PRIMOS Commands

The Programmer's Companion

PRIME

The Programmer's Companion

The Programmer's Companion is a new series of pocket-size, quick-reference guides to Prime software products

Published by Prime Computer, Incorporated
145 Pennslyvania Ave , Framingham, MA 01701

The information contained in this guide is subject to change without notice Prime Computer Incorporated assumes no responsibility for errors that may appear in this document

First Printing May, 1978

CONTENTS

GLOSSARY

Abbreviation of PRIMOS Commands
The minimum required abbreviation of a PRIMOS command is shown in rust colored letters Only internal commands can be abbreviated

binary file
A translation of source file generated by a language translator (PMA, COBOL ITN, RPG) Such files are in the format required as input to the linking loader or segmented loader

byte
8 bits, 1 ASCII character

braces { }
Of group of words or parameters enclosed in braces, at least one must appear in command

communication subsystems
The following PRIMOS commands invoke communications subsystems Refer to the HASP and RJE2780 guides for further information

HASP **RJSEND**
RJCNTL **RJRECV**

DBMS subsystems
The following PRIMOS commands invoke data base management subsystems Refer to the DBMS guides for further information

CDML **DBMS**
CLUP **FDML**
CSUB **FSUBS**
DBACP

devno
A device number See **pdisk**

directory

A special type of file containing a list of filenames or other directories along with information on their characteristics and location. A directory may be the MFD, a UFD or a sub UFD. Directories with names in the MFD are UFDs; all other directories are sub UFDs.

directory-chain

Part of a pathname, a series of directories and optional passwords separated by the > symbol, as in

directory [password] [>subdirectory [password]]

external command

A command that executes in user address space. All external commands cause GO to print when starting. External commands *cannot* be abbreviated.

file

An organized collection of information stored on a disk (or a peripheral storage medium such as tape). Each file has an identifying label called a filename.

filename

The name of a file or directory. Filenames may be up to 32 characters long. The first character *must not* be numeric (0-9). Filenames can be composed *only* of the following characters: A-Z 0-9 _ # $ & - *. *Note:* On some devices underline (_) may print as back arrow (←).

file-unit

A number between 1 and 17 (21) assigned as a pseudonym to an active file by PRIMOS. This number may be given in place of a filename in certain commands such as CLOSE. PRIMOS level internal commands require octal values.

PRIMOS assigned units	Octal	Decimal
INPUT	1	1
LISTING	**2**	**2**
BINARY	**3**	**3**
COMINPUT	**6**	6
SEG's loadmap	**13**	11
COMOUTPUT	**21**	17

FORMS subsystems

The following PRIMOS commands invoke FORMS subsystems. Refer to the FORMS guide for further information.

FAP **FDL**

identity

The addressing mode plus its associated repertoire of computer instructions. Programs compiled in 64R mode execute in the R-identity, programs compiled in 64V mode execute in the V-identity.

internal command

A command that executes in PRIMOS space. Does not overwrite user memory. Internal commands can be abbreviated. See abbreviation of PRIMOS commands.

key, file protection

Specifies file protection.

0 No access
1 Read
2 Write
3 Read/Write
4 Delete and truncate
5 Delete, truncate and read
6 Delete, truncate and write
7 All rights

ldisk

The logical unit number (octal) of a disk volume. It is determined when the disk is brought up by a START_UP or ADDISK command.

MFD

The Master File Directory. A special directory which contains the names of the UFDs on a particular disk or partition. There is one MFD for each logical disk.

mode

An addressing scheme. The mode used determines the construction of the computer instructions by the compiler.

MIDAS subsystems

The following PRIMOS commands invoke MIDAS subsystems. Refer to the MIDAS guide for dialog instructions.

CREATK REMAKE
KBUILD REPAIR
KIDDEL

nodename

Name of a system on a network assigned by CONFIG command when local system is started up.

object file

See **binary file**.

output stream

Output from the computer that would usually be printed at a terminal during command execution but which is written to a file if COMOUTPUT command was given.

packname

See **volume-name**.

page

A block of 1024 16 bit words within a segment (512 words on Prime 300).

parentheses ( )

A word or parameter enclosed in parentheses must appear along with the enclosing parentheses.

partition

A portion (or all) of a multihead disk pack. Each partition is treated by PRIMOS as a separate physical device. Partitions are an integral number of heads in size, offset an even number of heads from top of the disk pack. A disk partition is also a **volume**.

pathname

A chain of directories starting with the disk volume name and ending with the name of the directory containing the files to be accessed. Its format is

pathname – $\left\{\begin{array}{c}\text{<volume>}\\ \text{<ldisk>}\\ \text{<*>}\end{array}\right\}$ **directory-chain**

<**volume**> is the name of the disks <**ldisk**> is a logical disk number (see **ldisk**) and <*> represents the current volume. *Note* the angle brackets are required.

pdisk

A physical disk unit number.

phantom user

A command file running independently of a terminal under control of the PHANTOM command.

