLNGDE**
FB-512 DASD CPPROG
 first character of variable name **SPIREF**
 for CMS users using **VSE/SP 2.1 RGOS**
 for using **DDR CPPROG**
 for 3215 terminal console **CANCEL key OPGDE**
GCS supervisor PLNGDE
 imposed by the **VM/Pass thru Facility XEDIT**
 in programming **SPIREF**
I/O
 graphics data stream **PLNGDE**
 I/O device drops ready status **PLNGDE**
 pages for **I/O PLNGDE**
 locked pages **OPGDE**
Mass Storage System
 Central Service Application Program **PLNGDE**
 common inventory and journal **PLNGDE**
 compatibility of
MSC/DMKRIO/IOGEN PLNGDE
 prohibited use **PLNGDE**
 unique volume number **PLNGDE**
 volume serial **PLNGDE**
3330V PLNGDE
 maximum length of results **SPIREF**
minidisk
 cylinder 0 **PLNGDE**
DASD channel program PLNGDE
DASD I/O real search ID PLNGDE
 data buffer area **PLNGDE**
 data buffer area for **FB-512 PLNGDE**
Device Support Facility PLNGDE
Diagnostic Read/Write Home Address PLNGDE
 end-of-cylinder condition **PLNGDE**
FBA and CE area PLNGDE
FBA diagnostic commands PLNGDE
 multitrack search **PLNGDE**
OS/VS and 3375/3380 PLNGDE
 preferred machine assist **PLNGDE**
 seek **PLNGDE**

miscellaneous
 directory control statements **PLNGDE**
 logical device support **PLNGDE**
 non-display read up **PLNGDE**
 small CP option **PLNGDE**
 number of virtual devices **PLNGDE**
 on commands used in **CMS batch facility CMSUG**
 preferred machine assist **CPPROG, PLNGDE, RGOS**
 processor model dependent functions **PLNGDE**
 processors
 application programs and **2K keys PLNGDE**
 channel error recovery **PLNGDE**
 machine layout area **PLNGDE**
 processor identification **PLNGDE**
 simulation of processor models **PLNGDE**
VMSAVE/SAVESYS and 2K/4K keys PLNGDE
158 PLNGDE
2K and 4K keys PLNGDE
 program storage above **16Mb CPPROG**
 programs executing in transient area **CMSPROG**
 reading
 OS data sets **CMSPROG**
 SAM files **CMSPROG**
 real I/O **PLNGDE**
 remote 3270's **PLNGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- reserve/release**
 device sharing between real processors **PLNGDE**
 device/minidisk sharing **PLNGDE**
 no dynamic path selection **PLNGDE**
SEREP program **PLNGDE**
 service record file **PLNGDE**
shadow table
 for V=R guest **RGOS**
 for MVS V=V guest **RGOS**
single processor mode **RGOS**
storage **PLNGDE**
supervisor state **PLNGDE**
timing dependencies
 devices that expect interruptions
 within a fixed time **PLNGDE**
PCI **PLNGDE**
 telecommunication access methods **PLNGDE**
 virtual block multiplexer channel **PLNGDE**
using
 DOS macro libraries in CMS/DOS **CMSPROG**
 minidisks with VSAM data sets **CMSPROG**
 OS programs in CMS/DOS **CMSPROG**
virtual device **PLNGDE**
virtual machines
 control units **PLNGDE**
DIAGNOSE **PLNGDE**
 discontinuous saved segments **PLNGDE**
DUMMY feature **PLNGDE**
I/O errors **PLNGDE**
 integrated emulators **PLNGDE**
IPL command **PLNGDE**
IPL NOCLEAR **PLNGDE**
MVS subsystems and
 applications programs **PLNGDE**
PCI fetch **PLNGDE**
 pseudo-timer **PLNGDE**
Read/Write Direct **PLNGDE**
SET CLOCK **PLNGDE**
size **PLNGDE**
spooling **PLNGDE**
 tape mode setting **PLNGDE**
V=R **PLNGDE**
 1050/152 Model 2
 Data Communication System **PLNGDE**
 1052 console **PLNGDE**
 3066 **PLNGDE**
 3081 **PLNGDE**
VM/370 hardware assist **OPGDE**
 3480 devices for MVS guest **RGOS**
Restructured Extended Executor (REXX) language
APGDE, CMSLOT, INTRO, PRIMER
 compound symbols **APGDE**
DATE function **REL5GDE**
FILEDEF commands in **APGDE**
 function calls for **DIAGNOSE** codes
 X'C8' and X'CC' **REL5GDE**
functions **APGDE**
 interpreter structure **SPIREF**
MACLIBs in **APGDE**
 prototyping algorithms with **APGDE**
 references to other publications **REL5GDE**
 subroutines **APGDE**
 substitution rules **APGDE**
TXTLIBs in **APGDE**
RESULT
 reserved symbol **SPIUG**
 set by **RETURN** instruction **SPIREF**
 special variable **SPIREF**
- results, length of** **SPIREF**
resume
 after an attention interruption **CMSUG**
 execution **DIAG**
 program execution after regaining
 control following a disconnect **CMSUG**
 terminal displays **CMSUG**
RESUME
IUCV function **SFPROG**
 parameter list format **SFPROG**
 trace table entry format **SFPROG**
 using **SFPROG**
VMCF function **SFPROG**
resuming
 execution **CPREF**
 full-screen CMS **PRIMER**
 use of virtual machine after disconnecting **CPREF**
 virtual machine execution **CPREF**
RETAPE macro **APGDE**
retrieve
 a group name with **DIAGNOSE** code X'A0' **SFPROG**
RETRIEVE BUFFER
 See **RTRVBFR** function of **IUCV**
 function of **IUCV** **SFPROG**
 trace table entry format **SFPROG**
 using **SFPROG**
Retrieve function **PRIMER**
 for display terminals **CMSUG**
retrieving
 argument strings with **ARG** **SPIREF**
 commands **PRIMER**
 deleted lines **XEDIT**
 documents, **PROFS** **INTRO**
 lines
 saved by **PUT** **XEDIT**
 saved by **PUTD** **XEDIT**
 previously entered data **CMSUG**
RETRY operand of **SET** command **CPREF**
RETURN CMS subset command to leave subset **CMSUG**
return code
 and macro matrix **SRPI**
 from **MAKEBUF** command, effect
 on **&ERROR** statement **CMSREF**
 from **SENTRIES** effect on **EXEC** procedure **CMSREF**
 in CMS ready message **CMSUG**
return codes **APGDE, EXEC2, PRGDE, SYMSMG**
SRPI variable **RTNC** on return from **SENDREQ** **SRPI**
ACCEPT **TSAFREF**
APPC **TSAFREF**
 as set by host commands **SPIREF**
CMS and **CP** **SPIUG**
CMS in **EXEC** procedure **CMSREF**
CMSIUCV **SFPROG**
CONNECT **TSAFREF**
DASD Block I/O System Service **SFPROG**
DCLBFR **TSAFREF**
DIAGNOSE code
 X'BC' **SFPROG**
 X'CC' **SFPROG**
 X'C8' **SFPROG**
 X'D0' **SFPROG**
 X'D4' **SFPROG**
 X'0C' **SFPROG**
 X'00' **SFPROG**
 X'08' **SFPROG**
 X'10' **SFPROG**
 X'18' **SFPROG**
 X'28' **SFPROG**

X'64' SFPROG
X'68' SFPROG
X'7C' SFPROG
X'74' SFPROG
X'78' SFPROG
X'8C' SFPROG
X'80' SFPROG
X'84' SFPROG
X'94' SFPROG
X'98', subcode X 0000 SFPROG
X'98', subcode X 0004 SFPROG
X'98', subcode X 0008 SFPROG
 displayed in ready message **CMSPROG**
DMSXFLPT CMSPROG
DMSXFLRD CMSPROG
DMSXFLST CMSPROG
DMSXFLWR CMSPROG
 examples **PRGDE**
 field in CPRB on server exit **SRPI**
FINDSYS function **SFPROG**
 from access method services **CMSPROG, CMSREF**
 from CMS DDR Command **SYSMSG**
 from CMS EXEC interpreter **CMSREF**
 from CP DIRECT Command **SYSMSG**
 from EXEC 2 interpreter **CMSREF**
 from IPCS **SYSMSG**
 from SUBCOM function **CMSPROG**
 from System Product interpreter **CMSREF**
HNDIUCV SFPROG
 IBM Enhanced Connectivity Facilities
 and macro matrix **SRPI**
 definitions **SRPI**
 discussion **SRPI**
 environmental errors (X'FFxx') **SRPI**
 host machine error conditions (X'01xx') **SRPI**
 requester errors (X'06xx') **SRPI**
 server errors (X'08xx') **SRPI**
 server/requester errors (X'04xx') **SRPI**
 in **PLIST SRPI**
 in REXX variable **RC SRPI**
 in server request-handling sequence **SRPI**
 in service reply (user defined) **SRPI**
 in variable **RC** or **&RC SRPI**
IUCV
ACCEPT SFPROG
CONNECT SFPROG
DECLARE BUFFER SFPROG
DESCRIBE SFPROG
PURGE SFPROG
QUIESCE SFPROG
RECEIVE SFPROG
REJECT SFPROG
REPLY SFPROG
RESUME SFPROG
SEND SFPROG
SET CONTROL MASK SFPROG
SET MASK SFPROG
SEVER SFPROG
TEST COMPLETION SFPROG
LOADSYS function **SFPROG**
 messages **PRGDE**
 on return from **SENDREQ SRPI**
 on return to requester (in CPRB) **SRPI**
 passed by register 15 **CMSPROG**
PURGESYS function **SFPROG**
 read, write, multi password prompt **SFPROG**
RECEIVE TSAFREF
REXX SPIUG
SENDCNF TSAFREF
SENDCNFD TSAFREF
SENDDATA TSAFREF
SENDERR TSAFREF
SENDREQ TSAFREF
 setting by server in CPRB field **SRPI**
 setting on exit **SPIREF**
SEVER TSAFREF
 Signal System Service **SFPROG**
TESTCMPL TSAFREF
 value in RTNC not allowed (error code 2128) **SRPI**
VMCF SFPROG
RETURN command **APGDE**
 return DASD start of LOGREC area **SFPROG**
RETURN instruction **SPIREF, SPIUG**
RETURN macro **GCSREF, PLNGDE**
 description **GCSREF**
 rc parameter **GCSREF**
 reg parameter **GCSREF**
 t parameter **GCSREF**
 return string, setting on exit **SPIREF**
 return to CMS from CP **APGDE**
RETURN_CODE parameter (**APPC**)
 of **CONFIRM TSAFREF**
 of **DEALLOCATE TSAFREF**
 of **RECEIVE_AND_WAIT TSAFREF**
 of **SEND_DATA TSAFREF**
 of **SEND_ERROR TSAFREF**
 returning
 control from REXX program **SPIREF**
 from a function or routine **SPIUG**
 from CMS subset mode **XEDIT**
 from CP **XEDIT**
REUS
 option of **LKED** command **APGDE, CMSREF**
 subcommand of **DUMPSCAN** command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
 sample output **DIAG**
 usage **DIAG**
REUSEAD DIAG
REVERSE function **SPIREF**
 reverse locate **PRIMER**
 reverse tab key **PRIMER**
 reviewing messages and warnings **PRIMER**
 revoke
 groups that can revoke **TSAFREF**
 your own resources **TSAFREF**
REVOKE operand of **IUCV** directory
 control statement **PLNGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

REWIND

command **APGDE**, **CMSUG**, **CPREF**
 described **CPREF**
 operands, vaddr **CPREF**
 responses **CPREF**
 usage notes **CPREF**
 operand of **SPTAPE** command **CPREF**
 rewinding a real tape **CPREF**
REWRITE operand of **DEFNUC** macro **PLNGDE**
REXX (Restructured Extended Executor) language
APGDE, **CMSLOT**, **INTRO**, **PRIMER**, **PLNGDE**,
XEDITUG
 (Also called System Product Interpreter)
 and ISPF **APGDE**
 basic description **CMSUG**
 compound symbols **APGDE**
 error codes **CMSREF**
 file used as **XEDIT** macro **XEDITUG**
FILEDEF commands in **APGDE**
 functions **APGDE**
 interpreter structure **SPIREF**
 invoking **CMSUG**
MACLIBs in **APGDE**
 prototyping algorithms with **APGDE**
REXX language, interpreted by **CMSUG**
 sample **EXECs** **CMSUG**
 source, regeneration **INST**
 subroutines **APGDE**
 substitution rules **APGDE**
 tracing programs interpreted by **CMSREF**
TXTLIBs in **APGDE**
 writing **EXECs** for the **CMSUG**
RGTLLEFT subcommand **XEDIT**
RIGHT XEDITUG
 command of **DMS/CMS** **APGDE**
 function **SPIREF**
 right-justified **EXEX2**
 right shift **XEDIT**
RIGHT subcommand **XEDIT**
 example of **XEDIT**
 ring of files **XEDIT**, **XEDITUG**
 editing **XEDITUG**
 illustration of **XEDITUG**
RING option
 of **EXTRACT XEDIT**
 of **QUERY XEDIT**
RIOBLOK subcommand of **DUMPSCAN** command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
 sample output **DIAG**
 usage **DIAG**
RIOGEN macro
 example **PLNGDE**
 format **PLNGDE**
 operands
ALTCONS **PLNGDE**
CONS **PLNGDE**
SRF **PLNGDE**
RL command
 See **RDRLIST** command
RLD option of **ASSEMBLE** command **CMSREF**
RLDSAVE option
 of **INCLUDE** command **CMSREF**
 of **LOAD** command **CMSREF**
RLSE output field of **STAT** command **DIAG**

RMS (Recovery Management Support) **CPPROG**
RMSIZE operand of **SYSCOR** macro **PLNGDE**
RMSIZE parameter of **SYSCOR** macro **CPPROG**
RMSIZE parameter of **SYSCOR** macro **RGOS**
ROLLBACK WORK command **APGDE**
 of **SQL** **APGDE**
 rounding
 definition **SPIREF**
 numbers **SPIUG**
 using a character string as a number **SPIREF**
ROUTE command **CMSUG**, **REL5GDE**
 description **CMSREF**
 format **CMSREF**
 messages **CMSREF**
 of **CMS QUERY** command **CMSREF**
 operands
 * (asterisk) **CMSREF**
ALARM **CMSREF**
CMS **CMSREF**
CP **CMSREF**
MESSAGE **CMSREF**
 msgclass **CMSREF**
NETWORK **CMSREF**
NOALARM **CMSREF**
NONOTIFY **CMSREF**
NOTIFY **CMSREF**
SCIF **CMSREF**
 vname **CMSREF**
WARNING **CMSREF**
 summary **CMSREF**
 usage notes **CMSREF**
ROUTE statement **SFPROG**
 See also programmable operator facility
 routines
 See also functions
 See also subroutines
 access verification **CPPROG**
 action **SFPROG**
 routing **TSAFREF**
 dynamic configuration **TSAFREF**
 failure **TSAFREF**
 selection **TSAFREF**
 tables for programmable operator **REL5GDE**
 routing operand of **FDISPLAY** subcommand **DIAG**
 routing table
 for programmable operator **INTRO**, **SFPROG**
RPL macro (**VSAM**) **GCSREF**
 acb parameter **GCSREF**
 area parameter **GCSREF**
 arealen parameter **GCSREF**
 arg parameter **GCSREF**
 description **GCSREF**
 ecb parameter **GCSREF**
 keylen parameter **GCSREF**
 nextrpl parameter **GCSREF**
 optcd parameter **GCSREF**
 reclen parameter **GCSREF**
RPWLIST DATA **INST**
 file **PLNGDE**
RR option in **LINK** command **CMSLOT**
RSCODE field
 of answer data **TSAFREF**
 of **SEND** data (*CRM) **TSAFREF**
RSCS (Remote Spooling Communications Subsystem)
INST, **CPPROG**, **PLNGDE**, **TERMREF**
 dump **INTRO**
 help file **DIAG**
 networking **INTRO**, **TERMREF**

networking **CMSUG, INTRO, TERMREF**
 programmable operator facility relationship **SFPROG**
 publications **TERMREF**
 spooling to remote locations **OPGDE**
 userid **INST**
 wait state codes **SYMSMSG**
 Wait State Codes **SYMSMSG**
RSCSIPCS MAP DIAG
RSCSNET DIAG
MAP DIAG
RSCSV2 userid **INST**
RSERV command
 description **CMSREF, CMSPROG**
 DISK option **CMSREF**
 examples **CMSPROG**
 PRINT option **CMSREF**
 PUNCH option **CMSREF**
 TERM option **CMSREF**
RSM (real storage management) **CPPROG**
RSSIZE operand of **SYSCOR** macro **PLNGDE**
RSSIZE parameter of **SYSCOR** macro **CPPROG**
RSSIZE parameter of **SYSCOR** macro **RGOS**
RT (Resume Type) immediate command **CMSUG**
SET CMSTYPE RT command **SPIUG**
RTABLE (routing table) **SFPROG**
 See also programmable operator facility
RTARGET option of **ALL XEDIT**
RTRVBFR function of **IUCV TSAFREF**
 communication partner, affect on **TSAFREF**
 completion **TSAFREF**
 condition codes **TSAFREF**
 parameter list **TSAFREF**
 program exceptions **TSAFREF**
 return codes **TSAFREF**
 state changes **TSAFREF**
 use in sample resource program **TSAFREF**
 use in sample user program **TSAFREF**
 rules for entering subcommands **XEDIT**
RUN
 command **APGDE, INTRO**
 description **CMSREF**
 operand
 of **SET** command **CPREF**
 of **SPTAPE** command **CPREF**
 of **TRACE** command **CPREF**
 option of **PER** Command **CPREF**
 subcommand
 of **TESTCOB** command **APGDE**
 of **TESTFORT** command **APGDE**
 run list **CPPROG, REL5GDE**
 determining whether it is working properly **CPPROG**
 finding place on **CPREF**
 lock **CPPROG**
 run user requests monitored in **CP**
 internal trace table **CPREF**
 running
 a compiler **PRIMER**
 a program **CMSLOT, PRIMER**
 an **EXEC PRIMER**
 commands again **PRIMER**
 multiple VSE virtual machines **RGOS**
 off the end of a program **SPIREF**
 the programmable operator
 from **NCCF** or **NetView SFPROG**
TSAF TSAFREF
 VM under VM **RGOS**
RUNNING
 status on display screen **CMSUG**
 terminal status **APGDE**
RUNTSAF command **INTRO, TSAFREF**
RUNUSER (current user) **DIAG**
RX prefix on external routines **SPIREF**
RXSYSFN description **SPIREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

S

- S prefix macro **XEDIT**
 S prefix subcommand of XEDIT command **APGDE**
 S-disk
 accessed after IPLing CMS **CMSREF**
 CMS system disk accessing **PLNGDE**
S-STAT CMSPROG
S/370 Assembler PLNGDE
SAD frames OPGDE, RGOS
SAD MACRO DIAG
SADDUMP EXEC DIAG
SADGEN ASSEMBLE file DIAG
SADGEN TEXT file DIAG
SADUMP
 example **DIAG**
 EXEC DIAG
 operand of SPTAPE command **CPREF**
SAM (sequential access method)
 declarative macros **CMSPROG**
 I/O macros **CMSPROG**
 reading **CMSPROG**
SAME option of INCLUDE command **CMSREF**
SAMGEN EXEC
 function **INST**
 requirements for installation **INST**
 used to install CMSBSAM **INST**
 sample APAR form **DIAG**
 sample CMS IUCV program **SFPROG**
 sample directory
 for 3350 **PLNGDE**
 for 3375 **PLNGDE**
 for 3380 **PLNGDE**
 for 3380-E4 **PLNGDE**
 sample DMKRIO
 for 3350 **PLNGDE**
 for 3375 **PLNGDE**
 for 3380 **PLNGDE**
 sample DMKSNT
 for 3350 **PLNGDE**
 for 3375 **PLNGDE**
 for 3380 **PLNGDE**
 sample DMKSYS
 for 3350 **PLNGDE**
 for 3375 **PLNGDE**
 for 3380 **PLNGDE**
 sample EXEC 2 files **EXEX2**
SAMPLE operand of MONITOR command **CPREF**
 sample programs
 See examples
 sample resource program **TSAFREF**
 ACCEPT function **TSAFREF**
 CONNECT function **TSAFREF**
 DCLBFR function **TSAFREF**
 DESCRIBE function **TSAFREF**
 RECEIVE function **TSAFREF**
 RTRVBFR function **TSAFREF**
 SENDDATA function **TSAFREF**
 SETCMASK function **TSAFREF**
 SETMASK function **TSAFREF**
 SEVER function **TSAFREF**
 TESTCMPL function **TSAFREF**
 TESTMSG function **TSAFREF**
 sample session
 of IPCSDUMP **DIAG**
 using PROB command **DIAG**
 sample STALL LOCAL file **DIAG**
 sample terminal sessions
 for DOS programmers **CMSPROG**
 for OS programmers **CMSPROG**
 using access method services **CMSPROG**
 sample user program **TSAFREF**
 CONNECT function **TSAFREF**
 DCLBFR function **TSAFREF**
 RECEIVE function **TSAFREF**
 RTRVBFR function **TSAFREF**
 SENDDATA function **TSAFREF**
 SEVER function **TSAFREF**
SASSIST OFF operand
 of SET command **CPPROG**
SASSIST ON operand
 of SET command **CPPROG**
SASSIST operand
 of QUERY command **CPREF**
 of SET command **CPREF, OPGDE**
 save areas **GCSREF**
 convention
 BALRSAVE DIAG
 DUMPSAVE DIAG
 FREESAVE DIAG
 FREWORK DIAG
 LOCKSAVE DIAG
 LOKSAVE DIAG
 MFASAVE DIAG
 SAVEAREA DIAG
 SIGSAVE DIAG
 SVCREGS DIAG
 SWTHSAVE DIAG
 nonreenterable program **GCSREF**
 reenterable program **GCSREF**
 register, Vector Facility **CPPROG, OPGDE**
 Vector Facility **CPPROG**
 save automatically **CMSLOT**
SAVE command **APGDE, CMSLOT, PRIMER**
 in BASIC **PRIMER**
SAVE macro **GCSREF, PLNGDE**
 description **GCSREF**
 id name parameter **GCSREF**
 reg parameter **GCSREF**
 t parameter **GCSREF**
SAVE subcommand **XEDIT**
 changing file identifier **CMSUG**
 of PER command **CPREF**
 of XEDIT command **APGDE**
 example of use **INTRO**
 sub-commands, **APPEND CPREF**
 traceset **CPREF**
 writing file onto disk **CMSUG**
 save, automatic **XEDITUG**
 in typewriter mode **XEDITUG**
SAVEAREA DIAG
 saved systems
 calculating DASD space **PLNGDE**
 CMS **PLNGDE**
 DASD requirements **PLNGDE**
 defining **PLNGDE**
 definition **CPPROG**
 description **PLNGDE**
 installing **PLNGDE**
 SNTMAP EXEC PLNGDE
 loading **CPREF**

names, querying **CMSREF**
 naming **PLNGDE**
 restrictions for CMS **CMSPROG**
 security **PLNGDE**
 saved virtual storage **OPGDE**
SAVEFD command **CMSPROG**, **REL5GDE**
SAVENCP command **INST**
 for 37XX control program **CPPROG**
 format **INST**
 function **INST**
 how it works **INST**
 options **INST**
 use of **INST**
 used by GEN3705 command **INST**
 using to read 3704/2705 control program
 load module **INST**
SAVERETN **DIAG**
SAVESEQ operand of **NAMESYS** macro **PLNGDE**
SAVESEQ priority value **CPPROG**
SAVESYS command **CMSUG**, **CPPROG**, **CPREF**,
PLNGDE
 described **CPREF**
 operands
 systemname **CPREF**
 responses **CPREF**
 saving
 errors **PLNGDE**
 usage notes **CPREF**
SAVESYS operand of **DEFNUC** macro **PLNGDE**
 saving
 a BASIC program **PRIMER**
 a file
 using **AUTOSAVE** **CMSLOT**, **XEDIT**
 using **FILE** **XEDIT**
 using **SAVE** **CMSLOT**, **XEDIT**
 a list of files **PRIMER**
 a 3800 named system
 with **DIAGNOSE** code X'74' **SFPROG**
CMS **CMSPROG**
 CP message repository
 DIAGNOSE code X'CC' **SFPROG**
 editing variables **XEDITUG**
 history information **CMSPROG**
 messages in a file **PRIMER**
 national language files
 for CP and CMS **SFPROG**
 for GCS **SFPROG**
 storage space **CPREF**
 the 370X control program **SFPROG**
 the contents of GCS machines **PLNGDE**
 the CP and CMS language files **REL5GDE**
 using the **LANGGEN** command **REL5GDE**
 variables **XEDIT**
 virtual machine data **CPREF**
 warnings in a file **PRIMER**
 your GCS system **PLNGDE**
SAY (REXX instruction) **CMSLOT**, **PRIMER**,
SPIREF, **SPIUG**
 scale **PRIMER**
 changing location or display **XEDITUG**
 defining display features **XEDITUG**
 displaying
 using **SCALE** (prefix subcommand) **XEDIT**
 using **SET SCALE** **XEDIT**
 when defining mask **XEDIT**
 example of **XEDITUG**
 illustration of **XEDIT**
 location on screen **XEDITUG**
 removing from screen **XEDIT**
SCALE option
 of **EXTRACT** **XEDIT**
 of **QUERY** **XEDIT**
 of **SET** **XEDIT**
 of **TRANSFER** **XEDIT**
SCALE prefix subcommand **XEDIT**
SCAN operand of **SPTAPE** command **CPREF**
 scanning a file **XEDIT**
SCBLOCK control block created by **SUBCOM** **CMSPROG**
SCBLOCK macro **CMSPROG**
SCBLOK (swap control block) **CPPROG**, **CPPROG**
 scenario of GCS in VM/SP **GCSREF**
SCF (Service Control File)
 definition **INST**
 example **INST**
 keyword values **INST**
SCHANGE macro **XEDIT**
 assigned to a PF key **XEDIT**
 used with **AUTOSAVE ON** **XEDIT**
SCHEDX macro **GCSREF**, **PLNGDE**
 description **GCSREF**
 exit parameter **GCSREF**
 id parameter **GCSREF**
 uword parameter **GCSREF**
SCHEDULE class monitor records **CPPROG**
SCHEDULE operand of **MONITOR** command **CPREF**
 scheduler **CPPROG**
 differences
 monitor considerations because of **CPPROG**
 enhancements **REL5GDE**
 described **REL5GDE**
 modules, new and changed **REL5GDE**
 entry, monitored in CP internal trace table **CPREF**
 scheduling
 exits **PLNGDE**
 information requesting **CPREF**
 scientific notation **SPIREF**
SCIF (Single Console Image Facility) **SFPROG**
 controlling multiple virtual machines **SFPROG**
 using **SFPROG**
SCOPE option
 of **EXTRACT** **XEDIT**
 of **QUERY** **XEDIT**
 of **SET** **XEDIT**
SCPINFO command **SFPROG**
 usage with monitoring and service
 support facility **PLNGDE**
SCLVL (keyword definition) **DIAG**
SCREEN command **CMSUG**, **CPREF**
 described **CPREF**
 operands
 ALL **CPREF**
 area **CPREF**
 CPOut **CPREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

extcolor CPREF
 exthilght CPREF
 INArea CPREF
 INRedisp CPREF
 OUTarea CPREF
 STAtarea CPREF
 VMout CPREF
 responses CPREF
 usage notes CPREF
 SCREEN directory control statement
 example PLNGDE
 operands PLNGDE
 ALL PLNGDE
 SCREEN operand of QUERY command CPREF
 SCREEN option
 of EXTRACT XEDIT
 of QUERY XEDIT
 of SET XEDIT
 of TRANSFER XEDIT
 SCREEN subcommand of XEDIT command APGDE
 SCREEN/NOSCREEN option of DETAIL HELP CMSUG
 screens
 changes stacked by READ XEDIT
 display TERMREF
 updating XEDIT
 divided into multiple logical screens XEDIT
 DMS/CMS INTRO
 example of 3270 screen display CMSUG
 full-screen CMS REL5GDE
 full-screen status notices
 enter a command or press a PA or PF key CMSUG
 enter your response in vscreen vname CMSUG
 executing a command CMSUG
 press ENTER to view more data CMSUG
 scroll forward for more information
 in vscreen vname CMSUG
 images
 horizontal APGDE
 vertical APGDE
 in DMS/CMS
 completion options APGDE
 data field APGDE
 design grid APGDE
 field characteristics of APGDE
 field definition APGDE
 panel name APGDE
 panel size APGDE
 selector field APGDE
 text field APGDE
 in XEDIT, splitting PRIMER
 layout XEDITUG
 changing XEDITUG
 in FILELIST PRIMER
 in input mode XEDIT
 in NAMES PRIMER
 in NOTES PRIMER
 in power typing mode XEDIT
 in XEDIT edit mode PRIMER
 in XEDIT input mode PRIMER
 of RDRLIST PRIMER
 of the CMS window PRIMER
 logging on from logo screen REL5GDE
 management TERMREF
 keys APGDE
 VM SNA support SFPROG
 operation simulation XEDIT
 reserving a line on XEDIT
 scrolling
 backward XEDIT
 forward XEDIT
 size, defining XEDITUG
 virtual XEDIT
 VM status notices
 CP READ CMSUG
 HOLDING CMSUG
 MORE... CMSUG
 NOT ACCEPTED CMSUG
 RUNNING CMSUG
 VM READ CMSUG
 Script CMSLOT, PRIMER
 files CMSUG
 filetype usage in CMS CMSUG
 SCRIPT command CMSLOT, INTRO, PRIMER
 control word INTRO
 execution restrictions in CMS/DOS CMSPROG
 options
 CONTINUE CMSLOT, PRIMER
 DSMPROF3 CMSLOT
 PRINT CMSLOT, PRIMER
 PROFILE CMSLOT, PRIMER
 SPELLCHK CMSLOT, PRIMER
 SCRIPT/VS CMSLOT, PRIMER
 DCF INTRO
 SCRNSAVE operand of TERMINAL command CPREF
 SCROLAD DIAG
 SCROLL
 command
 See SCROLL command
 operand of TERMINAL command CPREF
 subcommand of DUMPSCAN command
 description DIAG
 error message DIAG
 format DIAG
 functional category DIAG
 response DIAG
 sample output DIAG
 usage DIAG
 SCROLL command CMSUG
 description CMSREF
 format CMSREF
 messages CMSREF
 operands
 BACKWARD CMSREF
 BOTTOM CMSREF
 DOWN CMSREF
 FORWARD CMSREF
 LEFT CMSREF
 NEXT CMSREF
 RIGHT CMSREF
 TOP CMSREF
 UP CMSREF
 wname CMSREF
 summary CMSREF
 usage notes CMSREF
 Scroll
 forward for more information (status notice) PRIMER
 interface, DUMPSCAN DIAG
 location information PRIMER
 operand of TRACE subcommand DIAG
 u operand of TRACE subcommand DIAG
 scrollable data area in full-screen CMS CMSUG
 SCROLLEN DIAG

- scrolling **APGDE**
 a window **PRIMER**
 horizontal **APGDE**
 in **FILELIST PRIMER**
 through a file using **XEDIT PRIMER**
 backward **XEDIT**
 forward **XEDIT**
 forward and backward using
 border commands **CMSUG**
 scrolling right and left using border
 commands **CMSUG**
 the screen
 using **BACKWARD XEDITUG**
 using **FORWARD XEDITUG**
 using PF keys **XEDITUG**
- SCROLUAD DIAG**
 SD option of **DSEVR** command **CMSREF**
 SDATE command **CMSLOT**
 synonym to sort **FILELIST CMSUG**
- SDB format DIAG**
- SDUMP**
 command **DIAG**
 macro **GCSREF**
 description **GCSREF**
 execute format **GCSREF**
 hdr parameter **GCSREF**
 hrad parameter **GCSREF**
 list format **GCSREF**
 list parameter **GCSREF**
 mf parameter **GCSREF**
 storage parameter **GCSREF**
- search algorithm improved for **HELP REL5GDE**
 search direction specified **XEDITUG**
 for column-target **XEDIT**
 for target **XEDIT**
- SEARCH** option
 in **QUERY CMSLOT**
 of **CMS QUERY** command **CMSREF**
- search order
 for **CMS** commands **CMSREF**
 displaying **CMSUG**
 summary **CMSUG**
 for **CMS** disks **CMSUG**
 for **CMS** loader **CMSREF**
 for commands **SPIREF**
 for executable phases in
CMS/DOS CMSPROG, CMSREF
 for filemode extensions **CMSUG**
 for functions **SPIREF**
 for locating server name **SRPI**
 for relocatable modules in **CMS/DOS CMSREF**
 for routines or commands in **CSMMS CMSPROG**
 for subcommands and macros
 controlling **XEDIT**
 for subroutines **SPIREF**
 and functions **SPIUG**
 for **TEXT** files and **TXTLIB** members **CMSPROG**
 of **CMS** disks, querying **CMSREF**
 of macros and subcommands specified **XEDITUG**
 used by **ASSEMBLE** command **CMSPROG**
- search, backward **CMSLOT**
- searching
 a file **XEDIT**
 a string for a phrase **SPIREF**
 disks for **CMS** files
 See disk determination
 for data
 using a target **XEDITUG**
 using **CLOCATE XEDITUG**
 using **CLOCATE** in typewriter
 mode **XEDITUG**
 for a word in a string or words **EXEX2**
 for a word in another word **EXEX2**
 libraries **CMSPROG**
 read-only extensions **CMSUG**
- SEC** operand
 of **MONITOR** command **CPREF**
 of **LABELDEF** command **CMSREF**
- second level
 installation **INST**
 storage **CPPROG**
 dumping of **SFPROG**
 virtual machine issues **SVC 76 SFPROG**
 VM system
 See second level VM system
- second level VM system
 building nucleus **RGOS**
DASD/Dump Restore RGOS
 defining **RGOS**
 directory **RGOS**
IPLing RGOS
 nucleus **RGOS**
 operating procedures **RGOS**
 performance considerations **RGOS**
 preparing system **RGOS**
 problem determination **RGOS**
 restoring **RGOS**
 spooling **RGOS**
 updating
DMKBOX RGOS
DMKRIO RGOS
DMKSNT RGOS
DMKSYS RGOS
- secondary storage protection, defined **PLNGDE**
 secondary users **SFPROG**
 list of current **CPREF**
- seconds calculated from midnight **SPIREF**
- section size **REL5GDE**
- security
 access control groups **PLNGDE**
 access verification routines **CPPROG**
 considerations
IUCV SFPROG
 for preparing directory **PLNGDE**
- data **INTRO**
 discontinuous saved segments **PLNGDE**
 enhancement
 3270 read inhibit **REL5GDE**
 keylock **TERMREF**
 maintenance **TERMREF**
 measures **CPPROG**
 of **APPC/VM TSAFREF**
 password deactivation **PLNGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- real storage **INTRO**
- saved systems **PLNGDE**
- when changing command access **CPPROG**
- SECUSER operand of QUERY command **CPREF**
- SEEKS class monitor records **CPPROG**
- SEEKS operand of MONITOR command **CPREF**
- segment **CPPROG, INTRO, CPPROG**
- protect **CPPROG, REL5GDE**
- protection
 - ADSTOP command **CPPROG**
 - at system initialization **CPPROG**
 - bit CPSEGPRT in PSA **CPPROG**
 - extension **REL5GDE**
 - protection exception **CPPROG**
 - STORE command **CPPROG**
 - TRACE command **CPPROG**
- table **CPPROG**
- tables **CPPROG**
- SEGMENT macro **GCSREF**
- description **GCSREF**
- end parameter **GCSREF**
- name parameter **GCSREF**
- start parameter **GCSREF**
- SEL operand of DEFINE command **CPREF**
- SELECT
 - command of SQL **APGDE**
 - function of SPOOL system service **SFPROG**
 - instruction **SPIREF**
 - description of **SPIUG**
 - END keyword **SPIUG**
 - example of **SPIUG**
 - OTHERWISE keyword **SPIUG**
 - THEN keyword **SPIUG**
 - WHEN keyword **SPIUG**
 - operand of TERMINAL macro **PLNGDE**
 - option of GLOBALV command **CMSREF**
 - service of ISPF **APGDE**
- SELECT option
 - of EXTRACT **XEDIT**
 - of QUERY **XEDIT**
- SELECT SYSIN control statement **CMSREF**
- select-items in DMS/CMS **APGDE**
- selecting
 - an alternate console **OPGDE**
 - the next virtual machine to migrate **CPPROG**
- selective
 - change **XEDIT, XEDITUG**
 - example of **XEDITUG**
 - in typewriter mode **XEDITUG**
 - invalidation as a function of shadow table maintenance **RGOS**
 - line editing **XEDIT**
 - See also ALL subcommand
 - example of **XEDIT**
 - subcommands **XEDIT**
- selectivity using PER **DIAG**
- selectmask in DMS/CMS **APGDE**
- selector field screens (ISPF) **APGDE**
- semicolons
 - implied **SPIREF**
 - omission of **SPIREF**
 - within a clause **SPIREF**
- SEND
 - command with SCIF **SFPROG**
 - IUCV function **SFPROG**
 - parameter list format **SFPROG**
 - to the DASD block I/O
 - system service **SFPROG**
 - to the signal system service **SFPROG**
 - to the SPOOL system service **SFPROG**
 - trace table entry format **SFPROG**
 - using **SFPROG**
 - SPOOL system service function **SFPROG**
 - VMCF function **SFPROG**
 - VMCF protocol **SFPROG**
 - SEND command **CMSLOT, CMSUG, CPREF**
 - CP **RGOS**
 - described **CPREF**
 - operands
 - CP **CPREF**
 - lprt **CPREF**
 - text **CPREF**
 - userid **CPREF**
 - usage notes **CPREF**
- send confirmation
 - See SENDCNF function of APPC/VM
- send confirmation response
 - See SENDCNFD function of APPC/VM
- send data
 - See SENDDATA function of APPC/VM
- send error notice
 - See SENDERR function of APPC/VM
- send request
 - See SENDREQ function of APPC/VM
- SEND state **TSAFREF**
- send-receive scenario
 - accepting **TSAFREF**
 - connecting **TSAFREF**
 - declaring a buffer **TSAFREF**
 - receiving data **TSAFREF**
 - sending data **TSAFREF**
- SEND/RECV
 - VMCF function **SFPROG**
 - VMCF protocol **SFPROG**
- SEND_DATA, APPC verb
 - abend conditions **TSAFREF**
 - mapped with APPC/VM **TSAFREF**
 - parameters **TSAFREF**
 - state changes **TSAFREF**
- SEND_ERROR, APPC verb
 - abend conditions **TSAFREF**
 - mapped with APPC/VM **TSAFREF**
 - parameters **TSAFREF**
 - state changes **TSAFREF**
- SENDCNF function of APPC/VM **TSAFREF**
 - completion **TSAFREF**
 - condition codes **TSAFREF**
 - mapped with APPC **TSAFREF**
 - overview **TSAFREF**
 - parameter list **TSAFREF**
 - parameters
 - MF=L **TSAFREF**
 - PATHID **TSAFREF**
 - PRMLIST **TSAFREF**
 - TYPE **TSAFREF**
 - WAIT **TSAFREF**
 - program exceptions **TSAFREF**
 - return codes **TSAFREF**
 - state changes **TSAFREF**
 - to communication partner **TSAFREF**
- SENDCNFD function of APPC/VM **TSAFREF**
 - completion **TSAFREF**
 - condition codes **TSAFREF**
 - mapped with APPC **TSAFREF**
 - overview **TSAFREF**
 - parameter list **TSAFREF**

parameters
 MF=L **TSAFREF**
 PATHID **TSAFREF**
 PRMLIST **TSAFREF**
 program exceptions **TSAFREF**
 return codes **TSAFREF**
 state changes **TSAFREF**
 to communication partner **TSAFREF**
SENDATA function of APPC/VM **TSAFREF**
 addressing for **TSAFREF**
 completion **TSAFREF**
 condition codes **TSAFREF**
 mapped with APPC **TSAFREF**
 message pending interrupt **TSAFREF**
 multiple **TSAFREF**
 overview **TSAFREF**
 parameter list **TSAFREF**
 parameters
 ANSBUF **TSAFREF**
 ANSLN **TSAFREF**
 ANSLIST **TSAFREF**
 BUFFER **TSAFREF**
 BUFLN **TSAFREF**
 BUFLIST **TSAFREF**
 MF=L **TSAFREF**
 PATHID **TSAFREF**
 PRMLIST **TSAFREF**
 RECEIVE **TSAFREF**
 WAIT **TSAFREF**
 program exceptions **TSAFREF**
 return codes **TSAFREF**
 scenario **TSAFREF**
 state changes **TSAFREF**
 to communication partner **TSAFREF**
 use in sample resource program **TSAFREF**
 use in sample user program **TSAFREF**
SENDERR function of APPC/VM **TSAFREF**
 completion **TSAFREF**
 condition codes **TSAFREF**
 mapped with APPC **TSAFREF**
 overview **TSAFREF**
 parameter list **TSAFREF**
 parameters
 CODE **TSAFREF**
 MF=L **TSAFREF**
 PATHID **TSAFREF**
 PRMLIST **TSAFREF**
 WAIT **TSAFREF**
 program exceptions **TSAFREF**
 return codes **TSAFREF**
 state changes **TSAFREF**
 to communication partner **TSAFREF**
SENDFILE command **APGDE**, **CMSLOT**, **PRIMER**
 ACK option **CMSREF**
 default PF key settings on **SENDFILE** menu **CMSREF**
 description **CMSREF**
 example **CMSREF**
 example of use **INTRO**
 file format **CMSREF**
 FILELIST option **CMSREF**
 LOG option **CMSREF**
 NEW option **CMSREF**
 NOACK option **CMSREF**
 NOFILELIST option **CMSREF**
 NOLOG option **CMSREF**
 NOTE option **CMSREF**
 NOTYPE option **CMSREF**
 OLD option **CMSREF**
 TYPE option **CMSREF**
 sending
 a note **CMSLOT**
 data
 APPC data **TSAFREF**
 overview **TSAFREF**
 file(s) **PRIMER**
 by selection from **FILELIST** **CMSLOT**
 using **SENDFILE** display **CMSLOT**
 files to other virtual machine users
 from **SENDFILE** menu **CMSUG**
 using **DISK DUMP** command **CMSUG**
 using **SENDFILE** command **CMSUG**
 messages **PRIMER**
 to other users **CPREF**
 to system operator **CPREF**, **INTRO**
 to the operator **CPREF**
 without special headers to users **CPREF**
 messages to other virtual machine users
 using **CP MESSAGE** command **CMSUG**
 using **TELL** command **CMSUG**
 more than one file **PRIMER**
 notes **CMSREF**
 notes to other virtual machine users
 using **SENDFILE** command **CMSUG**
 service reply
 assembler **SRPI**
 assembler server responsibilities **SRPI**
CPRB **SRPI**
REXX and **EXEC 2** **SRPI**
REXX and **EXEC 2** server responsibilities **SRPI**
 service request
 assembler **SRPI**
REXX and **EXEC 2** **SRPI**
 signals to
 the signal system service **SFPROG**
 special messages **CPREF**
 spool files **CPREF**
SENDREQ
 function of APPC/VM
 See **SENDREQ** function of APPC/VM
 interrupt **TSAFREF**
 format **TSAFREF**
 macro **CMSPROG**
 assembly message **SRPI**
 assembly messages (**MNOTE**s) **MACREF**
CPRBREG operand **MACREF**
 description **SRPI**
 in sending a service request **SRPI**
 making service requests **MACREF**
 on return from **SRPI**
 server reentrant requirement **SRPI**
 syntax **SRPI**
 subcommand
 See **SENDREQ** subcommand