PRIMOS

Prime's family of single-user and multi user disk operating systems.

runfile

The executable version of a program consisting of the binary file subroutines and library entries used by the program COMMON areas initial settings etc. This file is created using LOAD or SEG.

SEG

Prime's segmentation utility.

segment

A 64 536 word block of addressing space.

segno

Segment number.

source file

A program file consisting of text program statements comments etc.

square brackets [ ]

A word or parameter enclosed in square brackets is optional

sub-UFD

A directory which is in a UFD or other sub-UFD

System operator commands

The following PRIMOS commands are for the system operator Most of these commands can *only* be issued from the system console Refer to the System Administrators Guide for further information

ADDISK	**MAKE**
AMLC	**MAXSCH**
CHAP	**MAXUSR**
CONFIG	**OPRPRI**
COPY	**SETIME**
FIXRAT	**SHARE**
ELIGTS	**SHUTDN**
LOGPRT	**STARTUP**
LOOK	**USRASR**

treename

The complete description of a directory tree, starting with a specified disk volume or partition and ending with a filename The general format of a treename is

pathname > filename

UFD

A User File Directory one of the directories listed in the MFD of a disk or partition It may be used as a LOGIN name

volume

A self sufficient unit of disk storage, including an MFD, a disk record availability table, and associated files and directories A volume may occupy a complete disk pack or be a partition within a multi head disk pack

volume name

A name assigned by the MAKE operation when a disk volume is created

PRIMOS COMMANDS

/* [comment]

Allows comment lines in command files. See COMINPUT and COMOUTPUT. *Internal*

ASRCWD number

Changes virtual control word which selects a device for effective output. *Not PRIMOS II. Internal*

number	device
0	User terminal (port 1) *default*
2	Printer-2 (port 3)
4	Printer-1 (port 2)

ASSIGN { **device [-WAIT]** | **DISK pdev [-WAIT]** | **AMLC [protocol] amlc-line [config]** | **SMLC [-WAIT] smlc-line** }

Gives user complete control over a disk or other peripheral device. *Not PRIMOS II. Internal*

-WAIT queues ASSIGN request until device is UNASSIGNed. (Abort via CONTROL-P.) Up to 10 disk drives may be ASSIGNed at the same time.

device

CARDR	Serial card reader [amlc line 6]
CENPR	Printer 1 [SOC port 2]
CE2PR	Printer 2 [SOC port 3]
CRn	MPC parallel card reader-n
MTn	Magnetic tape drive [0-7]
PRn	MPC parallel interface line printer n
PTR	Paper tape reader
PUNCH	Paper tape punch
PLOT	Printer-plotter
SMLC00-03	Communications line 0-3

protocol

TTY	Normal terminal
TTYHS	TTY with per-character interrupt
TRAN	Transparent (no character conversion)

IRANHS	IRAN with per character interrupt
ITYNOP	Ignore all traffic

config

2033	110 Baud
2213	300 Baud
2323	1200 Baud [*default*]
2413	Programmable clock [*default*-9600]

ATTACH directory [password] [ldisk] [key]

Attaches to UFD or sub UFD as current directory. Non owner passwords may be given for PRIMOS III, IV, V only. *Internal*

ldisk

0 thru n	Search specified logical disk
100000	Search all disks in logical order *(default)*
177777_	Search MFD of current disk

key

177777	Attach to UFD, don't change home
0 *(default)*	Attach to UFD, set as home
1	Attach to sub UFD in current directory, do not set home
2	Attach to sub-UFd in current directory, set as home

AVAIL { **packname** | * | ONE | • | • | • | SEVENTEEN }

Displays disk usage statistics. Shows (in decimal) number of disk records available for use and percentage of space used in specified logical disk. *=all started disks. *External. Default* = current disk

BASIC [filename]

Invokes Prime interpretive BASIC. *Internal*

BASICV [filename]

Invokes compiled virtual-memory BASIC. See BASIC/VM guide.