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- SENDREQ** function of APPC/VM **TSAFREF**
 completion **TSAFREF**
 condition codes **TSAFREF**
 mapped with APPC **TSAFREF**
 overview **TSAFREF**
 parameter list **TSAFREF**
 parameters
 PATHID TSAFREF
 PRMLIST TSAFREF
 program exceptions **TSAFREF**
 return codes **TSAFREF**
 state changes **TSAFREF**
 to communication partner **TSAFREF**
- SENDREQ** subcommand
 description **SRPI**
 handling errors on return from **SRPI**
 in example **SRPI** macro loader **SRPI**
 in loading a server **SRPI**
 in sending a service request **SRPI**
 on return from **SRPI**
 syntax **SRPI**
 variables on return from **SRPI**
 variables server must set **SRPI**
- SENDX**
 VMCF function **SFPROG**
 VMCF protocol **SFPROG**
- SENTRIES** command **APGDE**
 description **CMSREF**
 effect of non-zero return code on EXECs **CMSREF**
- separating clauses **SPIUG**
- separator
 spool printer **OPGDE**
 spool punch output **OPGDE**
 used in **CHANGE CMSLOT**
 used in **CLOCATE CMSLOT**
 used in **LOCATE CMSLOT**
- sequence of commands assigned to a PF key **XEDIT**
- sequence numbers
 assigned (CMS/DOS) to VSAM extents **CMSREF**
 assigned to VSAM extents **CMSREF**
- sequence of functions
 in CMS IUCV **SFPROG**
 in IUCV **SFPROG**
- SEQUENCE** statement **CMSPROG**
- sequencing
 output records **CMSPROG**
 using **XEDIT SERIAL** subcommand **CMSPROG**
- sequential access method (SAM)
 See **SAM** (sequential access method)
- SEQ8** option
 of **EXTRACT XEDIT**
 of **QUERY XEDIT**
 of **TRANSFER XEDIT**
- SEREP** program restrictions **PLNGDE**
- serial identification
 removing **XEDIT**
 specifying **XEDIT**
- SERIAL** operand of **SYSID** macro **PLNGDE**
- SERIAL** option
 of **EXTRACT XEDIT**
 of **QUERY XEDIT**
 of **SET XEDIT**
 of **TRANSFER XEDIT**
- serialization of file, controlling **XEDIT**
- SERV** operand of **SYSFCN** macro **PLNGDE**
- server loader **SRPI** macro **SRPI**
- server termination
SRPI macro (**REXX** and **EXEC 2**) servers **SRPI**
 abnormal (CMSabend) **SRPI**
 and explicit unload (**NUCXDROP**) **SRPI**
 assembler
 Communications Manager termination **SRPI**
 end-of command processing (CMS ready) **SRPI**
Server-Requester Programming Interface (SRPI)
 See **SRPI** (Server-Requester Programming Interface)
- servers
 considerations for **TSAFREF**
 description **INTRO**
 directory entry **TSAFREF**
 directory option **TSAFREF**
 examples of **TSAFREF**
 termination
 See server termination
- service aids, for MVS guest **RGOS**
- Service Control File (SCF)
 See **SCF** (Service Control File)
- service exec
 minidisk defaults
 used for building **INST**
 used for loading service **INST**
 used for updating **INST**
 use with **VMSEV** **INST**
- Service Log **INST**
 contents **INST**
 definition **INST**
 example **INST**
- service operand of **FDISPLAY** subcommand **DIAG**
- SERVICE** operand of **NUCXLOAD** command **CMSREF**
- service overview **REL5GDE**
- service procedures **REL5GDE**
 CMS files, deleted **REL5GDE**
 control blocks, new and changed **REL5GDE**
 execs, deleted **REL5GDE**
 execs, new and changed **REL5GDE**
 macros, new and changed **REL5GDE**
 modules, new and changed **REL5GDE**
 new and changed CMS files **REL5GDE**
- service processor, **READ SCP**
INFORMATION service call **PLNGDE**
- service programs
DDR (DASD Dump Restore) **CPPROG**
 directory program **PLNGDE**
 EXEC procedures, updating **INST**
 loader **INST**
 generating **INST**
 updating **INST**
NCPDUMP
 updating **INST**
 updating **INST**
VM/370
 Format Allocate **CPPROG**
 when to regenerate **INST**
ZAP **INST**
- service queries **TSAFREF**
- service record file
 capability **PLNGDE**
 restrictions **PLNGDE**
 specifying
 RIOGEN macro **PLNGDE**
- service representative, described **CPREF**, **OPGDE**
- service requests
 making **MACREF**
 tokenized **PLIST** **SRPI**

- service
- routines **CMSPROG**
 - TSAF**
 - See also problem diagnosis preparing to **TSAFREF**
- servicing VM/SP program update tapes (PUT) **INTRO**
- servicing VM/SP HPO
- accessing update disks **INST**
 - building CMS nucleus using **SPGEN INST**
 - building CP nucleus using **SPGEN INST**
 - corrective service, definition **INST**
 - determine maximum module size using **PSPACE macro INST**
 - disk access profiles used **INST**
 - introduction **INST**
 - local updates **INST**
 - minidisks used **INST**
 - module identifiers **INST**
 - object-maintained products **INST**
 - overview **INST**
 - other IBM-supplied fixes **INST**
 - preventive service, definition **INST**
 - programs used **INST**
 - PUT format **INST**
 - shared segments **INST**
 - source maintained products
 - apply updates to national language-related files using **VMFNLS INST**
 - creating text libraries using **VMFTXT INST**
 - deciding which update procedures to use **INST**
 - files used **INST**
 - overview **INST**
 - punching new nucleus using **VMFLOAD INST**
 - service process **INST**
 - updating macro libraries using **VMFMAC INST**
 - updating source files using **VMFASM INST**
 - source-maintained products **INST**
 - suggested VM configuration **INST**
 - types of service **INST**
 - updating CMS modules **INST**
 - updating interactive problem control system (IPCS) **INST**
 - updating loader program **INST**
 - updating printer modules **INST**
 - updating service programs **INST**
 - use of MAINT virtual machine **INST**
- session
- accounting record **TSAFREF**
 - complex **TERMREF**
 - ending a **TERMREF**
 - nested **TERMREF**
 - manager, VS APL **INTRO**
 - starting a **TERMREF**
- SESSION** file of GLOBALV command **CMSREF**
- SET**
- action routine **SFPROG**
 - command, programmable operator **SFPROG**
- SET = XEDIT**
- SET ABBREV** command **CMSUG**
 - SET ALT XEDIT**
 - SET APL XEDIT**
- SET ARBCHAR XEDIT, XEDITUG**
 - use in **CHANGE XEDIT**
 - used with **COUNT XEDIT**
 - SET ASSIST**
 - command **OPGDE**
 - usage with hardware assist **OPGDE**
 - use with virtual machine assist **OPGDE**
 - SET AUTOREAD** command **TERMREF**
 - SET AUTOSAVE XEDIT, XEDITUG**
 - command **PRIMER**
 - in typewriter mode **XEDITUG**
 - practice exercise using **XEDITUG**
 - SET BORDER** command **CMSUG**
 - set breakpoint **DIAG**
 - SET BRKKEY XEDIT**
 - changing the CP setting **XEDIT**
 - default setting **XEDIT**
 - SET CASE XEDIT, XEDITUG**
 - command **PRIMER**
 - with DBCS strings **XEDIT**
 - SET CMDLINE XEDIT, XEDITUG**
 - example of **XEDITUG**
 - SET CMSPF** command **PRIMER**
 - SET COLOR XEDIT, XEDITUG**
 - SET COLPTR XEDIT**
 - SET** command (CMS)
 - CMS Session Services enhancements **REL5GDE**
 - controlling
 - ready message display **CMSUG**
 - whether you receive messages **CMSUG**
 - INSTSEG** option **REL5GDE**
 - invalid forms in job
 - for CMS batch facility **CMSUG**
 - LANGUAGE** option **REL5GDE**
 - operands invalid in job
 - for CMS batch facility **CMSUG**
 - set tracing on or off for System Product Interpreter EXECs **CMSUG**
 - setting
 - full-screen CMS **CMSUG**
 - implied CP function **CMSUG**
 - implied EXEC function **CMSUG**
 - program function keys **CMSUG**
 - the reserved line
 - in full-screen CMS **CMSUG**
 - window borders in full-screen CMS **CMSUG**
 - TRANSLATE** option **REL5GDE**
 - SET** commands **APGDE, CMSUG, CPREF, DIAG, GCSREF**
 - AUTOSAVE** option **CMSLOT**
 - CASE** option **CMSLOT**
 - class A **CPREF**
 - class B **CPREF**
 - class E **CPREF**
 - class F **CPREF**
 - class G **CPREF**
 - CMS
 - See **SET** command (CMS)
 - CONCEAL** option **CMSUG**
 - CP **RGOS**
 - described **CPREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

description CMSPROG, CMSREF, CMSUG,
GCSREF
determining current values CPREF
determining status of SET operands CMSREF
DOSLNCNT option CMSREF
DOSPART operand CMSPROG
DOSPART option CMSREF
ESCAPE option CMSLOT
example of use INTRO
EXECRAC option CMSREF
extended control-program support option INTRO
favored execution option INTRO
gcsbam operand GCSREF
gcsvsam operand GCSREF
IMESCAPE option CMSREF
INPUT option CMSLOT
list of options CMSREF
messages CMSREF
MSG option CMSLOT
multiple shadow table option INTRO
of DMS/CMS APGDE
operands
ACNT CPREF
AFFINITY CPPROG, CPREF, OPGDE
ALL CPREF
AND CPREF
ASSIST CPPROG, CPREF
AUTO CPREF
AUTOPOLL CPREF
BIT CPREF
BUFTIME CPREF
BYTE CPREF
class CPREF
CONCEAL CPREF
CP CPREF
CPASSIST CPREF, OPGDE
CPASSIST OFF CPPROG
CPCONIO CPREF
cpuid CPREF
DISK CPREF
DRUM CPREF
DSPSLICE CPREF
DUMP CPREF, OPGDE
ECMODE CPREF
EMSG CPREF
FAVORED CPPROG, CPREF, OPGDE
IB CPREF
IBUFF CPREF
IMSG CPREF
ISAM CPREF
JOURNAL CPREF
LIMIT CPREF
LINEDIT CPREF
LINK CPREF
LOGMSG CPREF
LOGON CPREF
MAIN CPREF
MAXPP CPREF
MAXSIZE CPREF
MAXWSS CPREF
MIH CPPROG
MINNUMSS CPREF
MINWS CPPROG
MITIME CPPROG, CPREF
MODE CPREF
MSG CPREF
NOQ2 CPREF, CPPROG
NOQ3 CPREF, CPPROG

NOTRANS CPPROG, CPREF
NULL CPREF
OFF CPREF
ON CPREF
OR CPREF
PAGEX CPREF
PAGING CPPROG, CPREF
PB CPREF
PCI CPREF
PFnn CPREF
PGFULL CPREF
PGMSTAT CPREF
PGMTLIM CPREF
PREPAGE CPREF
PRIORITY CPPROG, CPREF, OPGDE
PROC CPREF
QDROP CPPROG, CPREF, OPGDE
QUIET CPREF
Q1 CPREF
Q2 CPREF
raddr CPREF
RECORD CPREF
RESERVE CPPROG, CPREF, OPGDE
RETRY CPREF
RUN CPREF
SASSIST CPREF, OPGDE
SASSIST OFF CPPROG
SASSIST ON CPPROG
SMSG CPREF
SRM CPPROG, CPREF
SRM IBUFF CPPROG
SRM MHFULL CPPROG
SRM MINNUMSS CPPROG
SRM PGFULL CPPROG
SRM PGMTLIM CPPROG
SRM PREPAGE CPPROG
STBYPASS CPPROG, CPREF
STBYPASS VR CPPROG
STMULTI CPPROG, CPREF
SYSTEM CPREF
S370E CPREF
S370E ON command CPPROG
text CPREF
TIMER CPREF
userid CPREF
USERS CPREF
V=R CPREF
VMCONIO CPREF
VMSAVE CPPROG, CPREF
WNG CPREF
XMEM CPREF
370E CPREF
parameters
SRM PGFULL CPPROG
SRM PGMTLIM CPPROG
queue drop elimination option INTRO
reserved page option INTRO
responses CPREF
sysname operand GCSREF
TABS option CMSLOT
usage notes CMSREF, CPREF
used in PROFILE XEDIT CMSLOT
user priority option INTRO
virtual machine assist option INTRO
with Vector Facility program CPREF
SET CONCEAL command REL5GDE

SET CONTROL MASK function of IUCV **SFPROG**

See also **SETCMASK** function of IUCV
parameter list format **SFPROG**
trace table entry format **SFPROG**
using **SFPROG**

SET CPASSIST use with ECPS **OPGDE****SET CTLCHAR** **XEDIT**, **XEDITUG****SET CURLINE** **XEDIT**, **XEDITUG**

example of **XEDITUG**

used to change size of input zone **XEDIT**

SET DISPLAY **XEDIT**

SET DOS command used to enter or
exit DOS environment **CMSPROG**

SET DUMP command **OPGDE****SET ENTER** **XEDIT****SET ESCAPE** **XEDIT**

use in input mode **XEDIT**

SET ETARBCH **XEDIT**

with DBCS strings **XEDIT**

SET ETMODE **XEDIT****SET ETRACE** command **TSAFREF****SET EXEC** command **SPREF**, external

control of tracing **SPREF**

SET FAVORED command **RGOS**

usage with favored execution **OPGDE**

SET FILLER **XEDIT****SET FMODE** **XEDIT****SET FNAME** **XEDIT****SET FTYPE** **XEDIT****SET FULL**read **XEDIT****SET FULLSCREEN ON** command **REL5GDE**

interaction with

TERMINAL BRKKEY command **REL5GDE**

SET FULLSCREEN ON command **PRIMER****SET HEX** **XEDIT**, **XEDITUG****SET IMAGE** **XEDIT**

in typewriter mode **XEDITUG**

list of subcommands

affected by **XEDIT**

SET IMPCMSCP **XEDIT**

used with system-provided

editor macros **XEDIT**

SET INSTSEG

description **CMSUG**

use of **CMSUG**

set language

DIAGNOSE code X'C8' **SFPROG**

SET LANGUAGE command **CMSUG**, **REL5GDE**

making the message repository available **REL5GDE**

specifying another language **REL5GDE**

SET LASTLORC **XEDIT****SET LINEND** **XEDIT**

set location counter (SLC) loader

control statement **CMSREF**

SET LOGFILE command **CMSUG**, **PRIMER****SET LRECL** **XEDIT**

with DBCS strings **XEDIT**

SET MACRO **XEDIT**, **XEDITUG****SET MASK** **XEDIT**

example of **XEDIT**

function of IUCV **SFPROG**

See also **SETMASK** function of IUCV
parameter list format **SFPROG**
trace table entry format **SFPROG**
using **SFPROG**

SET MINWS command **REL5GDE**, **RGOS****SET MITIME** command **PLNGDE**

SET MODE MAIN invalid for 3031, 3032, 3033,
308x 3090 processors **OPGDE**

SET MSG command **PRIMER****SET MSGLINE** **XEDIT**, **XEDITUG**

example of **XEDITUG**

with **FULLSCREEN OFF** **XEDIT**

with **FULLSCREEN ON** **XEDIT**

SET MSGMODE **XEDIT**, **XEDITUG****SET NONDISP** **XEDIT****SET NOTRANS ON** command **OPGDE****SET NULLS** **XEDIT**, **XEDITUG****SET NUMBER** **XEDIT**, **XEDITUG****SET NUMBER ON** command **PRIMER****SET** operand of **QUERY** command **CPREF****SET** options

combining **XEDITUG**

displaying current values of

using **QUERY** **XEDIT**

using **STATUS** **XEDIT**

modifying **XEDIT**

querying **XEDIT**

transferring **XEDIT**

SET OUTPUT, issuing while in **XEDIT** **XEDIT****SET PACK** **XEDIT****Set Page Boundary** (SPB)

card **INST**, **CPPROG**

loader control statement **CMSREF**

SET PAn **XEDIT****SET PF** command **PRIMER****SET PFn** **XEDITUG****SET PFnn** command **APGDE**

COPY parameter **REL5GDE**

SET POINT **XEDIT**, **XEDITUG****SET PREFIX** **XEDIT**, **XEDITUG**

example of **XEDITUG**

SET PRIORITY command **RGOS****SET QDROP** (CP command) **TSAFREF****SET QDROP OFF** command **REL5GDE**

NOQ2 parameter **REL5GDE**

SET RANGE **XEDIT****SET RECFM** **XEDIT****SET REMOTE** **REL5GDE**, **XEDIT****SET RESERVE** command **RGOS****SET RESERVED** **XEDIT**, **XEDITUG**

command **CMSUG**

SET RUNMODE command of **ISQL** **APGDE****SET SASSIST**, use with ECPS **OPGDE****SET SCALE** **XEDIT**, **XEDITUG**

example of **XEDITUG**

SET SCOPE **XEDIT****SET SCREEN** command **PRIMER**, **XEDITUG**

example of **XEDITUG**

with **FULLSCREEN OFF** **XEDIT**

with **FULLSCREEN ON** **XEDIT**

SET SCREEN subcommand of **XEDIT** command **APGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

SET SELECT XEDIT
SET SERIAL XEDIT
with DBCS strings **XEDIT**
SET SHADOW XEDIT
SET SIDCODE XEDIT
with DBCS strings **XEDIT**
SET SMSG command INTRO
SET SPAN XEDIT, XEDITUG
with DBCS strings **XEDIT**
SET SPILL XEDIT
example of **XEDIT**
with DBCS strings **XEDIT**
SET SRM IBUFF command RGOS
SET SRM PGFULL command CPPROG, PLNGDE
SET SRM PGMTLIM command CPPROG
SET SRM PREPAGE command RGOS
SET STAY XEDIT
use in **CHANGE XEDIT**
SET STBYPASS command RGOS
SET STMULTI command RGOS
SET STREAM XEDIT
effect in **CDELETE XEDIT**
used with column target **XEDIT**
SET subcommand
DEBUG
of **TESTCOB** command **APGDE**
of **TESTFORT** command **APGDE**
of **XEDIT**, definition **INTRO**
SET SYNONYM XEDIT, XEDITUG
example of **XEDIT**
with DBCS strings **XEDIT**
SET TABLINE XEDIT, XEDITUG
SET TABS XEDIT, XEDITUG
command **PRIMER**
example of **XEDITUG**
in typewriter mode **XEDITUG**
practice exercise using **XEDITUG**
used by **EXPAND XEDIT**
using with
compress and expand **XEDIT**
SET TERMINAL XEDIT
SET TEXT XEDIT
SET TOFEOF XEDIT
SET TRANSLAT XEDIT
SET TRANSLATE CMSUG, REL5GDE
SET TRUNC XEDIT
use in **CHANGE XEDIT**
with DBCS strings **XEDIT**
SET VARBLANK XEDIT, XEDITUG
with DBCS strings **XEDIT**
SET VERIFY XEDIT, XEDITUG
hexadecimal data, entering **XEDIT**
with DBCS strings **XEDIT**
SET WINDOW command REL5GDE
SET WRAP XEDIT
SET ZONE XEDIT
use in **CHANGE XEDIT**
with DBCS strings **XEDIT**
SETADDR operand of **RDEVICE** macro **PLNGDE**
SETCMASK function of **IUCV TSAFREF**
completion **TSAFREF**
condition codes **TSAFREF**
parameter list **TSAFREF**
parameters
MASK TSAFREF
MF=L TSAFREF
PRMLIST TSAFREF
program exceptions **TSAFREF**
return codes **TSAFREF**
use in sample resource program **TSAFREF**
SETKEY command, changing storage key with **CPPROG**
SETMASK function of **IUCV TSAFREF**
completion **TSAFREF**
condition codes **TSAFREF**
parameter list **TSAFREF**
parameters
MASK TSAFREF
MF=L TSAFREF
PRMLIST TSAFREF
program exceptions **TSAFREF**
return codes **TSAFREF**
use in sample resource program **TSAFREF**
SETPRT command **CPPROG**
SETREPLY subcommand
description **SRPI**
handling errors on return from **SRPI**
in example **SRPI**, macro loader **SRPI**
in the request-handling sequence **SRPI**
syntax **SRPI**
using to set up reply **SRPI**
variables **SRPI**
SETRP macro **GCSREF**
compcod parameter **GCSREF**
description **GCSREF**
dump parameter **GCSREF**
rc parameter **GCSREF**
regs parameter **GCSREF**
system parameter **GCSREF**
user parameter **GCSREF**
wkarea parameter **GCSREF**
setting
a timer **PLNGDE**
CMS PF keys **PRIMER**
defaults for **SENDFILE** command
example **CMSUG**
device-end interruption
for virtual device **CPREF**
length of ready message **CMSUG**
limits on system resources
during batch jobs **CMSUG**
page migration options **CPPROG**
page migration parameters **CPPROG**
paging variables **CPPROG**
partition size for **CMS/DOS CMSREF**
program function keys **CMSUG**
screen colors and
highlighting features **CMSUG**
spool file characteristics **CPREF**
SRM variables **CPPROG**
system feature condition, or event **DIAG**
tabs **PRIMER, XEDITUG**
in typewriter mode **XEDITUG**
the age criterion for migration **CPPROG**
TOD clock, uniprocessor application **OPGDE**
up a terminal session **CPREF**
up system definition files **RGOS**
UPSI byte **CMSPROG**
settings of PF keys, displaying **PRIMER**
SETUP operand of **START** command **CPREF**
SEV
field **DIAG**
operand of **PRB** command **DIAG**
output field of **STAT** command **DIAG**

SEVER

codes **TSAFREF**
 function of APPC/VM
 See SEVER function of APPC/VM
 interrupt **TSAFREF**
 format **TSAFREF**
 reason codes
 Collection Resource Management
 System Service (*CRM) **TSAFREF**
 Identify System Service (*IDENT) **TSAFREF**
 state **TSAFREF**
SEVER function of APPC/VM **TSAFREF**
 completion **TSAFREF**
 condition codes **TSAFREF**
 from communication partner **TSAFREF**
 mapped with APPC **TSAFREF**
 overview **TSAFREF**
 parameter list **TSAFREF**
 parameters
 CODE TSAFREF
 MF=L TSAFREF
 PATHID TSAFREF
 PRMLIST TSAFREF
 TYPE TSAFREF
 program exceptions **TSAFREF**
 return code **TSAFREF**
 return codes **TSAFREF**
 revoking your own resources **TSAFREF**
 state changes **TSAFREF**
 use in sample resource program **TSAFREF**
 use in sample user program **TSAFREF**
SEVER function of IUUV **SFPROG**
 parameter list format **SFPROG**
 trace table entry format **SFPROG**
 using **SFPROG**
 severing connection
 to *CRM **TSAFREF**
 to your communication partner **TSAFREF**
 severity codes
 description of **SYMSMG**
 meanings **SYMSMG**
 types **SYMSMG**
SF command
 See **SENDFILE** command
SFBLOK CPPROG
SFCM1 INST
 shadow
 page tables **CPPROG**
 segment tables **CPPROG**
SHADOW option
 of **EXTRACT XEDIT**
 of **QUERY XEDIT**
 of **SET XEDIT**
 shadow table bypass **CPPROG**
 assist **REL5GDE**
 processor requirements **REL5GDE**
 processors supported **PLNGDE**
 SET STBYPASS command **PLNGDE**
 use with single processor mode **REL5GDE**
 for the V=V user **CPPROG**

for the V=R user
 MVS single processor mode **CPPROG**
 how to eliminate and reestablish **CPPROG**
 shadow tables **CPPROG**
 controlling **RGOS**
 MVS V=V guest **RGOS**
 preferred machine assist **RGOS**
 single processor mode **RGOS**
 enabling multiple **CPREF**
 free storage requirements **RGOS**
 maintenance with **DIAGNOSE** code X'6C' **SFPROG**
 performance, improving **RGOS**
 restrictions **RGOS**
 MVS V=R guests **RGOS**
 MVS V=V guests **RGOS**
 selective invalidation **RGOS**
 setting bypass **CPREF**
STFIRST directory option **RGOS**
VMMAP **RGOS**
SHARED option of **EXECMAP** command **CMSREF**
 shared
 DASD INTRO
 reserve/release support **PLNGDE**
 pages: attached processor system **OPGDE**
 pools of ISPF **APGDE**
 segment
 information for optional feature
 program products **INST**
 segment protection **CPPROG, REL5GDE**
 segments
 definition **CPPROG**
 description **PLNGDE**
 modifying **CPREF**
 protected **CPPROG**
 unprotected **CPPROG**
 usage notes **PLNGDE**
 virtual machine operation **CPPROG**
 storage **CMSPROG**
 storage access **REL5GDE**
 control blocks, execs, macros, modules,
 new and changed **REL5GDE**
 VCU mode
 miscellaneous devices **PLNGDE**
 tape devices **PLNGDE**
 TDISK space **PLNGDE**
 terminals **PLNGDE**
 unit record devices **PLNGDE**
 VTAM GCSREF
 sharing
 DASDs, 3380 CPPROG
 data files **INTRO**
 devices, spooling **OPGDE**
 EXEC 2 variables with assembler
 language programs **EXEX2**
 files **CMSLOT, PRIMER**
 in GCS, disks and files **PLNGDE**
 minidisks
 MVS guest **RGOS**
 VM/VSE **RGOS**
 system resources **INTRO**
 data integrity **INTRO**
 direct access storage **INTRO**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- minidisk **INTRO**
- processor usage **INTRO**
- real storage segment **INTRO**
- through spooling **INTRO**
- user CMS file **INTRO**
- virtual disks **CMSPROG, CPREF, CMSUG**
- Shexloc operand of STCP command **CPREF**
- SHIFT key **CMSLOT**
- shift keys **PRIMER**
- shift lock **TERMREF**
- SHIFT subcommand of XEDIT command **APGDE, XEDIT**
 - with DBCS strings **XEDIT**
- shift-in (SI) characters **SPIREF, XEDIT**
- shift-out (SO) characters **SPIREF, XEDIT**
- shifting data
 - using < prefix macro **XEDIT**
 - using > prefix macro **XEDIT**
 - using SHIFT **XEDIT**
- shifting display right or left **XEDITUG**
- SHORT option of NOTE command **CMSREF**
- show excluded lines **XEDIT**
- SHOW option of CMS QUERY command **CMSREF**
- SHOW WINDOW command **CMSUG**
 - operands summary **CMSREF**
- SHOWCB macro (VSAM) **GCSREF, GCSREF**
 - acb parameter **GCSREF**
 - area parameter **GCSREF**
 - description **GCSREF**
 - display the fields of an ACB **GCSREF**
 - display the fields of an exit list **GCSREF**
 - display the fields of an RPL **GCSREF**
 - exlst parameter **GCSREF**
 - fields parameter **GCSREF**
 - length parameter **GCSREF**
 - object parameter **GCSREF**
 - operand notation **GCSREF**
 - rpl parameter **GCSREF**
- showing message numbers **SYSMSG**
- shutdown **INST**
 - SNA **SFPROG**
 - spooling considerations **CPREF**
 - start **OPGDE**
 - usage in system termination **OPGDE**
- SHUTDOWN command **CMSUG, CPREF**
 - described **CPREF**
 - example of use **INTRO**
 - operands
 - raddr **CPREF**
 - REIPL **CPREF, CPPROG**
 - responses **CPREF**
 - usage notes **CPREF**
- SHUTDOWN operand of NETWORK command **CPREF**
- SHVBLOCK
 - format **SPIREF**
 - macro **CMSPROG**
- SI (shift-in)
 - characters **SPIREF**
 - prefix subcommand **XEDITUG**
- SI macro **XEDIT**
 - example of **XEDIT**
- SI prefix macro **XEDIT**
- SID option of EXECUPDT command **CMSREF**
- SIDCODE option
 - of EXTRACT **XEDIT**
 - of QUERY **XEDIT**
 - of SET **XEDIT**
 - of TRANSFER **XEDIT**
- SIGL
 - set by CALL instruction **SPIREF**
 - set by SIGNAL instruction **SPIREF**
 - special variable **SPIREF**
- SIGN function **SPIREF, SPIUG**
- sign-on procedure **CMSLOT**
- SIGNAL
 - command of DMS/CMS **APGDE**
 - execution of in subroutines **SPIREF**
 - in INTERPRET instruction **SPIREF**
 - instruction **SPIREF**
 - description of **SPIUG**
 - example of **SPIUG**
 - restrictions **SPIUG**
 - usage **SPIUG**
 - macro **CPPROG**
- Signal System Service **INTRO, PLNGDE, SFPROG**
 - connecting with **SFPROG**
 - establishing communications with **SFPROG**
 - leaving **SFPROG**
 - receiving signals **SFPROG**
 - sending signals **SFPROG**
- Single Console Image Facility (SCIF) **SFPROG**
 - controlling multiple virtual machines **SFPROG**
 - using **SFPROG**
- single processor mode
 - Input/Output Configuration Program **REL5GDE**
 - operational enhancements **REL5GDE**
 - shadow table bypass assist **REL5GDE**
 - use with preferred machine assist **REL5GDE**
- single system use of the programmable operator **SFPROG**
- signaling **TERMREF**
 - an error
 - AP/MP environment **CPPROG**
 - attention **TERMREF**
 - attention interruptions **CPREF**
 - end-of-input-line **TERMREF**
 - keys used for **TERMREF**
 - See SENDERR function of APPC/VM
- signed number **SPIUG**
- significant digits **SPIUG**
 - in arithmetic **SPIREF**
- signing
 - off **PRIMER**
 - on **PRIMER**
 - onto VM/SP **CMSUG**
- SIGSAVE (DMKEXT save area) **DIAG**
- simple list **CMSLOT, PRIMER**
- simple number
 - See numbers
- simple string expression as target
 - example of **XEDITUG**
 - format of **XEDITUG**
- simple symbols **SPIREF**
- simulated data sets, filemode number of 4 **CMSUG**
- simulated
 - devices, I/O, specifying **PLNGDE**
 - OS supervisor calls **CMSPROG**
- simulating
 - attention interruption **CPREF**
 - hardware store **CPREF**
 - interruptions **CPREF**
 - not ready status for a virtual device **CPREF**
 - real reset button **CPREF**
 - real restart button **CPREF**
- simulation
 - of VSE functions by CMS **CMSPROG**
 - OS macro **CMSPROG**

single

console image facility **INTRO**
 instruction mode **CPPROG**
 key support **CPPROG**
 processor mode **CPPROG, PLNGDE**
 commands used with **CPPROG**
 definition of **RGOS**
 error recording **RGOS**
 obtaining a VM/SP HPO dump **RGOS**
 option, **SPMODE** command **INTRO**
 PSW restart, using with **RGOS**
 restrictions **RGOS**
 setting **CPREF**
 off/on **RGOS**
 shadow tables, controlling **RGOS**
 varying offline a 308x, 3090, or 4381 processor **RGOS**
 verify, how to **RGOS**
SINGLE option of **COPYFILE** command **CMSREF**
 single spaced output forced **CPREF**
 single stepping
 See interactive debug
 single-frame configuration, 3880
 Storage Subsystem **PLNGDE**
SIO (Start I/O instruction) **CPPROG**
 initiating full screen mode **SFPROG**
 type X'06' entry **DIAG**
 operand of **TRACE** command **CPREF**
 six-word extended plist **SPIREF**
 size estimate control algorithm
 for projected working set **CPREF**
 size
 of file **XEDITUG**
 of logical screen **XEDIT, XEDITUG**
 of messages **TSAFREF**
SIZE option
 of **EXTRACT XEDIT**
 of **NAMEFIND CMSREF**
 of **QUERY XEDIT**
 of **TRANSFER XEDIT**
SIZE WINDOW command **CMSUG**
 operands
 summary **CMSREF**
 Size = **XEDITUG**
 sizing a virtual screen **XEDIT**
 sizing a window **XEDIT**
 skeleton libraries, **ISPSLIB APGDE**
SKIP option
 skipping
 instructions in a loop **SPIUG**
 lines **EXEX2**
SL operand of **FILEDEF** command **CMSREF**
 slash (/)
 as a separator
 in **CHANGE** command **CMSLOT**
 in **CLOCATE** command **CMSLOT**
 in **LOCATE** command **CMSLOT**
 as an operand
 in **COMPARE** command **CMSLOT**
 in **COPYFILE** command **CMSLOT**
 in **FILELIST** command **CMSLOT**
 in **RECEIVE** command **CMSLOT**
 in **SCRIPT** command **CMSLOT**

SLC (set location counter) loader
 control statement **CMSREF**
SLEEP command **CMSUG, CPREF**
 described **CPREF**
 operand
 nn **SEC/MIN/HRs CPREF**
 responses **CPREF**
 usage notes **CPREF**
 using on display terminals **CMSUG**
 slicing, time **INTRO**
SLREC synonym to sort **FILELIST CMSUG**
SLSS
 ordering additional copies
 of publications **REL5GDE**
 small CP option selection statement
 in **SPGEN PROFILE INST**
SMALLINT data type in **SQL APGDE**
COBOL APGDE
FORTRAN APGDE
SMART (VM/370 Real Time Monitor) **INST, PRGDE**
 analyzing performance with **RGOS**
SMODE synonym to sort **FILELIST CMSUG**
MSG command **CMSUG, CPREF, SFPROG**
CP CMSUG
 use with **VMCF PLNGDE**
 described **CPREF**
 operands
 msgtext **CPREF**
 userid **CPREF**
 responses **CPREF**
 usage notes **CPREF**
MSG operand of **SET** command **CPREF**
SNA (Systems Network Architecture) **GCSREF, REL5GDE**
 benefits **INTRO**
 console communication services **SFPROG**
 See **SNA CCS**
 console communications monitored in
 CP internal trace table **CPREF**
 defined **INTRO**
 introductory description **INTRO**
 logging on at a SNA terminal **GCSREF**
 logical units
 connecting previously unconnected **CPREF**
 disabling **CPREF**
 network components **INTRO**
 network control unit **GCSREF**
 node **INTRO**
 object code
 apply emergency fixes using **ZAPs INST**
 Apply List **INST**
 corrective service procedure **INST**
 Exclude List **INST**
 Merge Log **INST**
 merge multiple PTFs **INST**
 merge single PTF **INST**
 preventive service procedure **INST**
 Product Parameter File **INST**
 Remove List **INST**
 remove multiple PTFs **INST**
 remove single PTF **INST**
 Reqby Log **INST**
 Service Control File **INST**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

Service Log **INST**
 types of disks used **INST**
 ZAP List **INST**
 ZAP Log **INST**
 path between terminal
 and virtual machine **GCSREF**
 terminals **TERMREF**
 LOCATE raddr command not valid **CPREF**
 logging off **TERMREF**
 VM/SP support **SFPROG**
 accounting **SFPROG**
 CMS mode **SFPROG**
 command handling **SFPROG**
 communication interfaces **SFPROG**
 console mode **SFPROG**
 enabling SNA terminals **SFPROG**
 environments supported **SFPROG**
 establishing connections **SFPROG**
 full screen support mode **SFPROG**
 functions, SNA **SFPROG**
 I/O processing **SFPROG**
 MORE/HOLDING condition **SFPROG**
 NCP and PEP sharing **SFPROG**
 operator considerations **SFPROG**
 real device simulation **SFPROG**
 redisplay of input line for terminals **SFPROG**
 screen management **SFPROG**
 shutdown **SFPROG**
 system structure **SFPROG**
 trace table entries **SFPROG**
 TRQBLOK **SFPROG**
 user termination **SFPROG**
 WEBLOK **SFPROG**
 WEIBLOK **SFPROG**
 VM/SP virtual console support **SFPROG**
 VTAM service machine **SFPROG**
 with GCS **GCSREF**
 SNA CCS (Systems Network Architecture Console
 Communications Services)
 excluding modules **PLNGDE**
 NCP and PEP sharing **PLNGDE**
 planning considerations **PLNGDE**
 structure of the SNA environment **PLNGDE**
 supported devices **PLNGDE**
 tracing transactions
 error trace **PLNGDE**
 normal trace **PLNGDE**
 usage with IUCV **PLNGDE**
 SNA operand
 of DISABLE command **CPREF**
 of ENABLE command **CPREF**
 SNAME command **CMSLOT**
 SNAME synonym to sort **FILELIST CMSUG**
 SNAP macro (SVC 51) **CMSPROG**
 SNTMAP command **CMSUG**
 SNTMAP EXEC **PLNGDE**
 command format **INST**
 errors **PLNGDE**
 function **INST**
 input **INST, PLNGDE**
 introduction **PLNGDE**
 invoking **PLNGDE**
 messages **INST, PLNGDE**
 output **INST, PLNGDE**
 DASD SNTMAP **INST**
 MEMORY SNTMAP **INST**
 prompts **PLNGDE**
 use in installing
 discontinuous saved segments **PLNGDE**
 saved systems **PLNGDE**
 use of **PLNGDE**
 SNTINFO EXEC **INST**
 SO (shift-out) characters **SPIREF**
 software
 requirements **REL5GDE**
 support, virtual machines **PLNGDE**
 software-error information **DIAG**
 SORT **APGDE, XEDITUG**
 option of DSERV command **CMSREF**
 SORT command **APGDE, CMSLOT, PRIMER,**
SPIUG
 to specify filemode numbers **CMSUG**
 sort fields **CMSLOT, PRIMER**
 SORT macro **XEDIT**
 example of **XEDIT**
 SORT subcommand of **XEDIT** command **APGDE**
 example of use **INTRO**
 SORTED option of DATE function **SPIREF**
 sorting **XEDIT, XEDITUG**
 a file **SPIUG, PRIMER**
 characters **SPIUG**
 CMS disk files **CMSUG**
 directories of DOS/VSE private
 libraries **CMSPROG**
 files in **FILELIST CMSLOT, CMSUG**
 lines in a file, using **SORT CMSLOT**
 SOS option
ALARM XEDIT
CLEAR XEDIT
LINEADD XEDIT
LINEDEL XEDIT
NULLS XEDIT
PFn XEDIT
POP XEDIT
PUSH XEDIT
TABB XEDIT
TABCMD XEDIT
TABCMDDB XEDIT
TABCMDF XEDIT
TABF XEDIT
 SOS subcommand **XEDIT**
 source code
 definition **INST**
 how service **INST**
 load from product tape
 existing VM system procedure **INST**
 Starter System procedure **INST**
 source directory **REL5GDE**
 source files
 adding comments **CMSPROG**
 assembling
 identifying macro libraries **CMSREF**
 deleting records **CMSPROG**
 for assembler **CMSREF**
 inserting records **CMSPROG**
 multiple updates
 to using CTL option of **XEDIT CMSPROG**
 replacing records **CMSPROG**
 sample using UPDATE command **CMSPROG**
 updating with EXECUPDT command **CMSREF**
 source of the program and retrieval
 of information **SPIREF**
 SOURCE option of PARSE instruction **SPIREF**
 source program **CMSLOT**
 defined **INTRO**

- source statement libraries, VSE,
displaying directories **CMSREF**
SOURCE subcommand of TESTFORT command **APGDE**
source symbol table, assembler, generating **CMSREF**
source update, definition **INST**
source-maintained, definition **INST**
SOURCELINE function **SPIREF**, **SPIUG**
space bar **PRIMER**
SPACE command **CMSUG**, **CPREF**, **INTRO**
described **CPREF**
operands
lprt **CPREF**
raddr **CPREF**
responses **CPREF**
SPACE function **SPIREF**
space remaining, displaying **PRIMER**
space, determine free extents for VSAM **CMSREF**
spacing between lines of text **CMSUG**
span lines, allowing string target to **XEDIT**
SPAN option
of **EXTRACT XEDIT**
of **QUERY XEDIT**
of **SET XEDIT**
of **TRANSFER XEDIT**
spanned records, usage **CMSPROG**
spanning lines **XEDITUG**
SPB (Set Page Boundary) card **INST**
SPB card **CPPROG**
special characters **SPIREF**
in filenames and filetypes **CMSUG**
in typewriter mode
altering **XEDITUG**
using **XEDITUG**
using to determine if APL is on **CMSUG**
3270 Text feature **CMSUG**
special considerations: typewriter-like
terminals **TERMREF**
SPECIAL directory control statement **RGOS**
MVS guest **RGOS**
VM under VM **RGOS**
VM/VSE **RGOS**
special hardware for national languages **PLNGDE**
special message facility **PLNGDE**, **SFPROG**, **SYMSMG**
buffer length **SFPROG**
description **SFPROG**
introduction **SFPROG**
receiving messages via IUCV **SFPROG**
receiving messages via VMCF **SFPROG**
sending messages **SFPROG**
SMSG command **SFPROG**
special message flag (VMCPSMSG) **SFPROG**
turning on or off **SFPROG**
special messages
controlling receipt **CPREF**
controlling whether you receive them **CMSUG**
special symbols, use of **CPREF**
special variables **SPIUG**
See also EXEC, special variables
RC **SPIREF**
RESULT **SPIREF**
SIGL **SPIREF**
special-feature keyboards **TERMREF**
specification exception
ACCEPT **TSAFREF**
CONNECT **TSAFREF**
DCLBFR **TSAFREF**
DESCRIBE **TSAFREF**
RECEIVE **TSAFREF**
SENDCNF **TSAFREF**
SENDCNFD **TSAFREF**
SENDDATA **TSAFREF**
SENDERR **TSAFREF**
SENDREQ **TSAFREF**
SETCMASK **TSAFREF**
SETMASK **TSAFREF**
SEVER **TSAFREF**
TESTCMPL **TSAFREF**
specification list, for COPYFILE command format **CMSREF**
specify an alternate userid
with DIAGNOSE code X'D4' **SFPROG**
specifying
another language **REL5GDE**
automatically using the
LANG directory option **REL5GDE**
using the SET LANGUAGE command **REL5GDE**
DASD space
for CP message repository **SFPROG**
routing texts **SFPROG**
to an NCCF or NetView operator **SFPROG**
how full paging areas must be before
migration **CPPROG**
filemode numbers on DLBL and FILEDEF
commands **CMSUG**
3800 printer options **CPPROG**
SPECS option of COPYFILE command **CMSREF**
speed of paths **TSAFREF**
SPELLCHK option of SCRIPT command **CMSLOT**, **PRIMER**
spelling check **CMSLOT**, **PRIMER**
SPGEN command **CMSUG**
SPGEN EXEC **REL5GDE**, **TSAFREF**
command format **INST**
functions **INST**
messages **INST**
options **INST**
profile defaults **INST**
profile syntax **INST**
sample SPGEN PROFILE **INST**
usage notes **INST**
using to build CMS nucleus **INST**
using to build CP nucleus **INST**
SPGEN PROFILE **PLNGDE**, **REL5GDE**
defaults **INST**
sample file **INST**
syntax **INST**
tailoring considerations
existing VM system procedure **INST**
Starter System procedure **INST**
use for service **INST**
SPIE macro (SVC 14) **CMSPROG**, **DIAG**
SPILL option
of **EXTRACT XEDIT**
of **QUERY XEDIT**
of **SET XEDIT**
SPLINK **DIAG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

split a line
 at column number(s) **XEDIT**
 at column pointer **XEDIT**
 at cursor **PRIMER, XEDIT**
 at string **XEDIT**

SPLIT macro
 example of **XEDIT**
 with DBCS strings **XEDIT**

SPLIT subcommand of XEDIT command **APGDE**
splitting
 clauses **SPIUG**
 CMS files into smaller files **CMSUG**
 data **SPIUG**
 lines **XEDITUG**
 the screen **APGDE, PRIMER, XEDITUG**

SPLOAD command **CMSUG**
SPLOAD EXEC REL5GDE
 command format **INST**
 function **INST**
 messages **INST**
 profile syntax **INST**
 sample **SPLOAD PROFILE INST**
 usage notes **INST**

SPLOAD PROFILE REL5GDE
 sample file **INST**
 syntax **INST**

SPLTJOIN macro **XEDIT**
SPLTJOIN subcommand of XEDIT command **APGDE**
 with DBCS strings **XEDIT**

SPMODE command **CMSUG, CPPROG, CPREF**
CP RGOS
 described **CPREF**
 example of use **INTRO**
 operands
 OFF CPREF
 ON CPREF
 usage notes **CPREF**

SPMODE operand of QUERY command **CPREF**
spool CPPROG, REL5GDE
 batch job statement **INTRO**
 batch machine output **INTRO**
 buffers **OPGDE**
 class
 changing **CPREF**
 modifying **CPREF**
 command **INTRO**
 command (CP) **OPGDE**
 command, example of use **INTRO**
 control statement **INTRO**
 defining **GCSREF**
 spooling operator privilege class **REL5GDE**
 system service facility **REL5GDE**
 to copy screen to printer **XEDIT**

SPOOL command **CMSLOT, CMSUG, CPPROG, CPREF, DIAG, PRIMER**
 changing characteristics of
 unit record devices **CMSUG**
 described **CPREF**
 files
 See spool files
 operands
 * **CPREF**
 CHARS name CPREF
 CLASS CPREF
 CLOSE CPREF
 CONSOLE CPREF
 CONSOLE START CPPROG

CONSOLE STOP CPPROG
CONT CPREF
COPY **nnn CPREF**
DEST dest CPREF
DEST off CPREF
DIST distcode CPREF
EOF CPREF
FCB name CPREF
FLASH name CPREF
FOR CPREF
FORM form CPREF
HOLD CPREF
MODIFY name CPREF
NOCONT CPREF
NOEOF CPREF
NOHOLD CPREF
NOTERM CPREF
OFF CPREF
PRINTER CPREF
PUNCH CPREF
PURGE CPREF
READER CPREF
START CPREF
STOP CPREF
SYSTEM CPREF
TERM CPREF
TO CPREF
 userid **CPREF**
 vaddr **CPREF**
 operator task **INTRO**
 options, virtual device **CPREF**
 responses **CPREF**
 spooling console output **CMSUG**
 usage notes **CPREF**
 use with TAG command **CPREF**
 used to combine
 multiple spool files **CMSUG**
 used with DISK DUMP command **CMSREF**
 used with PRINT command **CMSREF**

SPOOL CONSOLE command **INTRO**
SPOOL directory control statement **PLNGDE**
MVS guest RGOS
VM under VM RGOS
VM/VSE RGOS

SPOOL EXEC, avoiding SPIREF
 spool file
 manipulation **SFPROG**
 external attribute buffer manipulation **SFPROG**
 opening with DIAGNOSE code X'BC' **SFPROG**
 system dump **SFPROG**

SPOOL file compression support **REL5GDE**
 control blocks, new and changed **REL5GDE**
 macros, new and changed **REL5GDE**
 modules, new and changed **REL5GDE**

spool file limit enhancements
 control blocks, new and changed **REL5GDE**
 described **REL5GDE**
 macros, new and changed **REL5GDE**
 modules, new and changed **REL5GDE**

spool files **APGDE, PLNGDE**
 altering external attributes **CPREF**
 altering TAG information **CPREF**
 attributes
 date **OPGDE**
 filename **OPGDE**
 filetype **OPGDE**
 number of copies **OPGDE**
 number of records **OPGDE**

- spool file **OPGDE**
- spoolid **OPGDE**
- time **OPGDE**
- userid **OPGDE**
- changing
 - attributes of **CPREF**
 - characteristics **CPREF**
 - filename **CPREF**
 - their order **CPREF**
- compression support enhancement **REL5GDE**
- control, CP commands used **CPREF**
- controlling in job for CMS batch facility **CMSUG**
- creating up to 9900 per user **REL5GDE**
- determining
 - number of closed **CPREF**
 - status of **CMSUG**
- dumping **CPREF**
- limiting number of **PLNGDE**
- limits **CPPROG**
- loading **CPREF**
- logical printer
 - at checkpoint start **OPGDE**
 - at warm start **OPGDE**
- manipulating **CPREF**
- migrating **INST, REL5GDE**
- migration **INST**
- MONITOR command, controlling **CPREF**
- ordering **CPREF**
- processing **PLNGDE**
- produced by CMS batch facility
 - controlling **CMSUG**
- putting in system hold status **CPREF**
- querying characteristics **CPREF**
- reclaiming after sent **CPREF**
- recovery **CPPROG**
- releasing them from system hold status **CPREF**
- removing **CPREF**
 - from system **CPREF**
- reordering **CPREF**
- selecting a specific printer or punch
 - using the DEST option **REL5GDE**
- sending to user **CPREF**
- setting characteristics **CPREF**
- storing **CPREF**
- TAG command **CPREF**
- transmitting to remote location **CPREF**
- unit record **OPGDE**
- SPOOL MODULE**, avoiding **SPIREF**
- SPOOL** operand of MONITOR command **CPREF**
- SPOOL PRINT CONT** command **APGDE**
- SPOOL PRINT NOCONT CLOSE** command **APGDE**
- SPOOL** System Service **SFPROG**
 - control blocks, new and changed **REL5GDE**
 - definition **SFPROG**
 - establishing communications **SFPROG**
 - functions **SFPROG**
 - CLOSE SFPROG**
 - IUCV CONNECT SFPROG**
 - IUCV SEND SFPROG**
 - MESSAGE SFPROG**
 - NOTIFY SFPROG**
 - PURGE SFPROG**
 - READ-SFBLOK SFPROG**
 - READ-SPLINK SFPROG**
 - READ-XAB SFPROG**
 - SELECT SFPROG**
 - SEND SFPROG**
- macros, new and changed **REL5GDE**
- modules, new and changed **REL5GDE**
- overview **REL5GDE**
- references to other publications **REL5GDE**
- to a logical printer **SFPROG**
- spooled **CPPROG**
 - card input **OPGDE**
 - input handling **OPGDE**
 - output **OPGDE**
 - printer output **OPGDE**
 - punch output **OPGDE**
 - virtual printer **INTRO**
- spoolid
 - attribute
 - spool files **OPGDE**
 - described **CPREF**
 - number **CPREF**
 - operand
 - of CHANGE command **CPREF**
 - of ORDER command **CPREF**
 - of PURGE command **CPREF**
 - of QUERY command **CPREF**
 - of SPTAPE command **CPREF**
 - of TRANSFER command **CPREF**
- spooling **CPPROG, INTRO**
 - accounting records, SYSACNT macro **PLNGDE**
 - across a teleprocessing network **OPGDE**
 - basic description **CMSUG**
 - changing
 - class **CPREF**
 - file attributes **CPREF**
 - filename **CPREF**
 - spoolid **CPREF**
 - class considerations **CPREF**
 - commands **OPGDE**
 - privilege class D or G **OPGDE**
 - considerations **OPGDE**
 - during abend **CPREF**
 - during shutdown **CPREF**
 - console output **TERMREF, CMSUG**
 - CP management **INTRO**
 - DASD requirements **PLNGDE**
 - defining virtual devices **PLNGDE**
 - described **CPREF**
 - description **INTRO**
 - determining number of closed files **CPREF**
 - devices **OPGDE, REL5GDE**
 - changing output class it serves **CPREF**
 - restarting **CPREF**
 - example **INTRO**
 - functions, operator **OPGDE**
 - I/O error handling **OPGDE**
 - input spool files **OPGDE**
 - modifying control options **CPREF**
 - multiple copies **CMSUG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

MVS virtual machine
 defining **RGOS**
 recommendations **RGOS**
operator
 described **CPREF, OPGDE**
 putting files on system hold **CPREF**
 responsibilities of **OPGDE**
options OPGDE
 output classes, defining with **RDEVICE**
 macro **PLNGDE**
 output spool files **OPGDE**
 overview **INTRO**
 performance considerations **PLNGDE**
 priority **INTRO**
 purging files **CPREF**
 real **OPGDE**
 removing closed files from the system **CPREF**
 reordering files **CPREF**
 resulting from I/O requests **INTRO**
 spoolid **CPREF**
 stopping real **CPREF**
 summary of CP activity **INTRO**
 support **OPGDE**
 system operator task **INTRO**
 transmitting files
 locally **CPREF**
 to remote locations **CPREF**
 user control **INTRO**
 using a 3880 Model 13 or Model 23 for **CPPROG**
 virtual **OPGDE**
 console **CPREF, OPGDE**
 console data **INTRO**
 punch **INTRO**
 reader **INTRO**
VM under VM
 first-level VM system **RGOS**
 options **RGOS**
 second-level VM system **RGOS**
VM/VSE
 options **RGOS**
 recommendations **RGOS**
 with **RSCS OPGDE**
SPTAPE operands, USERHOLD CPREF
SPTAPE command CMSUG, CPPROG, CPREF, INTRO
 described **CPREF**
 operands
 * **CPREF**
ALL CPREF
CANCEL CPREF
CLASS CPREF
DEST CPREF
 device parameters **CPREF**
DUMP CPREF
END CPREF
FORM CPREF
 hold parameters **CPREF**
LEAVE CPREF
LOAD CPREF
MODE CPREF
NOHOLD CPREF
PRINTER CPREF
PUNCH CPREF
PURGE CPREF
READER CPREF
REWIND CPREF
RUN CPREF
SADUMP CPREF
SCAN CPREF

spoolid **CPREF**
STOP CPREF
SYSHOLD CPREF
SYSTEM CPREF
 userid **CPREF**
1600 CPREF
38K CPREF
6250 CPREF
800 CPREF
SQL (Structured Query Language) INST
COBOL APGDE
 data types **APGDE**
 invoking **APGDE**
 commands **APGDE**
ALTER TABLE APGDE
COBOL APGDE
 coding **APGDE**
COMMIT WORK APGDE
CONTINUE APGDE
CREATE INDEX APGDE
CREATE TABLE APGDE
CREATE VIEW APGDE
DELETE APGDE
DROP INDEX APGDE
DROP TABLE APGDE
DROP VIEW APGDE
EXPLAIN APGDE
FORTRAN APGDE
GOTO APGDE
INCLUDE SQLCA APGDE
INSERT APGDE
 query **APGDE**
RELOAD APGDE
ROLLBACK WORK APGDE
SELECT APGDE
UNLOAD APGDE
UPDATE APGDE
WHENEVER APGDE
 creating table views **APGDE**
 creating tables **APGDE**
 data definition commands **APGDE**
ALTER TABLE APGDE
CREATE INDEX APGDE
CREATE TABLE APGDE
CREATE VIEW APGDE
DROP INDEX APGDE
DROP TABLE APGDE
DROP VIEW APGDE
 data manipulation commands **APGDE**
DELETE APGDE
INSERT APGDE
UPDATE APGDE
 data types **APGDE**
COBOL APGDE
FORTRAN APGDE
 data types for **COBOL**
SMALLINT APGDE
 data types for **FORTRAN**
SMALLINT APGDE
DBSPACE APGDE
DECLARE CURSOR statement APGDE
DECLARE statement in COBOL APGDE
DECLARE statements APGDE
 duplicates, **DISTINCT** keyword **APGDE**
 error handling **APGDE**
 excluding duplicates **APGDE**
EXECs APGDE
FETCH statement APGDE

FORTRAN APGDE
 data types **APGDE**
 invoking **APGDE**
 preprocessor **APGDE**
FROM clause **APGDE**
 functions **APGDE**
 AVG APGDE
 COUNT APGDE
 MAX APGDE
 MIN APGDE
 SUM APGDE
 host variables **APGDE**
INCLUDE statement in **COBOL APGDE**
 index **APGDE**
INTO statement **APGDE**
ISQL APGDE
 testing **APGDE**
 logical units of work **APGDE**
 main variables, exceptions **APGDE**
 manipulating data **APGDE**
 multiple data base mode **APGDE**
 multiple user mode **APGDE**
OPEN statement **APGDE**
ORDER BY clause **APGDE**
 predicates **APGDE**
 BETWEEN APGDE
 IN APGDE
 IS NULL APGDE
 LIKE APGDE
 preprocessor **APGDE**
 SQLSTART EXEC (FORTRAN) APGDE
 prototyping applications **APGDE**
 query command **APGDE**
QUOTE parameter **APGDE**
RESOURCE (table creation authority) **APGDE**
 search conditions **APGDE**
 single user mode **APGDE**
SQLCA (SQL communication area) **APGDE**
 SQLCODE APGDE
 SQLWARN APGDE
SQLCODE APGDE
SQLWARN APGDE
SQLWARNING APGDE
 statements
 CREATE VIEW APGDE
 DECLARE APGDE
 DECLARE CURSOR APGDE
 FETCH APGDE
 in **FORTRAN APGDE**
 INSERT APGDE
 INTO APGDE
 OPEN APGDE
 UPDATE APGDE
 table components
 columns **APGDE**
 fields **APGDE**
 rows **APGDE**
 testing **APGDE**
 variables
 indicator **APGDE**
 main **APGDE**
 view definitions **APGDE**
 WHERE clause **APGDE**
 WHERE CURRENT OF APGDE
SQL (Structured Query Language/Data System) **INTRO**,
INST
 data base **INTRO**
 EXECUTE facility **INTRO**
 PREPARE facility **INTRO**
 preprocessor **INTRO**
 with **QMF INTRO**
SQLCA (SQL communication area) **APGDE**
SQLCODE APGDE
SQLDBA INST
SQLPK, formatting **INST**
SQLUSER INST
SQLWARN APGDE
SQLWARNING APGDE
SRECF synonym to sort **FILELIST CMSUG**
SRF
 devices, specifying, **RIOGEN** macro **PLNGDE**
 mode **PLNGDE**
 operand of **RIOGEN** macro **PLNGDE**
SRM (System Resources Management) **CPREF**
SRM **IBUFF** operand of **CP SET**
 command **CPPROG, RGOS**
SRM **MHFULL** operand of **SET** command **CPPROG**
SRM operand
 of **QUERY** command **CPREF**
 of **SET** command **CPREF, CPPROG**
SRM **PGFULL** operand of **SET** command **CPPROG**
SRM **PGMACT** operand of **QUERY** command **CPPROG**
SRM **PGMTLIM** operand of **SET** command **CPPROG**
SRM **PREPAGE, CP SET** command **RGOS**
SRPI (Server-Requester Programming Interface) **REL5GDE**
 description **INTRO**
SRPI macro
 considerations for using **SRPI**
 filetype of **SRPI**
 loader **SRPI**
 example **SRPI**
 reason for using **SRPI**
 server
 definition **SRPI**
 request-handling sequence **SRPI**
 termination **SRPI**
 what it is **SRPI**
SRPI variables
 GETREQ SRPI
 SENDREQ SRPI
 SETREPLY SRPI
SSAVE subcommand **XEDIT**
SSBLOK (swap set block) **CPPROG, CPPROG**
SSERV command
 description of **CMSPROG**
 examples **CMSPROG**
 using **CMSPROG**
SSIZE
 command **CMSLOT**
 synonym to sort **FILELIST CMSUG**
SSND command responses **CPREF**
SSP (Systems Support Program) **INST, PLNGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

STACK

command **APGDE**
 counting lines in **SPIREF**
 option
 of **EXECMAP** command **CMSREF**
 of **GLOBALV** command **CMSREF**
 of **IDENTIFY** command **CMSREF**
 of **NAMEFIND** command **CMSREF**
 of **NUCXMAP** command **CMSREF**
 of **RDR** command **CMSREF**
 of **RECEIVE** command **CMSREF**
 reading from with **PULL SPIREF**
 writing to with **PUSH SPIREF**
 writing to with **QUEUE SPIREF**

stack

console **INTRO**
 described **SPIUG**
 program **INTRO**

STACK subcommand of **XEDIT XEDIT**

example of use **INTRO**

stacking

CP commands
 in **PROFILE EXEC** for VSE guest **RGOS**
 lines **EXEX2, XEDIT**
 null lines

 after attention interruption **CMSUG**
 at your terminal **CMSUG**

STACKR option of **GLOBALV** command **CMSREF**stacks **APGDE**

console **APGDE**
 stack **APGDE**
 local **APGDE**
 stack **APGDE**
 program stack **APGDE**
 used globally **APGDE**

STAE macro (SVC 60) **CMSPROG, DIAG**

stage 1 input

console definitions **RGOS**
 DMKRIO definitions **RGOS**
 tape drives, defining **RGOS**

Staging Adapter: channel interface positions **PLNGDE**stand-alone dump **INTRO, CPPROG**

stand-alone dump facility

configuring **DIAG**
 DASD format **DIAG**
 devices to IPL **DIAG**
 devices to send dump output **DIAG**
 error handling **DIAG**
 example of configuring **DIAG**
 output devices **DIAG**
 overview **DIAG**
 printer format **DIAG**
 processing dump data on tape **DIAG**
 program generation **DIAG**
SADUMP EXEC DIAG
 taking a dump **DIAG**
 tape format **DIAG**
 using **DIAG**
 wait state codes **SYMSMSG**

Stand-Alone Dump Program

execution wait state codes **SYMSMSG**
 generation wait state codes **SYMSMSG**

standard format

CMSIUCV macro **SFPROG**
HNDIUCV macro **SFPROG**

standard label processing, CMS/DOS **CMSUG**

standard label tape processing exits (OS Simulation)

CMSUG, REL5GDE

DMSTVI interface routine **REL5GDE**
 execs, new and changed **REL5GDE**
FILEDEF command **REL5GDE**
LABELDEF command **REL5GDE**
 macros, new and changed **REL5GDE**
 modules, new and changed **REL5GDE**
 modules, split **REL5GDE**

START

checkpoint (CKPT) **OPGDE**

cold **OPGDE**

command

force **OPGDE**

initiating VM/SP HPO **OPGDE**

option

 of **FETCH** command **CMSREF**

 of **INCLUDE** command **CMSREF**

 of **LOAD** command **CMSREF**

 of **NAMEFIND** command **CMSREF**

shutdown **OPGDE**

START command **APGDE, CMSUG, CPPROG,****CPREF**

defined **INTRO**

described **CPREF**

example of use **INTRO**

executing a file **CMSPROG**

executing TEXT files **CMSPROG**

FCB image operands and **LOADBUF** command **CPREF**

operands

* **CPREF**

ALL CPREF

ANY3800 CPREF

AUTO CPREF

BEG3800 CPREF

CFILEFCB CPREF

CHARS CPREF

CLASS CPREF

DEFFCB CPREF

DEST CPREF

FCB CPREF

FILEFCB CPREF

FLASH CPREF

FORM CPREF

IMAGE CPREF

lpvt CPREF

MANUAL CPREF

NOSEP CPREF

NO3800 CPREF

OFF CPREF

PRINTER CPREF

PUNCH CPREF

PURGE CPREF

raddr CPREF

READER CPREF

SETUP CPREF

operator use **INTRO**

responses **CPREF**

usage notes **CPREF**

used with **FETCH** command **CMSPROG**

start I/O, monitored in CP internal trace table **CPREF**

Start I/O instruction

handling **CPPROG**

initiating full screen mode **SFPROG**

reducing **CPPROG**

- START operand**
of CPTRAP command **CPREF**
of MONITOR command **CPREF**
of SPOOL command **CPREF**
- START option (of LOAD command) APGDE**
- start-stop lines, low speed PLNGDE**
- starter set of GML PRIMER**
- starter system**
- starter systems INTRO**
directories supplied **PLNGDE**
feature numbers **REL5GDE**
general description **INST**
procedure (CP)
See starter system procedure (CP)
- tape**
contents **INST**
file layout **INST, REL5GDE**
3350, introduction **PLNGDE**
3375, introduction **PLNGDE**
3380, introduction **PLNGDE**
- starter system procedure (CP)**
allocate remaining system volumes **INST**
backup **INST**
build new CP nucleus **INST**
checklist **INST**
complete **CUSTOMER PROFILE INST**
create CMS nucleus **INST**
defining more than one CP nucleus **INST**
designate volumes as CP-owned **INST**
format
DASD volumes **INST**
remaining base CP minidisks **INST**
- install**
EREP INST
GCS INST
- IPL new CP INST**
- load**
CMS nucleus generation profile **INST**
CP object code **INST**
IPCS INST
source code **INST**
system definition files **INST**
system generation tools **INST**
system HELP files **INST**
TSAF INST
- print**
load map **INST**
the system definition files **INST**
- related procedures INST**
- required materials INST**
- restore starter system to disk INST**
- shut down Starter System CP INST**
- tailor**
CMS nucleus generation profile **INST**
SPGEN PROFILE INST
system definition files **INST**
- save load map on disk INST**
- saving IPLable CP nucleus on tape INST**
- system control file, description INST**
- tailoring considerations**
AP and MP systems **INST**
existing VM system procedure **INST**
- GCS volume INST**
- paging INST**
- planning INST**
- Starter System procedure INST**
- user classes INST**
- VMSRES address INST**
- update SYSTEM NETID file INST**
- starting**
a program **PRIMER**
an EXEC **PRIMER**
control switch assist **CPPROG**
full-screen CMS **PRIMER**
program execution in CMS **CMSPROG**
programs **GCSREF, PLNGDE**
the programmable operator **SFPROG**
the VSE/POWER printer **RGOS**
to use XEDIT **CMSLOT, PRIMER**
TSAF TSAFREF
VM/SP HPO operations **OPGDE**
- starting point for execution of module, setting CMSREF**
- STARTR (start real) PLNGDE**
- startup**
map of storage allocations **OPGDE**
system **OPGDE**
- STAT command**
description **DIAG**
error message **DIAG**
format **DIAG**
output fields **DIAG**
response **DIAG**
sample **STATALL LOCAL file DIAG**
usage **DIAG**
- STAT option of LISTIO command CMSREF**
- statall local file DIAG**
- STATALL LOCAL file sample DIAG**
- STAtarea operand of SCREEN command CPREF**
- STATE (keyword definition) DIAG**
- state changes**
ACCEPT TSAFREF
ALLOCATE (APPC) TSAFREF
CONFIRM (APPC) TSAFREF
CONFIRMED (APPC) TSAFREF
CONNECT TSAFREF
DCLBFR TSAFREF
DEALLOCATE (APPC) TSAFREF
RECEIVE TSAFREF
RECEIVE_AND_WAIT (APPC) TSAFREF
REQUEST_TO_SEND (APPC) TSAFREF
RTRVBFR TSAFREF
SEND_DATA (APPC) TSAFREF
SEND_ERROR (APPC) TSAFREF
SENDCNF TSAFREF
SENDCNFD TSAFREF
SENDDATA TSAFREF
SENDERR TSAFREF
SENDREQ TSAFREF
SEVER TSAFREF
- STATE command used with OS data sets CMSPROG**
- states, APPC/VM TSAFREF**
CONFIRM TSAFREF
CONNECT TSAFREF
RECEIVE TSAFREF

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

RESET TSAFREF
 SEND TSAFREF
 SEVER TSAFREF
 switching TSAFREF
 statistics INTRO
 status
 '....' pending XEDITUG
 '''' pending XEDITUG
 'DD' pending XEDITUG
 action, summary TERMREF
 area TERMREF, XEDIT
 defining display features XEDITUG
 during macro execution XEDIT
 during macro processing XEDITUG
 during prefix subcommands XEDIT
 in full-screen CMS CMSUG
 in multiple logical screens XEDIT
 in XEDIT PRIMER
 location on screen XEDITUG
 resetting XEDIT
 C or CC pending XEDITUG
 F pending XEDITUG
 file DIAG
 information
 in full-screen CMS CMSUG
 request INTRO
 line PRIMER
 M or MM pending XEDITUG
 messages
 hardware and program OPGDE
 system operation OPGDE
 MIH CPPROG
 notices PRIMER
 notices in full-screen CMS
 enter a command or press
 a PA or PF key CMSUG
 enter your response
 in vscreen vname CMSUG
 executing a command CMSUG
 press ENTER to view more data CMSUG
 scroll forward for more information
 in vscreen vname CMSUG
 of editing session XEDITUG
 of virtual machine environment
 P pending XEDITUG
 querying CMSREF
 storing virtual machine CPREF
 system information CPREF
 status area message
 '.....' pending... XEDIT
 '< <' pending... XEDIT
 '> >' pending... XEDIT
 '''' pending... XEDIT
 'C' or 'CC' pending... XEDIT
 'D' or 'DD' pending... XEDIT
 'F' pending... XEDIT
 'P' pending... XEDIT
 'XX' pending... XEDIT
 STATUS macro XEDIT
 STATUS operand
 of IMMCMD command CMSREF
 of QUERY command CPREF
 of STORE command CPREF
 STATUS
 field DIAG
 logical device support facility function SFPROG
 output field of STAT command DIAG
 virtual screen PRIMER
 window PRIMER
 status words, tracing CPREF
 STAX macro (SVC 96) CMSPROG
 STAY option
 of EXTRACT XEDIT
 of QUERY XEDIT
 of SET XEDIT
 of TRANSFER XEDIT
 STBYPASS operand of SET command CPREF, CPPROG, RGOS
 STBYPASS VR operand of the SET command CPPROG
 STCP command CMSUG, CPPROG, CPREF, DIAG
 described CPREF
 operands
 hexdata CPREF
 hexloc CPREF
 hexword CPREF
 Lhexloc CPREF
 Mhexloc CPREF
 MLhexloc CPREF
 MShexloc CPREF
 Nhexloc CPREF
 NLhexloc CPREF
 NShexloc CPREF
 Shexloc CPREF
 responses CPREF
 usage notes CPREF
 stem
 description of SPIUG
 example of SPIUG
 of a variable
 assignment to SPIREF
 description of SPIREF
 used in DROP instruction SPIREF
 used in PROCEDURE instruction SPIREF
 STEM option
 of EXECIO command CMSREF
 of PER command CPREF
 stepping through programs
 See interactive debug
 stexec.execs in storage enhancements REL5GDE
 STFIRST directory option RGOS
 STIMER macro GCSREF, PLNGDE
 bintvl parameter GCSREF
 description GCSREF
 dintvl parameter GCSREF
 exit routine parameter GCSREF
 real parameter GCSREF
 (SVC 47) CMSPROG
 tod parameter GCSREF
 wait parameter GCSREF
 STMT option of ASSEMBLE command CMSREF
 STMult operand of SET
 command CPREF, CPPROG, RGOS
 stop execution DIAG
 STOP
 action routine SFPROG
 STOP command
 programmable operator SFPROG
 STOP operand
 of CPTRAP command CPREF
 of IPL command CPREF
 of MONITOR command CPREF
 of SPOOL command CPREF
 of SPTAPE command CPREF
 STOP TSAF command TSAFREF

stopping

a virtual machine CPREF
 channel program CPREF
 commands GCSREF
 execution DIAG, EXEX2
 virtual machine CPREF
 full-screen CMS PRIMER
 initial program load (IPL) procedure CPREF
 programs GCSREF, PLNGDE
 spooling operations on real unit
 record devices CPREF
 the batch virtual machine OPGDE
 the programmable operator facility SFPROG
 TSAF TSAFREF

storage

above 16Mb
 program restrictions CPPROG
 SYSCOR macro CPPROG
 accessing SPIREF
 address translation INTRO
 allocation INTRO, CMSPROG
 map OPGDE
 altering virtual CPREF
 AP/MP environment CPPROG
 assembler requirements CMSPROG
 auxiliary REL5GDE
 available in your virtual machine,
 calculated by CMS CMSPROG
 clearing to zeros CPREF
 in CMS/DOS CMSREF
 with LOAD command CMSREF
 clearing virtual CPREF
 CMS nucleus CMSPROG
 considerations for MVS V=R guest RGOS
 contents alteration DIAG
 real storage DIAG
 STCP command DIAG
 STORE command DIAG
 virtual machine storage DIAG
 ZAP command DIAG
 ZAPTEXT command DIAG
 directors CPPROG
 3880 Storage Subsystem PLNGDE
 3880 CPPROG
 displaying use and contention for it CPREF
 DMSFREE macro CMSPROG
 DMSFREE management CMSPROG
 DMSNUC CMSPROG
 dynamic paging CPPROG
 execution from SPIREF
 Extended Storage Support PLNGDE
 finding upper limit of SPIREF
 for each model of the 3704/3705 PLNGDE
 free storage CMSPROG
 greater than 16Mb
 preferred machine assist guest CPPROG
 storage map CPPROG
 SYSCOR macro CPPROG
 how CP manages INTRO
 how organized INTRO
 increases CMSLOT

initializing

for module file execution CMSREF
 keys
 changing PLNGDE, CPPROG
 displaying CPREF
 double key support CPPROG
 printing CPREF
 single key support CPPROG
 layout
 See storage layout
 loader tables CMSPROG
 locations
 altering virtual machine CPREF
 displaying virtual CPREF
 displaying virtual machine CPREF
 printing CPREF
 management enhancements REL5GDE
 control blocks, macros, modules,
 new and changed REL5GDE
 managing CMSPROG
 map, CMS CMSPROG
 maximum size INTRO
 modifying CPREF
 nucleus free CMSPROG
 of files CMSLOT
 of relatively inactive pages CPPROG
 pageable CPPROG
 setting amount of it CPREF
 permanent PRIMER
 planning for requirements INTRO
 protection
 fetch CPPROG
 storing CPPROG
 protection keys CMSPROG
 real
 above 16Mb CPPROG
 real storage management CPPROG
 releasing CMSPROG
 requests for prime
 monitored in CP internal trace table CPREF
 requirements REL5GDE
 for directory group names CPPROG
 shared CMSPROG
 space, saving CPREF
 specifying for CMS/DOS partition CMSREF
 structure of CMSPROG
 transient program area CMSPROG
 user free CMSPROG
 user program area CMSPROG
 using greater than 16Mb CPPROG
 virtual address INTRO
 virtual PRIMER, INTRO
 virtual vs. real INTRO
 with INCLUDE command CMSREF
 STORAGE function SPIREF
 storage layout
 comparing VM/SP HPO and MVS RGOS
 multiprocessing
 with no V=R area RGOS
 with nonpreferred MVS V=R guest RGOS
 MVS nonpreferred guest, example RGOS
 preferred machine assist RGOS

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- single processor mode
 - w/o preferred machine assist **RGOS**
 - UP system for MVS V=R guest **RGOS**
- STORAGE** operand
 - of **DEFINE** command **CPREF**
 - of **QUERY** command **CPREF**
 - of **QUERY VIRTUAL** command **CPREF**
- storage size
 - maximum
 - replacing directory entry **SFPROG**
 - virtual machine
 - replacing directory entry **SFPROG**
- STORE** command **APGDE**, **CMSUG**, **CPPROG**, **CPREF**, **DIAG**, **INTRO**
 - described **CPREF**
 - operands
 - , **CPREF**
 - element **CPREF**
 - Greg **CPREF**
 - hexdword1 **CPREF**
 - hexdword2 **CPREF**
 - hexloc **CPREF**
 - hexword1 **CPREF**
 - hexword2 **CPREF**
 - n **CPREF**
 - PSW **CPREF**
 - STATUS **CPREF**
 - VAC **CPREF**
 - VMR **CPREF**
 - VP **CPREF**
 - VR **CPREF**
 - vreg **CPREF**
 - VSR **CPREF**
 - Xreg **CPREF**
 - Yreg **CPREF**
 - response **CPREF**
 - segment protection **CPPROG**
 - usage notes **CPREF**
- STORE** event-type of **PER** command **CPREF**
 - MASK CPREF**
- store real CP data **DIAG**
- STORE STATUS** command **DIAG**
 - CP command **RGOS**
- store virtual data **DIAG**
- store extended-identification code
 - with **DIAGNOSE** code X'00' **SFPROG**
- store-in cache **CPPROG**
- storing
 - CPU status **CPREF**
 - into virtual storage **CPREF**
 - lines **CMSLOT**
 - storage protection **CPPROG**
 - vector activity counter **CPREF**
 - vector mask register **CPREF**
 - vector register elements **CPREF**
 - vector register pairs **CPREF**
 - vector registers **CPREF**
 - vector status register **CPREF**
 - virtual machine data **CPREF**
 - virtual machine status **CPREF**
- STOW** macro (SVC 21) **CMSPROG**
- STQUERY** operand of **SYSJRL** macro **PLNGDE**
- STR** option of **GENMOD** command **CMSREF**
- STREAM** option
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
 - of **SET XEDIT**
 - of **TRANSFER XEDIT**
- string **CMSLOT**
 - as literal constants **SPIREF**
 - as names of functions **SPIREF**
 - as names of subroutines **SPIREF**
 - comparing **SPIUG**
 - comparison of **SPIREF**
 - concatenation of **SPIREF**
 - copying **SPIUG**
 - description of **SPIREF**, **SPIUG**
 - duplicating **SPIUG**
 - examples of **SPIUG**
 - expression
 - complex target as **XEDITUG**
 - example of specifying target as **XEDIT**
 - column-target as **XEDIT**
 - format of **XEDIT**
 - simple target as **XEDITUG**
 - specifying column-target as **XEDIT**
 - specifying target as **XEDIT**
 - hexadecimal specification of **SPIREF**
 - interpretation of **SPIREF**
 - length of **SPIREF**
 - locating
 - using a target **XEDITUG**
 - using **CLOCATE XEDITUG**
 - using **CLOCATE** in typewriter mode **XEDITUG**
 - null **SPIREF**
 - overlying **SPIUG**
 - quotes in **SPIREF**
 - switching
 - See string switching
 - target **XEDITUG**
 - verifying contents of **SPIREF**
- string operand of **LOCATE (UP)** subcommand **DIAG**
- string switching
 - MVS virtual machine
 - reserve/release, affect on **RGOS**
 - 3380-AA4s **RGOS**
 - VSE virtual machine
 - hardware considerations **RGOS**
 - performance considerations **RGOS**
 - reserve/release, affect on **RGOS**
 - 3380-AA4s **RGOS**
- STRINIT** macro
 - description of **CMSPROG**
 - format of **CMSPROG**
 - initializing pointers for storage management **CMSPROG**
 - releasing storage **CMSPROG**
- STRIP** function **SPIREF**
- structure
 - and syntax **SPIREF**
 - paging hierarchy **CPPROG**
 - SNA system **SFPROG**
 - of a save area **GCSREF**
 - of CMS storage **CMSPROG**
- structured data base (SDB) **DIAG**
 - format **DIAG**
 - keyword **DIAG**
- structured input **XEDIT**, **XEDITUG**
- Structured Query Language (SQL) **INST**
 - See SQL (Structured Query Language)
- Structured Query Language (SQL)/Data System
 - See SQL (Structured Query Language)/Data System
- Structured Query Language/Data System (SQL) **INTRO**
 - data base **INTRO**
 - EXECUTE** facility **INTRO**
 - PREPARE** facility **INTRO**

- preprocessor **INTRO**
- with QMF **INTRO**
- style of programming **SPIREF**
- STYLE command **CMSLOT**
- STYLE synonym to sort FILELIST **CMSUG**
- suballocated VSAM cluster, defining **CMSPROG**
- SUBCOM function **SPIREF**
 - calling routines dynamically **CMSPROG**
 - command search function **CMSPROG**
 - register 1 contents **CMSPROG**
 - return codes **CMSPROG**
- subcommand operand of PRINT subcommand **DIAG**
- subcommands
 - ADDENTRY**
 - See **ADDENTRY** subcommand
 - addressing of **SPIREF**
 - assigning to PF key **XEDIT**
 - CMS INTRO**
 - concept **SPIREF**
 - controlling search order for **XEDIT**
 - DELENTY**
 - See **DELENTY** subcommand
 - destinations **SPIREF**
 - entering in input mode
 - using escape character **XEDIT**
 - GETREQ**
 - See **GETREQ** subcommand
 - in **XEDIT SPIUG**
 - defining range of operation **XEDITUG**
 - entering on display terminal **XEDITUG**
 - entering on typewriter terminal **XEDITUG**
 - used in macros, list of **XEDITUG**
 - with target operands **XEDITUG**
 - writing your own **XEDITUG**
 - multiple
 - assigned to PF key **XEDIT**
 - entered on command line **XEDIT**
 - redisplaying
 - using ? **XEDIT**
 - reexecuting **XEDIT**
 - SENDREQ**
 - See **SENDREQ** subcommand
 - SETREPLY**
 - See **SETREPLY** subcommand
 - using & **XEDIT**
- submitting jobs
 - to CMS batch facility **CMSUG**
 - non-CMS users **CMSUG**
 - to VSE/SP 2.1 virtual machine **RGOS**
 - under CMS **RGOS**
 - using SUBVSE EXEC **RGOS**
- subpools **REL5GDE**
 - defined **PLNGDE**
 - management **REL5GDE**
- subroutines
 - ARG** instruction **SPIUG**
 - arguments for **SPIUG**
 - calling **EXEX2, SPIREF**
 - description of **SPIUG**
 - differences with functions **SPIUG**
 - example of **SPIUG**
 - external **SPIUG**
 - interface **SPIREF**
 - forcing built-in or external reference **SPIREF**
 - formatting output **SPIUG**
 - internal **SPIUG**
 - naming of **SPIREF**
 - passing back values from **SPIREF**
 - PROCEDURE instruction **SPIUG**
 - protecting variables **SPIUG**
 - return from **SPIREF**
 - RETURN** instruction **SPIUG**
 - returning **EXEX2**
 - search order **SPIUG**
 - sharing variables **SPIUG**
 - similarities with functions **SPIUG**
 - use of labels **SPIREF**
 - variables in **SPIREF**
- subset, CMS
 - See CMS subset
- subsetting options in **DETAIL HELP**
 - ALL CMSUG**
 - DESCRIPT CMSUG**
 - ERRORS CMSUG**
 - FORMAT CMSUG**
 - NOTES CMSUG**
 - OPTIONS CMSUG**
 - PARMS CMSUG**
- substituting
 - compound symbols **SPIUG**
 - symbols **SPIUG**
 - using the **INTERPRET** instruction **SPIUG**
 - using the **VALUE** function **SPIUG**
 - variables **SPIUG, EXEX2**
- substitution
 - in expressions **SPIREF**
 - in variable names **SPIREF**
- SUBSTR** function **SPIREF, SPIUG**
- substring **SPIUG**
- SUBSYS** operand of **CACHE** command **CPREF**
- subsystem storage 3880
 - Model 13 **CPPROG**
 - Model 23 **CPPROG**
- subsystem support interface: **SVC 199 DIAG**
- subtasks **PLNGDE**
 - adding and discarding **PLNGDE**
- subtraction **SPIUG**
 - definition **SPIREF**
 - operator **SPIREF, SPIUG**
- SUBVSE EXEC RGOS**
- SUBWORD** function **SPIREF, SPIUG**
- SUL** operand of **FILEDEF** command **CMSREF**
- SUM** function of **SQL APGDE**
- summary
 - of changes **SFPROG**
 - of CMS commands **CMSREF, CMSUG**
 - for system programmers **CMSREF, CMSUG**
 - of CP command privilege classes **CMSUG**
 - of CP commands **CMSUG, CPREF, OPGDE**
 - by function **CPREF**
 - of **DUMPSCAN** subcommands **DIAG**
 - of **HELP** and **HELPCONV** format words **CMSUG**
 - of immediate commands **CMSUG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- of initial PF key settings **XEDITUG**
 - of IPCS commands **DIAG**
 - of migration problems **CPPROG**
 - of prefix subcommands **XEDIT, XEDITUG**
 - of subset for full-screen **XEDITUG**
 - of subset for typewriter terminals **XEDITUG**
 - of **XEDIT** subcommands and macros **XEDIT, XEDITUG**
 - VMCF functions **PLNGDE**
 - of VM/SP concepts **INTRO**
 - summary of changes **APGDE, CMSPROG, DIAG, EXEC2, GCSREF, MACREF, PRIMER**
 - summary record **DIAG**
 - file **DIAG**
 - superseded, definition **INST**
 - supervisor call (SVC) instructions **MACREF**
 - handling **MACREF**
 - supervisor calls **CMSPROG**
 - supervisor state **PLNGDE**
 - supervisors
 - which one to use with VAE **RGOS**
 - pregenerated for VSE/SP 2.1 **RGOS**
 - support package, 3704/3705 control program **PLNGDE**
 - supported
 - DIAGNOSE** codes when you IPL with the **PMAV** option **RGOS**
 - languages **SRPI**
 - products **SRPI**
 - suppressing
 - automatic loading **CPREF**
 - messages sent by the **TELL** command **CMSUG**
 - passwords **CPREF, CPPROG**
 - on the command line **CMSUG**
 - special messages **CMSUG**
 - suspending
 - full-screen **CMS PRIMER**
 - PER DIAG**
 - SVC** (supervisor call)
 - CMS/DOS** support routines **CMSPROG**
 - DMSITS** module **CMSPROG**
 - dumps for MVS guest **RGOS**
 - handling routine
 - DMSITS CMSPROG**
 - INTSVC CMSPROG**
 - instructions **MACREF**
 - interrupts **CMSPROG**
 - CMS CMSPROG**
 - description of **CMSPROG**
 - internal linkage **SVC CMSPROG**
 - monitored **CPREF**
 - problem state **CPPROG**
 - supervisor state **CPPROG**
 - type X'05' entry **DIAG**
 - linkage **CMSPROG**
 - save area (**SVCSAVE**) **DIAG**
 - types **CMSPROG**
 - invalid **SVCs CMSPROG**
 - OS** and **VSE** **SVC** simulation **CMSPROG**
 - SVC 202 CMSPROG**
 - SVC 203 CMSPROG**
 - user-handled **CMSPROG**
 - 0 CPPROG**
 - 8 CPPROG**
 - 12 CPPROG**
 - 16 CPPROG**
 - 20 CPPROG**
 - 24 CPPROG**
- 76
 - error recording **OPGDE**
 - from a second level virtual machine **SFPROG**
 - how **MVS** and **CP** use **RGOS**
 - messages to system operator **OPGDE**
 - 199 code 10 **DIAG**
 - 199 code 20 **DIAG**
 - 199 code 30 **DIAG**
 - 199 code 31 **DIAG**
 - 199 code 40 **DIAG**
 - 199 code 41 **DIAG**
 - 199 code 50 **DIAG**
 - 199 code 60 **DIAG**
 - 199 code 70 **DIAG**
 - 199 code 71 **DIAG**
 - 199 code 80 **DIAG**
 - 199 code 90 **DIAG**
 - 199 code 91 **DIAG**
 - 199 codes available **DIAG**
 - 199 services **DIAG**
 - disk error **DIAG**
 - printer error **DIAG**
 - subsystem support interface: **SVC 199 DIAG**
 - 202 CMSPROG, SRPI**
 - description of **CMSPROG**
 - entered from a program **CMSPROG**
 - extended **PLIST CMSPROG**
 - extended **PLIST** address for **SRPI**
 - format of to invoke servers **SRPI**
 - processing **CMSPROG**
 - publication reference **SRPI**
 - register 0 points to extended **PLIST SRPI**
 - return codes **CMSPROG**
 - search hierarchy **CMSPROG**
 - server distinguishing how called **SRPI**
 - server receives control (with **ENDCMD** option) **SRPI**
 - tokenized **PLIST CMSPROG**
 - tokenized **PLIST** address for **SRPI**
 - 202 call
 - example **EXEX2**
 - SUBCOM** function **EXEX2**
 - 203 CMSPROG**
 - SVC** operand of **TRACE** command **CPREF**
 - SVCACCL** operand of **OPTION** directory
 - control statement **PLNGDE**
 - SVCACCL** option, defining in directory **PLNGDE**
 - SVCOFF** operand of **OPTION** directory
 - control statement **PLNGDE**
 - SVCOFF** option, defining in directory **PLNGDE**
 - SVCOPSW** (**SVC** old **PSW**) **DIAG**
 - SVCREGS** (**SVC** interrupt save area) **DIAG**
 - SVCSAVE** (**SVC** save area) **DIAG**
 - SVCSECT** (**SVC** interrupt work area) **DIAG**
 - SVCTRACE** command **APGDE, DIAG**
 - described **INTRO**
 - swap
 - area **CPPROG, REL5GDE**
 - decision page versus **CPPROG**
 - fault **CPPROG**
 - faults **CPPROG**
 - list **CPPROG**
 - queue, time for users specified **CPREF**
 - set **CPPROG, REL5GDE**
 - set block **CPPROG**
 - sets
 - for which page forms are available **CPREF**
 - swapped into storage **CPREF**
 - SWAP** class monitor records **CPPROG**