BASINP filename

Loads non-Prime standard BASIC program from paper tape into **filename** *External*

BINARY filename

Opens **filename** for writing on file unit 3 for output. Equivalent to OPEN filename 3 2 *Internal*

CLOSE { **filename** / **ALL** } **[file-unit] . . . [file-unit]**

Closes specified files and file units (except a COMOUTPUT file which is closed by COMO-E) Retrieves buffers and resets file system *Internal*

CMPF treename-1 treename-2 [. . . treename-5] [option]

Compares lines in up to five compressed ASCII files, showing insertions/changes/deletions from **treename-1.** *External*

Options:

-BRIEF	Supresses display of differing lines
-MINL number	Sets minimum **number** of lines that must match *(default*=3)
-REPORT filename	Sends output to **filename.**

CMPRES filename-1 [filename-2]

Compresses ASCII file Inverse of EXPAND *External Obsolete*

CNAME old-name new-name

Changes name of file or directory Requires owner status for PRIMOS III, IV or V *Internal*

COBOL { **treename [option-1 . . . option-n]** / **[option-1] -INPUT treename [. . . option-n]** }

Invokes COBOL compiler *External*

Options:

-BINARY { **treename** / NO / **[YES]** }

Specifies binary (object) file.

-INPUT treename

Specifies input source file

-LISTING { **treename** | NO | [YES] | SPOOL | TTY }

Specifies the listing file

-64R

Generate object code to run in 64R mode

-64V

Generate object code to run in 64V mode

-NOEXPLIST

List source code with line numbers *Default*

-EXPLIST

Expanded listing Machine generated labels replace user-defined names *64V mode only*

COMINPUT option

Reads command input from filename instead of terminal *Default* file-unit=6 *Internal*

Options:

filename [file-unit]

Read command input from **filename** and optional **file-unit.**

-CONTINUE

Continue original command filename

-END

Return to terminal input

-PAUSE

Return to PRIMOS from current command filename

-START

Restart after CONTROL-P or WARM START Use -CONTINUE for all other cases

-TTY

Take input from terminal

Notes

1 CLOSE ALL will close the COMINPUT file-unit, causing COMINP FILE EOF

2 Insert comments in file with /* comment

COMOUTPUT option

Sends output stream to specified filename or file opened on unit 17. At least one option must be specified. Not closed by CLOSE ALL. *Not PRIMOS II. Internal*

Options:

[filename-1]
Send output to **filename-1.**

-CONTINUE [filename-2]
Continue output *overwriting* filename-1 if **filename-2** not specified.

-END
Close output file. Used instead of CLOSE.

-NTTY
Turn off terminal output including OK prompt.

-PAUSE
Stop output but *do not* close filename-1.

-TTY
Turn on terminal output.

CPMPC treename [options]

Punches file on ASSIGNed card reader/punch. *Does not* punch EOF ($E) card. *Not PRIMOS II. External*

Options:

-CRn	Card-reader/punch-n
PRINT	Display cards on terminal and interpret while punching

CREATE directory-name

Creates new UFD in MFD or sub-UFD in current directory with owner password blank, non-owner password zero and protection keys 7 0. *Internal*

CRMPC treename [options]

Reads cards from parallel interface reader connected to MPC controller and loads card image ASCII data into file specified until 1. End of deck, 2. $E in columns 1 and 2, 3. Card-reader/punch STOP button hit. *Not PRIMOS II. External*

Options.

-CRn	Card reader/punch-n
-PRINT	Displays cards at terminal

CRSER filename

Reads cards from serial interface card reader into **filename.** *External Not PRIMOS II*

CX { **filename** / **option** } **[-ON ldisk]**

Invokes sequential phantom job processor

Options:

-A	List entire audit file
-Dn	Drop job number **n**
-P	List user jobs in queue and audit file
-Q	List queue (running and pending jobs)
-Sn	List status of job number **n**
-ON ldisk	Perform operation on local logical device **ldisk** a remote disk

DATE

Displays the current date and time *Not PRIMOS II External*

DBASIC [filename]

Invokes double precision interpretive BASIC

DLLAY [minimum] [maximum] [r-margin]

Sets terminal delay characteristics Can be set prior to LOGIN *Not Primos II Defaults* **minimum**=6 **maximum**=12 **r-margin**=72 These are for 30 CPS terminals

DELETE filename

Deletes **filename** from current directory Filename can be either a file or an empty directory (For non empty directories use FUTIL TREDEL or UFDDFL)

DELSEG { ***segno*** / **ALL** }

Deassigns a segment **ALL** releases all segments belonging to user *Internal PRIMOS IV V only*