- swap in
 - logical data monitored in CP internal trace table **CPREF**
 - physical **CPPROG**
 - SWAP** operand of **MONITOR** command **CPREF**
 - swap out, physical **CPPROG**
 - swap set, migration **CPPROG**
 - swapping **CPPROG**, **REL5GDE**
 - logical **CPPROG**
 - performance considerations **PLNGDE**
 - support **REL5GDE**
 - switched line **TERMREF**
 - switching
 - between CMS and the Interactive Interface **RGOS**
 - CMS tape volume **CMSPROG**
 - devices between systems **RGOS**
 - states **TSAFREF**
 - SWITCHVM** macro **CPPROG**
 - SWSIZE** operand
 - of **SYSPAG** macro **PLNGDE**
 - of **SYSXSTOR** macro **PLNGDE**
 - SWTCHVM** macro **CPPROG**
 - SWTHSAVE** (DMKSTK save area) **DIAG**
 - SYM** option of **OPTION** command **CMSREF**
 - symbol editor for **GDDM** **INTRO**
 - SYMBOL** function **SPIREF**, **SPIUG**
 - symbol table, read **SFPROG**
 - symbolic names
 - assigned **XEDITUG**
 - assigning
 - using **SET POINT XEDIT**
 - using .xxxx (prefix subcommand) **XEDIT**
 - CMS devices **PLNGDE**
 - displaying **XEDIT**
 - transferring **XEDIT**
 - symbols
 - assigning values to **SPIREF**
 - classifying **SPIREF**
 - compound **SPIUG**
 - constant **SPIREF**
 - description of **SPIREF**, **SPIUG**
 - determining if it is a variable **SPIUG**
 - duplicate names of **SPIUG**
 - in **EXEC** procedure
 - logical line editing **CMSUG**
 - simple **SPIREF**
 - substituting **SPIUG**
 - uppercase translation **SPIREF**
 - use of **SPIREF**
 - valid names **SPIREF**
 - variable
 - See variable symbols
 - SYMDMP** option with **COBOL** compiler **APGDE**
 - symmetric multiprocessor: **DASD** sharing
 - with **MVS** guest **RGOS**
 - SYMP** subcommand of **DUMPSCAN** command
 - error message **DIAG**
 - format **DIAG**
 - response **DIAG**
 - sample output **DIAG**
 - usage **DIAG**
 - symptom records **DIAG**, **TSAFREF**
 - contents of **PRGDE**
 - definition of **PRGDE**
 - example in **SYMP** subcommand **DIAG**
 - printing **DIAG**
 - symptom string **DIAG**
 - in **SYMP** subcommand **DIAG**
 - symptoms **PRGDE**
 - basic categories **PRGDE**
 - messages **PRGDE**
 - compared with return codes **PRGDE**
 - components of **PRGDE**
 - examples **PRGDE**
 - message identifier **PRGDE**
 - message sentence **PRGDE**
 - message variables **PRGDE**
 - return codes **PRGDE**
 - compared with messages **PRGDE**
 - examples **PRGDE**
 - sluggish system performance **PRGDE**
 - dealing with **PRGDE**
 - described **PRGDE**
 - symptom summary
 - file **DIAG**
 - file conversion **DIAG**
 - summary record **DIAG**
 - unexpected output results **PRGDE**
- SYNADAF** macro
 - (**BSAM/QSAM**) **GCSREF**
 - acsmeth parameter **GCSREF**
 - description **GCSREF**
 - parm parameter **GCSREF**
 - (**SVC 68**) **CMSPROG**
- SYNADRLS** macro
 - (**BSAM/QSAM**) **GCSREF**
 - description **GCSREF**
 - (**SVC 68**) **CMSPROG**
- SYNC_LEVEL** parameter (**APPC**)
- SYNCH** macro **GCSREF**, **PLNGDE**
 - description **GCSREF**
 - entry point parameter **GCSREF**
 - execute format **GCSREF**
 - list format **GCSREF**
 - mf parameter **GCSREF**
 - restore parameter **GCSREF**
 - state parameter **GCSREF**
- synchronization
 - machines **PLNGDE**
 - tasks **PLNGDE**
- synchronous communication
 - compared with asynchronous **TSAFREF**
 - functions **TSAFREF**
- synchronous lines, medium speed **PLNGDE**
- SYNCLVL** parameter of **CONNECT** **TSAFREF**
- SYNONYM**
 - assigning **XEDITUG**
 - check, overriding with **COMMAND XEDIT**
 - command to invoke synonym tables **CMSUG**
 - filetype usage in **CMS** **CMSUG**
 - not checking for **XEDITUG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- option, of CMS QUERY command **CMSREF**
- used to define synonyms for CMS and user-written commands **CMSUG**
- synonyms
 - abbreviation of
 - specifying **XEDIT**
 - controlling search for **XEDIT**
 - defining for prefix subcommand **XEDIT**
 - defining for subcommand **XEDIT**
 - for CMS user-written commands
 - rearranging operands of **XEDIT**
 - used to sort **FILELIST**
 - SDATE CMSUG**
 - SLREC CMSUG**
 - SMODE CMSUG**
 - SNAME CMSUG**
 - SREFC CMSUG**
 - SSIZE CMSUG**
 - STYPE CMSUG**
- SYNONYM** option
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
 - of **SET XEDIT**
 - of **TRANSFER XEDIT**
- syntax
 - BNF** description **EXEX2**
 - checking
 - See **TRACE** instruction of commands **REL5GDE**
 - command **TSAFREF**
 - conditional statements **EXEX2**
 - conventions: messages **SYSMSG**
 - description of **SPIUG**
 - diagrams
 - See syntax diagrams
 - error
 - example of **SPIUG**
 - FORMAT** function **SPIUG**
 - traceback after **SPIREF**
 - trapping with **SIGNAL** instruction **SPIREF**
 - general **SPIREF**
 - of commands, interpreting **PRIMER**
 - of macros and subcommands
 - ADDENTRY** macro **SRPI**
 - ADDENTRY** subcommand **SRPI**
 - CPRB** macro **SRPI**
 - CSMRETC** macro **SRPI**
 - DELENT** macro **SRPI**
 - DELENT** subcommand **SRPI**
 - GETREQ** subcommand **SRPI**
 - SENDREQ** macro **SRPI**
 - SENDREQ** subcommand **SRPI**
 - SETREPLY** subcommand **SRPI**
 - predefined functions **EXEX2**
 - user-defined functions **EXEX2**
 - SYNTAX** condition of **SIGNAL** instruction **SPIREF**
 - syntax diagrams
 - ADSTOP** command **CPREF**
 - ATTN** command **CPREF**
 - BEGIN** command **CPREF**
 - CHANGE** command **CPREF**
 - CLOSE** command **CPREF**
 - COMMANDS** command **CPREF**
 - COUPLE** command **CPREF**
 - CP** commands **CPREF**
 - DEFINE** command **CPREF**
 - DETACH** command **CPREF**
 - DIAL** command **CPREF**
 - DISCONN** command **CPREF**
 - DISPLAY** command **CPREF**
 - DUMP** command **CPREF**
 - ECHO** command **CPREF**
 - event types
 - BRANCH CPREF**
 - GAREG1 CPREF**
 - INSTRUCT CPREF**
 - MASK CPREF**
 - STORE CPREF**
 - EXTERNAL** command **CPREF**
 - INDICATE** command **CPREF**
 - IPL** command **CPREF**
 - LINK** command **CPREF**
 - LOADVFCB** command **CPREF**
 - LOGOFF** command **CPREF**
 - LOGON** command **CPREF**
 - NOTREADY** command **CPREF**
 - options
 - BOTH CPREF**
 - CMD CPREF**
 - FROM CPREF**
 - NORUN CPREF**
 - PASS CPREF**
 - PRINTER CPREF**
 - RANGE CPREF**
 - RUN CPREF**
 - STEP CPREF**
 - TERMINAL CPREF**
 - ORDER** command **CPREF**
 - PER** command **CPREF**
 - PURGE** command **CPREF**
 - QUERY** command **CPREF**
 - READY** command **CPREF**
 - REQUEST** command **CPREF**
 - RESET** command **CPREF**
 - REWIND** command **CPREF**
 - SCREEN** command **CPREF**
 - SEND** command **CPREF**
 - SET** command **CPREF**
 - SLEEP** command **CPREF**
 - SMSG** command **CPREF**
 - SPTAPE** command **CPREF**
 - STORE** command **CPREF**
 - TAG** command **CPREF**
 - TERMINAL** command **CPREF**
 - TRACE** command **CPREF**
 - TRANSFER** command **CPREF**
 - VMDUMP** command **CPREF**
 - SYS** option of **LISTIO** command **CMSREF**
 - SYSACNT** macro **CPPROG**, **TSAFREF**
 - format **PLNGDE**
 - operands
 - CLASS PLNGDE**
 - LIMIT PLNGDE**
 - OUTPUT PLNGDE**
 - USERID PLNGDE**
 - spooling accounting records **PLNGDE**
 - SYSADMIN INST**
 - SYSBLOK** operand of **NAMESYS** macro **PLNGDE**
 - SYSCAT** assigned in **CMS/DOS CMSREF**
 - SYSCAT** system logical unit, assigning
 - in **CMS/DOS CMSPROG**
 - SYSCKP** operand of **SYSRES** macro **PLNGDE**
 - SYSCLB** system logical unit
 - assigning in **CMS/DOS CMSPROG**
 - unassigning **CMSPROG**
 - SYSCLR** operand of **SYSRES** macro **PLNGDE**

SYSCMD command **APGDE**
SYSCOR macro instruction **DIAG**
AP operand **OPGDE**
coding to generate attached
processor **PLNGDE**
diagnostic aids **CPPROG**
example **PLNGDE**
format **PLNGDE**
MP operand, coding to generate
multiprocessor **PLNGDE**
operands
AP **PLNGDE**
FREE **PLNGDE**
MP **PLNGDE**
PRIME **PLNGDE**
RMSIZE **PLNGDE**
RSSIZE **PLNGDE**
TRACE **PLNGDE**
parameters
RMSIZE **CPPROG**
RSSIZE **CPPROG**
storage greater than 16Mb **CPPROG**
example **CPPROG**
using to control
free storage allocation **CPPROG**
using to maintain real storage **RGOS**
SYSCYL operand of **NAMESYS** macro **PLNGDE**
SYSDISK operand of **DEFNUC** macro **PLNGDE**
SYSDUMP operand of **SYSOPR** macro **PLNGDE**
SYSDUMP1 **INST**, **PLNGDE**
SYSERR operand of **SYSRES** macro **PLNGDE**
SYSFCN macro
format **PLNGDE**
operands **PLNGDE**
CPRD **PLNGDE**
CPWT **PLNGDE**
DFLT **PLNGDE**
OPER **PLNGDE**
PRIV **PLNGDE**
SERV **PLNGDE**
SYSFORM macro
example **PLNGDE**
format **PLNGDE**
operands
DEFCON **PLNGDE**
DEFPRT **PLNGDE**
DEFPUN **PLNGDE**
NARROW **PLNGDE**
OPERFORM **PLNGDE**
USERFORM **PLNGDE**
SYSHOLD operand
of **QUERY** command **CPREF**
of **SPTAPE** command **CPREF**
SYSHRSG operand of **NAMESYS** macro **PLNGDE**
SYSID macro
example **PLNGDE**
format **PLNGDE**
operands
DEFAULT **PLNGDE**
MODEL **PLNGDE**
SERIAL **PLNGDE**
SYSTEMID **PLNGDE**
SYSIN
assembler input **CMSREF**
logical unit assignment in **CMS/DOS** **CMSREF**
SYSIN system logical unit
assigning in **CMS.DOS** **CMSPROG**
input for **ESERV** command **CMSPROG**
SYSIPT assigned for **ESERV** program **CMSREF**
SYSIPT system logical unit **CMSPROG**
SYSJRL macro **CPPROG**
format **PLNGDE**
operands
JOURNAL **PLNGDE**
LNKLMT **PLNGDE**
LNKUID operand **PLNGDE**
LOGLMT **PLNGDE**
LOGLOC **PLNGDE**
LOGUID **PLNGDE**
PSUPRS **PLNGDE**
STQUERY **PLNGDE**
SYSLOCS macro
format **PLNGDE**
SYSLOG assigned in **CMS/DOS** **CMSREF**
SYSLOG system logical unit **CMSPROG**
SYSLST lines per page
displaying number of **CMSREF**
setting number of **CMSREF**
SYSLST system logical unit
assigning in **CMS/DOS** **CMSPROG**
output from **ESERV** program **CMSPROG**
SYSMIH macro **CPPROG**
example **PLNGDE**
format **PLNGDE**
operands
DASD **PLNGDE**
GRAF **PLNGDE**
MISC **PLNGDE**
TYPE **PLNGDE**
UR **PLNGDE**
samples **PLNGDE**
SYSMON macro **CPPROG**
example **PLNGDE**
format **PLNGDE**
operands
AUTO **PLNGDE**
BUFFS **PLNGDE**
CLASS **PLNGDE**
ENABLE **PLNGDE**
LIMIT **PLNGDE**
TIME **PLNGDE**
USERID **PLNGDE**
SYSNAME operand
of **DEFNUC** macro **PLNGDE**
of **NAMESYS** macro **PLNGDE**
SYSNAMES option of **CMS QUERY** command **CMSREF**
SYSNAMES table **GCSREF**
SYSNUC operand
of **SYSRES** macro **PLNGDE**
SYSOPER operand
of **SYSOPR** macro **PLNGDE**
SYSOPR macro **DIAG**
example **PLNGDE**
format **PLNGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

operands
 SYSDUMP PLNGDE
 SYSOPER PLNGDE
SYSOPR macro instruction
 used to specify virtual card reader file **OPGDE**
SYSORD macro
SYSOWN list volumes
 limits to detaching **CPREF**
SYSOWN macro
 example **PLNGDE**
 format **PLNGDE**
 operands
 VOLID PLNGDE
SYSPAG areas
 automatic reordering **CPPROG**
SYSPAG macro **CPPROG, REL5GDE**
 error messages **PLNGDE**
 example of use **CPPROG, PLNGDE**
 format **PLNGDE**
 mnotes **PLNGDE**
 operands
 ORDER PLNGDE
 SWSIZE PLNGDE
 TYPE PLNGDE
 Paging Storage **CPPROG**
 parameters
 ORDER = REL5GDE
 REORDER = CPPROG
 restrictions **PLNGDE**
 use with Paging Storage
 use with **DDR CPPROG**
SYSPARM option of **ASSEMBLE** command **CMSREF**
SYSPCH system logical unit
 assigning in **CMS/DOS CMSPROG**
 output from **ESERV** program **CMSPROG**
SYSPCLAS macro
 example **PLNGDE**
 format **PLNGDE**
 operands
 BOTTOM PLNGDE
 TOP PLNGDE
SYSPGCT operand
 of **NAMENCP** macro **PLNGDE**
 of **NAMESYS** macro **PLNGDE**
 of **NAME3800** macro **PLNGDE**
SYSPGNM operand
 of **NAMESYS** macro **PLNGDE**
SYSPLIST **CPPROG, REL5GDE**
 chaining structure **CPPROG**
 control block **CPPROG**
SYSPRINT control statement
 of **DDR (DASD Dump Restore) CPPROG**
SYSPROF class monitor records **CPPROG**
SYSPROF EXEC System Profile **CMSUG**
 bypassing **REL5GDE**
 bypassing it using the
 IPL NOSPROF command **REL5GDE**
 default functions **REL5GDE**
 description of **CMSPROG**
 executing it using the
 IPL CMS command **REL5GDE**
 functions at initialization **REL5GDE**
 functions of **CMSPROG**
 migration considerations **REL5GDE**
 overview **REL5GDE**
 references to other publications **REL5GDE**
 use with **IPL** command **REL5GDE**

SYSPROF operand
 of **MONITOR** command **CPREF**
SYSRDR system logical unit **CMSPROG**
SYSRES assigned in **CMS/DOS CMSREF**
SYSRES macro **REL5GDE**
 example **PLNGDE**
 format **PLNGDE**
 operands
 SYSCKP PLNGDE
 SYSCLR PLNGDE
 SYSERR PLNGDE
 SYSNUC PLNGDE
 SYSRES PLNGDE
 SYSSPL PLNGDE
 SYSTYPE PLNGDE
 SYSVOL PLNGDE
 SYSWRM PLNGDE
 parameters
 SYSSPL CPPROG
 special coding considerations **PLNGDE**
SYSRES operand
 of **SYSRES** macro **PLNGDE**
SYSRLB system logical units
 assigned in **CMS/DOS CMSPROG**
SYSSIZE operand
 of **NAMESYS** macro **PLNGDE**
SYSSLB system logical units
 assigned in **CMS/DOS CMSPROG**
SYSSPL operand
 of **SYSRES** macro **CPPROG, PLNGDE**
SYSSPOOL operand
 of **LOCK** command **CPREF**
 of **UNLOCK** command **CPREF**
 of **VMBLOK** subcommand **DIAG**
SYSSTRT operand
 of **NAMENCP** macro **PLNGDE**
 of **NAMESYS** macro **PLNGDE**
 of **NAME3800** macro **PLNGDE**
 system
 analyst privilege class **REL5GDE**
 dump spool file, reading **SFPROG**
 lock
 use of **REL5GDE**
 maintenance **REL5GDE**
 structure, **SNA SFPROG**
 symbol table, reading **SFPROG**
SYSTEM
 abnormal termination
 dumps **OPGDE**
 activity display frames (**SAD frames**) **OPGDE**
 console **OPGDE**
 creating named **CPREF**
 definition **OPGDE**
 failure
 monitor considerations **CPPROG**
 failure dump unit **OPGDE**
 generation
 monitor considerations **CPPROG**
 hold status
 putting spool files in it **CPREF**
 releasing spool files from it **CPREF**
 initialization
 VM/SP HPO OPGDE
 integrity
 when changing command access **CPPROG**
 loading by name **CPREF**

- messages
 - VM/SP HPO initialization **OPGDE**
- name table
 - DMKSNT CPPROG**
- operand of NUCXLOAD command **CMSREF**
- option
 - of EXECDROP command **CMSREF**
 - of EXECLOAD command **CMSREF**
 - of EXECMAP command **CMSREF**
 - of GENMOD command **CMSREF**
- performance
 - for mixed mode foreground/background systems **CPPROG**
 - measurement **CPPROG**
- requesting status information **CPREF**
- resources
 - affect on virtual machine's share of processor time **CPPROG**
- shutdown
 - monitor considerations **CPPROG**
- termination **OPGDE**
- system abend **DIAG**
- System Activity Display frames **RGOS, OPGDE**
- system analyst
 - described **CPREF, OPGDE**
- system and programmer logical units
 - entered on DLBL command **CMSREF**
- system assembler, building **INST**
- system character set translation tables **MACREF**
 - generating a DSECT
 - for using TRANTBL **MACREF**
- SYSTEM** command **CMSUG, CPREF, DIAG**
 - described **CPREF**
 - operands
 - CLEAR CPPROG, CPREF**
 - RESET CPREF**
 - RESTART CPREF**
 - responses **CPREF**
 - usage notes **CPREF**
- system completion code **GCSREF**
- system configuration
 - AP or MP
 - load list **PLNGDE**
 - UP
 - load list **PLNGDE**
- system console **TERMREF**
 - configuration aid **PLNGDE**
 - defining **PLNGDE**
- system control file
 - performance considerations **PLNGDE**
 - preparing **PLNGDE**
 - supplied with starter systems **PLNGDE**
 - SYSCOR** macro **PLNGDE**
 - SYSFCN** macro **PLNGDE**
 - SYSFORM** macro **PLNGDE**
 - SYSID** macro **PLNGDE**
 - SYSLOCS** macro **PLNGDE**
 - SYSMIH** macro **PLNGDE**
 - SYSOPR** macro **PLNGDE**
 - SYSOWN** macro **PLNGDE**
 - SYSPAG** macro **PLNGDE**
 - SYSPCLAS** macro **PLNGDE**
- SYSRES** macro **PLNGDE**
- SYSTIME** macro **PLNGDE**
- SYSXSTOR** macro **PLNGDE**
- system definition
 - introduction **PLNGDE**
 - starter systems **PLNGDE**
 - introduction **PLNGDE**
 - supported **SYSRES** device types **PLNGDE**
 - 3704/3705 requirements **PLNGDE**
 - 3800 image library requirements **PLNGDE**
- system definition files
 - description **INST**
- system definition files, changes to **RGOS**
- system directory
 - See also directory, system description **INST**
 - modify current directory **INST**
 - tailoring considerations
 - adding userids **INST**
 - existing VM system procedure **INST**
 - logon passwords **INST**
 - MAINT** userid **INST**
 - minidisk read/write passwords **INST**
 - minidisks for GCS source code **INST**
 - minidisks for TSAF source code **INST**
 - modifying the GCS userid **INST**
 - modifying the TSAFVM userid **INST**
 - planning **INST**
 - Starter System procedure **INST**
 - system volumes **INST**
 - TDISK** space **INST**
 - TEMP** space **INST**
 - user classes **INST**
 - using **DIRECT** command
 - to place directory on line **INST**
 - using **DISKMAP EXEC**
 - to check changes **INST**
 - using mixed **DASD INST**
 - using **DISKMAP EXEC** to check changes **INST**
- system directory entry, **TSAF**
 - See **TSAF** virtual machine
- system disk
 - CMS**
 - planning considerations **PLNGDE**
 - CMS**, creating **INST**
 - files available **CMSREF**
 - releasing **CMSREF**
 - system disk, files available **CMSUG**
- system dump directory entry
 - operating systems
 - virtual machine example **PLNGDE**
- system failure **CMSLOT**
- system file, preparing **INTRO**
- system generation
 - considerations for **VSE PLNGDE**
 - defining your system **PLNGDE**
 - DMKRIO**
 - preparation **PLNGDE**
 - Extended Storage Support **PLNGDE**
 - introduction **PLNGDE**
 - Memo to Users
 - printing **INST**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- options
 - virtual = real **PLNGDE**
- Program Update Tape (PUT) **INST**
- RDEVICE macro
 - coding considerations for 3704/3705/3725 **PLNGDE**
- requirements
 - locally supported display systems **PLNGDE**
 - to support channel switching between two processors **PLNGDE**
 - on one processor **PLNGDE**
- tools and profiles
 - SPGEN EXEC **INST**
 - SPGEN PROFILE **INST**
- system generation option
 - AFFINITY **INTRO**
 - virtual = real **INTRO**
- system identification
 - SYSID macro **PLNGDE**
- system information, collect and analyze
 - INDICATE command **DIAG**
 - LOCATE command **DIAG**
 - MONITOR command **DIAG**
- system integrity
 - APARs **PLNGDE**
 - defined **PLNGDE**
 - for MVS guest machines **PLNGDE**
 - your responsibilities **PLNGDE**
- system interfaces **SPIREF**
- system load
 - displaying **CPREF**
- system logical units
 - invalid assignments in CMS/DOS **CMSREF**
 - listing assignments for in CMS/DOS **CMSREF**
 - SYSCLB **CMSPROG**
 - SYSIN **CMSPROG**
 - SYSIPT **CMSPROG**
 - SYSLOG **CMSPROG**
 - SYSLST **CMSPROG**
 - SYSPCH **CMSPROG**
 - SYSRDR **CMSPROG**
 - SYSLB **CMSPROG**
 - SYSSLB **CMSPROG**
 - valid assignments in CMS/DOS **CMSREF**
- system logo file
 - description **INST**
 - tailoring considerations
 - existing VM system procedure **INST**
 - Starter System procedure **INST**
- system MACLIBs **APGDE, CMSPROG**
 - CMS macros **CMSPROG**
 - CMSLIB **CMSPROG**
 - DMSSP **CMSPROG**
 - DOSMACRO **CMSPROG**
 - OS macros **CMSPROG**
 - OSMACRO **CMSPROG**
 - OSMACRO1 **CMSPROG**
 - OSVSAM **CMSPROG**
 - TSMAC **CMSPROG**
- system message **INTRO**
- system messages vs. CP command responses **CPREF**
- system name table **PLNGDE**
 - creating an entry for 3704/3705 **PLNGDE**
 - creating your own version **PLNGDE**
 - NAMELANG macro **PLNGDE**
 - NAMENCP macro **PLNGDE**
 - NAMESYS macro **PLNGDE**
 - preparing **PLNGDE**
- tailoring
 - existing VM system procedure **INST**
 - GCS entry **INST**
 - new entries **INST**
 - planning **INST**
 - Starter System procedure **INST**
 - system disk pointers **INST**
 - using SNTMAP EXEC to verify changes **INST**
 - using SNTMAP EXEC to verify changes **INST**
- system name table file
 - description **INST**
- system national language
 - defined in DMSGNP ASSEMBLE **INST**
 - defining when building CMS nucleus **INST**
- SYSTEM NETID file **TSAFREF**
 - update
 - existing VM system procedure **INST**
 - Starter System procedure **INST**
- System Network Architecture (SNA)
 - terminals, logging off **TERMREF**
- SYSTEM operand
 - of ATTACH command **CPREF**
 - of CHANGE command **CPREF**
 - of DETACH command **CPREF**
 - of LOCK command **CPREF**
 - of ORDER command **CPREF**
 - of PURGE command **CPREF**
 - of QUERY command **CPREF**
 - of SET command **CPREF**
 - of SPOOL command **CPREF**
 - of SPTAPE command **CPREF**
 - of TRANSFER command **CPREF**
 - of UNLOCK command **CPREF**
 - of VMDUMP command **CPREF**
- system operation
 - installation requirements **OPGDE**
 - program requirements **OPGDE**
- system operator
 - action on CP errors **SYMSMG**
 - alerted to error conditions **OPGDE**
 - batch virtual machine **INTRO**
 - communication with VM/SP **INTRO**
 - console usage **INTRO**
 - controlling performance options **INTRO**
 - dedicating devices **INTRO**
 - defining in SYSOPR macro **PLNGDE**
 - functions performed by **OPGDE**
 - IPF panel **INTRO**
 - privileged command **INTRO**
 - RSCS Networking management task **INTRO**
 - sending messages to **INTRO**
 - use of CMS commands **INTRO**
 - view of spooling **INTRO**
 - VM/Pass-Through management **INTRO**
- system parameters
 - checklist for reporting problem **PRGDE**
 - described **PRGDE**
- System Product Editor (XEDIT)
 - See XEDIT (System Product Editor)
- System Product Interpreter
 - See REXX
- system profile **CMSPROG, CMSUG**
 - bypassing **CMSPROG**
 - creating **CMSPROG**
 - description of **CMSPROG**
 - functions of **CMSPROG**

- system profile **SYSPROF EXEC**
 - bypassing it **REL5GDE**
 - using the IPL **NOSPROF** command **REL5GDE**
 - control blocks, new and changed **REL5GDE**
 - default functions **REL5GDE**
 - execs, new and changed **REL5GDE**
 - executing it using the
 - IPL **CMS** command **REL5GDE**
 - functions at initialization **REL5GDE**
 - macros, new and changed **REL5GDE**
 - migration considerations **REL5GDE**
 - modules, new and changed **REL5GDE**
 - overview **REL5GDE**
 - references to other publications **REL5GDE**
 - use with IPL command **REL5GDE**
- system programmer
 - described **CPREF, OPGDE**
 - privilege class **REL5GDE**
- system requirements **REL5GDE**
- system residence devices
 - alternate tracks **PLNGDE**
- system residence volume
- system residence volume, VSE, specifying **CMSREF**
- system resource operator
 - described **CPREF, OPGDE**
 - privilege class **REL5GDE**
- system resource table **TSAFREF**
- system resources
 - displaying use of **CPREF**
- System Resources Management **CPREF**
- system restart **REL5GDE**
- system save area
 - format of **CMSPROG**
 - modifications of **CMSPROG**
- system service, CP
 - DASD block I/O **SFPROG**
 - error logging **SFPROG**
 - IUCV communication **SFPROG**
 - message **SFPROG**
 - message all **SFPROG**
 - signal **SFPROG**
 - SNA virtual console
 - communication **SFPROG**
 - spool **SFPROG**
- system services **APGDE**
 - See also Collection Resource Management System Service
 - See also Identify System Service Collection Resource Management System Service **TSAFREF**
 - Identify System Service **TSAFREF**
- system spool information
 - DIAGNOSE** code X'D8' **SFPROG**
- system state indicators **TERMREF**
- system support
 - virtual machines **PLNGDE**
- System Support Program **INST**
- system text libraries
 - for **CMS** **PLNGDE**
- system timing facility
 - System/370
 - introduction **PLNGDE**
- system trace bit **SPIREF**
- system trace data
 - external tracing **TSAFREF**
 - query external trace setting **TSAFREF**
 - trapping entries (CPTRAP) **TSAFREF**
 - viewing CPTRAP data **TSAFREF**
- System/370 **CPPROG**
 - requirements
 - dynamic address translation feature **PLNGDE**
 - extended control mode **PLNGDE**
 - system timing facility **PLNGDE**
- System/370 Extended Facility (hardware) **CPREF**
 - attached processor restriction **PLNGDE**
 - functions **PLNGDE**
 - processors supported **PLNGDE**
- SYSTEM, CP** command **RGOS**
- SYSTEMID** operand
 - of **SYSID** macro **PLNGDE**
- systemname operand
 - of IPL command **CPREF**
 - of **SAVESYS** command **CPREF**
- systems
 - mixed mode foreground/background
 - performance of **CPPROG**
 - Systems Network Architecture (SNA) **GCSREF**
 - See SNA (Systems Network Architecture)
 - Systems Network Architecture Console Communications Services (SNA CCS)
 - See SNA CCS
- SYSTEM** option of **ASSEMBLE** command **CMSREF**
- SYSTEM** macro
 - example **PLNGDE**
 - format **PLNGDE**
 - ZONE** **PLNGDE**
- operands
 - ID** **PLNGDE**
 - LOC** **PLNGDE**
- SYSTYPE** operand
 - of **SYSRES** macro **PLNGDE**
- SYSUTx** filetype **CMSUG**
- SYSUT1** filetype **CMSUG**
- SYSUT2** filetype **CMSUG**
- SYSUT3** filetype **CMSUG**
- SYSUT4** filetype **CMSUG**
- SYSVIRT** operand
 - of **DEFINE** command **CPREF**
 - of **QUERY** command **CPREF**
- SYSVOL** operand
 - of **NAMENCP** macro **PLNGDE**
 - of **NAME3800** macro **PLNGDE**
 - of **SYSRES** macro **PLNGDE**
- SYSWRM** operand
 - of **SYSRES** macro **PLNGDE**
- SYSXSTOR** macro **REL5GDE**
 - advantages of **REL5GDE**
 - coding considerations **PLNGDE**
 - error messages **PLNGDE**
 - examples **PLNGDE**
 - format **PLNGDE**
 - MNOTES** **PLNGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

operands
 SWSIZE PLNGDE
 TYPE PLNGDE
Paging Storage **CPPROG**
 use with paging storage
 use with **DDR CPPROG**
 when to code instead of **SYSPAG** macro **PLNGDE**
SYSxxx (programmer logical units)
 programmer logical units, assigning **CMSPROG**
SYSxxx option
 of **ASSGN** command **CMSREF**
 of **DLBL** command **CMSREF**
 of **LISTIO** command **CMSREF**

SYS00x filetype **CMSUG**
SYS001 filetype **CMSUG**
SYS002 filetype **CMSUG**
SYS003 filetype **CMSUG**
SYS004 filetype **CMSUG**
SYS005 filetype **CMSUG**
SYS006 filetype **CMSUG**
SYS1.LOGREC data set
 MVS error recording **RGOS**
S370E operand
 of **QUERY** command **CPREF**
 of **SET** command **CPREF**

T

- T operand
 - of DCP command CPREF
- T-DISK
 - defining PLNGDE
 - defining in directory
 - preferred machine assist PLNGDE
- tab characters
 - affected by SET IMAGE XEDIT
 - defined CMSLOT
 - how handled by FIND XEDIT
 - how handled by FINDUP XEDIT
 - how handled by NFOUND XEDIT
 - how handled by NFOUNDUP XEDIT
 - in input line XEDIT
 - in typewriter mode XEDITUG
 - inserted by compress XEDIT
- tab key PRIMER, TERMREF
 - in typewriter mode XEDITUG
 - using PF key as XEDITUG
 - example of XEDITUG
- tab line
 - defining display features XEDITUG
 - displaying XEDITUG
 - using SET TABLINE XEDIT
 - using TABL (prefix subcommand) XEDIT
 - example of XEDITUG
- tab settings XEDITUG
 - COBOL filetype APGDE
 - defining XEDIT
 - FORTTRAN filetype APGDE
 - FREEFOTR filetype APGDE
 - in typewriter mode XEDITUG
 - used by EXPAND XEDIT
- tabbing
 - using PF key XEDITUG
- TABCHAR operand
 - of TERMINAL command CPREF
- TABKEY option
 - of SET PAn XEDIT
 - of SET PFn XEDIT
- TABL prefix subcommand XEDIT
- table, routing SFPROG
- Table Character Reference byte CMSREF
- table creation authority in SQL APGDE
- table input libraries
 - ISPFIL APGDE
 - ISPTLIB APGDE
- table output libraries
 - ISPSLIB APGDE
 - ISPTABL APGDE
- Table Reference Character (TRC) MACREF
 - specified using PRINTL macro MACREF
- TABLE sub-command
 - of PER command CPREF
- table views in SQL APGDE
- tables SPIUG
- tables for translating TERMREF
- tables option in ISPF APGDE
- TABLINE option
 - of EXTRACT XEDIT
 - of QUERY XEDIT
 - of SET XEDIT
 - of TRANSFER XEDIT
- tabs APGDE
 - displaying XEDITUG
 - example of XEDITUG
 - in typewriter mode XEDITUG
 - option in QUERY CMSLOT
 - option in SET CMSLOT
 - setting CMSLOT, PRIMER, XEDITUG
 - in typewriter mode XEDITUG
- TABS option
 - of EXTRACT XEDIT
 - of QUERY XEDIT
 - of SET XEDIT
 - of TRANSFER XEDIT
- TABSET subcommand
 - tabulating text output SPIUG
 - tabulation APGDE
- TACTIVE subcommand of DUMPSCAN command
 - description DIAG
 - error message DIAG
 - format DIAG
 - functional category DIAG
 - response DIAG
 - sample output DIAG
 - usage DIAG
- TAG area DIAG
- TAG command CMSUG, CPPROG, CPREF
 - altering TAG information CPREF
 - described CPREF
 - operands
 - DEV PRT/PCH/CONSOLE/vaddr CPREF
 - FILE spoolid CPREF
 - QUERY DEV/FILE CPREF
 - tagtext CPREF
 - responses CPREF
 - transmitting files to remote location CPREF
 - usage notes CPREF
 - use with SPOOL command CPREF
- tag, DCF INTRO
- tags for lists PRIMER
- tags in a names file CMSLOT
- tags, GML (Generalized Markup Language) PRIMER
 - description of CMSLOT
 - types of
 - heading CMSLOT
 - highlighting CMSLOT
 - list CMSLOT
 - paragraph CMSLOT
- tagtext operand
 - of TAG command CPREF
- tailoring a programmable operator routing table SFPROG
- tailoring considerations
 - CMS nucleus generation profile
 - existing VM system procedure INST
 - Starter System procedure INST
 - CP system control file
 - AP and MP systems INST
 - existing VM system procedure INST

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

GCS volume INST
 paging INST
 Starter System procedure INST
 user classes INST
 VMSRES address INST
DMKBOX ASSEMBLE
 existing VM system procedure INST
 Starter System procedure INST
DMKFCB ASSEMBLE
 existing VM system procedure INST
 Starter System procedure INST
DMKRIO ASSEMBLE
 existing VM system procedure INST
 Starter System procedure INST
DMKSNT ASSEMBLE
 existing VM system procedure INST
 GCS entry INST
 new entries INST
 Starter System procedure INST
 system disk pointers INST
 using SNTMAP EXEC to verify changes INST
DMKSYS ASSEMBLE
 AP and MP systems INST
 existing VM system procedure INST
 GCS volume INST
 paging INST
 Starter System procedure INST
 user classes INST
 VMSRES address INST
DMSNGP ASSEMBLE
 existing VM system procedure INST
 Starter System procedure INST
 existing VM system procedure
 adding new CP commands INST
 CP system control file INST
DMKBOX ASSEMBLE INST
DMKFCB ASSEMBLE INST
DMKRIO ASSEMBLE INST
DMKSNT ASSEMBLE INST
DMKSYS ASSEMBLE INST
 forms control buffer file INST
 real I/O configuration file INST
SPGEN PROFILE INST
 system directory INST
 system logo file INST
 system name table INST
 forms control buffer file
 existing VM system procedure INST
 Starter System procedure INST
 real I/O configuration file
 existing VM system procedure INST
 Starter System procedure INST
SPGEN PROFILE
 existing VM system procedure INST
 Starter System procedure INST
 starter system procedure
 CMS nucleus generation profile INST
 CP system control file INST
DMKBOX ASSEMBLE INST
DMKFCB ASSEMBLE INST
DMKPIA ASSEMBLE INST
DMKPIB ASSEMBLE INST
DMKRIO ASSEMBLE INST
DMKSNT ASSEMBLE INST
DMKSYS ASSEMBLE INST
DMKUCB ASSEMBLE INST
DMKUCC ASSEMBLE INST
DMKUCS ASSEMBLE INST
DMSNGP ASSEMBLE INST
 font offset buffer INST
 printer universal character set INST
 real I/O configuration file INST
SPGEN PROFILE INST
 system directory INST
 system name table INST
 system directory
 adding userids INST
 existing VM system procedure INST
 logon passwords INST
 MAINT userid INST
 minidisk read/write passwords INST
 minidisks for GCS source code INST
 minidisks for TSAF source code INST
 modifying the GCS userid INST
 modifying the TSAFVM userid INST
 Starter System procedure INST
 system volumes INST
 TDISK space INST
 TEMP space INST
 user classes INST
 using DIRECT command
 to place directory on line INST
 using DISKMAP EXEC to check changes INST
 using mixed DASD INST
 system logo file
 existing VM system procedure INST
 Starter System procedure INST
 system name table
 existing VM system procedure INST
 GCS entry INST
 new entries INST
 Starter System procedure INST
 system disk pointers INST
 using SNTMAP EXEC to verify changes INST
VMUSERS DIRECT
 adding userids INST
 existing VM system procedure INST
 logon passwords INST
 MAINT userid INST
 minidisk read/write passwords INST
 minidisks for GCS source code INST
 minidisks for TSAF source code INST
 modifying the GCS userid INST
 modifying the TSAFVM userid INST
 Starter System procedure INST
 system volumes INST
 TDISK space INST
 TEMP space INST
 user classes INST
 using DIRECT command
 to place directory on line INST
 using DISKMAP EXEC to check changes INST
 using mixed DASD INST
 tailoring the CMS environment **REL5GDE**
 using the SYSPROF EXEC **REL5GDE**
 tailoring the screen **XEDITUG**
 tailoring your system **CMSPROG**
 taking data from a program stack **SPIUG**
 tape
 dumping spool files to **CPREF**
 error
 unrecoverable **CPPROG**
 loading spool files from **CPREF**
TAPE command
 control functions
 creating CMS files from tapes created by **CMSUG**

sample terminal display **CMSUG**
 using **CMSUG**

tape definitions
 MVS virtual machine **RGOS**
 VM under VM **RGOS**
 VSE virtual machine **RGOS**

tape devices
 magnetic **INTRO**
 monitoring missing interruptions **CPREF**
 shared or nonshared VCU mode **PLNGDE**

tape drive support **REL5GDE**

tape file
 DCB address **CMSUG**
 FCBSECT address **CMSUG**
 in CMS **CMSUG**

tape format, stand-alone dump **DIAG**

tape handling options, specifying **CMSUG**

tape label
 by CMS commands **CMSUG**
 EOT **CMSUG**
 EOVS **CMSUG**
 in CMS **CMSUG**
 LABELDEF command **CMSUG**
 limitations **CMSUG**
 MOVEFILE command **CMSUG**
 processing, IBM standard **CMSUG**
 under CMS/DOS **CMSUG**
 DTFMT macro **CMSUG**
 under OS simulation **CMSUG**
 under OS/VS simulation **CMSUG**

tape layout **REL5GDE**

TAPE operand
 of MONITOR command **CPREF**

Tape Processing Exits (OS Simulation Standard Label)
REL5GDE
 DMSTVI interface routine **REL5GDE**
 execs, new and changed **REL5GDE**
 FILEDEF command **REL5GDE**
 LABELDEF command **REL5GDE**
 macros, new and changed **REL5GDE**
 modules, new and changed **REL5GDE**
 modules, split **REL5GDE**

tape volume serial number, 3480 **SFPROG**

tape volume switching in CMS **CMSPROG**

TAPECTL macro **APGDE, CMSPROG**
 See also **MACREF**
 BLKBUFF= operand **MACREF**
 ERROR= operand **MACREF**
 MODE= operand **MACREF**
 positioning tape **MACREF**
 used in tape label process **CMSUG**

TAPEMAC command **CMSUG, REL5GDE**

tapes
 assigning to logical units
 in CMS/DOS **CMSREF**
 bypass label, description **CMSUG**
 channel switching **PLNGDE**
 CMS restrictions **PLNGDE**
 compacting output **CMSUG**
 configuration aid **PLNGDE**
 considerations for CMS/DOS **CMSPROG**

control units supported
 by VM/SP HPO **PLNGDE, REL5GDE**

density, when to specify **CMSUG**

devices supported
 by VM/SP HPO **PLNGDE, REL5GDE**

files
 handling
 CMS/DOS **PLNGDE**

input **CMSPROG**

installing
 Starter System procedure **INST**

label processing **CMSUG**

labels
 displaying definitions in effect **CMSREF**
 in CMS **CMSUG**
 in CMS/DOS **CMSUG**
 in FILEDEF command **CMSREF**
 in OS simulation **CMSUG**
 specifying descriptive information **CMSREF**

marks
 Merged Product Tape
 Non-Merged Product Tape
 nonlabeled, description **CMSUG**
 nonstandard label, description **CMSUG**
 optional handling **CMSUG**
 output **CMSPROG**
 positioning
 reading **CMSPROG**
 rewinding **CPREF**
 special handling **CMSUG**

Starter System Tape
 contents **INST**
 distribution format **INST**
 file layout **INST**
 installing **INST**

support for CMS **PLNGDE**
 used for AMSERV input and output
CMSPROG, CMSREF
 entering ddnames **CMSREF**
 in CMS/DOS **CMSREF**
 virtual addresses **CMSUG**
 3704/3705 control program distribution tape **INST**

TAPES operand
 of QUERY command **CPREF**
 of QUERY VIRTUAL command **CPREF**

TAPESL macro **APGDE, CMSPROG, REL5GDE**
 See also **MACREF**
 BLKCNT= operand **MACREF**
 checking and writing tape labels **MACREF**
 ERROR= operand **MACREF**
 LABID= operand **MACREF**
 MODE= operand **MACREF**
 processing IBM standard
 HDR1 and EOF1 labels **MACREF**
 SPACE= operand **MACREF**
 TM= operand **MACREF**
 used with RDTAPE, WRTAPE,
 and TAPECTL **MACREF**

TAPESL macro, description **CMSUG**

TAPIN option of AMSERV command **CMSREF**

TAPn device type **APGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

TAPn option

of ASSGN command **CMSREF**
of FILEDEF command
description **CMSREF**
usage **CMSREF**

TAPOUT option of AMSERV command CMSREF**TAPPDS command CMSUG, REL5GDE**

copying files from tapes **CMSUG**
creating CMS files from tapes created by **CMSUG**

target

affected by **SET IMAGE XEDIT**
as absolute line number **XEDIT, XEDITUG**
example of **XEDITUG**
as complex string expression **XEDIT, XEDITUG**
example of **XEDITUG**
as line name **XEDIT, XEDITUG**
example of **XEDITUG**
as operand of **LOCATE XEDITUG**
as relative displacement **XEDIT, XEDITUG**
example of **XEDITUG**
as simple string expression **XEDIT, XEDITUG**
example of **XEDITUG**
format of **XEDITUG**
as subcommand operand **XEDITUG**
example of **XEDITUG**
definition of **XEDITUG**
description of **XEDIT**
entered alone **XEDITUG**
entered before subcommand **XEDITUG**
how to express **XEDITUG**
ignoring characters within **XEDIT**
specifying in hexadecimal **XEDIT**
types of **XEDITUG**
UPPERCAS XEDIT
use in **ALTER XEDIT**
use in **CHANGE XEDIT**
use in **COMPRESS XEDIT**
use in **COPY XEDIT**
use in **COUNT XEDIT**
use in **DELETE XEDIT**
use in **DUPLICAT XEDIT**
use in **EXPAND XEDIT**
use in **HEXTYPE XEDIT**
use in **LOCATE XEDIT**
use in **LOWERCAS XEDIT**
use in **MOVE XEDIT**
use in **PUT XEDIT**
use in **PUTD XEDIT**
use in **SET RANGE XEDIT**
use in **SHIFT XEDIT**
use in **SORT XEDIT**
use in **STACK XEDIT**
use in **TYPE XEDIT**
use with DBCS strings **XEDIT**
used in **PUT XEDITUG**
used in subcommands **XEDITUG**
used to change current line **XEDITUG**
used to move line pointer **XEDITUG**
example of **XEDITUG**

TARGET option

of **EXTRACT XEDIT**
of **QUERY XEDIT**
of **TRANSFER XEDIT**

target search

defining columns for **XEDIT**
ignoring case in **XEDIT**
respecting case in **XEDIT**
with DBCS strings **XEDIT**

task

CMS user INTRO
spool operator **INTRO**
TASK menu CMSUG
TASK menus CMSUG, XEDIT
RELATED XEDIT
TASK option of HELP XEDIT
task-oriented help files **XEDIT**
TASKEEXIT macro GCSREF, PLNGDE
clr parameter **GCSREF**
description **GCSREF**
ep parameter **GCSREF**
error parameter **GCSREF**
execute format **GCSREF**
list address format **GCSREF**
list format **GCSREF**
mf parameter **GCSREF**
name parameter **GCSREF**
set parameter **GCSREF**
uword parameter **GCSREF**
taskid operand of **TACTIVE subcommand DIAG**
taskid operand of **TLOADL subcommand DIAG**
taskid operand of **TSAB subcommand DIAG**
tasks in **GCS**
adding and discarding subtasks **PLNGDE**
coordination **PLNGDE**
defined **PLNGDE**
dispatching **PLNGDE**
exit routines **PLNGDE**
priority **PLNGDE**
resource sharing **PLNGDE**
termination **PLNGDE**
TASKS operand of HELP command CMSREF
TBL operand
of **QUERY command CPREF**
TCLEARQ macro (SVC 94) CMSPROG
TCLOSE command in tape label processing CMSUG
TCU (Transmission Control Units)
remote terminal control unit support **PLNGDE**
TD option of DSERV command CMSREF
TDISK space
shared or nonshared **VCU mode PLNGDE**
TDSK operand
of **QUERY command CPREF**
TE (Trace End) immediate command
CMSUG, SPIREF
TELL command APGDE, CMSLOT, PRIMER
TELL command, example of use INTRO
templates, parsing
general rules **SPIREF**
in **ARG instruction SPIREF**
in **PARSE instruction SPIREF**
in **PULL instruction SPIREF**
temporary command destination change **SPIREF**
temporary disk space
clearing **CPREF**
formatting **CPREF**
temporary disks
defining **CPREF**
detaching **CPREF**
formatting using **DSF CMSPROG**
releasing **CPREF**
using for **VSAM data sets CMSPROG**
temporary virtual disks **CPREF**
ten, powers of **SPIREF**
TEOVEXIT macro CMSPROG
term **SPIUG**

- TERM** operand
of SPOOL command **CPREF**
of **TERMINAL** macro **PLNGDE**
- TERM** option
of **DOSLIB** command **CMSREF**
of **DOSLKED** command **CMSREF**
of **DSERV** command **CMSREF**
of **LKED** command **APGDE, CMSREF**
of **LOADLIB** command **CMSREF**
of **MACLIB** command **APGDE, CMSREF**
of **OPTION** command **CMSREF**
of **PSERV** command **CMSREF**
of **RSERV** command **CMSREF**
of **TXTLIB** command **APGDE**
- terminal **CPPROG, REL5GDE**
connecting remote **CPREF**
control of attention handling **CPREF**
controlling input/output processing **CPREF**
controlling line length **CPREF**
disconnecting from virtual machine **CPREF**
display
used in full screen mode **XEDIT**
used in line mode **XEDIT**
testing **CPREF**
- terminal breakin guestctl
for VSE virtual machine **RGOS**
- TERMINAL BRKKEY** command **REL5GDE**
interaction with **SET FULLSCREEN ON**
command **REL5GDE**
- TERMINAL CHARDEL** command **CMSLOT**
- TERMINAL** command **CMSUG, CPREF, TERMREF**
described **CPREF**
determining current values **CPREF**
enhancement **REL5GDE**
example of use **INTRO**
operands
APL CPREF
ASCITBL CPREF
ATTN CPREF
BREAKIN CPREF, SFPROG
BRKKEY CPREF, SFPROG
CHARDEL CPREF
CNTL CPREF
CONMODE CPREF, SFPROG
ESCAPE CPREF
HIGHLIGHT CPREF
LINEDEL CPREF
LINEND CPREF
LINESIZE CPREF
MODE CPREF
PROMPT CPREF
SCRNSAVE CPREF, SFPROG
SCROLL CPREF
TABCHAR CPREF
TEXT CPREF
TYPE CPREF
responses **CPREF**
usage notes **CPREF**
used to set logical line editing symbols **CMSUG**
- terminal connections **TERMREF**
- terminal definitions
MVS virtual machine
dedicated **RGOS**
non-dedicated **RGOS**
nondedicated **RGOS**
VSE virtual machine
dedicated **RGOS**
- TERMINAL** device type **APGDE**
- terminal I/O, waiting to complete **MACREF**
- terminal input buffer
APGDE, INTRO, SPIUG
- terminal interrupts **CMSPROG**
- terminal keyboards **TERMREF**
- TERMINAL LINESIZE** command **CMSLOT**
- TERMINAL** macro
coding **PLNGDE**
control unit and device addressing **PLNGDE**
effect on addressing
bisync terminals and printers **PLNGDE**
examples **PLNGDE**
format **PLNGDE**
remote 3270 addressing **PLNGDE**
- TERMINAL** macro
FEATURE PLNGDE
MODEL operand **PLNGDE**
SELECT PLNGDE
TERM PLNGDE
- TERMINAL** operand
of **QUERY** command **CPREF**
of **TRACE** command **CPREF**
- TERMINAL** option
of **ASSEMBLE** command **CMSREF**
of **ASSGN** command **CMSREF**
of **EXTRACT XEDIT**
of **FILEDEF** command **CMSREF**
of **PER** command **CPREF**
of **QUERY XEDIT**
of **SET XEDIT**
of **TRANSFER XEDIT**
- terminal output **DIAG**
- TERMINAL SCROLL** command **CMSLOT**
- terminal session
setting up **CPREF**
summary of commands
used to control **CPREF, OPGDE**
- terminal status **APGDE**
- terminal support **REL5GDE**
- TERMINAL TEXT** command **TERMREF**
- TERMINAL, CP** command **RGOS**
- terminal, using **PRIMER**
- terminals **INTRO, TERMREF**
adapters **PLNGDE**
attachable **PLNGDE**
categories **PLNGDE**
characteristics **CMSUG**
CMS interface **CMSPROG**
console **TERMREF**
disconnecting **CMSUG**
display **TERMREF**
See also display terminals
finding width with **LINESIZE SPIREF**
for VM/SP HPO control **OPGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- input procedures **OPGDE**
- macros for communication **CMSPROG**
- mode, setting **CMSUG**
- output
- reading data from
- reading from with PULL **SPIREF**
- requesting information about **CMSUG**
- required features **PLNGDE**
 - and special considerations **PLNGDE**
- sample sessions
 - for DOS programmers **CMSPROG**
 - for OS programmers **CMSPROG**
 - using access method services **CMSPROG**
- shared or nonshared VCU mode **PLNGDE**
- special considerations **PLNGDE**
- supported as virtual system consoles **PLNGDE**
- supported by VM/SP **TERMREF**
- supported by VM/SP HPO **PLNGDE**
- supported on start/stop lines **PLNGDE**
- system generation restrictions **PLNGDE**
- types **TERMREF**
- typewriter-like **TERMREF**
 - using **TERMREF**
- writing to with SAY **SPIREF**
- TERMINATE ALL**
 - logical device support facility function **SFPROG**
- TERMINATE** command of DMS/CMS **APGDE**
- terminating
 - console input/output **CPREF**
 - editing session **CMSUG**
 - using **CANCEL XEDIT**
 - using **FILE XEDIT**
 - using **QUIT XEDIT**
 - execution of a program **CMSUG**
 - EXEC 2** file **EXEX2**
 - PER DIAG**
 - processing of files **CPREF**
 - terminal session **CMSUG**
 - the programmable operator facility **SFPROG**
- termination
 - system **OPGDE**
 - virtual machine **OPGDE**
 - VMSAVE** option **CPPROG**
- termination accounting records **TSAFREF**
- termination in GCS
 - appealing **ABENDS PLNGDE**
 - routines **PLNGDE**
 - task **PLNGDE**
- termination of server
 - SRPI** macro (**REXX** and **EXEC 2**) **SRPI**
 - abnormal (**CMS abend**) **SRPI**
 - and explicit unload (**NUCXDROP**) **SRPI**
 - assembler
 - Communications Manager termination **SRPI**
 - end-of command processing (**CMS ready**) **SRPI**
- termination, abnormal
 - See also **abend** (abnormal termination)
 - CP abend** codes **SYMSMSG**
- terminology
 - CMS/DOS CMSPROG**
 - of IUCV macro parameters **SFPROG**
 - OS CMSPROG**
- TERMIO** command **APGDE**
- terms **DIAG**
- terms and data **SPIREF**
- terms, definition of
 - SRPI** macro **SRPI**
 - SRPI** subcommand environment **SRPI**
- reply (service reply) **SRPI**
- requester **SRPI**
- server **SRPI**
- server name **SRPI**
- server package **SRPI**
- service function **SRPI**
- service request **SRPI**
- transparent access **SRPI**
- TEST BLOCK**
 - Extended Storage Support
 - validating storage **PLNGDE**
 - supported operating systems **PLNGDE**
 - 308x and 3090 hardware instruction
 - validating storage **PLNGDE**
- TEST** compile option **INTRO**
- test complete
 - See **TESTCmpl** function of IUCV
- TEST COMPLETION** function of IUCV **SFPROG**
 - parameter list format **SFPROG**
 - trace table entry format **SFPROG**
 - using **SFPROG**
- test I/O
 - monitored in CP internal trace table **CPREF**
- TEST** keyword of **ISPSTART** command **APGDE**
- test message
 - See **TESTMSG** function of IUCV
- TEST MESSAGE** function of IUCV, using **SFPROG**
 - trace table entry format **SFPROG**
- TEST** option of **ASSEMBLE** command **CMSREF**
- TEST** parameter **APGDE**
- TESTCB (VSAM) GCSREF**
 - acb parameter **GCSREF**
 - aixflag parameter **GCSREF**
 - aixpc parameter **GCSREF**
 - area parameter **GCSREF**
 - arealen parameter **GCSREF**
 - arg parameter **GCSREF**
 - atrb parameter **GCSREF**
 - description **GCSREF**
 - ech parameter **GCSREF**
 - eodad parameter **GCSREF**
 - eret parameter **GCSREF**
 - exllen parameter **GCSREF**
 - exlst parameter **GCSREF**
 - fdbk parameter **GCSREF**
 - ftncd parameter **GCSREF**
 - io parameter **GCSREF**
 - jrncd parameter **GCSREF**
 - keylen parameter **GCSREF**
 - lerad parameter **GCSREF**
 - macrf parameter **GCSREF**
 - nxtrpl parameter **GCSREF**
 - object parameter **GCSREF**
 - optcd parameter **GCSREF**
 - rba parameter **GCSREF**
 - reclen parameter **GCSREF**
 - rpl parameter **GCSREF**
 - rpllen parameter **GCSREF**
 - synad parameter **GCSREF**
 - test a certain field in an ACB **GCSREF**
 - test a certain field in an exit list **GCSREF**
 - test a certain field in an RPL **GCSREF**
- TESTCB** macro instruction **GCSREF**
- TESTCB** operand notation **GCSREF**
- TESTCmpl** function of IUCV **TSAFREF**
 - completion **TSAFREF**
 - condition codes **TSAFREF**
 - parameter list **TSAFREF**

- parameters
 - MF=L TSAFREF
 - PATHID TSAFREF
 - PRMLIST TSAFREF
- program exceptions TSAFREF
- return code TSAFREF
- return codes TSAFREF
- use in sample resource program TSAFREF
- TESTCOB command APGDE
 - subcommands
 - AT APGDE
 - CALL APGDE
 - DUMP APGDE
 - END APGDE
 - GO APGDE
 - IF APGDE
 - LIST APGDE
 - LISTBRKS APGDE
 - NEXT APGDE
 - OFF APGDE
 - PERFORM APGDE
 - RUN APGDE
 - SET APGDE
 - TRACE APGDE
 - WHEN APGDE
- TESTFORT command APGDE, INTRO
 - subcommands
 - AT APGDE
 - END APGDE
 - ERROR APGDE
 - FIXUP APGDE
 - GO APGDE
 - IF APGDE
 - LIST APGDE
 - LISTBREAKS APGDE
 - LISTFREQ APGDE
 - NEXT APGDE
 - OFF APGDE
 - RUN APGDE
 - SET APGDE
 - SOURCE APGDE
 - TRACE APGDE
 - WHEN APGDE
 - WHERE APGDE
- testing
 - controlling CCW CPREF
 - period REL5GDE
 - programs CPREF
 - terminal CPREF
- TESTMSG function of IUCV TSAFREF
 - completion TSAFREF
 - condition codes TSAFREF
 - parameter list TSAFREF
 - program exceptions TSAFREF
 - return codes TSAFREF
 - use in sample resource program TSAFREF
- TESTX keyword of ISPSTART command APGDE
- TEVC (trace entry verification code) DIAG
- TEXT
 - assembler output ddname CMSREF
 - control of translation tables CPREF
- files
 - automatic loading CMSREF
 - cards read in by loader CMSREF
 - created by
 - assembler language processors CMSUG
 - creating with assembler CMSREF
 - executing with RUN command CMSREF
 - link-editing in CMS/DOS CMSREF
 - linking in storage CMSREF
 - loading into virtual storage CMSREF
 - resolving unresolved references
 - with LOAD command CMSREF
- filetype
 - usage in CMS CMSUG
- keys
 - allowing the use of XEDIT
- libraries
 - See TXTLIB
 - of CMS QUERY command CMSREF
- TEXT deck names
 - from GENIMAGE command CPPROG
- text expressions SPIUG
- text feature for 3270 terminals CMSUG
- text feature on 3270 TERMREF
- text field APGDE
- TEXT file APGDE
- TEXT file (COBOL) APGDE
- TEXT file (FORTRAN) APGDE
- TEXT file, PRELOAD utility program INST
- TEXT files INTRO
 - adding OS linkage editor
 - control statements CMSPROG
 - created by assembler, output filemode CMSPROG
 - executing CMSPROG
 - link-editing in CMS/DOS CMSPROG
 - loading CMSPROG
 - loading into storage for execution CMSREF
 - setting starting point for execution CMSREF
- TEXT files reformatted by PRELOAD utility INST
- TEXT filetype CMSLOT, PRIMER
- text format
 - of CP commands CPREF
- text formatting
 - See formatting
 - See word
- text libraries APGDE
 - adding members to APGDE
 - CMS PLNGDE
 - deleting members of APGDE
 - replacing members of APGDE
- text modules with ISPF APGDE
- TEXT operand
 - of SEND command CPREF
 - of SET command CPREF
 - of TERMINAL command CPREF
- TEXT option
 - of EXTRACT XEDIT
 - of QUERY XEDIT
 - of SET XEDIT
 - of TRANSFER XEDIT

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- text preparation program product
 DCF INTRO
 PROFS INTRO
- text processing INTRO
- textmask in DMS/CMS APGDE
- TEXTSYM statement SFPROG
 See also programmable operator facility
- TFB-512 devices
 defining fixed-block mode CPREF
- TFB-512 operand
 of DEFINE command CPREF
- TGET/TPUT macro (SVC 93) CMSPROG
- the SRPI search for server name SRPI
- THEN
 as free standing clause SPIREF
 following IF clause SPIREF
 following WHEN clause SPIREF
- THEN keyword
 NOP instruction SPIUG
 of IF instruction SPIUG
 of SELECT instruction SPIUG
- Thexloc operand of DISPLAY subcommand DIAG
- Thexloc% operand of DISPLAY subcommand DIAG
- Thexloc1 operand
 of DCP command CPREF
- third-level storage CPPROG
 not dumped SFPROG
- thrashing TSAFREF
- throwing away a file PRIMER
- time
 determining length
 of a terminal session CPREF
 sharing CPPROG, REL5GDE
 slice CPPROG
 slice dispatching
 duration CPREF
 swap queue
 controls CPREF
 working set pages
 held in interactive buffer CPREF
- time allocation, processor INTRO
- time displayed PRIMER
- TIME function SPIREF
- time intervals
 changing CPREF
 controlling in monitoring devices CPREF
- TIME macro GCSREF, PLNGDE
 bin parameter GCSREF
 dec parameter GCSREF
 description GCSREF
- TIME macro (SVC 11) CMSPROG
- time management
 virtual machine CPPROG
- time of day displayed CMSLOT
- TIME operand
 of MONITOR command CPREF
 of QUERY command CPREF
 of SYSMON macro PLNGDE
- time slicing INTRO
 supported by the interval timer OPGDE
- time-of-day (TOD) clock CPPROG, PLNGDE
 accounting interface SFPROG
 defining in SYSTIME macro PLNGDE
 in AP environment CPPROG
 MVS virtual machine RGOS
 obtaining current value OPGDE
 processor hardware OPGDE
 setting OPGDE
 VM under VM RGOS
 VSE virtual machine RGOS
- Time-Sharing Option (TSO)
 See TSO (Time-Sharing Option)
- time-zone in the VSE virtual machine RGOS
- timeout TERMREF
- TIMER operand
 of DEFINE command CPREF
 of SET command CPREF
- timers
 clock comparator CPPROG
 controlling virtual CPREF
 interval timer CPPROG
 management PLNGDE
 processor timer CPPROG
 pseudo CPPROG, SFPROG
 request queue lock CPPROG
 time of day (TOD) clock CPPROG
 virtual interval CMSREF
- timing a missing interrupt CPPROG
- title line in full-screen CMS CMSUG
- title line of the CMS window PRIMER
- TLOADL subcommand of DUMPSCAN command
 description DIAG
 error message DIAG
 format DIAG
 functional category DIAG
 response DIAG
 sample output DIAG
 usage DIAG
- TO
 keyword of SENDFILE command CMSREF
 option of GENMOD command CMSREF
- TO operand
 of ATTACH command CPREF
 of CPTRAP command CPREF
 of NETWORK command CPREF
 of SPOOL command CPREF
 of TRANSFER command CPREF
 of VMDUMP command CPREF
- TO operand of SPOOL command CMSUG
- TO phrase of DO instruction SPIREF
- TOD clock
 See Time-of-Day clock
- TODACCNT Function
 See also MACREF
 clock accounting interface MACREF
 ENABLE subfunction MACREF
 issues DIAGNOSE 70 MACREF
 QUERY subfunction MACREF
 usage MACREF
- TOF option
 of EXTRACT XEDIT
 of QUERY XEDIT
 of TRANSFER XEDIT
- TOFB action routine SFPROG
- TOFEOF option
 of EXTRACT XEDIT
 of QUERY XEDIT
 of SET XEDIT
 of TRANSFER XEDIT
- toggle between pf keys CMSUG
- tohexloc operand of LOCATE (UP) subcommand DIAG
- tokenized parameters APGDE
- tokenized PLIST CMSPROG, SRPI
 example EXEX2

tokens
tokens, classes of SPIREF
TOL option
 of EXTRACT XEDIT
 of QUERY XEDIT
TOLABEL option of COPYFILE command CMSREF
TOOLS exec
TOP XEDITUG
 in typewriter mode XEDITUG
 practice exercise using XEDITUG
TOP command CMSLOT, PRIMER
TOP command of DMS/CMS APGDE
top of file
 line, controlling display of XEDIT
 moving current line to CMSLOT
 moving current line toward CMSLOT
 moving line pointer toward
 using target XEDIT
 using UP XEDIT
top of range XEDIT
 line, controlling display of XEDIT
TOP operand
 of SYSPCLAS macro PLNGDE
TOP subcommand
 of TRAPRED command DIAG
 of XEDIT command APGDE, XEDIT
TOVM action routine SFPROG
TPN parameter (APPC)
TRACCURR
 (current CP internal trace table entry) DIAG
TRACE PRGDE
 Errors SPIUG
 Intermediate results SPIUG
 Normal SPIUG
 Results SPIUG
 turning off CPREF
trace bit, external SPIREF
TRACE command APGDE, CMSUG, CPREF,
 DIAG
 described CPREF
 GCS REL5GDE
 FREEMAIN entries REL5GDE
 GETMAIN entries REL5GDE
 operands
 ALL CPREF
 BOTH CPREF
 BRANCH CPREF
 CCW CPREF
 CSW CPREF
 END CPREF
 EXTERNAL CPREF
 I/O CPREF
 INSTRUCT CPREF
 NORUN CPREF
 OFF CPREF
 PRINTER CPREF
 PRIV CPREF
 PROGRAM CPREF
 RUN CPREF
 SIO CPREF
 SVC CPREF
 TERMINAL CPREF
 protected shared page CPPROG
 responses CPREF
 segment protection CPPROG
 testing nonshared segments CPPROG
 usage notes CPREF
TRACE command described INTRO
Trace End (TE) immediate command SPIREF
trace entries
 SNA CCS PLNGDE
trace entry verification code (TEVC) DIAG
trace event type codes CPREF
trace events in virtual machine
 ADSTOP command DIAG
 BEGIN command DIAG
 CP PER command DIAG
 branch traceback table DIAG
 CMD option DIAG
 GUESTR option DIAG
 GUESTV option DIAG
 multiple address stops DIAG
 PER COUNT subcommand DIAG
 selectivity DIAG
 storage alteration tracing DIAG
 suspending DIAG
 terminating DIAG
 tracing interrupts DIAG
 CP trace command DIAG
 controlling a CP trace DIAG
 suspending tracing DIAG
 resume execution DIAG
 stopping execution DIAG
 SVCTRACE command DIAG
 trace execution DIAG
 TRACE function SPIREF
 TRACE instruction SPIREF, SPIUG
 See also interactive debug
 TRACE keyword of ITSPSTART command APGDE
 TRACE operand
 of SYSCOR macro PLNGDE
 TRACE output DIAG
 closing CPREF
 trace real machine events DIAG
 TRACE setting
 altering with TRACE function SPIREF
 altering with TRACE instruction SPIREF
 querying SPIREF
 Trace Start (TS) immediate command SPIREF
 TRACE subcommand DIAG
 TRACE subcommand of DUMPSCAN command
 description DIAG
 error detection DIAG
 error message DIAG
 format DIAG
 functional category DIAG
 response DIAG
 sample output
 formatted CP display DIAG
 formatted TSAF display DIAG
 HEX CP display DIAG
 HEX TSAF display DIAG
 usage DIAG
 TRACE subcommand of TESTCOB command APGDE

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

TRACE subcommand of TESTFORT command **APGDE**

trace table

CP real storage requirements **PLNGDE**

entries **CPREF**

entry

formats, IUCV **SFPROG**

formats, SNA CCS **SFPROG**

IUCV field definitions **SFPROG**

problem determination **RGOS**

recording facility **RGOS**

size **PLNGDE**

size reduction **REL5GDE**

trace tags **SPIREF**

traceback, on syntax error **SPIREF**

TRACEND (end of CP internal trace table) **DIAG**

traces

CPTRAP PRGDE

definition of **PRGDE**

ETTRACE PRGDE

GTRACE PRGDE

ITRACE PRGDE

PER PRGDE

problems helped by **PRGDE**

SNA tracing tools **PRGDE**

TRACE PRGDE

traces option in ISPF **APGDE**

traceset-name operand

of **QUERY** command **CPREF**

TRACEX keyword of **ISPSTART** command **APGDE**

tracing **EXEX2**

action saved during subroutine calls **SPIREF**

branches **CPREF**

by interactive debug **SPIREF**

commands **EXEX2**

commands that yield nonzero return codes **EXEX2**

data identifiers **SPIREF**

description of **SPIUG**

every executable statement **EXEX2**

example **SPIUG**

EXEC 2 programs **CMSREF**

execution of programs **SPIREF**

external control of **SPIREF**

external tracing **GCSREF**

input/output operations **CPREF**

interruptions **CPREF**

IUCV functions **SFPROG**

looping programs **SPIREF**

privileged instructions **CPREF**

SNA Console Communication Services **SFPROG**

status words **CPREF**

SVC instructions

System Product interpreter programs **CMSREF**

tracing of **GTRACE** events **GCSREF**

Vector Facility instructions

with two mnemonics **CPREF**

vector instructions **APGDE, CPPROG**

virtual machine activity **CPREF**

tracing capabilities in **EXECs** **DIAG**

tracing flags

+++ **SPIREF**

** **SPIREF**

>.> **SPIREF**

>>> **SPIREF**

>C> **SPIREF**

>F> **SPIREF**

>L> **SPIREF**

>O> **SPIREF**

>P> **SPIREF**

>V> **SPIREF**

tracing storage alteration using **PER** **DIAG**

track slot **CPPROG**

tracking number

per cylinder on disk devices **CMSPROG**

tracks

alternate

3340, cylinder assignments **PLNGDE**

TRACSTRT

(start of CP internal trace table) **DIAG**

trailing blanks **MACREF**

removed using **STRIP** function **SPIREF**

removing using **WRTERM** macro **MACREF**

trailing fill characters

removing from records **CMSREF**

trailing zeros **SPIREF**

train

print **CPREF**

TRANS macro **CPPROG**

TRANS option of **COPYFILE** command **CMSREF**

TRANSFER command **CMSUG, CPPROG, CPREF**

class D **CPREF**

class G **CPREF**

described **CPREF**

description **CMSUG**

example of use **INTRO**

moving reader files **CMSUG**

operands

* **CPREF**

ALL **CPREF**

CLASS **CPREF**

DEST dest **CPREF**

FORM **CPREF**

FORM form **CPREF**

FROM **CPREF**

PRINTER **CPREF**

PUNCH **CPREF**

READER **CPREF**

spoolid **CPREF**

SYSTEM **CPREF**

TO **CPREF**

userid **CPREF**

responses **CPREF**

usage notes **CPREF**

TRANSFER subcommand **XEDIT**

transferring

control **EXEX2**

data files **CMSUG**

data between files **CMSLOT**

using **GET** **XEDIT**

using **PUT** **XEDIT**

using **PUTD** **XEDIT**

files

to a specified queue **CPREF**

to a specified user **CPREF**

to another user **CPREF**

output with VM writer task **RGOS**

setting of editing options **XEDIT**

transient area

CMS commands that execute in **CMSREF, CMSUG**

creating modules to execute in **CMSREF**

loading programs into **CMSREF**

transient directories in **VSE**, displaying **CMSREF**

- transient program area
 - creating modules to execute in **CMSPROG**
 - description of **CMSPROG**
 - location in virtual storage **CMSPROG**
 - restrictions on modules executing in **CMSPROG**
 - transient program area **CMSPROG**
- transient routines
 - \$\$BCLOSE CMSPROG**
 - \$\$BDUMP CMSPROG**
 - \$\$BOPEN CMSPROG**
 - \$\$BOPENR CMSPROG**
 - \$\$BOPNLB CMSPROG**
 - \$\$BOPNR2 CMSPROG**
 - \$\$BOPNR3 CMSPROG**
 - \$\$BOSVLT CMSPROG**
 - supported by CMS/DOS **CMSPROG**
- transition to native mode
 - requesting this for a virtual machine **CPREF**
- TRANSLAT option
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
 - of **SET XEDIT**
- TRANSLATE function **SPIREF, SPIUG**
- TRANSLATE option
 - of **CMS QUERY** command **CMSREF**
- translate tables **REL5GDE, TERMREF**
 - description for 3800 printer **OPGDE**
 - displaying **CMSREF**
 - for 2741 APL **TERMREF**
 - for 3270 APL **TERMREF**
 - for 3270 text feature **TERMREF**
- translated messages **SYMSMG**
- translating
 - between character, hexadecimal, decimal **SPIUG**
 - character sets **SPIUG**
 - characters **XEDITUG**
 - to lowercase **XEDIT**
 - to other characters **EXEX2**
 - to uppercase **XEDIT**
 - command arguments **MACREF, REL5GDE**
 - examples of **SPIUG**
 - output characters **CMSUG**
 - to uppercase **EXEC2, SPIUG**
 - TRANSLATE** function **SPIUG**
 - VERIFY** function **SPIUG**
 - virtual storage to EBCDIC **DIAG**
- translation
 - See also uppercase translation
 - with **TRANSLATE** function **SPIREF**
 - with **UPPER** instruction **SPIREF**
- translation list for **COPYFILE** command
 - description **CMSREF**
- translation synonyms for commands **CMSUG**
- translation tables, system character set **MACREF**
 - generating a DSECT for using **TRANSTBL MACREF**
- translations for commands **CMSUG**
- Transmission Control Units (TCU)
 - See TCU (Transmission Control Units)
- transmission control units (TCUs)
 - configuration aid **PLNGDE**
 - remote 3270 support **PLNGDE**
 - supported by VM/SP HPO **PLNGDE**
- 2702 required features **PLNGDE**
- 2703 features **PLNGDE**
- 3704/3705/3725 features **PLNGDE**
- transmission error rate **TSAFREF**
- transmitting
 - commands
 - to **CMS XEDIT**
 - to **CMS/CP** automatically **XEDIT**
 - to **CP XEDIT**
 - files and messages **TERMREF**
 - high priority messages **CPREF**
 - spool files locally **CPREF**
 - spool files to remote locations **CPREF**
- transparent services access facility
 - See **TSAF**
- transporting VSAM data sets **CMSPROG**
- TRANSTBL macro **CMSPROG**
 - expansion **MACREF**
 - generating a DSECT for system character set
 - translation tables **MACREF**
- trapping improper use of CP free storage **DIAG**
- trapping of conditions
 - See **SIGNAL** instruction
- TRAPRED
 - data reduction program **CPREF**
- TRAPRED facility **DIAG, REL5GDE**
- TRAPRED command format **DIAG**
- TRAPRED subcommands **DIAG**
 - ALL DIAG**
 - BOTTOM DIAG**
 - DOWN DIAG**
 - FORMAT DIAG**
 - HEX DIAG**
 - PRINTERK DIAG**
 - QUIT DIAG**
 - TOP DIAG**
 - TYPE DIAG**
 - TYPEBACK DIAG**
 - typenum **DIAG**
 - UP DIAG**
- viewing entries in the CPTRAP file **DIAG**
- TRC (Table Reference Character) **MACREF**
 - specified using **PRINTL** macro **MACREF**
- TRC option of **PRINT** command **CMSREF**
- trimming **REL5GDE**
- TRKBAL macro (SVC 25) **CMSPROG**
- TRQBLOK
 - unstack
 - monitored in CP internal trace table **CPREF**
 - VM SNA support **SFPROG**
- TRTCH
 - of **ASSGN** command **CMSREF**
 - of **FILEDEF** command **CMSREF**
- TRUE expression **SPIUG**
- true run list algorithm **OPGDE**
- Trunc **APGDE**
 - of commands **CMSREF**
 - option of **COPYFILE** command **CMSREF**
- TRUNC function **SPIREF, SPIUG**
- TRUNC option
 - of **COPYFILE** command **CMSUG**
 - of **EXTRACT XEDIT**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- of QUERY XEDIT
- of SET XEDIT
- of TRANSFER XEDIT
- Trunc= XEDITUG
- TRUNC=n, meaning of PRIMER
- truncating
 - limits EXEX2
 - lines EXEX2
 - numbers SPIREF, SPIUG
 - trailing blanks CMSUG
- truncation APGDE
 - of command names
 - querying acceptability of CMSREF
 - of records in CMS file CMSREF
 - of trailing blanks from CMS file CMSREF
- truncation column PRIMER, XEDITUG
 - defining XEDIT
- TS (Trace Start)
 - immediate command CMSUG, SPIREF
- TSAB subcommand of DUMPSCAN command
 - description DIAG
 - error message DIAG
 - form DIAG
 - functional category DIAG
 - response DIAG
 - sample output DIAG
 - usage DIAG
- TSAF (transparent services access facility)
 - CPPROG, INTRO
 - abend codes SYMSMSG
 - action for SYMSMSG
 - codes SYMSMSG
 - problem determination SYMSMSG
 - reason for SYMSMSG
 - user action SYMSMSG
 - abend messages DIAG
 - abends DIAG
 - APPC/VM program interface REL5GDE
 - collection resource management
 - system service REL5GDE
 - collection structure PLNGDE
 - components REL5GDE
 - contrasted with IUCV REL5GDE
 - control blocks, new and changed REL5GDE
 - corrective service procedure INST
 - general description INST
 - GENTSAF EXEC INST
 - enhancements to your system TSAFREF
 - environmental considerations REL5GDE
 - identify system service REL5GDE
 - introduction PLNGDE
 - IUCV functions for APPC/VM REL5GDE
 - loading national language files
 - from feature tape INST
 - machine requirements PLNGDE
 - macros, new and changed REL5GDE
 - modules, new and changed for REL5GDE
 - merging collections PLNGDE
 - overview REL5GDE
 - planning for IUCV/APPC PLNGDE
 - preventive service procedure INST
 - references to other publications REL5GDE
 - requirements REL5GDE
 - routing PLNGDE
 - service
 - corrective INST
 - virtual machine
 - See TSAF virtual machine
 - TSAF debugging
 - abends DIAG
 - collecting error information DIAG
 - creating TSAF dump DIAG
 - creating TSAF IPCS map DIAG
 - diagnosing TSAF dump DIAG
 - displaying trace records DIAG
 - displaying TSAF dump DIAG
 - formatting trace records DIAG
 - printing TSAF dump DIAG
 - processing TSAF dump DIAG
 - sample console log DIAG
 - setting external tracing DIAG
 - trace table entry format DIAG
 - trace table trailer record format DIAG
 - trapping trace table entries DIAG
 - TSAF QUERY command DIAG
 - using console log DIAG
 - using TSAF dumps to diagnose DIAG
 - viewing CPTRAP data DIAG
 - TSAF dump option of PRTDUMP command DIAG
 - TSAF dumps
 - creating DIAG
 - diagnosing DIAG
 - displaying DIAG
 - printing DIAG
 - processing DIAG
 - use to diagnose DIAG
 - TSAF internal trace table
 - entry format DIAG
 - trailer record format DIAG
 - TSAF Load Map (TSAF MAP) DIAG
 - TSAF MAP DIAG
 - TSAF performance
 - See performance
 - TSAF QUERY command DIAG
 - TSAF service
 - See also problem diagnosis
 - preparing to TSAFREF
 - TSAF SET ETRACE command DIAG
 - TSAF virtual machine REL5GDE
 - accounting record
 - initialization TSAFREF
 - link TSAFREF
 - session TSAFREF
 - termination TSAFREF
 - ACCT option TSAFREF
 - commands TSAFREF
 - ADD LINK TSAFREF
 - DELETE LINK TSAFREF
 - QUERY TSAFREF
 - RUNTSAF TSAFREF
 - STOP TSAF TSAFREF
 - description TSAFREF
 - diagnosing problems
 - dumps TSAFREF
 - system trace data TSAFREF
 - trapping entries (CPTRAP) TSAFREF
 - viewing CPTRAP data TSAFREF
 - directory entry TSAFREF
 - ACCT option TSAFREF
 - BMX option TSAFREF
 - COMSRV option TSAFREF
 - CONCEAL option TSAFREF
 - ECMODE option TSAFREF
 - IUCV *CRM TSAFREF
 - IUCV ALLOW TSAFREF
 - MAXCONN option TSAFREF

- REALTIMER option **TSAFREF**
 - sample **TSAF TSAFREF**
 - global functions **TSAFREF**
 - installation **TSAFREF**
 - links **TSAFREF**
 - setting up **TSAFREF**
- TSAFPCS MAP DIAG**
- TSAFVM INST, PLNGDE**
- TSO**
 - macro libraries for CMS **PLNGDE**
 - using with MVS guest **RGOS**
- TSO (Time-Sharing Option)**
- TSOLIB library APGDE**
- TSOMAC MACLIB APGDE, CMSPROG**
- TTIMER macro GCSREF, PLNGDE**
 - cancel parameter **GCSREF**
 - description **GCSREF**
- TTIMER macro (SVC 46) CMSPROG**
- tuning**
 - See storage management enhancements
 - turning off an **ADSTOP CPREF**
 - turning off messages **PRIMER**
 - turning on full-screen CMS **PRIMER**
- TVECTIME APGDE**
- TVSPARMS macro CMSPROG**
- two- or four-channel switch**
 - 3880 PLNGDE**
- two-channel switch**
 - alternate path support **PLNGDE**
 - channel switching
 - feature **PLNGDE**
 - MVS virtual machine **RGOS**
 - RDEVICE macro PLNGDE**
 - VSE virtual machine **RGOS**
- TWX terminals**
 - coding **RDEVICE macro PLNGDE**
- TXT statement of TXTLIB member APGDE**
- TXTLIB**
 - file, searching for unresolved references **CMSREF**
 - files
 - determining which **TXTLIBs** are searched **CMSREF**
 - identifying for **LOAD** and **INCLUDE** command processing **CMSREF**
 - search for unresolved references **CMSREF**
 - searched during
 - INCLUDE** command processing **CMSREF**
 - LOAD** command processing **CMSREF**
 - option
 - of **CMS QUERY** command **CMSREF**
 - of **GLOBAL** command **CMSREF**
- TXTLIB (filetype) APGDE**
 - adding members to **APGDE**
 - deleting members of **APGDE**
 - replacing members of **APGDE**
- TXTLIB (TEXT file library) INTRO**
- TXTLIB command APGDE**
 - creating **CMSPROG**
 - description **CMSPROG**
 - enhancement **REL5GDE**
 - modules, new and changed **REL5GDE**
- ENTRY statement CMSPROG**
 - executing **CMSPROG**
- FILENAME option CMSPROG**
- GEN function CMSPROG**
- loading CMSPROG**
- members
 - creating a directory entry for **CMSPROG**
- OS linkage editor**
 - control statements supported **CMSPROG**
- SETSSI card CMSPROG**
 - specify an alias name **CMSPROG**
- usage **CMSPROG**
- TXTLIB command for ISPF APGDE**
- TXTLIB filetype usage in CMS CMSUG**
- TXTLIBs APGDE**
 - adding members to **APGDE**
 - deleting members of **APGDE** in **EXECs APGDE**
 - replacing members of **APGDE**
- typamatic **TERMREF**
- typamatic, definition of **PRIMER**
- type (device) **SFPROG**
- type call in tape label processing **CMSUG**
- type code
 - description of **SYSMSG**
- TYPE command APGDE, CMSUG** and **MACLIB members APGDE**
- MEMBER option APGDE**
 - to display lines in a file **CMSLOT**
 - used in **FILELIST CMSLOT**
 - used in **RDRLIST CMSLOT**
- TYPE control statement**
 - of **DDR (DASD Dump Restore) CPPROG**
 - sample output of **DDR** program **CPPROG**
- type of data checking with **DATATYPE SPIREF**
- TYPE operand**
 - of **MAP** command **DIAG**
 - of **SYSMIH** macro **PLNGDE**
 - of **SYPAG** macro **PLNGDE**
 - of **SYSXSTOR** macro **PLNGDE**
 - of **TERMINAL** command **CPREF**
- TYPE option XEDITUG**
 - of **COPYFILE** command **CMSREF**
 - of **ERASE** command **CMSREF**
 - of **IDENTIFY** command **CMSREF**
 - of **INCLUDE** command **CMSREF**
 - of **LOAD** command **CMSREF**
 - of **NAMEFIND** command **CMSREF**
 - of **RENAME** command **CMSREF**
 - of **SENDFILE** command **CMSREF**
- TYPE parameter (APPC)**
 - of **DEALLOCATE TSAFREF**
 - of **SEND_ERROR TSAFREF**
 - of **SENDCNF TSAFREF**
 - of **SEVER TSAFREF**
- TYPE subcommand**
 - of **TRAPRED** command **DIAG**
 - of **XEDIT** command **XEDIT**
- type-ahead line counting with **EXTERNALS SPIREF**
- TYPE/NOTYPE option of DETAIL HELP CMSUG**
- TYPEBACK subcommand of TRAPRED command DIAG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

T

typenum operand
 of CPTRAP command CPREF

typenum subcommand of TRAPRED command DIAG

types
 classes, models, and features of devices
 (DIAGNOSE code X'24') SFPROG
 command CPPROG
 of data SPIUG
 of executable statements
 assignments EXEX2
 commands EXEX2
 control statements EXEX2
 null statement EXEX2

typewriter keys for PC TERMREF

typewriter mode XEDITUG

TYPEWRITER subcommand
 used to edit in line mode CMSUG

typewriter terminal
 controlling display of
 column pointer on XEDIT
 using escape character on XEDIT
 using input mode XEDIT

typing capital letters PRIMER

typing data
 See SAY (REXX instruction)

typing lines EXEX2

typing lines to terminal XEDITUG

typing mistakes, correcting PRIMER

typing over commands PRIMER

T2305 operand
 of DEFINE command CPREF

T3310 operand
 of DEFINE command CPREF

T3330 operand
 of DEFINE command CPREF

T3340 operand
 of DEFINE command CPREF

T3350 operand
 of DEFINE command CPREF

T3370 operand
 of DEFINE command CPREF

T3375 operand
 of DEFINE command CPREF

T3380 operand
 of DEFINE command CPREF

U

- UA option
 - of ASSGN command **CMSREF**
 - of LISTIO command **CMSREF**
- UCB
 - See Universal Character Set Buffer
- UCB macro **CPPROG**
- UCBCCW macro **CPPROG**
- UCC
 - buffer images
 - for the 3203 Printer **CPPROG**
- UCC macro **CPPROG**
- UCCCCW macro **CPPROG**
- UCS (universal character set)
 - adding buffer images **CPPROG**
 - supplied images **CPPROG**
- UCS macro **CPPROG**
- UCS operand
 - of LOADBUF command **CPREF**
- UCSB (Universal Character Set Buffer)
 - associative field chart **CPPROG**
 - buffer images
 - for the 3211 Printer **CPPROG**
 - images
 - examples **CPPROG**
- UCSCCW macro **CPPROG**
- UCW operand
 - of RCTLUNIT macro **PLNGDE**
- unassigning logical unit
 - assignments in CMS/DOS **CMSPROG**
- unassigning variables **SPIREF**
- UNAUTHORIZE function of VMCF **SFPROG**
- unauthorized
 - applications **PLNGDE**
- unconditionally leaving your program **SPIREF**
- under migration
 - problems related to **CPPROG**
- underflow, arithmetic **SPIREF**
- underlining **PRIMER**
- underscore
 - highlighting feature
 - controlling with CP SCREEN command **CMSUG**
 - in filename and filetype **CMSUG**
 - use of **CPREF**
 - used in COVERLAY **XEDIT**
 - used in FIND
 - used in FINDUP **XEDIT**
 - used in NFIND **XEDIT**
 - used in NFINDUP **XEDIT**
 - used in OVERLAY **XEDIT**
- undoing your changes **PRIMER**
- unexpected result in CP **DIAG**
- unexpected result in virtual machine **DIAG**
- unexpected results **DIAG**
- uniprocessor
 - definition of **RGOS**
 - environment
 - MVS virtual machine **RGOS**
- installation
 - definition **INST**
 - system
 - load list **PLNGDE**
- unique clusters, defining **CMSPROG**
- UNIQUEID option
 - of EXTRACT **XEDIT**
 - of QUERY **XEDIT**
- unit record
 - control units supported
 - by VM/SP HPO **PLNGDE, REL5GDE**
 - devices
 - configuration aid **PLNGDE**
 - support for CMS **PLNGDE**
 - supported by VM/SP HPO **PLNGDE, REL5GDE**
 - error messages for RDEVICE macro **PLNGDE**
 - support for CMS **PLNGDE**
- unit record device
 - defined **INTRO**
 - in a virtual machine **INTRO**
 - virtual device **INTRO**
- unit record devices
 - halting output **CPREF**
 - holding output **CPREF**
 - monitoring missing interruptions **CPREF**
 - MVS virtual machine **RGOS**
 - purging output **CPREF**
 - shared or nonshared VCU mode **PLNGDE**
 - stopping spooling **CPREF**
 - virtual **CPREF**
 - VM under VM **RGOS**
 - VSE virtual machine **RGOS**
- unit record spool files **OPGDE**
- stopping **CPREF**
- unit record table
 - generating **PLNGDE**
- unit record, devices **CMSUG**
- universal character set **CPREF**
 - altering **PLNGDE**
- universal character set (UCS) **CPPROG**
- universal character set buffer **CPREF**
- Universal Character Set Buffer (UCB), loading **RGOS**
- Universal Character Set Buffer (UCSB) **CPPROG**
- unlabeled tapes, defining **CMSUG**
- unlinking from someone's disk **CMSLOT**
- UNLOAD command of SQL **APGDE**
- unload list in DMS/CMS **APGDE**
- UNLOAD OPERAND
 - of UNLOAD command **CPREF**
- UNLOCK command **CMSUG, CPPROG, CPREF**
 - controlling reallocation of
 - virtual = real storage **OPGDE**
 - described **CPREF**
- operands
 - firstpage **CPREF**
 - lastpage **CPREF**
 - SYSSPOOL **CPREF**
 - SYSTEM **CPREF**
 - userid **CPREF**
 - VIRT=REAL **CPREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- releasing virtual = real area **PLNGDE**
- responses **CPREF**
- usage notes **CPREF**
- unlocking your keyboard **PRIMER**
- unnumbered responses **SYMSMG**
- unordered list **CMSLOT, PRIMER**
- UNPACK option of COPYFILE command **CMSREF**
- unpacking a string with C2X **SPIREF**
- unprotected shared segment **CPPROG**
- unprotected QUIT **XEDIT**
- unrecoverable tape error **CPPROG**
- unresolved references
 - during MODULE execution **CMSREF**
 - loader handling of **CMSREF**
 - resolving with INCLUDE command **CMSREF**
 - searching for TEXT files **CMSREF**
 - searching TXTLIBs for **CMSREF**
- unsupported devices
 - defining subclass **PLNGDE**
 - MVS virtual machine **RGOS**
 - RDEVICE macro **PLNGDE**
 - VM/VSE **RGOS**
- UNTIL keyword **EXEX2**
- UNTIL option
 - of EXTRACT **XEDIT**
 - of QUERY **XEDIT**
- UNTIL phrase of DO instruction **SPIREF**
- untokenized plist
 - "in-memory file" **EXEX2**
 - example **EXEX2**
- UP **XEDITUG**
 - in typewriter mode **XEDITUG**
 - practice exercise using **XEDITUG**
- UP command **CMSLOT, PRIMER**
- UP subcommand
 - of TRAPRED command **DIAG**
 - of XEDIT command **XEDIT**
 - example of **XEDIT**
- UP-generated VM/SP HPO systems
 - using for MVS guest **RGOS**
- UPCASE option
 - of ASSGN command **CMSREF**
 - of COPYFILE command **CMSREF**
 - of FILEDEF command **CMSREF**
 - of PRINT command **CMSREF**
- UPDATE
 - CMS**
 - CMS modules using **MSGEND INST**
 - CMSAMS INST**
 - CMSBAM INST**
 - CMSDOS INST**
 - CMSVSAM INST**
 - command
 - control statements
 - existing VM system procedure
 - macro libraries using **VMFMAC INST**
 - modules using **VMFASM INST**
 - option
 - programmable operator modules **INST**
 - starter system procedure
 - SYSTEM NETID file **INST**
 - SYSTEM NETID file
 - Starter System procedure **INST**
 - text libraries using **VMFTXT INST**
 - UPDATE, update procedures **INTRO**
- UPDATE command
 - use by the **VMFASM EXEC INST**
- UPDATE command control statement usage **CMSPROG**
- UPDATE command of SQL **APGDE**
- UPDATE commands **APGDE**
- update file, definition **INST**
- UPDATE filetype usage in CMS **CMSUG**
- update level identifiers
 - use by **PRELOAD** command **INST**
 - use by **VMFASM EXEC INST**
- update mode **XEDIT**
- UPDATE option **APGDE**
 - COBOL APGDE**
 - FORTRAN APGDE**
 - in **XEDIT XEDIT**
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
 - of **TRANSFER XEDIT**
- update procedures
 - applying local updates **INST, INTRO**
 - ASMGEND INST, INTRO**
 - MSGEND INST, INTRO**
 - DCSSGEN INST, INTRO**
 - deciding which procedure to use **INST, INTRO**
 - DOSGEN INST, INTRO**
 - GENMOD INST**
 - GENTSAF INST, INTRO**
 - PRELOAD INST, INTRO**
 - punch a new nucleus **INST**
 - SAMGEN INST, INTRO**
 - SPGEN INST, INTRO**
 - update macro libraries **INST**
 - update source files **INST**
 - VMFASM INST**
 - VMFLKED INST, INTRO**
 - VMFLOAD INST**
 - VMFMAC INST**
 - VMFNLS INST, INTRO**
 - VMFREMOV INTRO**
 - VMFTXT INST**
 - VMSERV INST, INTRO**
 - VRSIZE INST, INTRO**
 - VSAMGEN INST, INTRO**
 - VSEVSAM INST, INTRO**
 - ZAP INST, INTRO**
 - ZAPTEXT INST, INTRO**
- update sample, 3380 system **INST**
- UPDATE statement of SQL **APGDE**
- updates, kinds
- updating
 - CMS file directories **CMSUG**
 - directory
 - entries for national languages **SFPROG**
 - in-place with **DIAGNOSE** code X'84' **SFPROG**
 - with **DIAGNOSE** code X'3C' **SFPROG**
 - files for an existing national language **SFPROG**
 - multiple **CMSPROG**
 - preferred level **CMSPROG**
 - programs **CMSPROG**
 - screen display **XEDIT**
 - source file, using CTL option of **XEDIT CMSPROG**
 - UPDATE command **CMSPROG**
 - VMFASM EXEC CMSPROG**
 - VSE CMSPROG**
- updating FILELIST display **CMSLOT**
- updating IPCS **INST**
- updating problem report **DIAG**
- updating system dependent files
 - DMKBOX**
 - VM under VM **RGOS**