ED [filename]

Invokes the EDITOR sub system See the section on EDITOR commands at the back of this guide

EDB

Invokes the binary editor subsystem See the section on binary editor commands at the back of this guide

EXPAND [filename-1] [filename-2]

Reverse of CMPRES Maximum line size=720 *External*

FILEMEM [ALL]

Clears user address space for unsegmented programs On PRIMOS II will clear locations 100 through 47777, *except* those occupied by PRIMOS II itself On PRIMOS III, IV and V will clear locations '100 through '77777 Using **FILMEM ALL** will clear all user space on PRIMOS II *except* that occupied by PRIMOS II, clear locations 100 through 177777 on PRIMOS III IV and V *External*

FILVER [filename-1] [filename-2]

Compares two ASCII files for equivalence *Not PRIMOS II External*

FTN

Invokes Prime FORTRAN IV compiler See the section on FTN at the back of this guide

FUTIL

Invokes the file manipulation utility See the FUTIL section at the back of this guide

HPSD

Loads version of Prime's symbolic debugger stored in upper portion of memory Refer to the section on PSD at the back of this guide

INPUT filename

Opens **filename** for reading on file unit 1 Equivalent to OPLN filename 1 1 *Internal*

LABEL MTn -VOLID volume-id -OWNER owner-id -ALL access

Creates an ANSI COBOL level 1 volume label on a magnetic tape *Not PRIMOS II External*

n	unit number of tape drive (0-7)
volume-id	1-6 character string
owner-id	1-14 character string (default is the LOGIN name)
access	1-character access indicator Ignored by PRIMOS *Default*=blank

LATE

Requests time of day in HHMM format when next command is to be processed Terminal *cannot* be used for any other purpose until after time specified (escape via CONTROL-P) *Not PRIMOS II External*

LISTF

Displays current directory name logical device and names of all files sub UFDs and segment directories in current directory PRIMOS III, IV and V also display owner non owner status as O or N' *Internal*

LISTING filename

Opens **filename** for writing on file unit 2 Equivalent to OPEN filename 2 2 *Internal*

LOAD

Invokes the LOAD subsystem See the section on LOAD at the back of this guide

LOGIN ufd-name [password] [logical-device] [-ON node-name]

Log in to specified **ufd-name** *Not PRIMOS II* Logs user out if one currently logged in at terminal

LOGOUT [-user]

Log out user or phantom user *Not PRIMOS II Internal*

MACHK

Turns on machine check mode *Only PRIMOS II Internal*

MAGNLI

Invokes the magnetic tape utility See the section on MAGNEI at the back of this guide

MAGRST

Invokes the magnetic tape restore utility See the MAGRSI section at the back of this guide

MAGSAV

Invokes the magnetic tape save utility See the section on MAGSAV at the back of this guide

MCG filename

Translates assembled microcode in **filename** for ROM simulator *External*

MDL

Memory dump/load to/from punched paper tape

MESSAGE [nodename]

Waits for one line of text and sends it to operator's console of specified system *Not PRIMOS II Internal*

MRGF treename-1 treename-2 [treename-5] outtreename [option-1 option-n]

Merges ASCII files into specified **outtreename** *External*

NUMBER

Numbers/renumbers statements in a BASIC program Requests intreename outtreename and starting statement number (1 9999) *External*

OPEN filename unit key

Opens **filename** on specified **unit** *Internal*

keys			
1	Read	1000	New SAM
2	Write	2000	New DAM
3	Read write	4000	New SAM segment
4	Close	6000	New DAM segment
5	Delete	10000	New UID
6	Exist		
7	Rewind		
10	Truncate		

PASSWD [owner-password] [non-owner-password]

Resets **owner** and **non-owner-passwords** for current directory PRIMOS II owner passwords only *Internal Defaults* blank owner non owner

PHANTOM command-inputfile [file-unit]

Runs specified **command-inputfile** as a phantom user *Default* file-unit=6

PM

Displays contents of RVEC vector or user register vector *Internal*

PMA

Invokes Prime Macro Assembler See section on PMA at the back of this guide

PRERR

Displays ERRVEC message set by ERRSET and first six octal location in ERRVEC or prints ERRVEC and last error message *Internal PRIMOS II III Obsolete*

PRMPC treename

Prints **treename** on MPC parallel interface printer previously ASSIGNed *External*

PROTEC filename [owner-rights] [nonowner-rights]

Sets protection rights on **filename** *Not PRIMOS II Internal Default* 0 0

Rights

0	No access	4	Delete/truncate
1	Read	5	Delete/truncate/read
2	Write	6	Delete/truncate write
3	Read Write	7	ALL

PRSER treename

Prints **treename** on serial interface printer previously ASSIGNed *External*

PRVER treename

Prints **treename** on a configured printer/plotter Refer to PRMPC *Not PRIMOS II External*

PSD

Invokes Prime Symbolic debugger See section on PSD at the back of this guide

PTCPY

Duplicates and verifys paper tape Reader and punch must have been previously ASSIGNed for PRIMOS III, IV, V *External*

RESTORE filename [start-address] [end-address] [p] [a] [b] [x] [keys]

Restores runfile contained in **filename** into memory *Internal*

RESUME filename [p] [a] [b] [x] [keys]

Runs (restores and starts) external program contained in **filename.** *Internal*

RPG

Invokes Prime RPG II language compiler Refer to RPGII guide

RUNOFF

Invokes Prime RUNOFF text processor Refer to the New User's Guide to EDITOR and RUNOFF for further information

SAVE filename start-address end-address [a] [b] [x] [keys]

Saves memory image/contents from specified **start-address** to **end-address** *Do not* use with 64V segmented run files *Internal* Also see SEG SAVE *Default* Previous RVEC contents

SEG

Invokes Prime segmented loader See the section on SEG at the back of this guide

SIZE treename

Displays data size of treename in records Record is data words/440 rounded up *External*

SLIST filename

Prints (displays) **filename** at user's terminal *External*

SORT [option-1] [option-2]

Sorts an ASCII file Requests name of input and output files, number of fields and columns delimiting fields Maximum number of SORT fields =10 Maximum number of characters/record=144 To sort in reverse specify R after closing column in field Upper and lower case characters are sorted identically *External*

Options:

-BRIEF	Suppress SORT request for values
-SPACE	Delete blank lines from output file
-MERGE	Merge indicated files (maximum=10)

SPOOL

Places file in queue for line printer See section on SPOOL at the back of this guide *Not PRIMOS II External*

SPSS

Invokes Prime's SPSS subsystem *PRIMOS IV V only External* See SPSS guide

START [location] [a] [b] [x] [keys]

Starts execution, initializes process registers and **keys** and starts execution from **location** Assumes that program is in memory If location not specified execution resumes at point of interruption *Internal*

STATUS { **[ALL]** / **DISKS** / **USERS** / **NET** / **UNITS** }

Displays user of system status Lists for LOGIN UFD's logical device open file units physical/logical device correspondence and physical device numbers In PRIMOS II also shows lower boundary and buffers PRIMOS III IV, V, disk packnames also printed *External* (PRIMOS II) *Internal* (PRIMOS III, IV V) *Defaults* information about disks, units and network

SVCSW {[0] / 1}

Sets SVC switch, controls SVC instruction handling in virtual memory environments *Internal* Allows VDOS32 to run under PRIMOS III, IV V

0	Traps SVC's for processing by PRIMOS
1	Virtual traps SVC's for processing through user location '65

TA pathname

Tree attach to directory location specified by **pathname** Sets new directory to home *External*

TAP

Invokes Prime Octal Mode debugger See section on TAP at the back of this guide *External*

TDOS64

Runs virtual memory PRIMOS II under PRIMOS III IV and V *Not PRIMOS II External*

TERM option-1 option-n

Sets terminal characteristics (resets to default explicitly or via LOGOUT) *Not PRIMOS II External*

Options

-BREAK {[ON] / OFF}	Enable/disable BREAK key equivalent to Control P
-DISPLAY	Display current terminal characteristics
-ERASE character	Set new PRIMOS erase **character.**
-FULL	Full duplex mode *(default)*
-HALF {[-LF] / -NOLF}	Half duplex mode **[-LF]**-DO LF when CR hit) **-NOLF**-don't
-KILL character	Set new PRIMOS Kill **character.**
-NOXOFF	Disable Control-S/Control-Q functions
-XOFF	Enable Control-S/Control-Q functions for inspection of screen output (Hit Control-S to halt terminal output Control Q to resume)

TIME

Displays current values in the time accounting registers *Not PRIMOS II Internal*

TRAMLC { **TRANSMIT** / **RECEIVE** } **filename amlc-line [T]**

Transmits/receives **filename** over specified **amlc-line** between compatible systems *Not PRIMOS II External* **T** displays milestone messages