DMKRIO
 VM under VM **RGOS**
 VM/VSE **RGOS**
DMKSNT
 VM under VM **RGOS**
 VM/VSE **RGOS**
DMKSYS
 VM under VM **RGOS**
 updating VM/SP **HPO**
 accessing disks **INST**
 accessing update disks **INST**
 building CMS nucleus using **SPGEN INST**
 building CP nucleus using **SPGEN INST**
 control files **INST**
 corrective service, definition **INST**
DDR (DMKDDR module) INST
 determine maximum module size
 using **PSPACE macro INST**
 Device Support Facility (DSF) **INST**
 directory (module **DMKDIR) INST**
 disk access profiles used **INST**
 files for system updates **INST**
 Format/Allocate (module **DMKFMT) INST**
 introduction **INST**
 local updates **INST**
 minidisks used **INST**
 module identifiers **INST**
 object-maintained products
 overview **INST**
 other IBM-supplied fixes **INST**
 preventive service, definition **INST**
 programs used **INST**
 PUT format **INST**
 shared segments **INST**
 source maintained products
 apply updates to national language-related
 files using **VMFNLS INST**
 creating text libraries using **VMFTXT INST**
 deciding which update procedures to use **INST**
 files used **INST**
 overview **INST**
 punching new nucleus using **VMFLOAD INST**
 service process **INST**
 updating macro libraries using **VMFMAC INST**
 updating source files using **VMFASM INST**
 suggested VM configuration **INST**
 types of service **INST**
 update file identifiers **INST**
 updating
 CMS modules **INST**
 interactive problem control system (IPCS) **INST**
 loader program **INST**
 printer modules **INST**
 service programs **INST**
 use of **MAINT** virtual machine **INST**
 3704/3705 dump program (module **DMKRNDD) INST**
UPDIRT option of **RENAME** command **CMSREF**
UPDLOG filetype usage in CMS **CMSUG**
UPDTxxxx filetype usage in CMS **CMSUG**
UPPER instruction **SPIREF, SPIUG**
UPPER option of **PARSE** instruction **SPIREF**

UPPERCAS XEDITUG
 example of **XEDITUG**
UPPERCAS subcommand **XEDIT**
 example of **XEDIT**
 with DBCS strings **XEDIT**
 uppercase **SPIUG**
 translating characters entered into **XEDIT**
 translating characters in file to **XEDIT**
 use of **CPREF**
 uppercase data **EXEX2**
 uppercase letters
 converting to lowercase
 with **COPYFILE** command **CMSREF**
 uppercase letters and words **CPREF**
 uppercase letters, typing **PRIMER**
UPPERCASE subcommand of **XEDIT** command **APGDE**
 uppercase translation
 during **ARG** instruction **SPIREF**
 during **PULL** instruction **SPIREF**
 of symbols **SPIREF**
 with **PARSE UPPER SPIREF**
 with **TRANSLATE** function **SPIREF**
 with **UPPER** instruction **SPIREF**
 uppercase, data converted to **CMSLOT**
 uppercase, data entered in **CMSLOT, PRIMER**
UPSI (user program switch indicator)
 byte
 querying setting of **CMSREF**
 byte, setting in CMS/DOS **CMSPROG**
 operand, of CMS **SET** command, example **CMSPROG**
 option
 option of CMS **QUERY** command **CMSREF**
 setting **CMSPROG**
UR operand
 of **QUERY** command **CPREF**
 of **QUERY VIRTUAL** command **CPREF**
 of **SYSMIH** macro **PLNGDE**
USA option of **DATE** function **SPIREF**
 usability enhancements
 for CP **REL5GDE**
 overview **REL5GDE**
 usage notes
 * command **CPREF**
 #CP command **CPREF**
ADSTOP command **CPREF**
ATTACH command **CPREF**
ATTN command **CPREF**
AUTOLOG command **CPREF**
BACKSPAC command **CPREF**
BEGIN command **CPREF**
CACHE command **CPREF**
CHANGE command **CPREF**
CLOSE command **CPREF**
COMMANDS command **CPREF**
COUPLE command **CPREF**
CP command **CPREF**
CPTRAP command **CPREF**
DCP command **CPREF**
DEFINE command **CPREF**
DETACH command **CPREF**
DIAL command **CPREF**
DISABLE command **CPREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

DISCONN command CPREF
 DISPLAY command CPREF
 DRAIN command CPREF
 DUMP command CPREF
 ECHO command CPREF
 event types
 BRANCH CPREF
 INSTRUCT CPREF
 STORE CPREF
 EXTERNAL command CPREF
 FLUSH command CPREF
 FORCE command CPREF
 INDICATE command CPREF
 IPL command CPREF
 LINK command CPREF
 LOADBUF command CPREF
 LOADVFCB command CPREF
 LOGOFF command CPREF
 LOGON command CPREF
 MESSAGE command CPREF
 MONITOR command CPREF
 MSGNOH command CPREF
 NETWORK command CPREF
 NOTREADY command CPREF
 options
 NORUN CPREF
 PASS CPREF
 RUN CPREF
 STEP CPREF
 ORDER command CPREF
 PER command CPREF
 PURGE command CPREF
 QVM command CPREF
 REQUEST command CPREF
 RESET command CPREF
 REWIND command CPREF
 SAVESYS command CPREF
 SCREEN command CPREF
 SEND command CPREF
 SET command CPREF
 SHUTDOWN command CPREF
 SLEEP command CPREF
 MSG command CPREF
 SPMODE command CPREF
 SPOOL command CPREF
 START command CPREF
 STCP command CPREF
 STORE command CPREF
 SYSTEM command CPREF
 TAG command CPREF
 TERMINAL command CPREF
 TRACE command CPREF
 TRANSFER command CPREF
 UNLOCK command CPREF
 VARY command CPREF
 VMDUMP command CPREF
 USE command of DMS/CMS APGDE
 USEINST operand
 of DEFNUC macro PLNGDE
 user
 accounting options CPPROG
 accounting records CPPROG
 classes
 reverting to IBM-defined CPPROG
 data collection class PLNGDE
 finding CP control block addresses CPREF
 priority CPPROG
 user area (USERSECT) CMSPROG
 user areas APGDE
 user catalogs CMSREF
 identifying
 in CMS/DOS CMSREF
 user class INTRO
 USER class monitor records CPPROG
 user class restructure REL5GDE
 user completion code GCSREF
 USER control statement CPPROG, INTRO
 user directory
 entries for national languages, updating SFPROG
 reading SFPROG
 updating with DIAGNOSE code X'3C' SFPROG
 USER directory control statement PLNGDE
 MVS virtual machine RGOS
 VM under VM RGOS
 VM/VSE RGOS
 user doubleword function of VMCF SFPROG
 user file directory CMSUG
 contents CMSREF
 creating CMSREF
 updating on disk CMSREF
 user forms
 specifying
 SYSFORM macro PLNGDE
 user free storage
 allocating CMSPROG
 DMSFREE requests CMSPROG
 user hold status of spool files CMSUG
 user identification
 See userid
 user identification (userid)
 spool file attribute OPGDE
 user identification card
 for spooled card input OPGDE
 format OPGDE
 user input area TERMREF
 user interaction EXEX2
 user messages
 virtual machine OPGDE
 user MODULEs with ISPF APGDE
 USER operand
 of INDICATE command CPREF, CPPROG
 of MONITOR command CPREF
 USER operand of PRB command DIAG
 USER option
 of EXECDROP command CMSREF
 of EXECLOAD command CMSREF
 of EXECMAP command CMSREF
 user options
 replacing directory entry SFPROG
 user priority CPPROG
 option for SET command INTRO
 user program (sample) TSAFREF
 CONNECT function TSAFREF
 DCLBFR function TSAFREF
 RECEIVE function TSAFREF
 RTRVBFR function TSAFREF
 SENDDATA function TSAFREF
 SEVER function TSAFREF
 user program area
 CMS storage requirements PLNGDE
 commands that execute in CMSREF, CMSUG
 description of CMSPROG
 GETMAIN macro CMSPROG
 overlying programs in CMSPROG

- user program switch indicator (UPSI)
 - See also UPSI (user program switch indicator)
 - byte
 - querying setting of **CMSREF**
 - option
 - option of **CMS QUERY** command **CMSREF**
- user responsibilities for CMS/DOS **CMSPROG**
- user save area **CMSPROG**
- user task, **CMS INTRO**
- user termination, **SNA SFPROG**
- user transient area **APGDE**
- user view, **CMS INTRO**
- user-controlled device interrupts **CMSPROG**
- user-defined functions
 - description of **EXEX2**
 - examples **EXEX2**
 - form of **EXEX2**
 - invocation **EXEX2**
 - label search **EXEX2**
 - returning to **EXEX2**
- user-defined synonyms, displaying **CMSREF**
- user-written
 - EXECs**, samples **CMSUG**
- user-written commands
 - creating **CMSPROG**, **CMSREF**
- user-written functions **SPIUG**
- user, general
 - See general user
- USERFORM** operand
 - of **SYSFORM** macro **PLNGDE**
- USERHOLD** operand
 - of **QUERY** command **CPREF**
 - of **SPTAPE** command **CPREF**
- userid **APGDE**, **CPPROG**, **REL5GDE**, **TERMREF**
 - alternate **SFPROG**
 - described **CPREF**
 - descriptions for optional feature
 - program products **INST**
 - displaying **CMSLOT**
 - for CMS batch virtual machine **CMSUG**
 - for your virtual machine **CMSUG**
 - of **QUERY** command **CPREF**
 - option in **QUERY** **CMSLOT**
 - specifying for output spool files **CMSUG**
 - used in **NOTE** command **CMSLOT**
 - used in names file **CMSLOT**
 - used in **SENDFILE** command **CMSLOT**
 - used in **TELL** command **CMSLOT**
 - used to logon **CMSLOT**
- userid displayed **PRIMER**
- userid entry in a names file **CMSLOT**
- USERID** function **SPIREF**
- userid operand
 - of **ACNT** command **CPREF**
 - of **ATTACH** command **CPREF**
 - of **AUTOLOG** command **CPREF**
 - of **CACHE** command **CPREF**
 - of **CHANGE** command **CPREF**
 - of **COUPLE** command **CPREF**
 - of **CPTRAP** command **CPREF**
 - of **DETACH** command **CPREF**
 - of **DIAL** command **CPREF**
 - of **DISABLE** command **CPREF**
 - of **ENABLE** command **CPREF**
 - of **FORCE** command **CPREF**
 - of **FREE** command **CPREF**
 - of **HOLD** command **CPREF**
 - of **INDICATE** command **CPREF**
 - of **LINK** command **CPREF**
 - of **LOCATE** command **CPREF**
 - of **LOCK** command **CPREF**
 - of **LOGON** command **CPREF**
 - of **MESSAGE** command **CPREF**
 - of **MIGRATE** command **CPREF**
 - of **MSGNOH** command **CPREF**
 - of **NAMESYS** macro **PLNGDE**
 - of **NETWORK** command **CPREF**
 - of **ORDER** command **CPREF**
 - of **PURGE** command **CPREF**
 - of **QUERY** command **CPREF**
 - of **QVM** command **CPREF**
 - of **SEND** command **CPREF**
 - of **SET** command **CPREF**
 - of **MSG** command **CPREF**
 - of **SPOOL** command **CPREF**
 - of **SPTAPE** command **CPREF**
 - of **SYSACNT** macro **PLNGDE**
 - of **SYSMON** macro **PLNGDE**
 - of **TRANSFER** command **CPREF**
 - of **UNLOCK** command **CPREF**
 - of **VMDUMP** command **CPREF**
 - of **WARNING** command **CPREF**
- userid operand of **VIOLBOK** subcommand **DIAG**
- userid operand of **VMBLOK** subcommand **DIAG**
- userids, displaying ones logged on **CMSLOT**
- USERMAP** subcommand of **DUMPSCAN** command
 - description **DIAG**
 - error message **DIAG**
 - format **DIAG**
 - functional category **DIAG**
 - response **DIAG**
 - sample output **DIAG**
 - usage **DIAG**
- users
 - assigning group names to **CPPROG**
 - determining current number on system **CPREF**
 - displaying **PRIMER**
 - displaying number using computer **CMSLOT**
 - listing names currently on system **CPREF**
 - VM/SP HPO REL5GDE**
- USERS** operand
 - of **QUERY** command **CPREF**
 - of **SET** command **CPREF**
- USERS** option in **QUERY** **CMSLOT**
- USERSECT** (user area) **CMSPROG**
- USERSECT** macro **CMSPROG**
- using
 - CMS IUCV** to communicate
 - between two virtual machines **SFPROG**
 - CP** and **CMS OPGDE**
 - DASD** block I/O system service from **CMS SFPROG**
 - Format/Allocate** program **CPPROG**
 - DDR** program **CPPROG**
 - IUCV** data in a buffer **SFPROG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

U

IUCV data in a parameter list **SFPROG**
programmable operator facility
in a distributed VM system **SFPROG**
in a mixed environment **SFPROG**
in a single system **SFPROG**
single console image facility (SCIF) **SFPROG**
VMCF SFPROG
using a compiler **PRIMER**
using an EXEC **PRIMER**
using full-screen CMS **PRIMER**
using IBM BASIC **PRIMER**
using other people's files **CMSLOT, PRIMER**
using terminals with VM/SP **TERMREF**

using virtual forms control buffer
with 3262 printer **CPREF**
with 3289E printer **CPREF**
using XEDIT subcommand in HELP **CMSUG**
UTILITY command **CMSUG**
utility commands **APGDE**
UTILITY EXEC **REL5GDE**
command format **INST**
functions **INST**
messages **INST**
options **INST**
utility functions **SPIREF**
function packages **SPIREF**
UWORD operand

V

V=R

guest **CPPROG**
 machine
 used with single processor mode **CPPROG**
 necessary conditions **CPPROG**
 virtual machine recovery **CPPROG**
 information saved **CPPROG**
 use with preferred machine assist **REL5GDE**
 when preferred machine assist is active **CPPROG**

V=R MVS guest

definition of **RGOS**
 directory entry **RGOS**
 IPL, how to **RGOS**
 real storage, using **RGOS**
 recovery, virtual machine **RGOS**
 specifying size **RGOS**
 STBYPASS, CP SET command **RGOS**
 STMULTI, CP SET command **RGOS**
 storage considerations **RGOS**

V=R operand

of SET command **CPREF**

V=V MVS guest

definition of **RGOS**
 directory entry **RGOS**
 IPL, how to **RGOS**
 shadow tables, controlling **RGOS**
 STMULTI, CP SET command **RGOS**
 storage considerations **RGOS**

VAC operand

of DISPLAY command **CPREF**
 of STORE command **CPREF**

vaddr

described **CPREF**

vaddr operand

of ATTACH command **CPREF**
 of CLOSE command **CPREF**
 of COUPLE command **CPREF**
 of DEFINE command **CPREF**
 of DETACH command **CPREF**
 of DIAL command **CPREF**
 of IPL command **CPREF**
 of LOADVFCB command **CPREF**
 of LOCATE command **CPREF**
 of NETWORK command **CPREF**
 of NOTREADY command **CPREF**
 of QUERY VIRTUAL command **CPREF**
 of READY command **CPREF**
 of RESET command **CPREF**
 of REWIND command **CPREF**
 of SPOOL command **CPREF**

vaddr1 operand

of LINK command **CPREF**

VAE (Virtual Addressability Extension) **RGOS**VALIDATE command **CMSUG**, **REL5GDE**

modules, new and changed **REL5GDE**
 summary **CMSREF**

VALIDATE macro **GCSREF**, **PLNGDE**

addr parameter **GCSREF**

description **GCSREF**

key parameter **GCSREF**

length parameter **GCSREF**

validating requests for storage access **PLNGDE**VALUE function **SPIREF**, **SPIUG**VALUE option of PARSE instruction **SPIREF**VAR option of EXECIO command **CMSREF**VAR option of PARSE instruction **SPIREF**

VARBLANK option

of EXTRACT **XEDIT**

of QUERY **XEDIT**

of SET **XEDIT**

of TRANSFER **XEDIT**

VARCHAR data type in SQL

COBOL **APGDE**

VARGRAPH data type in SQL

COBOL **APGDE**

variable data

in EXEC procedure

variable data operand

AUTOLOG command **CPREF**

variable length

converting to fixed-length **CMSREF**

variable length record

reading using FSREAD macro **CMSPROG**

writing using FSWRITE macro **CMSPROG**

variable names **SPIREF**variable number of blanks, significance of **XEDIT**variable packed record format **XEDIT**

variable pools of ISPF

application profile pools **APGDE**

dialog variables **APGDE**

function pools **APGDE**

shared pools **APGDE**

variable record format **XEDIT**

variable services of ISPF

invoking from COBOL program **APGDE**

invoking from FORTRAN program **APGDE**

variable symbols

variable trace option in ISPF **APGDE**variable-length records **INTRO**

variables

compound **SPIREF**

controlling loops **SPIREF**

description of **SPIREF**, **SPIUG**

direct interface to **SPIREF**

dropping **SPIUG**

dropping of **SPIREF**

embedded blanks **EXEX2**

evaluation **EXEX2**

example of **SPIUG**

examples **EXEX2**

EXEC 2 variables **EXEX2**

exposing to caller **SPIREF**

getting value with VALUE **SPIREF**

in internal functions **SPIREF**

in subroutines **SPIREF**

length of **SPIUG**

names **EXEX2**

naming conventions **SPIUG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- new level of **SPIREF**
- not restored by **RESTORE XEDIT**
- not saved by **PRESERVE XEDIT**
- parsing **SPIUG**
- parsing of **SPIREF**
- protecting **SPIUG**
- resetting of **SPIREF**
- restored by **RESTORE XEDIT**
- saved by **PRESERVE XEDIT**
- setting new value **SPIREF**
- setting of **SPIUG**
- sharing between routines **SPIUG**
- simple **SPIREF**
- special
 - RC SPIREF**
 - RESULT SPIREF**
 - SIGL SPIREF**
- substituting **SPIUG**
- testing for initialization **SPIREF**
- translation to uppercase **SPIREF**
- valid names **SPIREF**
- XEDIT**, known to **SPIUG**
- variables in **XEDIT**
 - See editing variables
- variables option in **ISPF APGDE**
- variables used in an **EXEC CMSLOT, PRIMER**
- variables, special **SPIUG**
- VARY** command **CMSUG, CPREF**
 - described **CPREF**
 - operands
 - FORCE CPREF**
 - lprt CPREF**
 - OFFLINE CPPROG, CPREF**
 - ONLINE CPPROG, CPREF**
 - PROCESSR CPREF**
 - raddr CPREF**
 - VECTOR CPREF**
 - VLOG CPREF**
 - VPHY CPREF**
 - responses **CPREF**
 - usage notes **CPREF**
 - use with monitoring and service support facility **PLNGDE**
 - use with service processor **PLNGDE**
- VARY** command, example of use **INTRO**
- VARY OFFLINE** command **OPGDE**
- VARY ONLINE** command **OPGDE**
- VARY** operand
 - of **NETWORK** command **CPREF**
- VARY, CP** command **RGOS**
- varying devices offline/online
 - MVS** guest in single processor mode (308x) **RGOS**
 - VM** under **VM** **RGOS**
 - VM/VSE** **RGOS**
- VCHBLOK CPREF, DIAG**
- VCNA** (**VTAM** Communications Network Application)
- VCOPY APGDE**
- VCU** mode
 - shared or nonshared
 - miscellaneous devices **PLNGDE**
 - tape devices **PLNGDE**
 - TDISK** space **PLNGDE**
 - terminals **PLNGDE**
 - unit record devices **PLNGDE**
- VCUBLOK CPREF, DIAG**
- VCUNOSHR** operand
 - of **OPTION** directory control statement **PLNGDE**
- VCUNOSHR** option
 - defining in directory **PLNGDE**
- VDEFINE APGDE**
- VDELETE** (**ISPF**) variable service **APGDE**
- VDEVBLOK CPREF, DIAG**
- vector **APGDE, CPPROG, OPGDE**
 - activity count **APGDE, CPPROG, OPGDE**
 - cleanup **CMSUG**
 - failure **CPPROG**
 - instruction tracing **APGDE, CPPROG**
 - instructions **APGDE, CPPROG, OPGDE**
 - mask register **APGDE, CPPROG, OPGDE**
 - registers **APGDE, CPPROG, OPGDE**
 - resetting using **EXECOS CMSUG**
 - source **CPPROG**
- vector activity count
 - displaying **APGDE**
- Vector Facility **APGDE, CPPROG, OPGDE, REL5GDE**
 - accounting records **CPPROG**
 - authorization **CPPROG, OPGDE**
 - cautions about **SET AFFINITY** command **CPREF**
 - command use **CPPROG**
 - controlling user's access to **REL5GDE**
 - copyfiles, new and changed **REL5GDE**
 - description **PLNGDE**
 - diagnostic aids **CPPROG**
 - error messages **APGDE**
 - finding sum of virtual machine's total time plus **CP's** time **CPREF**
 - finding virtual machine's total time **CPREF**
 - machine checks **CPPROG**
 - macros, new and changed **REL5GDE**
 - monitor data **CPPROG**
 - register save areas **CPPROG, OPGDE**
 - registers
 - changing the contents of **APGDE**
 - displaying **APGDE**
 - resource
 - displaying how much your virtual machine is using **APGDE**
 - resource operator controls **CPPROG, OPGDE**
 - restricting use **PLNGDE**
 - restrictions, new and changed modules for **REL5GDE**
 - save areas **CPPROG**
 - steps required for
 - VM/SP HPO** support of **CPPROG, OPGDE**
 - storage requirements **PLNGDE**
 - storing in vector register pairs **CPREF**
 - storing in vector registers **CPREF**
 - storing vector activity counter **CPREF**
 - storing vector mask register **CPREF**
 - storing vector status register **CPREF**
 - summary of **VM/SP HPO** support **CPPROG, OPGDE**
 - tracing instructions with two mnemonics **CPREF**
 - virtual machine controls **CPPROG, OPGDE**
- vector mask register
 - displaying **APGDE**
- VECTOR** operand
 - of **QUERY** command **CPREF, CPPROG**
 - of **VARY** command **CPREF**
- vector register pairs
 - displaying **CPREF**
 - storing in them **CPREF**
- vector registers
 - displaying **CPREF**
 - storing in them **CPREF**
- vector status register
 - displaying **APGDE**

- vector symbol editor (GDDM) **INTRO**
- VER** control record, ZAP program
 example **INST**
 format **INST**
 function **INST**
 options **INST**
 special consideration during ZAP processing **INST**
- VER** operand
 of **LOADBUF** command **CPREF**
- verbs, **APPC**
- verification **APGDE**
 of changed lines **XEDIT**
- verification routines
 access **CPPROG**
- VERIFY** control record, ZAP program
 example **INST**
 format **INST**
 function **INST**
 options **INST**
 special consideration during ZAP processing **INST**
- VERIFY** function **SPIREF, SPIUG**
- VERIFY** option
 of **EXTRACT XEDIT**
 of **QUERY XEDIT**
 of **SET XEDIT**
 of **TRANSFER XEDIT**
- verifying a VSAM catalog structure **CMSREF**
- verifying existence of saved systems **SFPROG**
- VERSHIFT** option
 of **EXTRACT XEDIT**
 of **QUERY XEDIT**
 of **TRANSFER XEDIT**
- VERSION** operand
 of **DEFNUC** macro **PLNGDE**
- VERSION** option of **PARSE** instruction **SPIREF**
- vertical screens, multiple **XEDITUG**
 example of **XEDITUG**
- VGET APGDE**
- video display **TERMREF**
 Personal Computer **TERMREF**
- video display terminal **CMSLOT, PRIMER**
- viewing data
 examples **XEDIT**
 to the left **XEDIT**
 to the right **XEDIT**
- viewing two files at the same time **APGDE**
- views of a table in SQL **APGDE**
- VIOLBOK** subcommand of **DUMPSCAN** command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
 sample output **DIAG**
 usage **DIAG**
- VIRT=REAL** operand
 of **OPTION** directory control statement **PLNGDE**
 of **UNLOCK** command **CPREF**
- VIRT=REAL** option
 defining in directory **PLNGDE**
 for MVS guest **RGOS**
 for VSE guest **RGOS**
- virtual
 address **CPPROG, INST**
 block multiplexer channel option **CPPROG**
 console
 function, **DIAGNOSE** instruction **SFPROG**
 operator **CPPROG**
- disk **CPPROG**
- I/O devices
 input devices
 action taken on a **CLOSE CPREF**
 interval timer assist **CPPROG**
- IPL** by device, clean-up after **SFPROG**
- machine **INST**
- operator's console **CPPROG**
- output devices
 action taken on a **CLOSE CPREF**
- page tables **CPPROG**
- processor **CPPROG**
- relocation **CPPROG**
- reserve/release support
 virtual machine I/O management **CPPROG**
- segment tables **CPPROG**
- shadow tables **CPPROG**
- storage **INST**
- system console
 supported by VM/SP HPO **PLNGDE**
- 3800 Printer
 defining **CPPROG**
- 3880 Storage Control
 addressing **CPPROG**
- virtual address **INTRO, REL5GDE**
- Virtual Addressability Extension (VAE) **RGOS**
- virtual addresses **CPREF**
 for disks **CMSUG**
 for tapes **CMSUG**
 for unit record devices **CMSUG**
- virtual concept **INTRO**
- device **INTRO**
 console **INTRO**
 direct access storage **INTRO**
 magnetic tape **INTRO**
 unit record **INTRO**
- storage **INTRO**
 compared to real **INTRO**
 need for **INTRO**
 size limitation **INTRO**
 summary **INTRO**
- virtual console
 CP commands
 used for **CPREF**
 disconnecting **CPREF**
 spooling **CPREF, OPGDE**
- virtual console data, spooling **INTRO**
- virtual console facility, definition and use **RGOS**
- virtual console management **INTRO**
- virtual CSW
 storing
 monitored in CP internal trace table **CPREF**
- virtual device characteristics **MACREF**
 obtaining using **CMSDEV** macro **MACREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- virtual devices **REL5GDE**
 - closing **CPREF**
 - defining **CPREF, OPGDE**
 - detaching **CPREF**
 - determining current number of **CPREF**
 - determining the status of **CPREF**
 - extension **REL5GDE**
 - finding CP control block addresses **CPREF**
 - removing from your virtual machine **CPREF**
 - setting a device-end interruption for **CPREF**
 - simulating not ready status for **CPREF**
- virtual disks **INTRO, REL5GDE**
 - See also **DISK** command
 - See also disks
 - capacity under **CMS PLNGDE**
 - CMS**
 - maximum number of files **PLNGDE**
 - counting cylinders on **CMSREF**
 - defining in directory **PLNGDE**
 - definition **CMSUG**
 - initializing **CMSREF**
 - managing **CPREF**
 - managing permanent **CPREF**
 - managing temporary **CPREF**
 - resetting number of cylinders on **CMSREF**
 - sharing **CPREF**
 - valid addresses for **CMSREF**
- virtual feature
 - usage **OPGDE**
- virtual file **INTRO**
- virtual I/O devices
 - defining **CPREF**
- virtual I/O, performing (GCS) **PLNGDE**
- virtual interval timer
 - MVS** virtual machine **RGOS**
 - VSE** virtual machine **RGOS**
- virtual interval timer assist **OPGDE**
 - description **PLNGDE**
- virtual machine **CPPROG**
 - affect of system resources on its share
 - of processor time **CPPROG**
 - assist feature **CPPROG**
 - restrictions for use of **CPPROG**
 - usage **CPPROG**
 - used to reduce real supervisor-state time **CPPROG**
 - changing
 - access to commands **CPPROG**
 - its deadline priority **CPPROG**
 - the definition of privilege classes **CPPROG**
 - components of **CMSREF**
 - connecting to real device **CPREF**
 - console **CMSREF**
 - controls for the Vector Facility **CPPROG, OPGDE**
 - creation **CPPROG**
 - defining eight or fewer privilege classes **CPPROG**
 - defining more than eight privilege classes **CPPROG**
 - defining privilege classes for **CPPROG**
 - definition **CMSREF, REL5GDE**
 - described **CPPROG**
 - determining status of **CPREF**
 - device
 - linking to **CPREF**
 - device limit **CPPROG**
 - differences between Q1, Q2, and Q3 **CPPROG**
 - directory **CPPROG**
 - directory entry **CPREF**
 - first-level VM system **RGOS**
 - MVS** virtual machine **RGOS**
 - second-level VM system **RGOS**
 - VSE** virtual machine **RGOS**
 - disconnecting **CPREF**
 - dispatching scheme **CPPROG**
 - environment, determining status of **CMSREF**
 - how CP keeps track of the order
 - in which they run **CPPROG**
 - how long CP allows it to execute **CPPROG**
 - how to attach more than 410 devices to **CPPROG**
 - I/O management
 - AP (attached processor) **CPPROG**
 - dedicated devices **CPPROG**
 - directory **CPPROG**
 - mass storage volumes **CPPROG**
 - MP (multiprocessor) **CPPROG**
 - shared devices **CPPROG**
 - spooled devices **CPPROG**
 - virtual reserve/release support **CPPROG**
 - I/O operation **CPPROG**
 - in-queue **CPPROG**
 - interface entries **CPREF**
 - noninteractive **CPPROG**
 - operating system **CPPROG**
 - logging off **CPREF**
 - logging on **CPREF**
 - options
 - controlling **CPREF**
 - MVS** virtual machine **RGOS**
 - VM under VM **RGOS**
 - VSE** virtual machine **RGOS**
 - performance
 - for time-shared multibatch machines **CPPROG**
 - options **CPPROG**
 - placing in a dormant state **CPREF**
 - PSW (program status word) **CPPROG**
 - reconfiguring **CPREF**
 - recovery **CPPROG**
 - recovery for **MVS V=R** guest **RGOS**
 - requesting its return to native mode **CPREF**
 - resetting with preferred machine assist **CPREF**
 - restarting **CPREF**
 - selecting the next to migrate **CPPROG**
 - setting control functions **CPREF**
 - shared segment operation **CPPROG**
 - spooling
 - considerations **OPGDE**
 - functions **OPGDE**
 - stopping execution **CPREF**
 - storage management
 - directory **CPPROG**
 - virtual storage **CPPROG**
 - storage size
 - maximum, replacing directory entry **SFPROG**
 - replacing directory entry **SFPROG**
 - storage space
 - saving **CPREF**
 - storing information from **CPREF**
 - termination **OPGDE**
 - time management **CPPROG**
 - system programmer consideration **CPPROG**
 - timers **CPPROG**
 - tracing activity **CPREF**
 - tracing activity of **CPREF**
 - user messages **OPGDE**
 - what CP does with a nonrunnable **CPPROG**
- virtual machineabend **DIAG**
- virtual machine assignments **CMSPROG**

- virtual machine assist
 - and SET SASSIST command CPREF
 - described OPGDE
 - expanded PLNGDE
 - functional summary REL5GDE
 - general information PLNGDE
 - processors supported PLNGDE
 - segment protection extension REL5GDE
 - use with extended storage support REL5GDE
- virtual machine command environment CPREF
- Virtual Machine Communication Facility (VMCF) SFPROG
 - See also VMCF
 - control functions SFPROG
 - data transfer functions SFPROG
 - DIAGNOSE code X'68' SFPROG
 - data transfer error codes SFPROG
 - return codes SFPROG
 - external interrupt SFPROG
 - functions SFPROG
 - AUTHORIZE SFPROG
 - CANCEL SFPROG
 - IDENTIFY SFPROG
 - PRIORITY option SFPROG
 - QUIESCE SFPROG
 - RECEIVE SFPROG
 - REJECT SFPROG
 - REPLY SFPROG
 - RESUME SFPROG
 - SEND SFPROG
 - SEND/RECV SFPROG
 - SENDX SFPROG
 - special message facility SFPROG
 - SPECIFIC option SFPROG
 - UNAUTHORIZE SFPROG
 - introduction SFPROG
 - invoking functions SFPROG
 - protocol SFPROG
 - IDENTIFY SFPROG
 - SEND SFPROG
 - SEND/RECV SFPROG
 - SENDX SFPROG
 - receiving messages from the
 - special message facility SFPROG
 - return codes SFPROG
 - special message facility SFPROG
 - table of functions SFPROG
 - user doubleword SFPROG
 - using SFPROG
 - applications SFPROG
 - general considerations SFPROG
 - performance considerations SFPROG
 - security SFPROG
- virtual machine configuration
 - altering CPREF
- virtual machine contents
 - restoring OPGDE
- virtual machine data, displaying or dumping
 - byte alignment on terminal output DIAG
 - DCP command DIAG
 - DISPLAY command DIAG
 - DMCP command DIAG
 - DUMP command DIAG
- printer output DIAG
- terminal output DIAG
- VMDUMP command DIAG
- Virtual Machine/Directory Maintenance Program Product (VM/DMPP) REL5GDE
- virtual machine dump DIAG
- virtual machine environment
 - altering CPREF
 - entering CP commands CPREF
- virtual machine execution
 - resuming CPREF
- virtual machine group
 - building PLNGDE
 - communication within PLNGDE
 - defined PLNGDE
 - joining PLNGDE
 - storage layout PLNGDE
- Virtual Machine Monitor Analysis Program (VMMAP) REL5GDE
- Virtual Machine Performance Planning Facility (VMPPF) REL5GDE
- Virtual Machine Real Time Monitor (VM/RTM) REL5GDE
- virtual machine status
 - storing CPREF
- Virtual Machine/System Product (VM/SP)
 - See VM/SP (Virtual Machine/System Product)
- Virtual Machine/System Product High Performance Option
 - See VM/SP HPO
- virtual machine, loading (IPL) TERMREF
- virtual machines APGDE
 - assist INTRO
 - option of SET command INTRO
 - automatic system loading at user logon PLNGDE
 - batch machine INTRO
 - changing the definition INTRO
 - communication facility
 - IUCV PLNGDE
 - VMCF PLNGDE
 - console INTRO
 - creation CPPROG
 - dedicating real devices PLNGDE
 - defining
 - in directory PLNGDE
 - spooling devices PLNGDE
 - the virtual console in the directory PLNGDE
 - defining in directory INTRO
 - definition CMSUG
 - described CPPROG
 - description INTRO
 - determine storage size
 - with DIAGNOSE code X'60' SFPROG
 - DIAGNOSE instruction use SFPROG
 - directory CPPROG
 - disk space for APGDE
 - dispatching scheme CPPROG
 - display status INTRO
 - group INTRO, SFPROG
 - hardware support PLNGDE
 - I/O management
 - AP (attached processor) CPPROG
 - dedicated devices CPPROG

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- mass storage volumes **CPPROG**
- MP (multiprocessor) **CPPROG**
- input and output **INTRO**
- linking devices at logon **PLNGDE**
- make changes **INTRO**
- multiple
 - controlling from a single console **SFPROG**
- naming systems **PLNGDE**
- operating system **CPPROG, INTRO**
- operating systems **PLNGDE**
- performance
 - for time-shared multibatch machines **CPPROG**
- priority **INTRO**
- programmable operator **SFPROG**
- PSW (program status word) **CPPROG**
- requirement **INTRO**
- resource available to **INTRO**
- share of processor time **INTRO**
- sharing minidisks **PLNGDE**
- software support **PLNGDE**
- storage management
 - directory **CPPROG**
 - virtual storage **CPPROG**
- system support **PLNGDE**
- timers **CPPROG**
- to virtual machine communication
 - CMSIUCV SFPROG**
- use of real devices **INTRO**
- using reserve/release **PLNGDE**
- virtual input/output device **INTRO**
- VMSAVE option **PLNGDE**
- working in virtual environment **INTRO**
- VIRTUAL** operand
 - of **DEFINE** command **CPREF**
 - of **QUERY** command **CPREF**
- virtual operating system
 - passing parameters to **CPREF**
- virtual print **INTRO**
- virtual printer **INTRO, MACREF**
 - display current attributes **CPREF**
 - external attribute buffer manipulation **SFPROG**
 - specifying forms controls for **CPREF**
 - writing lines to using **PRINTL** macro **MACREF**
- virtual printer files **MACREF**
 - closing using **CP CLOSE** command **MACREF**
- virtual punch **INTRO, MACREF**
 - closing after **PUNCHC** macro **MACREF**
 - display current attributes **CPREF**
 - spooling **INTRO**
 - writing a line to **MACREF**
- virtual reader **MACREF**
 - defined **INTRO**
 - display current attributes **CPREF**
 - handling input files **INTRO**
 - reading a line from **MACREF**
 - spooling **INTRO**
- virtual reserve/release **RGOS**
 - data protection **RGOS**
- virtual screen
 - default characteristics **CMSUG**
 - defining **CMSUG, XEDIT**
 - general description **CMSUG, XEDIT**
 - naming **XEDIT**
 - sizing **XEDIT**
 - system-defined **CMSUG**
- virtual screens
 - CMS virtual screen **PRIMER**
 - definition of **PRIMER**
- MESSAGE virtual screen **PRIMER**
- NETWORK virtual screen **PRIMER**
- STATUS virtual screen **PRIMER**
- WARNING virtual screen **PRIMER**
- WM virtual screen **PRIMER**
- virtual storage **CMSLOT, CPPROG, INTRO, PRIMER, REL5GDE**
 - altering **CPREF**
 - assembler requirements **CMSPROG**
 - changing **CPREF**
 - clearing **CPREF**
 - displaying **CPREF**
 - dumping **CPREF**
 - locking selected pages **CPREF**
 - management
 - CP (control program) **CPPROG**
 - mapping to real **INTRO**
 - overlying during program execution **CMSPROG**
 - preservation **CPPROG, OPGDE**
 - SAVESEQ** priority value **CPPROG**
 - VMSAVE** option **CPPROG**
 - requesting information about **CMSUG**
 - required by CMS **PLNGDE**
 - specifying locations
 - for program execution **CMSPROG**
 - used by editor
 - what to do when it is full **CMSUG**
 - virtual storage management **INTRO**
- Virtual Storage Access Method (VSAM) **REL5GDE**
- See also VSAM (Virtual Storage Access Method)
- catalog
 - defining in CMS/DOS **CMSPROG**
 - sharing **CMSPROG**
 - structure **CMSPROG**
- catalogs
 - determining which catalog is searched **CMSREF**
 - identifying **CMSREF**
 - identifying in CMS/DOS **CMSREF**
 - verifying a structure of **CMSREF**
- CMS support for **CMSPROG**
- compiling and executing in CMS **CMSPROG**
- data set extents displayed **CMSREF**
- data sets
 - compatibility considerations **CMSPROG**
 - exporting **CMSPROG**
 - identifying **CMSPROG**
 - importing **CMSPROG**
 - manipulating with **AMSERV** command **CMSPROG**
- defining
 - catalogs in CMS/DOS **CMSPROG**
 - clusters **CMSPROG**
 - master catalog in OS **CMSPROG**
 - unique clusters **CMSPROG**
 - user catalogs in CMS/DOS **CMSPROG**
- determining free space extents **CMSREF**
- devices supported under CMS **CMSPROG**
- disks **CMSPROG**
- environment, resetting **CMSREF**
- extent
 - multiple, information in CMS/DOS **CMSPROG**
 - multivolume, information in CMS/DOS **CMSPROG**
- files
 - defining with **DLBL** command **CMSREF**
 - in CMS/DOS **CMSPROG**
 - in OS **CMSPROG**
 - specifying extents **CMSREF**

- identifying multivolume files
 - in CMS/DOS **CMSPROG**
 - in OS **CMSPROG**
- macros supported under CMS **CMSPROG**
- master catalog
 - identifying **CMSREF**
 - identifying in CMS/DOS **CMSREF**
- master catalogs **CMSPROG**
- multivolume extents **CMSPROG**
- option
 - of DLBL command **CMSREF**
 - of SET DOS ON command **CMSREF**
- programs identifying
 - before executing programs **CMSPROG**
- reading tape files **CMSPROG**
- restriction
- support of **CMSPROG**
- using in CMS **CMSPROG**
- writing EXECs **CMSPROG**
- Virtual Storage Access Method **VSAM**
 - See **VSAM** (Virtual Storage Access Method)
- Virtual Storage Extensions (**VSE**)
 - See **VSE** (Virtual Storage Extensions)
- virtual storage preservation **OPGDE**
- virtual storage requirements **PLNGDE**
- virtual storage, altering **DIAG**
- Virtual Telecommunications Access Method (**VTAM**)
 - INST, INTRO**
 - See also **VTAM**
 - running in a group machine **GCSREF**
 - running on GCS **GCSREF**
- virtual timer
 - controlling **CPREF**
- virtual unit record devices **CPREF**
- virtual volumes (3330V)
 - defining **CPREF**
- virtual = real
 - bypassing CCW translation **PLNGDE**
 - calculating maximum size of area **PLNGDE**
 - determining the size of CP **PLNGDE**
 - generating CP to support **PLNGDE**
 - recovery **PLNGDE**
 - releasing the area **PLNGDE**
 - restrictions **PLNGDE**
 - specifying a virtual = real machine **PLNGDE**
 - specifying the amount of space **PLNGDE**
 - storage **PLNGDE**
 - storage assignments
 - DOS 160K OPGDE**
 - use with multiport teleprocessing system **PLNGDE**
 - virtual storage requirements **PLNGDE**
 - VM/SP HPO performance option **OPGDE**
- virtual = real option **CPPROG**
 - installation procedure **INST**
 - loadlists **INST**
 - overview **INST**
 - selection statement in **SPGEN PROFILE INST**
- virtual = real system generation option **INTRO**
- VLOG** operand
 - of **VARY** command **CPREF**
- VM Batch Facility **REL5GDE**
- VM Batch Subsystem **INTRO**
- VM debug environment **APGDE**
- VM File Storage Facility **INTRO**
- VM MAP **INST**
- VM performance factors **RGOS**
- VM READ (terminal status) **APGDE**
- VM READ status notice **PRIMER**
- VM READ status on display screen **CMSUG**
- VM SNA Console Support (**VSCS**) **INTRO**
- VM swap enhancement support **REL5GDE**
 - efficient use of DASD **REL5GDE**
 - Fixed-Block-Architecture (FBA) devices **REL5GDE**
- VM system
 - See first-level VM system
 - See second level VM system
- VM under VM **RGOS**
 - additional topics when operating **RGOS**
 - introduction to running **RGOS**
 - performance considerations **RGOS**
 - spooling options when running **RGOS**
- VM writer task
 - using to transfer output for **VSE/SP 2.1**
 - virtual machine **RGOS**
- VM/HPO
 - See **VM/SP HPO**
- VM/interactive problem control system (**VM/IPCS**)
 - OPGDE, RGOS**
- VM/Interactive Productivity Facility (**VM/IPF**) **REL5GDE**
- VM/IPF **INST**
- VM/IS (Integrated System) **INTRO**
- VM/IS-Productivity Facility **INST**
- VM/Pass-Through Facility **INTRO, RGOS, REL5GDE, TERMREF**
 - Extended Data Stream Support for **REL5GDE**
 - publications **TERMREF**
 - restrictions imposed by **XEDIT**
- VM/PC Host Server **INST**
- VM/RTM support **CPPROG, INST**
- VM/SP (Virtual Machine/System Product) **APGDE, PRIMER, CMSLOT, PRIMER**
 - additions
 - alternate userid support **REL5GDE**
 - central message facility **REL5GDE**
 - CMS session services **REL5GDE**
 - Error Logging System Service **REL5GDE**
 - National Language Support (**NLS**) **REL5GDE**
 - SPOOL System Service **REL5GDE**
 - system profile, **SYSPROF EXEC REL5GDE**
 - transparent services access facility (**TSAF**) **REL5GDE**
- basic description **CMSUG**
- CMS **CMSPROG**
- CMS subsystem **CMSPROG**
- command summaries **CMSUG**
- components of **CMSUG**
- concepts **INTRO**
- control blocks, new and changed **REL5GDE**
- control files **INST**
- defined **INTRO**
- device types in **SFPROG**
- DIAGNOSE** instruction **SFPROG**
- directory
 - authorization for **IUCV SFPROG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- entries
 - for national languages, updating **SFPROG**
 - for VSE **CMSPROG**
 - in IUCV **SFPROG**
- replacing entries **SFPROG**
- update in-place **SFPROG**
- updating with DIAGNOSE code X'3C' **SFPROG**
- enhancements
 - HELP facility **REL5GDE**
 - installation and service procedures **REL5GDE**
 - PRINT command **REL5GDE**
 - RAS **REL5GDE**
 - usability **REL5GDE**
- environments **CMSUG**, **TERMREF**
- execs, new and changed **REL5GDE**
- logon procedures **TERMREF**
- manuals
 - See abstracts of VM/SP manuals
- macros, new and changed **REL5GDE**
- modules, new and changed **REL5GDE**
- publications **SRPI**, **TERMREF**
- recommended updating procedures **INTRO**
- significant changes
 - alternate userid support **REL5GDE**
 - central message facility **REL5GDE**
 - CMS session services **REL5GDE**
 - Error Logging System Service **REL5GDE**
 - HELP facility **REL5GDE**
 - installation and service procedures **REL5GDE**
 - National Language Support (NLS) **REL5GDE**
 - parsing facility **REL5GDE**
 - PRINT command **REL5GDE**
 - RAS **REL5GDE**
 - SPOOL System Service **REL5GDE**
 - system profile, **SYSPROF EXEC REL5GDE**
 - TSAF REL5GDE**
 - usability **REL5GDE**
- some ASCII terminals supported by **TERMREF**
- some EBCDIC terminals supported by **TERMREF**
- some terminals supported by **TERMREF**
- supported facilities and services **REL5GDE**
- terminals and consoles supported by **TERMREF**
- unique functions **SPIREF**
- using terminals with **TERMREF**
- VM/SP HPO (VM/SP High Performance Option)
 - cold start **OPGDE**
 - control files **INST**
 - control program **CPPROG**
 - DASD devices supported **PLNGDE**
 - DASD storage requirements
 - for the directory **PLNGDE**
 - defining your system **PLNGDE**
 - definition **REL5GDE**
 - directory **CPPROG**, **PLNGDE**
 - DASD requirements **PLNGDE**
 - directory entry **PLNGDE**
 - dump space
 - DASD requirements **PLNGDE**
 - free storage management improvements **INTRO**
 - functions **REL5GDE**
 - control switch assist to
 - preferred machine assist **REL5GDE**
 - dispatching and scheduling
 - modifications **REL5GDE**
 - enhanced paging subsystem **REL5GDE**
 - Expanded Storage **REL5GDE**
 - extended channel **REL5GDE**
 - extended storage protection
 - keys **REL5GDE**
 - extended storage support **REL5GDE**
 - free storage management
 - improvements **REL5GDE**
 - hardware segment protect
 - follow-on **REL5GDE**
 - keys **REL5GDE**
 - MVS/SP Support **REL5GDE**
 - performance enhancements for dyadic
 - and dual processors **REL5GDE**
 - preferred machine assist **REL5GDE**
 - single processor mode **REL5GDE**
 - Vvirtual Machine Assist — Segment Protection
 - Extension **REL5GDE**
 - 3090 Processor Complex support **REL5GDE**
 - introduction **PLNGDE**
 - load environment **CPPROG**
 - messages
 - initialization and status **OPGDE**
 - minimum configurations **PLNGDE**
 - object-maintained products
 - corrective service procedure **INST**
 - preventive service procedure **INST**
 - page migration enhancement **INTRO**
 - paging
 - DASD requirements **PLNGDE**
 - performance options **OPGDE**
 - pre-installation requirements **INST**
 - product tape **INST**
 - file layout **INST**
 - loading during system generation **INST**
 - Program Directory **INST**
 - program states **CPPROG**
 - real devices supported **PLNGDE**
 - real storage requirements
 - for CP **PLNGDE**
 - reducing size of the CP nucleus **PLNGDE**
 - recovery from system failures **OPGDE**
 - relation to VM/SP **REL5GDE**
 - service
 - accessing update disks **INST**
 - apply corrective service to source code **INST**
 - apply local and IBM corrective
 - updates to source code **INST**
 - apply preventive service to object code **INST**
 - apply preventive service to source code **INST**
 - apply updates to national language-related
 - files using VMFNLS **INST**
 - corrective service, definition **INST**
 - create text libraries using VMFTXT **INST**
 - disk access profiles used **INST**
 - files used for updating source **INST**
 - introduction **INST**
 - minidisks used **INST**
 - module identifiers **INST**
 - other IBM-supplied fixes **INST**
 - preventive service, definition **INST**
 - programs used **INST**
 - punch new nucleus using VMFLOAD **INST**
 - suggested VM configuration **INST**
 - types of **INST**
 - update macro libraries using VMFMAC **INST**
 - update source files using VMFASM **INST**
 - updating
 - CMS modules **INST**
 - interactive problem control system (IPCS) **INST**
 - loader program **INST**

printer modules **INST**
 service programs **INST**
 shared segments **INST**
 use of MAINT virtual machine **INST**
 when to regenerate
 CP/CMS **INST**
 service **INST**
 System Product Interpreter source **INST**
 single processor mode **INTRO**
 spooling
 DASD requirements **PLNGDE**
 support of the 3704, 3705, and 3725 **PLNGDE**
 starting **OPGDE**
 system components **INST**
 system console **OPGDE**
 system definition
 directory **PLNGDE**
 forms control buffer load **PLNGDE**
 real I/O configuration file **PLNGDE**
 system control file **PLNGDE**
 system name table **PLNGDE**
 system generation
 introduction **PLNGDE**
 terminals supported **PLNGDE**
 transmission control units supported **PLNGDE**
 two-channel switch feature **PLNGDE**
 unsupported devices in virtual machines **PLNGDE**
 users **REL5GDE**
 VSAM and
 Access Method Services requirements **PLNGDE**
 warm start **OPGDE**
 3033 Extension Feature Enhancement **REL5GDE**
 308x processor complex **INTRO**
 3090 processor complex **INTRO**
 3704/3705 control program support **PLNGDE**
 VM/SP HPO Release 5
 abstracts of publications **REL5GDE**
 compatibility **REL5GDE**
 direct access storage devices **REL5GDE**
 language **REL5GDE**
 library **REL5GDE**
 library reorganization **REL5GDE**
 license requirements **REL5GDE**
 licensed program specifications **REL5GDE**
 licensed programs that operate with **REL5GDE**
 migration considerations **REL5GDE**
 minimum configuration **REL5GDE**
 online HELP facility **REL5GDE**
 ordering information **REL5GDE**
 ordering publications for previous releases **REL5GDE**
 performance **REL5GDE**
 planning information **REL5GDE**
 processor requirements **REL5GDE**
 product tape **REL5GDE**
 program distribution **REL5GDE**
 program services **REL5GDE**
 programming requirements **REL5GDE**
 publications **REL5GDE**
 resident nucleus size **REL5GDE**
 software requirements **REL5GDE**
 spooling devices **REL5GDE**
 starter systems **REL5GDE**
 storage requirements **REL5GDE**
 supplementary publications **REL5GDE**
 supported processors **REL5GDE**
 system maintenance **REL5GDE**
 system requirements **REL5GDE**
 tape devices **REL5GDE**
 testing period **REL5GDE**
 transmission control units **REL5GDE**
 unit record devices **REL5GDE**
 VM/SP base **REL5GDE**
 warranty **REL5GDE**
 VM/System Product (VM/SP) Release 5 **REL5GDE**
 VM/SP System Product Editor
 See XEDIT
 VM/VCNA **CPPROG**
 (VM/VTAM Communication Network Application)
 VM/SP SNA support **SFPROG**
 VM/VS handshaking feature **PLNGDE**
 control of **CPREF**
 VM/VSE Interface **RGOS**
 modules and EXPLAIN files **RGOS**
 VM/VTAM and remote terminals **REL5GDE**
 control blocks, new and changed **REL5GDE**
 macros, new and changed **REL5GDE**
 modules, new and changed **REL5GDE**
 VM/SP SNA support **SFPROG**
 VM/370
 Extended Control-Program Support **OPGDE**
 hardware assist and restrictions **OPGDE**
 VM/370 (Virtual Machine Facility / 370)
 VM/370 Real Time Monitor (SMART) **PRGDE**
 VMA (virtual machine assist) **CPPROG**
 VMARCH **INST**
 VMASMON **INST**
 VMASYS **INST**
 VMASTEST **INST**
 VMBACKUP Management System **INST, REL5GDE**
 VMBATCH **INST, REL5GDE**
 VMBATCH1 **INST**
 VMBATCH2 **INST**
 VMBLOK **CPREF, DIAG**
 VMBLOK lock **CPPROG**
 VMBLOK operand
 of CPTRAP command **CPREF**
 VMBLOK subcommand of DUMPSCAN command
 description **DIAG**
 error message **DIAG**
 format **DIAG**
 functional category **DIAG**
 response **DIAG**
 sample output
 no operand **DIAG**
 OPERATOR operand **DIAG**
 usage **DIAG**
 VMBSYSAD **INST**
 VMCF (Virtual Machine Communication Facility)
 CPPROG, SFPROG
 control functions **SFPROG**
 data transfer functions **SFPROG**
 DIAGNOSE code X'68' **SFPROG**
 data transfer error codes **SFPROG**
 return codes **SFPROG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- external interrupt **SFPROG**
- functions **SFPROG**
 - AUTHORIZE SFPROG**
 - CANCEL SFPROG**
 - IDENTIFY SFPROG**
 - PRIORITY option SFPROG**
 - QUIESCE SFPROG**
 - RECEIVE SFPROG**
 - REJECT SFPROG**
 - REPLY SFPROG**
 - RESUME SFPROG**
 - SEND SFPROG**
 - SEND/RCV SFPROG**
 - SENDX SFPROG**
 - special message facility **SFPROG**
 - SPECIFIC option SFPROG**
 - UNAUTHORIZE SFPROG**
- introduction **SFPROG**
- invoking functions **SFPROG**
- protocol **SFPROG**
 - IDENTIFY SFPROG**
 - SEND SFPROG**
 - SEND/RCV SFPROG**
 - SENDX SFPROG**
- receiving messages from the
 - special message facility **SFPROG**
- return codes **SFPROG**
- special message facility **SFPROG**
- summary of functions **PLNGDE**
- table of functions **SFPROG**
- user doubleword **SFPROG**
- using **SFPROG**
 - applications **SFPROG**
 - general considerations **SFPROG**
 - performance considerations **SFPROG**
 - security **SFPROG**
- VMCONIO** operand
 - of **SET** command **CPREF**
- VMCPARM** parameter list **SFPROG**
- VMDUMP** **INTRO**
- VMDUMP** command **CMSUG, CPREF, DIAG, REL5GDE**
 - described **CPREF**
 - GCS REL5GDE**
 - operands
 - * **CPREF**
 - *dumpid **CPREF**
 - bytecount **CPREF**
 - DSS CPREF**
 - END CPREF**
 - FORMAT** vmtyp **CPREF**
 - hexloc **CPREF**
 - SYSTEM CPREF**
 - TO CPREF**
 - userid **CPREF**
 - responses **CPREF**
 - RSCS REL5GDE**
 - usage notes **CPREF**
- VMDUMP** function **SFPROG**
- VMDUMP** records
 - DMPINREC DIAG**
 - DMPKYREC1 DIAG**
 - DMPKYREC2 DIAG**
 - format **DIAG**
 - locating logical dump record **DIAG**
 - SPLINK DIAG**
 - TAG** area **DIAG**
- VMDUMP, CP** command **RGOS**
- VMFASM** command **CMSUG**
- VMFASM** **EXEC**
 - command procedure **INST**
 - description **CMSPROG**
 - disk input files **INST**
 - disk output files **INST**
 - error messages **INST**
 - format **INST**
 - how it works **INST**
 - options **INST**
 - printer output files **INST**
 - responses **INST**
 - update procedure
 - example **INST**
 - files used **INST**
 - requirements **INST**
 - updating source files **INST**
 - updating source files **INST**
 - use of the **UPDATE** command **INST**
 - using to update modules **INST**
 - when to use **INST**
- VMFDEOPT** macro **XEDIT**
- VMFDOS** command **CMSPROG**
- VMFDOS** **EXEC**
 - creating **CMS** files
 - containing **VSE** modules **INST**
 - examples **INST**
 - format **INST**
 - function **INST**
 - messages **INST**
 - options **INST**
 - usage notes **INST**
 - using to create **CMS** files
 - containing **VSE** modules **INST**
- VMFLKED** command **CMSUG**
- VMFLKED** **EXEC**
 - command procedure **INST**
 - control statements
 - example **INST**
 - error messages **INST**
 - format **INST**
 - how it works **INST**
 - input files **INST**
 - output files **INST**
 - using to link-edit modules **INST**
 - when to use **INST**
- VMFLOAD** **EXEC**
 - disk input files **INST**
 - enhancement **REL5GDE**
 - format **INST**
 - function **INST**
 - how it works **INST**
 - loadlist requirements **INST**
 - loadlists and uses **INST**
 - procedure
 - example **INST**
 - files used **INST**
 - punching a new nucleus **INST**
 - requirements **INST**
 - punch output files **INST**
 - responses **INST**
 - using to generate new nucleus **INST**
- VMFMAC** command **CMSUG**
- VMFMAC** **EXEC**
 - command procedure **INST**
 - disk input files **INST**
 - disk output files **INST**
 - format **INST**

- how it works **INST**
- printer output files **INST**
- responses **INST**
- update procedure
 - example **INST**
 - files used **INST**
 - requirements **INST**
 - updating macro libraries **INST**
- updating macro libraries **INST**
- when to use **INST**
- VMFMERGE** command **CMSUG**
- VMFMERGE** EXEC
 - applying corrective service **INST**
 - applying preventive service **INST**
 - command options **INST**
 - command procedure **INST**
 - disks used **INST**
 - enhancement **REL5GDE**
 - error messages **INST**
 - format **INST**
 - how it works **INST**
 - maintaining the Reqby Log **INST**
 - merging multiple PTFs, example **INST**
 - merging single PTF, example **INST**
 - re-applying corrective fixes **INST**
 - updating the Merge Log **INST**
 - usage notes **INST**
 - use of Exclude List **INST**
 - use of Product Parameter File **INST**
 - using to apply PTFs **INST**
 - when to use **INST**
- VMFNLS** command **CMSUG**
- VMFNLS** EXEC **REL5GDE**
 - command options **INST**
 - command procedure **INST**
 - error messages **INST**
 - format **INST**
 - when to use **INST**
- VMFOPT** macro **XEDIT**
- VMFPLC2** command **CMSUG**
- VMFPLC2** EXEC
 - format **INST**
 - function **INST**
 - messages **INST**
 - options. **INST**
 - usage notes **INST**
- VMFREMOV** command **CMSUG**
- VMFREMOV** EXEC **REL5GDE**
 - command options **INST**
 - command procedure **INST**
 - disks used **INST**
 - error messages **INST**
 - format **INST**
 - how it works **INST**
 - maintaining the Reqby Log **INST**
 - removing fix-in-error **INST**
 - removing multiple PTFs, example **INST**
 - removing single PTF, example **INST**
 - updating the Merge Log **INST**
 - use of Product Parameter File **INST**
 - using to remove PTFs **INST**
 - when to use **INST**
- VMFSF** **INST**
- VMFTXT** command **CMSUG**
- VMFTXT** EXEC **REL5GDE**
 - command procedure **INST**
 - creating text libraries **INST**
 - disk input files **INST**
 - disk work files **INST**
 - error messages **INST**
 - format **INST**
 - how it works **INST**
 - procedure
 - creating text libraries **INST**
 - example **INST**
 - files used **INST**
 - requirements **INST**
 - usage notes **INST**
 - responses **INST**
 - when to use **INST**
- VMFZAP** command **CMSUG**
- VMFZAP** EXEC
 - applying corrective service **INST**
 - applying emergency fixes **INST**
 - applying preventive service **INST**
 - command option **INST**
 - command procedure **INST**
 - disks used **INST**
 - error messages **INST**
 - format **INST**
 - how it works **INST**
 - maintaining the ZAP Log **INST**
 - re-apply ZAPs **INST**
 - removing fix-in-error **INST**
 - use of Product Parameter File **INST**
 - use of ZAP List **INST**
 - using to apply ZAPs **INST**
 - when to use **INST**
- VMGROUP** operand
 - of **NAMESYS** macro **PLNGDE**
- VMLOADL** subcommand of **DUMPSCAN** command
 - description **DIAG**
 - error message **DIAG**
 - format **DIAG**
 - functional category **DIAG**
 - response **DIAG**
 - sample output **DIAG**
 - usage **DIAG**
- VMMAP** support **CPPROG**, **INST**
 - analyzing performance of MVS guest **RGOS**
 - using to collect data about shadow tables **RGOS**
- VMout** operand
 - of **SCREEN** command **CPREF**
- VMPK02**, formatting **INST**
- VMPK03**, formatting **INST**
- VMPPF** support **CPPROG**
- VMPUT** PRODUCTS Inventory file
 - format of entry **INST**
 - purpose **INST**
- VMR** operand
 - of **DISPLAY** command **CPREF**
 - of **STORE** command **CPREF**
- VMRUN** bit **CPPROG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- VMSAVE DIAG, PLNGDE**
 areas **CPPROG**
 option **CPPROG**
 overlapping areas **CPPROG**
 target areas **CPPROG**
- VMSAVE function**
 enabling **OPGDE**
- VMSAVE operand**
 of **OPTION** directory control statement **PLNGDE**
 of **QUERY** command **CPREF**
 of **SET** command **CPREF**
- VMSAVE option**
 defining in directory **PLNGDE**
- VMSEV command CMSUG**
- VMSEV command procedure INST**
- VMSEV EXEC**
 format **INST**
 how it works **INST**
 invoking the service exec **INST**
 options **INST**
 return codes **INST**
 use in applying preventive service **INST**
 use of service exec **INST**
 use of **VMPUT PRODUCTS** Inventory file **INST**
 when to use **INST**
- VMSIZE PLNGDE**
- VMTAPE Management System INST, REL5GDE**
- VMTLIBR INST**
- VMUSERS DIRECT**
 changing passwords for
 program product userids **INST**
 modify current directory **INST**
 setting up entries for
 program products with **DIRECGEN INST**
 tailoring considerations
 adding userids **INST**
 existing VM system procedure **INST**
 logon passwords **INST**
 MAINT userid **INST**
 minidisk read/write passwords **INST**
 minidisks for GCS source code **INST**
 minidisks for TSAF source code **INST**
 modifying the GCS userid **INST**
 modifying the TSAFVM userid **INST**
 planning **INST**
 Starter System procedure **INST**
 system volumes **INST**
 TDISK space **INST**
 TEMP space **INST**
 user classes **INST**
 using **DIRECT** command
 to place directory on line **INST**
 using **DISKMAP EXEC** to check changes **INST**
 VMSRES address **INST**
 using **DISKMAP EXEC** to check changes **INST**
- VMUTIL INST**
- VM3812 INST**
- valid
 described **CPREF**
- VOLID operand**
 of **ATTACH** command **CPREF**
 of **DEDICATE** directory control statement **PLNGDE**
 of **FILEDEF** command **CMSREF**
 of **LABDEF** command **CMSREF**
 of **QUERY** command **CPREF**
 of **SYSOWN** macro **PLNGDE**
- VOLID parameter FILEDEF command CMSUG**
- VOLSEQ operand of LABELDEF command CMSREF**
- VOLSER (3480 tape volume serial) REL5GDE**
 modules, new and changed **REL5GDE**
 volume label contents
 CMS formatted disks **PLNGDE**
 volume labels on **DASD REL5GDE**
 volume serial error recording **REL5GDE**
 DIAGNOSE code **X'D0'** **REL5GDE**
 for 3480 tape drives **REL5GDE**
 Miscellaneous Data Records (**MDR**) **REL5GDE**
 3480 Outboard Records (**OBR**) **REL5GDE**
 Volume Table of Contents (**VTOC**) **CMSPROG**
 volumes
 format
 of cylinder zero **CPPROG**
 of cylinders for CP use **CPPROG**
 mounting and demounting
 3330V **OPGDE**
 use of **Format/Allocate** program
 allocating **CPPROG**
 formatting **CPPROG**
 labeling **CPPROG**
 use of the **Format/Allocate** program **CPPROG**
 user and system
 attaching and detaching **OPGDE**
- VP operand**
 of **STORE** command **CPREF**
- VPHY operand**
 of **VARY** command **CPREF**
- VPUT APGDE**
- VR operand**
 of **STORE** command **CPREF**
- vreg operand**
 of **STORE** command **CPREF**
- VREPLACE APGDE**
- VRESET APGDE**
- VRSIZE command CMSUG**
- VRSIZE EXEC**
 command procedure **INST**
 format **INST**
 function **INST**
 when to use **INST**
- VS APL INTRO, PLNGDE**
 use with **CMS PLNGDE**
- VS BASIC PLNGDE**
- VS FORTRAN CMSLOT, INST, PLNGDE, PRIMER, REL5GDE**
- VS FORTRAN interactive debug APGDE**
 commands
 AT APGDE
 BACKSPACE APGDE
 CLOSE APGDE
 ENDFILE APGDE
 ERROR APGDE
 FIXUP APGDE
 GO APGDE
 HELP APGDE
 IF APGDE
 LISTFREQ APGDE
 QUIT APGDE
 REWIND APGDE
 SYSCMD APGDE
 TERMIO APGDE
 TRACE APGDE
 WHEN APGDE
 WHERE APGDE
 FORTRAN interactive debug **APGDE**
 full-screen mode **APGDE**
- VS FORTRAN Version 2 compiler**

VS FORTRAN Version2 Compiler APGDE
VSAM (Virtual Storage Access Method) PLNGDE,
REL5GDE

applying PTFs **INST**
 catalog
 defining in CMS/DOS **CMSPROG**
 sharing **CMSPROG**
 structure **CMSPROG**
 catalogs
 determining which catalog is searched **CMSREF**
 identifying **CMSREF**
 identifying in CMS/DOS **CMSREF**
 verifying a structure of **CMSREF**
 CMS support for **CMSPROG**
 CMS support for DOS users **PLNGDE**
 compiling and executing in CMS **CMSPROG**
 considerations for installing **PLNGDE**
 DASD devices supported **PLNGDE**
 data management services **PLNGDE**
 data set compatibility with CMS **PLNGDE**
 data set extents displayed **CMSREF**
 data sets **PLNGDE**
 compatibility considerations **CMSPROG**
 exporting **CMSPROG**
 identifying **CMSPROG**
 importing **CMSPROG**
 manipulating with
 AMSERV command **CMSPROG**
 defining
 catalogs in CMS/DOS **CMSPROG**
 clusters **CMSPROG**
 master catalog in OS **CMSPROG**
 unique clusters **CMSPROG**
 user catalogs in CMS/DOS **CMSPROG**
 determining free space extents **CMSREF**
 devices supported under CMS **CMSPROG**
 disks **CMSPROG**
 environment, resetting **CMSREF**
 extent
 multiple
 information in CMS/DOS **CMSPROG**
 multivolume
 information in CMS/DOS **CMSPROG**
 files
 defining with DLBL command **CMSREF**
 in CMS/DOS **CMSPROG**
 in OS **CMSPROG**
 specifying extents **CMSREF**
 hardware devices supported **PLNGDE**
 identifying multivolume files
 in CMS/DOS **CMSPROG**
 in OS **CMSPROG**
 ISAM Interface Program **PLNGDE**
 macro library **PLNGDE**
 macros supported under CMS **CMSPROG**
 master catalog
 identifying **CMSREF**
 identifying in CMS/DOS **CMSREF**
 master catalogs **CMSPROG**
 multivolume extents **CMSPROG**

option
 of DLBL command **CMSREF**
 of SET DOS ON command **CMSREF**
 processing **PLNGDE**
 programs
 identifying before executing programs **CMSPROG**
 reading tape files **CMSPROG**
 restriction
 storage requirements **PLNGDE**
 support of **CMSPROG**
 under CMS, update procedures **INST**
 update procedure **INST**
 using in CMS **CMSPROG**
 writing EXECs **CMSPROG**
 VSAM cleanup **CMSUG**
 VSAM dumping information **DIAG**
 VSAM option
 of DLBL command **CMSPROG**
 of DLBL command in CMS/DOS **CMSPROG**
 VSAM under GCS **GCSREF**
 VSAMGEN EXEC
 error messages **INST**
 functions **INST**
 requirements for installing CMSAMS **INST**
 requirements for installing CMSVSAM **INST**
 update considerations **INST**
 updating
 Access Method Services **INST**
 CMSAMS INST
 CMSVSAM INST
 used to install CMSAMS **INST**
 used to install CMSVSAM **INST**
 VSAPL program, invoking **CMSUG**
 VSBASIC file, renumbering **XEDIT**
 vscreen (virtual screen) **PRIMER**
 VSCREEN option
 of CMS QUERY command **CMSREF**
 VSCS **INTRO**
 VSCS (VTAM SNA Console Support) **PLNGDE**
 running with VTAM **GCSREF**
 sending information to VTAM **GCSREF**
 VM/SP SNA support **SFPROG**
 VSCS printing formatted control blocks **DIAG**
 VSE **REL5GDE**
 assembler language macros
 supported in CMS **CMSPROG**
 CMS support for **CMSPROG**
 compilers, CMS usage **CMSPROG**
 differences between CMS/DOS
 tape label processing **CMSUG**
 hardware devices supported **CMSPROG**
 I/O macros **CMSPROG**
 libraries **CMSPROG**
 macro libraries for CMS **PLNGDE**
 macros supported under CMS **CMSPROG**
 macros, supervisor **CMSPROG**
 supervisor control blocks simulated **CMSPROG**
 supervisor macros **CMSPROG**
 support under CMS **PLNGDE**
 system residence volume
 using in CMS/DOS **CMSPROG**
 TLBL card in tape label processing **CMSUG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

transient routines **CMSPROG**
 transients simulated by CMS/DOS **CMSPROG**
 VM/SP directory entries **CMSPROG**
VSE (Virtual Storage Extensions)
VSE/POWER
 using VM writer task to transfer output **RGOS**
VSE/POWER printer
 starting **RGOS**
VSE/POWER under VM **RGOS**
VSE/SP
 virtual machine and problem determination **RGOS**
VSE/SP 2.1
 considerations for 3203-5 **RGOS**
 VM/VSE Interface **RGOS**
VSE/SP 2.1 virtual machine
 additional topics when operating **RGOS**
 autologging **RGOS**
 backup/restore procedures for **RGOS**
 DASD sharing
 considerations **RGOS**
 without hardware switches **RGOS**
 date and time-zone within the **RGOS**
 defining a single **RGOS**
 defining CPUsIDs for **RGOS**
 introduction to running **RGOS**
 IPLing **RGOS**
 issuing CP commands from **RGOS**
 library structure **RGOS**
 operating **RGOS**
 performance considerations **RGOS**
 pregenerated supervisors **RGOS**
 preparing the guest **RGOS**
 running multiple VSE virtual machines **RGOS**
 stacking CP commands in PROFILE EXEC **RGOS**
 submitting jobs to **RGOS**
 supervisor to use with VAE **RGOS**
 switching between CMS and
 the Interactive Interface **RGOS**
 using CMS/DOS **RGOS**
 VM directory entry for **RGOS**
 VM performance factors **RGOS**
VSE/VSAM
 macros
 ACB **CMSPROG**
 BLDVRP **CMSPROG**
 DLVRP **CMSPROG**
 ENDREQ **CMSPROG**
 ERASE **CMSPROG**
 VSE macros supported by CMS **CMSPROG**
VSE/VSAM Catalog Check Service Aid
 invoking **CMSREF**
VSE/VSAM service **INST**
VSE, copying macros into CMS MACLIB **INST**
VSEVSAM command prompting **CMSPROG**
VSEVSAM EXEC
 command procedure **INST**
 format **INST**
 messages **INST**
 usage note **INST**
 use, example **INST**
 when to use **INST**
VSM REL5GDE
VSR operand
 of DISPLAY command **CPREF**
 of STORE command **CPREF**
VSYSDR operand
 of NAMESYS macro **PLNGDE**
VSYSRES operand
 of NAMESYS macro **PLNGDE**
VTAM (Virtual Telecommunications Access Method)
 INST, INTRO, PLNGDE
 I/O reduction **SFPROG**
 printing formatted control blocks **DIAG**
 running in a group machine **GCSREF**
 running on GCS **GCSREF**
 service machine **REL5GDE**
 VM SNA support **SFPROG**
 structure of the SNA environment **PLNGDE**
VTAM Communications Network Application (VCNA)
 See VCNA (VTAM Communications Network
 Application)
VTAM SNA Console Support
 See VSCS (VTAM SNA Console Support)
VTOC
 minidisk allocation **PLNGDE**
VTOC (Volume Table of Contents) **CMSPROG**
VTOC, minidisk allocation **PLNGDE**
VVECTIME **APGDE**

W

- wait **DIAG**
- WAIT (keyword definition) **DIAG**
- wait bit, modifying **DIAG**
- WAIT FAILURE code (keyword definition) **DIAG**
- WAIT macro **GCSREF, PLNGDE**
 - description **GCSREF**
 - ecb parameter **GCSREF**
 - ecblist parameter **GCSREF**
 - number of events parameter **GCSREF**
 - related parameter **GCSREF**
- WAIT macro (SVC 1) **CMSPROG**
- WAIT operand
 - of **INDICATE** command **CPREF**
- WAIT operand of **STAT** command **DIAG**
- WAIT parameter
 - of **CONNECT** **TSAFREF**
 - of **RECEIVE** **TSAFREF**
 - of **SEND CNF** **TSAFREF**
 - of **SEND DATA** **TSAFREF**
 - of **SEND ERR** **TSAFREF**
- WAIT state **TSAFREF**
- wait state codes
 - CP **SYSMSG**
 - Loader **SYSMSG**
 - normal **SYSMSG**
 - RSCS **SYSMSG**
 - Stand-Alone Dump Facility **SYSMSG**
 - Stand-Alone Dump Program Execution **SYSMSG**
 - Stand-Alone Dump Program Generation **SYSMSG**
- wait states
 - disabled **PRGDE**
 - enabled **PRGDE**
 - hard **PRGDE**
 - in CMS
 - gathering information on **PRGDE**
 - in CP
 - gathering information on **PRGDE**
 - in RSCS **PRGDE**
 - interrupts associated with **PRGDE**
 - soft **PRGDE**
 - symptoms of **PRGDE**
 - using PSW to determine **PRGDE**
- WAITD macro **APGDE, CMSPROG**
 - See also **HNDINT** macro
 - See also **MACREF**
 - ERROR=** operand **MACREF**
 - waiting for next interruption **MACREF**
- WAITECB macro **CMSPROG**
 - See also **MACREF**
 - complex list format **MACREF**
 - Console I/O wait **MACREF**
 - ECB format **MACREF**
 - execute format **MACREF**
 - FORMAT** operand **MACREF**
 - list format **MACREF**
 - OS format, of ECB **MACREF**
 - standard format **MACREF**
- VSE format, of ECB **MACREF**
- waiting on Event Control Blocks (ECBs) **MACREF**
- WAITECB macro (use in sample program) **TSAFREF**
- WAITRD Function
 - See also **MACREF**
 - logical line editing **MACREF**
 - reading a line of input via **WAITRD** **MACREF**
 - usage **MACREF**
- WAITREAD VSCREEN command **CMSUG**
 - operands
 - summary **CMSREF**
- WAITT macro **APGDE**
 - See also **MACREF**
 - description of **CMSPROG**
 - usage **CMSPROG**
 - waiting for terminal I/O to complete **MACREF**
- WAITT VSCREEN command **CMSUG**
 - operands
 - summary **CMSREF**
- warm start **CPPROG**
 - VM/SP HPO **OPGDE**
- warm start data
 - calculating number of cylinders needed **PLNGDE**
 - DASD storage requirements **PLNGDE**
 - defining cylinders **PLNGDE**
- WARNING command **CMSUG, CPREF**
 - described **CPREF**
 - operands
 - ALL **CPREF**
 - msgtext **CPREF**
 - OPERATOR **CPREF**
 - userid **CPREF**
 - responses **CPREF**
 - usage notes **CPREF**
- WARNING LOGFILE **CMSUG, PRIMER**
- warning message issued by **QUIT** **CMSLOT, XEDIT**
- warning messages **PRIMER**
 - controlling receipt **CPREF**
- Warning status notice **PRIMER**
- WARNING virtual screen **PRIMER**
- WARNING window **PRIMER**
- warnings
 - log file for **PRIMER**
 - reviewing **PRIMER**
- warranty **REL5GDE**
- WEBLOK, VM SNA support **SFPROG**
- WEEKDAY option of DATE function **SPIREF**
- WEIBLOK, VM SNA support **SFPROG**
- WHAT_RECEIVED parameter (**APPC**)
 - of **RECEIVE_AND_WAIT** **TSAFREF**
- WHEN clause
 - See **SELECT** instruction
- WHEN command **APGDE**
- WHEN keyword **SPIUG**
- WHEN subcommand of **TESTCOB** command **APGDE**
- WHEN subcommand of **TESTFORT** command **APGDE**
- WHENEVER command of SQL **APGDE**
- WHERE clause of SQL **APGDE**
- WHERE command **APGDE**
- WHERE CURRENT OF statement of SQL **APGDE**
- WHERE subcommand of **TESTFORT** command **APGDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- WHILE keyword **EXEX2**
- WHILE phrase of DO instruction **SPIREF**
- whole numbers **SPIUG**
 - checking with **DATATYPE SPIREF**
 - description of **SPIREF**
- WIDTH option
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
 - of **TRANSFER XEDIT**
 - of **XEDIT XEDIT**
- WINDOW
 - defining **XEDIT**
 - general description **XEDIT**
 - naming **XEDIT**
 - sizing **XEDIT**
- WINDOW option
 - of **CMS QUERY** command **CMSREF**
 - of **EXTRACT XEDIT**
 - of **LOAD XEDIT**
 - of **XEDIT XEDIT**
- windows
 - border commands **REL5GDE**
 - characteristics of **CMSUG**
 - clearing **PRIMER**
 - CMS window **PRIMER**
 - CMSOUT window **PRIMER**
 - default characteristics **CMSUG**
 - defining **CMSUG**
 - definition of **PRIMER**
 - description **REL5GDE**
 - dropping **CMSUG, PRIMER**
 - functions **REL5GDE**
 - general description **CMSUG**
 - making them appear **PRIMER**
 - maximizing **CMSUG**
 - MESSAGE window **PRIMER**
 - moving **PRIMER**
 - NETWORK window **PRIMER**
 - overview **REL5GDE**
 - popping **CMSUG, PRIMER, REL5GDE**
 - and dropping **REL5GDE**
 - positioning **CMSUG, PRIMER**
 - restoring **CMSUG**
 - scrolling **PRIMER**
 - setting borders **CMSUG**
 - SET WINDOW command **REL5GDE**
 - sizing **CMSUG**
 - STATUS window **PRIMER**
 - system-defined **CMSUG**
 - virtual screens **REL5GDE**
 - WARNING window **PRIMER**
 - WM window **PRIMER**
- WM virtual screen **PRIMER**
- WM window **PRIMER**
 - customizing **CMSUG**
 - PF keys
 - Backward **CMSUG**
 - Clear **CMSUG**
 - Copy **CMSUG**
 - Drop WM **CMSUG**
 - Forward **CMSUG**
 - Help **CMSUG**
 - Left **CMSUG**
 - Maximize **CMSUG**
 - Restore **CMSUG**
- Retrieve **CMSUG**
- Right **CMSUG**
- Top **CMSUG**
 - using **CMSUG**
- WMPF option
 - of **CMS QUERY** command **CMSREF**
- WNG operand
 - of SET command **CPREF**
- word
 - counting in a string **SPIREF**
 - definition of **EXEX2**
 - deleting from a string **SPIREF**
 - description of **SPIUG**
 - extracting from a string **SPIREF**
 - finding in a string **SPIREF**
 - finding length of **SPIREF**
 - functions using **SPIUG**
 - in parsing **SPIREF**
 - locating in a string **SPIREF**
 - parsing **SPIUG**
 - reserved **EXEX2**
- WORD function **SPIREF, SPIUG**
- word processing
 - See formatting
 - See word
- WORDINDEX function **SPIREF, SPIUG**
- WORDLENGTH function **SPIREF, SPIUG**
- WORDS function **SPIREF, SPIUG**
- workfiles, COBOL **APGDE**
- working set **CPPROG, REL5GDE**
 - minimum size
 - how to control the setting of **CPPROG**
 - projected
 - setting size estimate control algorithm **CPREF**
 - setting maximum value **CPREF**
 - setting minimum size **CPREF**
- workload factors influencing performance
 - VM under VM **RGOS**
 - VM/VSE **RGOS**
- wrap around **XEDIT**
- wrap file **DIAG**
- WRAP operand
 - of **CPTRAP** command **CPREF**
- WRAP option
 - of **EXTRACT XEDIT**
 - of **QUERY XEDIT**
 - of **SET XEDIT**
 - of **TRANSFER XEDIT**
- wrap-size operand
 - of **CPTRAP** command **CPREF**
- wrapping, automatic line **XEDIT**
- write full screen in DMS/CMS **APGDE**
- WRITE macro **CMSPROG**
 - execute format **GCSREF**
 - list format **GCSREF**
- WRITE macro (BSAM) **GCSREF**
 - area address parameter **GCSREF**
 - dcb address parameter **GCSREF**
 - decb name parameter **GCSREF**
 - description **GCSREF**
 - length parameter **GCSREF**
 - mf parameter **GCSREF**
 - s parameter **GCSREF**
 - sf parameter **GCSREF**
- write pointers, resetting **MACREF**
- WRITE VSCREEN command **CMSUG**
 - operands
 - summary **CMSREF**

writing

CMS disk files **CMSPROG**
 CMS files onto disk, disk determination **CMSUG**
 labels on CMS disks **CMSUG**
 lines to terminal **CMSPROG**
 specific records in CMS file **CMSPROG**
 variable length records **CMSPROG**
 writing a file on disk **PRIMER**
 using **AUTOSAVE CMSLOT, XEDIT**
 using **FILE CMSLOT, XEDIT**
 using **SAVE CMSLOT, XEDIT**
 writing a server
 assembler **SRPI**
 freeing CPRB storage **SRPI**
 initializing **SRPI**
 installing, assembler **SRPI**
 receiving the service reply **SRPI**
 receiving the service request **SRPI**
 sending a service request **SRPI**
 sending the service reply **SRPI**
 using CPRB in sending reply **SRPI**
 using CPRB in sending request **SRPI**
 handling a service request **SRPI**
 REXX and EXEC 2
 handling service requests **SRPI**
 initializing servers **SRPI**
 installing servers **SRPI**
 loading servers **SRPI**
 receiving a service reply **SRPI**
 receiving the service request **SRPI**
 responsibilities **SRPI**
 sending a service request **SRPI**
 sending the service reply **SRPI**
 writing blocked records **MACREF**
 writing CMS files **SPIREF**
 writing comments **CPREF**
 writing file on disk **XEDITUG**
 in typewriter mode **XEDITUG**
 writing files **SPIUG**

writing lines to the screen **SPIUG**
 writing macros **XEDITUG**
 writing records sequentially **MACREF**
 writing tape labels using **TAPESL MACREF**
 writing to the stack
 with **PUSH SPIREF**
 with **QUEUE SPIREF**
 writing your own subcommands **XEDITUG**
WRTAPE macro **APGDE, CMSPROG**
 See also **MACREF**
 ERROR = operand MACREF
 MODE = operand MACREF
 TRAN = operand MACREF
 writing records on tape **MACREF**
WRTERM macro **APGDE**
 See also **LINEWRT** macro
 See also **MACREF**
 COLOR = operand MACREF
 description of **CMSPROG**
 displaying lines at terminal **MACREF**
 EDIT = operand MACREF
 examples **CMSPROG**
WTM
WTO macro **GCSREF, PLNGDE**
 description **GCSREF**
 execute format **GCSREF**
 list format **GCSREF**
 mf parameter **GCSREF**
WTO/WTOR macro (**SVC 35**) **CMSPROG**
WTOR macro **GCSREF, PLNGDE**
 description **GCSREF**
 ecb parameter **GCSREF**
 execute format **GCSREF**
 list format **GCSREF**
 mf parameter **GCSREF**
 reply address parameter **GCSREF**
 reply length parameter **GCSREF**
WVOL1 function in tape command processing **CMSUG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

X

X prefix macro **XEDIT**
 X prefix subcommand of XEDIT command **APGDE**
 x'string operand of LOCATE (UP) subcommand **DIAG**
 XAB (External Attribute Buffer) **REL5GDE, SFPROG**
 definition **SFPROG**
 format **SFPROG**
 manipulation of spool file **SFPROG**
 manipulation of virtual printer **SFPROG**
 READ-XAB function of SPOOL system service **SFPROG**
 XCAL option of LKED command **CMSREF**
 XCTL (OS macro) **APGDE**
 XCTL macro **GCSREF, PLNGDE**
 de parameter **GCSREF**
 description **GCSREF**
 ep parameter **GCSREF**
 eploc parameter **GCSREF**
 execute format **GCSREF**
 list format **GCSREF**
 mf parameter **GCSREF**
 param parameter **GCSREF**
 reg parameter **GCSREF**
 sf parameter **GCSREF**
 vl parameter **GCSREF**
 XCTL macro (SVC 7) **CMSPROG**
 XDAP macro (SVC 0) **CMSPROG**
 XEDIT (System Product Editor) **REL5GDE, TERMREF**
 CLOCATE subcommand **CMSUG**
 command to invoke System Product Editor **CMSUG**
 example **CMSUG**
 publications **TERMREF**
 subcommands, invoking **CMSUG**
 with a 3270 terminal **TERMREF**
 XEDIT (filetype) **APGDE**
 XEDIT (System Product Editor)
 APGDE, SYMSG
 changing files **CMSPROG**
 creating files **CMSPROG**
 CTL option
 creating multiple updates to source file **CMSPROG**
 description **INTRO**
 DMSXFLPT CMSPROG
 DMSXFLRD CMSPROG
 DMSXFLST CMSPROG
 DMSXFLWR CMSPROG
 edit mode **APGDE**
 example, of using **CMSUG**
 EXECs APGDE
 EXTRACT subcommand **SPIUG**
 generating full screen menus **SPIUG**
 interface to access files in storage **CMSPROG**
 full screen display **CMSUG**
 input mode **APGDE**
 invoking **CMSUG**
 linemode on display terminals **CMSUG**
 macros **APGDE**
 description of **SPIUG**
 examples of **SPIUG**
 naming **SPIUG**
 return codes **SPIUG**
 messages **SPIUG**
 profile **SPIUG**
 publications **TERMREF**
 subcommands **SPIUG**

tabs with **APGDE**
 using for program development **INTRO**
 using to display HELP files **CMSUG**
 XEDIT command **APGDE, CMSLOT,**
PRIMER, XEDIT, XEDITUG
 changing files **CMSPROG**
 creating files **CMSPROG**
 editing a MACLIB member **CMSPROG**
 in typewriter mode **XEDITUG**
 practice exercise using **XEDITUG**
 prefix subcommands **APGDE**
 relation to LOAD **XEDIT**
 subcommands
 = **APGDE**
 ADD APGDE
 ALTER APGDE
 BACKWARD APGDE
 CANCEL APGDE
 CHANGE APGDE
 COPY APGDE
 DELETE APGDE
 DUPLICATE APGDE
 FILE APGDE
 FIND APGDE
 FINDUP APGDE
 FORWARD APGDE
 GET APGDE
 INPUT APGDE
 JOIN APGDE
 LOCATE APGDE
 LOWERCASE APGDE
 MERGE APGDE
 MOVE APGDE
 OVERLAY APGDE
 POWERINP APGDE
 PUT APGDE
 PUTD APGDE
 QQUIT APGDE
 QUERY APGDE
 QUIT APGDE
 RECOVER APGDE
 REPLACE APGDE
 SAVE APGDE
 SCREEN APGDE
 SET SCREEN APGDE
 SHIFT APGDE
 SORT APGDE
 SPLIT APGDE
 SPLTJOIN APGDE
 TOP APGDE
 UPPERCASE APGDE
 used to bypass profile macro **XEDITUG**
 used to specify profile macroname **XEDITUG**
 XEDIT command, example of use **INTRO**
 FILE subcommand **INTRO**
 POWERINP subcommand **INTRO**
 SAVE subcommand **INTRO**
 SET subcommand **INTRO**
 SORT subcommand **INTRO**
 STACK subcommand **INTRO**
 XEDIT commands, repeating **PRIMER**
 XEDIT file identification line **PRIMER**
 XEDIT macro
 See macros in XEDIT
 XEDIT macro interface **SPIREF**
 XEDIT macro name **XEDIT**

- XEDIT macros in EXEC 2
 - avoiding name conflicts **EXEX2**
 - creating **EXEX2**
 - defining **EXEX2**
 - executing **EXEX2**
 - filetype **EXEX2**
 - sample XEDIT macro **EXEX2**
 - using **EXEX2**
 - XEDIT EXTRACT subcommand **EXEX2**
- XEDIT option
 - of LISTFILE command **CMSREF**
 - of NAMEFIND command **CMSREF**
- XEDIT prefix macros
 - current line positioning **EXEX2**
 - description of **EXEX2**
 - sample of **EXEX2**
 - writing **EXEX2**
- XEDIT profile
 - creating **CMSLOT, PRIMER**
- XEDIT subcommand **XEDIT, XEDITUG**
 - and macros summary **XEDIT**
 - issued from a logical screen **XEDITUG**
- XEDIT variables
 - See editing variables
- XEDIT, introduction to **CMSLOT, PRIMER**
- XMEM operand
 - of OPTION directory control statement **PLNGDE**
 - of SET command **CPREF**
- XMEM option
 - defining in directory **PLNGDE**
 - for MVS guest **RGOS**
- XMITMSG command **CMSUG, REL5GDE**
 - for accessing messages **REL5GDE**
 - summary **CMSREF**
- XOR, logical **SPIREF**
- XORing character string together **SPIREF**
- XRANGE function **SPIREF**
- XREF option
 - of ASSEMBLE command **CMSREF**
 - of LKED command **CMSREF**
 - of OPTION command **CMSREF**
- XREF option of LKED command **APGDE**
- Xreg operand
 - of DISPLAY command **CPREF**
 - of STORE command **CPREF**
- XTENT option of FILEDEF command **CMSREF**
- xxx-DEVICE feature operand
 - of RCTLUNIT macro **PLNGDE**
- X2C function **SPIREF**
- X2D function **SPIREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

Y

Y-disk accessed after IPLing CMS **CMSREF**
 Y-STAT **CMSPROG**
 YDISK operand
 of DEFNUC macro **PLNGDE**
 YFLAG option of ASSEMBLE command **CMSREF**
 Yreg operand
 of DISPLAY command **CPREF**
 of STORE command **CPREF**

Z

ZAP
 command procedure **INST**
 control records
 BASE INST
 COMMENT INST
 DUMP INST
 END INST
 function **INST**
 LOG INST
 NAME INST
 REP INST
 VERIFY or **VER INST**
 definition **INST**
 format **INST**
 input control records **INST**
 option output **INST**
 options **INST**
 service program
 description **INST**
 special considerations for **INST**
 when to use **INST**
 ZAP command **DIAG**

ZAP filetype usage in CMS **CMSUG**
 ZAP List
 contents **INST**
 definition **INST**
 example **INST**
 ZAP Log
 contents **INST**
 definition **INST**
 example **INST**
 ZAP, definition **INST**
 ZAPTEXT
 command procedure **INST**
 format **INST**
 input control records **INST**
 options **INST**
 use of EXPAND command **INST**
 when to use **INST**
 ZAPTEXT command **DIAG**
 ZCMD **APGDE**
 zeros
 clearing storage to **CPREF**
 zeros added on the left **SPIREF**
 zeros removal with STRIP function **SPIREF**
 zone
 defining **XEDIT**
 effect on CFIRST **XEDIT**
 effect on CHANGE **XEDIT**
 effect on CLAST **XEDIT**
 moving column pointer to beginning of **XEDIT**
 moving column pointer to end of **XEDIT**
 of input **PRIMER**
 ZONE operand
 of SYSTIME macro **PLNGDE**
 ZONE option
 of EXTRACT **XEDIT**
 of QUERY **XEDIT**
 of SET **XEDIT**
 of TRANSFER **XEDIT**
 zones, date and time
 VSE virtual machine **RGOS**

Numerics

- 0 operand
 - of DCP command **CPREF**
- 1 operand
 - of BACKSPAC command **CPREF**
 - of ECHO command **CPREF**
- 1017
 - coding RDEVICE macro **PLNGDE**
- 1018
 - coding RDEVICE macro **PLNGDE**
- 1050, control units, models and features **PLNGDE**
- 1050, supported remotely on start-stop lines **PLNGDE**
- 1052
 - coding RDEVICE macro **PLNGDE**
- 1052 Printer-Keyboard **TERMREF**
- 1053 printer
 - limits to use of SET MITIME GRAF command **CPREF**
 - time intervals set and monitored **CPREF**
- 138 Display Console **TERMREF**
- 1403 printer
 - altering font offset buffer **PLNGDE**
 - altering universal character set **PLNGDE**
 - coding RDEVICE macro **PLNGDE**
 - loading it with universal character set (UCS)
 - buffer **CPREF**
 - supported models **PLNGDE, REL5GDE**
- 1403 operand
 - of DEFINE command **CPREF**
- 1443
 - coding RDEVICE macro **PLNGDE, REL5GDE**
 - supported models **PLNGDE**
- 1443 operand
 - of DEFINE command **CPREF**
- 148 Display Console **TERMREF**
- 158 Display Console **TERMREF**
- 16Mb storage
 - using greater than **CPPROG**
- 1600 operand
 - of SPTAPE command **CPREF**
- 168 Display Console **TERMREF**
- 18TRACK option of FILEDEF command **CMSREF**
- 19E virtual disk address accessed as
 - Y-disk **CMSREF, CMSUG**
- 190 virtual disk address accessed as
 - S-disk **CMSREF, CMSUG**
- 191 virtual disk address accessed as
 - as A-disk **CMSREF, CMSUG**
- 192 virtual disk address accessed as
 - D-disk **CMSREF, CMSUG**
- 195 virtual disk address formatted by
 - CMS batch facility **CMSREF**
- 2150 **TERMREF**
 - coding RDEVICE macro **PLNGDE**
 - supported models **PLNGDE**
- 2250
 - coding RDEVICE macro **PLNGDE**
- 2260
 - coding RDEVICE macro **PLNGDE**
- 2265
 - coding RDEVICE macro **PLNGDE**
- 2301
 - coding RDEVICE macro **PLNGDE**
- 2303
 - coding RDEVICE macro **PLNGDE**
- 2305
 - attaching a device **CPREF**
 - coding RDEVICE macro **PLNGDE**
 - DASD space requirements
 - paging and spooling **PLNGDE**
 - detaching a device **CPREF**
 - indicating PCI flag **CPREF**
 - specifying device address **CPREF**
 - specifying in SYSRES macro **PLNGDE**
- 2305 devices
- 2314
 - coding RDEVICE macro **PLNGDE**
 - specifying in SYSRES macro **PLNGDE**
- 2319
 - coding RDEVICE macro **PLNGDE**
 - specifying in SYSRES macro **PLNGDE**
- 2321
 - coding RDEVICE macro **PLNGDE**
- 2401
 - coding RDEVICE macro **PLNGDE**
 - supported models **PLNGDE**
- 2402
 - coding RDEVICE macro **PLNGDE**
 - supported models **PLNGDE**
- 2403
 - coding RDEVICE macro **PLNGDE**
- 2404
 - coding RDEVICE macro **PLNGDE**
- 2415
 - coding RDEVICE macro **PLNGDE**
 - supported models **PLNGDE**
- 2501
 - coding RDEVICE macro **PLNGDE**
 - supported models **PLNGDE, REL5GDE**
- 2501 operand
 - of DEFINE command **CPREF**
- 2520
 - coding RDEVICE macro **PLNGDE**
 - supported models **PLNGDE, REL5GDE**
- 2540
 - coding RDEVICE macro **PLNGDE**
 - supported models **PLNGDE, REL5GDE**
- 2540P operand
 - of DEFINE command **CPREF**
- 2540R operand
 - of DEFINE command **CPREF**
- 2671
 - coding RDEVICE macro **PLNGDE**
- 270 EP program
 - used with 37xx **CPREF**
- 270x
 - detaching a device **CPREF**
 - low-speed communication lines
 - connecting previously unconnected **CPREF**
 - preventing low-speed communication lines
 - from accessing VM/SP HPO **CPREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- 270x EP program
used to load 37xx CPREF
with ATTACH command CPREF
- 2701 CPREF
coding RDEVICE macro PLNGDE
emulation PLNGDE
features
required and optional PLNGDE
remote 3270 support PLNGDE
- 2702 CPREF
coding RDEVICE macro PLNGDE
emulation PLNGDE
features
required PLNGDE
- 2703 CPREF
coding RDEVICE macro PLNGDE
emulation PLNGDE
- 2741
features, required and desirable PLNGDE
supported models PLNGDE
supported remotely on start-stop lines PLNGDE
- 2741 Communications Terminal TERMREF
- 2770
features
required for RSCS PLNGDE
supported models PLNGDE
- 2780
features
required for RSCS PLNGDE
supported models PLNGDE
- 2780 Data Transmission Terminal TERMREF
- 2780, remote terminals PLNGDE
- 2803
supported models PLNGDE
- 2804
supported models PLNGDE
- 2816
supported switches PLNGDE
switching unit PLNGDE
- 2821
supported models PLNGDE, REL5GDE
- 2835
supported models PLNGDE, REL5GDE
- 2844
supported models PLNGDE, REL5GDE
- 2955
coding RDEVICE macro PLNGDE
- 303x
specifying SRF devices PLNGDE
- 303x attached processor
activating CP assist CPREF
SET MODE MAIN command invalid OPGDE
- 3031 TERMREF
- 3032 TERMREF
- 3033 processor REL5GDE, RGOS, TERMREF
AP
channel-set switching PLNGDE
multiple service record files PLNGDE
preferred machine assist REL5GDE
optional feature CPPROG
processor requirements REL5GDE
supported models REL5GDE
- 3036
coding RDEVICE macro PLNGDE
supported models PLNGDE
- 3036 Display Console Station TERMREF
- 3036 operand
of DEFINE command CPREF
- 3066
coding RDEVICE macro PLNGDE
supported models PLNGDE
- 3066 operand
of DEFINE command CPREF
- 3066 System Console TERMREF
- 308x processor RGOS
AP
channel-set switching PLNGDE
considerations CPPROG
input/output configuration program PLNGDE
planning INST
preferred machine assist REL5GDE
standard feature CPPROG
supported models REL5GDE
system monitoring and reconfiguration PLNGDE
validating real storage
TEST BLOCK instruction PLNGDE
virtual Machine Assist – Segment Protection
Extension REL5GDE
SET MODE MAIN command invalid OPGDE
VM/SP HPO INTRO
- 3081
Input/Output Configuration Program PLNGDE
- 3081 processor
MSSFCALL - DIAGNOSE code X'80' SFPROG
varying its configuration physically offline CPREF
- 3082
processor controller PLNGDE
system monitoring and reconfiguration PLNGDE
- 3088
CCWs CPPROG
diagnostic aids CPPROG
how to define virtual support CPPROG
messages CPPROG
MNOTEs CPPROG
Multisystem Communication Unit CPPROG
support
command use CPPROG
system programmer considerations CPPROG
- 3088 links TSAFREF
- 3088 Multisystem Communication Unit
coding RDEVICE macro PLNGDE
overview PLNGDE
planning considerations PLNGDE
processors supported PLNGDE
- 3088 operand
of DEFINE command CPREF
- 3090 Processor Complex REL5GDE, RGOS
considerations CPPROG
Expanded Storage support REL5GDE
extended channel support PLNGDE, REL5GDE
input/output configuration program PLNGDE
planning INST
preferred machine assist REL5GDE
standard feature CPPROG
Release 3.6 support REL5GDE
SET MODE MAIN command invalid OPGDE
supported models REL5GDE
system monitoring and reconfiguration PLNGDE
validating real storage
TEST BLOCK instruction PLNGDE
Vector Facility PLNGDE
virtual Machine Assist – Segment Protection
Extension REL5GDE
VM/SP HPO INTRO

- 3101 RDEVICE macro
 - specifying an adapter **PLNGDE**
 - supported models **PLNGDE**
 - supported remotely as CPT-TWX 33/35 **PLNGDE**
- 3101 Display Terminal **TERMREF**
- 3138 operand
 - of DEFINE command **CPREF**
- 3148 operand
 - of DEFINE command **CPREF**
- 3158 operand
 - of DEFINE command **CPREF**
- 3161/3163 ASCII Display Station **TERMREF**
- 3178 Display Station **TERMREF**
- 3203
 - altering font offset buffer **PLNGDE**
 - altering universal character set **PLNGDE**
 - coding RDEVICE macro **PLNGDE**
 - Model 4 and 5 Printer
 - forms control and print buffer **CPPROG**
 - Printer
 - UCC buffer images **CPPROG**
 - supported models **PLNGDE, REL5GDE**
- 3203 device
 - LOADVFCB restrictions **CPREF**
- 3203 operand
 - of DEFINE command **CPREF**
- 3203 printer
 - loading it with UCS buffer or FCB **CPREF**
 - specifying forms controls for virtual **CPREF**
- 3203-5
 - printer considerations when running VSE guest **RGOS**
- 3210
 - coding RDEVICE macro **PLNGDE**
 - supported models **PLNGDE**
- 3210 Console Printer Keyboard **TERMREF**
- 3211
 - altering font offset buffer **PLNGDE**
 - altering universal character set **PLNGDE**
 - coding RDEVICE macro **PLNGDE**
 - Printer
 - UCSB buffer images **CPPROG**
 - supported models **PLNGDE, REL5GDE**
- 3211 operand
 - of DEFINE command **CPREF**
- 3211 printer
 - cautions concerning attaching **CPREF**
 - loading it with UCS buffer or FCB **CPREF**
 - specifying forms controls for virtual **CPREF**
- 3213
 - supported models **PLNGDE, REL5GDE**
- 3215
 - coding RDEVICE macro **PLNGDE**
 - supported models **PLNGDE**
 - terminal console
 - CANCEL key restrictions **OPGDE**
- 3215 Console Printer-Keyboard **TERMREF**
- 3230
 - coding RDEVICE macro **PLNGDE**
- 3232
 - supported remotely as CPT-TWX 33/35 **PLNGDE**
- 3232 Keyboard-Printer Terminal
 - Model 51 **TERMREF**
- 3250
 - supported models **PLNGDE, REL5GDE**
- 3262
 - coding RDEVICE macro **PLNGDE**
 - FCB (forms control buffer) **CPPROG**
- 3262 operand
 - of DEFINE command **CPREF**
- 3262 printer
 - loading a virtual forms control buffer **CPREF**
 - loading it with UCS buffer or FCB **CPREF**
- 3268
 - coding RDEVICE macro **PLNGDE**
- 3270
 - coding real I/O configuration file **PLNGDE**
 - control unit and device addressing **PLNGDE**
 - determining line code **PLNGDE**
 - emulation **REL5GDE**
 - example of configuration **PLNGDE**
 - examples of addressing **PLNGDE**
 - local configurations supported **PLNGDE**
 - logical, creating via logical device
 - support facility **SFPROG**
 - models and features **PLNGDE**
 - planning considerations **PLNGDE**
 - RDEVICE macro
 - FEATURE coding considerations **PLNGDE**
 - remote (see remote 3270s)
 - resource identification codes **PLNGDE**
 - sample list **PLNGDE**
 - resource identification codes sample list **PLNGDE**
 - security enhancement **REL5GDE**
 - support for local configurations **PLNGDE**
 - support on binary synchronous lines **PLNGDE**
 - TERMINAL macro
 - control unit and device addressing **PLNGDE**
 - virtual console interface
 - attribute bytes, how to supply **SFPROG**
 - full screen interactions **SFPROG**
 - full screen interactions (3270 SIO) **SFPROG**
 - full screen mode **SFPROG**
 - selector-pen limitations **SFPROG**
- 3270 Communications Controller
 - binary synchronous lines
 - shutdown **CPREF**
 - cautions concerning attaching **CPREF**
 - functions
 - NETWORK command usage **CPREF**
 - locally attached lines
 - connecting low-speed lines **CPREF**
 - preventing low-speed communication lines
 - from accessing VM/SP HPO **CPREF**
 - remote resources
 - marking devices available or unavailable **CPREF**
 - using WARNING command **CPREF**
- 3270 PC File Transfer **INST**
- 3270 device message length **CPREF**
- 3270 information display
 - RDEVICE macro **PLNGDE**
- 3270 Information Display System Terminals **TERMREF**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

- 3270 operand
 - of DEFINE command CPREF
- 3270 screen display, example CMSUG
- 3270 terminal
 - power off vs. logoff precautions CPREF
- 3270 terminal display
 - highlighting features available CPREF
- 3270 terminals TERMREF
 - See also display terminals
- 3271
 - coding real I/O configuration macros PLNGDE
 - planning considerations PLNGDE
 - required features PLNGDE
 - supported attachments PLNGDE
 - supported models PLNGDE
- 3272
 - planning considerations PLNGDE
 - required features PLNGDE
 - supported attachments PLNGDE
 - supported models PLNGDE
- 3274
 - CLUSTER macro PLNGDE
 - planning considerations PLNGDE
 - supported attachments PLNGDE
 - supported models PLNGDE
- 3275
 - coding real I/O configuration macros PLNGDE
 - coding TERMINAL macro PLNGDE
 - planning considerations PLNGDE
 - required features PLNGDE
 - supported models PLNGDE
- 3276
 - CLUSTER macro PLNGDE
 - coding TERMINAL macro PLNGDE
 - planning considerations PLNGDE
 - required features PLNGDE
 - supported models PLNGDE
- 3277
 - coding RDEVICE macro PLNGDE
 - coding TERMINAL macro PLNGDE
 - planning considerations PLNGDE
 - supported models PLNGDE
- 3277 Display Station TERMREF
- 3278
 - coding RDEVICE macro PLNGDE
 - coding TERMINAL macro PLNGDE
 - planning considerations PLNGDE
 - supported models PLNGDE
- 3278 Display Station TERMREF
- 3278 Model 2A TERMREF
- 3279
 - coding RDEVICE macro PLNGDE
 - coding TERMINAL macro PLNGDE
 - defining color
 - SCREEN directory control statement PLNGDE
 - planning considerations PLNGDE
 - supported models PLNGDE
- 3279 Color Display Station TERMREF
- 3279 Model 2C TERMREF
- 328X printer
 - limits to use of SET MITIME GRAF command CPREF
 - time intervals set and monitored CPREF
- 3284
 - coding RDEVICE macro PLNGDE
 - coding TERMINAL macro PLNGDE
 - supported models PLNGDE
- 3286
 - coding RDEVICE macro PLNGDE
 - coding TERMINAL macro PLNGDE
 - supported models PLNGDE
- 3287
 - coding RDEVICE macro PLNGDE
 - coding TERMINAL macro PLNGDE
 - supported models PLNGDE, REL5GDE
- 3288
 - coding RDEVICE macro PLNGDE
 - coding TERMINAL macro PLNGDE
 - supported models PLNGDE
- 3289
 - altering font offset buffer PLNGDE
 - altering universal character set PLNGDE
 - coding RDEVICE macro PLNGDE
 - coding TERMINAL macro PLNGDE
 - FOB (font offset buffer)
 - adding CPPROG
 - names of supplied CPPROG
 - purpose of CPPROG
 - supported models PLNGDE, REL5GDE
- 3289 model 4 printer
 - loading print belt image CPREF
- 3289E operand
 - of DEFINE command CPREF
- 3289E printer
 - limits to use of SET MITIME UR command CPREF
 - loading a virtual forms control buffer CPREF
 - time intervals set and monitored CPREF
- 3290
 - coding RDEVICE macro PLNGDE
 - supported models PLNGDE
- 3290 Information Panel TERMREF
- 3310
 - See also FB-512
 - capacity for CMS minidisks PLNGDE
- 3310 DASD
 - device capacity CPPROG
- 3330
 - allocating DASD space for directory PLNGDE
 - alternate tracks
 - minidisks PLNGDE
 - capacity for CMS minidisks PLNGDE
 - coding RDEVICE macro PLNGDE
 - DASD space requirements
 - checkpoint start data PLNGDE
 - CP nucleus PLNGDE
 - directory PLNGDE
 - error recording PLNGDE
 - saved systems PLNGDE
 - warm start data PLNGDE
 - DASD storage requirements
 - CP PLNGDE
 - specifying in SYSRES macro PLNGDE
 - starter system
 - forms control buffer supplied PLNGDE
 - supported models PLNGDE, REL5GDE
- 3330-1
 - copying to 3330V volumes PLNGDE
- 3330V
 - attaching devices to virtual machine
 - using 3850 CPREF
 - automatic volume mount and demount OPGDE
 - cautions concerning attaching volumes
 - to system CPREF
 - coding RDEVICE macro PLNGDE
 - copying 3330-1 volumes to PLNGDE

- demounting **PLNGDE**
 making it available to mount system volumes **CPREF**
 mounting **PLNGDE**
 redefined as **SYSVIRT CPREF**
 redefining status of a volume **CPREF**
 used as system volumes **PLNGDE**
 using for VS system residence **PLNGDE**
 virtual feature **OPGDE**
- 3330V operand
 of **ATTACH** command **CPREF**
 of **DEDICATE** directory control statement **PLNGDE**
- 3333
 coding **RDEVICE** macro **PLNGDE**
 supported models **PLNGDE, REL5GDE**
- 3340
 allocating DASD space for directory **PLNGDE**
 alternate tracks
 minidisks **PLNGDE**
 capacity for CMS minidisks **PLNGDE**
 coding **RDEVICE** macro **PLNGDE**
 cylinder assignments **PLNGDE**
 DASD space requirements
 checkpoint start data **PLNGDE**
 CP nucleus **PLNGDE**
 directory **PLNGDE**
 error recording **PLNGDE**
 paging and spooling **PLNGDE**
 saved systems **PLNGDE**
 warm start data **PLNGDE**
 DASD storage requirements
 CP **PLNGDE**
 DDR utility **PLNGDE**
 error recovery **PLNGDE**
 specifying in **SYSRES** macro **PLNGDE**
 supported models **PLNGDE, REL5GDE**
- 3344
 DDR utility **PLNGDE**
 error recovery **PLNGDE**
- 3350
 allocating DASD space for directory **PLNGDE**
 alternate tracks
 minidisks **PLNGDE**
 capacity for CMS minidisks **PLNGDE**
 coding **RDEVICE** macro **PLNGDE**
 DASD space requirements
 checkpoint start data **PLNGDE**
 CP nucleus **PLNGDE**
 directory **PLNGDE**
 error recording **PLNGDE**
 paging and spooling **PLNGDE**
 saved systems **PLNGDE**
 warm start data **PLNGDE**
 DASD storage requirements
 CP **PLNGDE**
 DASDs **CPPROG**
 special features
 Control Store Extension **PLNGDE**
 Expanded Control Store **PLNGDE**
 specifying in **SYSRES** macro **PLNGDE**
 starter system
 forms control buffer supplied **PLNGDE**
 supported models **PLNGDE, REL5GDE**
- 3370
 See also **FB-512**
 capacity for CMS minidisks **PLNGDE**
 supported models **PLNGDE**
- 3370 DASD
 device capacity **CPPROG**
- 3375
 allocating DASD space for directory **PLNGDE**
 alternate tracks
 minidisks **PLNGDE**
 coding **RDEVICE** macro **PLNGDE**
 DASD space requirements
 CP nucleus **PLNGDE**
 defective tracks
 minidisks **PLNGDE**
 starter system
- 3380 **REL5GDE**
 allocating DASD space for directory **PLNGDE**
 alternate tracks
 minidisks **PLNGDE**
 capacity for CMS minidisks **PLNGDE**
 coding **RDEVICE** macro **PLNGDE**
 DASD space requirements
 checkpoint start data **PLNGDE**
 CP nucleus **PLNGDE**
 directory **PLNGDE**
 error recording **PLNGDE**
 paging and spooling **PLNGDE**
 saved systems **PLNGDE**
 warm start data **PLNGDE**
 DASDs **CPPROG**
 defective tracks
 minidisks **PLNGDE**
 DOS simulation support for **REL5GDE**
 improving the performance of
 an MVS or CMS guest running with **CPPROG**
 MDISK control statement **CPPROG**
 minidisk allocation
 Device Support Facilities **PLNGDE**
 modules, new and changed **REL5GDE**
 power off considerations **CPPROG**
 sharing DASDs **CPPROG**
 specifying in **SYSRES** macro **PLNGDE**
 starter system
 forms control buffer supplied **PLNGDE**
 supported models **PLNGDE, REL5GDE**
- 3410
 coding **RDEVICE** macro **PLNGDE**
 supported models **PLNGDE, REL5GDE**
- 3411
 supported models **PLNGDE, REL5GDE**
- 3420
 coding **RDEVICE** macro **PLNGDE**
 supported models **PLNGDE, REL5GDE**
- 3422 magnetic tape subsystem **REL5GDE**
 CMS control blocks, new and changed **REL5GDE**
 CMS macros, new and changed **REL5GDE**
 CMS support **REL5GDE**
 CP control blocks, new and changed **REL5GDE**
 CP macros, new and changed **REL5GDE**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

Numerics

- CP support **REL5GDE**
 - execs, new and changed **REL5GDE**
 - modules, new and changed **REL5GDE**
 - 3480 supported models **PLNGDE**
 - 3480 devices
 - restrictions for MVS guest **RGOS**
 - 3480 magnetic tape subsystem
 - restrictions in single processor **OPGDE**
 - restrictions under VM/SP HPO **OPGDE**
 - 3480 tape drive
 - RDEVICE macro **PLNGDE**
 - using DDR with it **CPPROG**
 - 3505 coding RDEVICE macro **PLNGDE**
 - supported models **PLNGDE, REL5GDE**
 - 3505 operand
 - of DEFINE command **CPREF**
 - 3525 coding RDEVICE macro **PLNGDE**
 - supported models **PLNGDE, REL5GDE**
 - 3525 operand
 - of DEFINE command **CPREF**
 - 37xx binary synchronous lines
 - shutdown **CPREF**
 - control program
 - controlled by NETWORK command **CPREF**
 - in EP mode
 - connecting low-speed lines **CPREF**
 - preventing low-speed communication lines
 - from accessing VM/SP HPO **CPREF**
 - in NCP OR PEP mode
 - marking devices available or unavailable **CPREF**
 - restrictions in using the ATTACH command **CPREF**
 - special considerations for using
 - under VM/SP HPO **CPREF, OPGDE**
 - 37xx control program
 - DIAGNOSE code X'50' **SFPROG**
 - system name table **CPPROG**
 - using the NAMENCP macro **CPPROG**
 - using the SAVENCP command **CPPROG**
 - 370E feature
 - enabling **CPREF**
 - 370E operand
 - of OPTION directory control statement **PLNGDE**
 - of SET command **CPREF**
 - 370E option
 - defining in directory **PLNGDE**
 - for MVS guest **RGOS**
 - for VSE guest **RGOS**
 - 370X control program, saving **SFPROG**
 - DIAGNOSE code X'50' **SFPROG**
 - 370X dump processing
 - NCPDUMP service program **DIAG**
 - network dump operations **DIAG**
 - 3704 coding RDEVICE macro **PLNGDE**
 - supported models **PLNGDE**
 - 3704/3705 eliminating support modules **PLNGDE**
 - naming the control program **PLNGDE**
 - nucleus
 - reducing its size **PLNGDE**
 - 3704/3705 Communication Controller emulation program (EP)
 - loading considerations **OPGDE**
 - 3704/3705 Communications Controller
 - controlling **OPGDE**
 - loading considerations **OPGDE**
 - NETWORK LOAD command **OPGDE**
 - usage **OPGDE**
 - 3704/3705 control program (EP) Emulation Program **PLNGDE**
 - ARNGEND EXEC INST
 - ASM3705 command INST
 - BUILD macro INST
 - CMS requirements INST
 - considerations
 - loading EP INST
 - macro coding INST
 - Stage 1 assembly INST
 - Stage 2 generation INST
 - CSB macro INST
 - GENEND macro INST
 - generating
 - GEN3705 command INST
 - GROUP macro INST
 - INSTEP EXEC INST
 - introduction **PLNGDE**
 - LINE macro INST
 - macro libraries INST
 - macros
 - assembling INST
 - BUILD INST
 - CSB INST
 - GENEND INST
 - GROUP INST
 - LINE INST
 - special coding for EP INST
 - minimum storage required **PLNGDE**
 - NETWORK LOAD command INST
 - planning considerations **PLNGDE**
 - requirements
 - CMS INST
 - VM/SP HPO INST
 - SAVENCP command INST
 - sign-on procedure (CPT-TWX) INST
 - support package **PLNGDE**
 - basic material **PLNGDE**
 - support under CP **PLNGDE**
 - terminals supported **PLNGDE**
 - testing control program INST
 - VM/SP HPO requirements INST
- 3704/3705/3725
- coding RDEVICE macro **PLNGDE**
 - CP support **PLNGDE**
 - connected to single processor **PLNGDE**
 - shared between two or more processors **PLNGDE**
 - creating an entry in the
 - system name table **PLNGDE**
 - error messages for RDEVICE macro **PLNGDE**
 - examples of RDEVICE macro **PLNGDE**
 - features not supported **PLNGDE**
 - line speeds **PLNGDE**
 - models supported **PLNGDE**
 - planning considerations **PLNGDE**
 - RDEVICE macro
 - summary of coding considerations **PLNGDE**
 - reserving DASD space for
 - control program image **PLNGDE**
 - storage sizes **PLNGDE**
 - support provided by **PLNGDE**
 - supported models **PLNGDE**

- 3704/3705/3725 control program generation procedure coding the RDEVICE macro **PLNGDE**
- 3705 coding RDEVICE macro **PLNGDE** supported models **PLNGDE**
- 3705 assembler, building **INST**
- 3725 coding RDEVICE macro **PLNGDE** supported models **PLNGDE**
- 3767 required features **PLNGDE** supported models **PLNGDE** supported remotely as a 2741 **PLNGDE**
- 3767 Communications Terminal **TERMREF**
- 3770 features required for RSCS **PLNGDE** supported models **PLNGDE**
- 3780 features required for RSCS **PLNGDE** supported models **PLNGDE**
- 38K operand of SPTAPE command **CPREF**
- 3800 image library **PLNGDE**
- 3800 operand of DEFINE command **CPREF**
- 3800 printer as a dedicated device **CPPROG** as a real spooling device **CPPROG** **CHANGE** command **CPPROG** **SPOOL** command **CPPROG** **START** command **CPPROG** as a virtual spooling device **CPPROG** **CHANGE** command **CPPROG** **SPOOL** command **CPPROG** **START** command **CPPROG** character arrangement tables for **CPPROG** coding RDEVICE macro **PLNGDE** control information specifying **CPPROG** dedicated device support **OPGDE** features **OPGDE** character arrangement tables **CPPROG** character modification **CPPROG** copy modification **CPPROG** FCB (forms control buffer) **CPPROG** forms overlay (flashing) **CPPROG** multiple copy printing **CPPROG** generating **PLNGDE** image library coding RDEVICE macro to support **PLNGDE** generating VM/SP to support **PLNGDE** imbedding modules in a spool file **CPPROG** limits to use of SET MITIME UR command **CPREF** load CCWs in spool file **SFPROG** modifying device attributes **CPREF** modifying spool file attributes **CPREF** named system creating **PLNGDE** planning considerations **PLNGDE** print file duplication **CPREF** printer defining a virtual **CPPROG** printer options specifying **CPPROG** specifying control information **CPPROG** specifying delayed purge queue **PLNGDE** specifying options **CPPROG** spooling output to **CPREF** supported models **PLNGDE**, **REL5GDE** time intervals set and monitored **CPREF** translate tables **OPGDE** using CHANGE CHARS command **CPREF** using CHANGE COPY command **CPREF** using CHANGE MODIFY command **CPREF** using its forms overlay sheet **CPREF** using SPOOL command **CPREF**
- 3803 supported models **PLNGDE**, **REL5GDE**
- 3811 supported models **PLNGDE**, **REL5GDE**
- 3830 specifying 64-device feature **PLNGDE** supported models **PLNGDE**, **REL5GDE**
- 3850 Mass Storage System (MSS) **CPPROG**, **PLNGDE** attaching 3330V devices while using **CPREF** communicator program **PLNGDE** copying 3330-1 volumes to 3330V volumes **PLNGDE** creating MSS volumes **PLNGDE** defining the MSS communication device **PLNGDE** error messages **OPGDE** initialization **OPGDE** mass storage control tables **PLNGDE** OS/VS1 jobs **PLNGDE** OS/VS2 jobs **PLNGDE** partitioning **OPGDE** shutdown process **CPREF**
- 3851 coding RDEVICE macro **PLNGDE** Mass Storage Facility **PLNGDE**
- 3851 devices shutdown process **CPREF**
- 3880 cache **CPPROG** **CACHE** command **CPPROG** **CCW** (channel command word) **CPPROG** channel command words **CPPROG** command usage **CPPROG** considerations for 308x **CPPROG** for 3090 **CPPROG** device end posting **CPPROG** diagnostic aids **CPPROG** differences between models **CPPROG** format/allocate **CPPROG** hardware error messages **CPPROG** messages **CPPROG** **MNOTE**s **CPPROG** Model 11 **CPPROG**

Refer to the foldout page at the back of this book for a chart of abbreviations and their corresponding manuals.

Numerics

- Model 13
 - hardware description **CPPROG**
 - subsystem storage **CPPROG**
 - using for paging and spooling **CPPROG**
- Model 21 **CPPROG**
 - recommended hardware configuration **CPPROG**
- Model 23
 - hardware description **CPPROG**
 - subsystem storage **CPPROG**
 - using for paging and spooling **CPPROG**
- programmer considerations
 - addressing characteristics **CPPROG**
 - MDISK control statement **CPPROG**
 - RCTLUNIT Macro **CPPROG**
 - RDEVICE macro **CPPROG**
 - SYSMON macro **CPPROG**
 - SYSORD macro **CPPROG**
 - whether to activate or
 - deactivate the cache **CPPROG**
 - which minidisks should be allowed to use the cache **CPPROG**
 - 308x processor **CPPROG**
- Storage Control Subsystems **CPPROG**
 - Model 11 **CPPROG**
 - Model 13 **CPPROG**
 - Model 21 **CPPROG**
 - Model 23 **CPPROG**
- storage directors **CPPROG**
- two- or four-channel switch feature **PLNGDE**
- virtual addressing **CPPROG**
- 3350 DASDs **CPPROG**
- 3380 DASDs **CPPROG**
- 3880 storage control device
 - attaching **CPREF**
 - attaching channel **CPREF**
 - detaching channel **CPREF**
 - limits **CPREF**
 - response **CPREF**
 - in **QUERY** command **CPREF**
 - in **VARY** command **CPREF**
 - limits to defining **CPREF**
 - limits to how it can be defined **CPREF**
- 3880 Storage Subsystem
 - addressing **PLNGDE**
 - system generation considerations **PLNGDE**
 - configuration **PLNGDE**
 - dual-frame configuration **PLNGDE**
 - general information **PLNGDE**
 - preferred system paging **PLNGDE**
 - RCTLUNIT macro **PLNGDE**
 - RDEVICE macro **PLNGDE**
 - single-frame configuration **PLNGDE**
 - specifying alternate channel **PLNGDE**
 - storage directors **PLNGDE**
 - supported models **PLNGDE, REL5GDE**
 - system generation considerations **PLNGDE**
- 3880 subsystem
 - caching **CPREF**
- 3880-11 storage control device
 - in **QUERY** command **CPREF**
- 3880-21 storage control device
 - in **ATTACH CHANNEL** command **CPREF**
 - in **NETWORK ATTACH** command **CPREF**
- 4nxx identifier, messages with **SYMSMSG**
- 4K paging support for VSE/SP 2.1 guests **RGOS**
- 40 operand
 - of **EXTERNAL** command **CPREF**
- 4245
 - coding **RDEVICE** macro **PLNGDE**
 - supported models **PLNGDE, REL5GDE**
- 4245 operand
 - of **DEFINE** command **CPREF**
- 4245 printer
 - loading UCS image **CPREF**
- 4248
 - coding **RDEVICE** macro **PLNGDE**
 - supported models **PLNGDE, REL5GDE**
- 4248 operand
 - of **DEFINE** command **CPREF**
- 4248 printer
 - loading UCS image **CPREF**
- 4250
 - coding **RDEVICE** macro **PLNGDE**
 - supported models **PLNGDE**
- 4331 Display Console **TERMREF**
- 4341 Display Console **TERMREF**
- 4361 Display Console **TERMREF**
- 4381 Display Console **TERMREF**
- 4381 Processor Complex **REL5GDE, RGOS**
 - preferred machine assist **REL5GDE**
 - segment protection extension **REL5GDE**
 - supported models **REL5GDE**
 - virtual Machine Assist – Segment Protection Extension **REL5GDE**
- 48C option of **OPTION** command **CMSREF**
- 512-byte block formatted disk
 - using with **RESERVE** command **CMSREF**
- 5550 Multi Station **TERMREF**
- 60C option of **OPTION** command **CMSREF**
- 6250 operand
 - of **SPTAPE** command **CPREF**
- 7TRACK option
 - of **ASSGN** command **CMSREF**
 - of **FILEDEF** command **CMSREF**
- 7171
 - ASCII Device Attachment Control Unit **TERMREF**
 - ASCII support **REL5GDE**
- 7412
 - supported models **PLNGDE**
- 7412 Console **TERMREF**
- 7443
 - coding **RDEVICE** macro **PLNGDE**
- 800 operand
 - of **SPTAPE** command **CPREF**
- 8809
 - coding **RDEVICE** macro **PLNGDE**
 - supported models **PLNGDE**
- 8809 tape drive
 - with compacted DDR data **CPPROG**
- 9TRACK option
 - of **ASSGN** command **CMSREF**
 - of **FILEDEF** command **CMSREF**

Code	Title
APGDE	<i>Application Development Guide</i>
CMSLOT	<i>CMS Primer for Line-Oriented Terminals</i>
CMSPROG	<i>CMS for System Programming</i>
CMSREF	<i>CMS Command Reference</i>
CMSUG	<i>CMS User's Guide</i>
CPPROG	<i>CP for System Programming</i>
CPREF	<i>CP Command Reference</i>
DIAG	<i>Diagnosis Guide</i>
EXEC2	<i>EXEC 2 Reference</i>
SFPROG	<i>System Facilities for Programming</i>
GCSREF	<i>Group Control System Command and Macro Reference</i>
INST	<i>Installation Guide</i>
INTRO	<i>Introduction</i>
MACREF	<i>CMS Macros and Functions Reference</i>
OPGDE	<i>Operator's Guide</i>
PLNGDE	<i>Planning Guide and Reference</i>
PRIMER	<i>CMS Primer</i>
PRGDE	<i>Problem Reporting Guide</i>
REL5GDE	<i>Release 5 Guide</i>
RGOS	<i>Running Guest Operating Systems</i>
SPIREF	<i>System Product Interpreter Reference</i>
SPIUG	<i>System Product Interpreter User's Guide</i>
SRPI	<i>Programmer's Guide to the Server-Requester Programming Interface for VM/SP</i>
SYSMMSG	<i>System Messages and Codes</i>
TERMREF	<i>Terminal Reference</i>
TSAFREF	<i>Transparent Services Access Facility Reference</i>
XEDIT	<i>System Product Editor Command and Macro Reference</i>
XEDITUG	<i>System Product Editor User's Guide</i>

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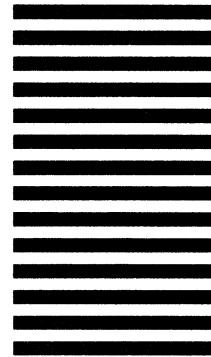
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2 GC23-0187-03

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