UNASSIGN { **device [-WAIT]** / **DISK pdev [-WAIT]** / **AMLC [-protocal] amlc-line [config]** / **SMLC [-WAIT] smlc-line** }

Releases peripheral device (or communications line) previously ASSIGNed See ASSIGN for parameters values *Not PRIMOS II Internal*

UPCASE intreename [outtreename]

Replaces all lower case letters in **intreename** with upper case letters Output goes to **outtreename** or file open on unit 2 *External*

USERS

Displays number of current users *Not PRIMOS II Internal*

VPSD

Virtual mode symbolic debugger See section on PSD at the back of this guide for information

VRTSSW octal-number

Sets virtual sense switches **WARNING.** skip and sense switch instructions refer to *actual* not *virtual* sense switches *Not PRIMOS II Internal Default* **octal-number**=0

PRIMOS SUBSYSTEMS

DEBUGGING UTILITIES (TAP, PSD VPSD)

For S and R mode programs Load the object program using the PRIMOS commands LOAD or RESTORE and then choose which version you need Since the debug

utility is resident in user memory with your program, make sure your program is not overlaid For V-Mode programs load using SEG and then run by saying SEG filename 1/1 Type the VE command to VPSD to obtain its resident address

Terminating long operations To terminate long operations such as DUMP type CTRL P to return to PRIMOS command level

Restarting Restart at the version's starting address To determine this value type a VERSION command to print the starting location (For TAP return to PRIMOS and do a PM)

PSD/VPSD input/output formats The format is established by ending any command with a colon followed by a single letter as in A 1000 O

- **A** ASCII
- **B** Binary
- **:D** Decimal
- **:H** Hexadecimal
- **:O** Octal
- **:S** Symbolic
- **:L** Long integer (VPSD only)
- **P** AP

Expressions only + and - operators No literals **Symbol use** global symbols if the LIS procedure has been used or any symbols defined within PSD Symbolic input is only legal in access mode — i e S 100 200 SAIA is not legal Constants entered in S mode are octal

Command Line Operands These may be constants constant expressions or symbols The format of a constant is

[format] [>] { **±digits** / **ASCII-constant** } **[format]**

> relocatable mode

Access Mode Terminators,

TAP, PSD, VPSD

CR	Move to next location
↑	Move to current location -1
?	Exit from access mode do not change contents of current location

PSD, VPSD ONLY

n (CR)	Move to current location +**n**
-n (CR)	Move to current location -**n**
@	Move to location addressed by instruction in current location
{	Move to location addressed by instruction in current location without following indirects
****	Return to the address of the last @
}	Return to the address of the last {
=	Calculate and print effective address and its contents
!	Set current location to new contents and exit from access mode

Subcommands [input rest letters in upper case ONLY]

ACCESS address *[IAP]*
Accesses **address** in memory and waits for keyboard input in the form

[value] tap terminator

ACCESS address *[PSD VPSD]*
Accesses **address** in the current segment and waits for keyboard input in the following form

[format-symbol] [value] [new-format] terminator

BR *[\PSD]*
Prints the contents of the procedure base stack base link base and temporary base registers

BREAKPOINT location
Sets a breakpoint at the specified **location**

COPY blockstart block-end target
Copies a block of memory to a new location starting at **target**

DEFINE symbol value *[PSD]*
Assigns a **value** to an alphanumeric **symbol**

DUMP block-start block-end [words-per-line]
Prints the contents of a block of memory on the terminal or optionally to a file previously OPENed with no parameters

EFFECTIVE block-start block-end address [mask] *[PSD \PSD]*
Searches for an instruction with the specified effective

address in the specified block under an optional **mask** The current values of the register are used

EXECUTE address [a] [b] [x] *(I VP)*
Executes the S- or R-mode subroutine at the specified **address**

EXECUTE *(VPSD)*
Executes a segmented program by passing control to SEG

FILL block-start block-end constant
Fills a memory block with the specified **constant**

GO [count] [a] [b] [x] [keys] *(PSD)*
Proceeds from the current breakpoint **Count** is the number of times to execute breakpoint location

JUMPTRACE [start-add] [a] [b] *(I VP PSD)*
Executes the object program and produces a diagnostic printout prior to execution of JMP JST or HLT instruction SVCs are not traced Printout is

Location: instruction A= B= X= K= R

KEYS value *(PSD VPSD)*
Sets CPU status keys to octal **value**

LB seg-no word-no *(VPSD)*
Loads the link base register with a segment number and word number

LIST address
Prints the contents of **address** in the current output format *(Does not move pointer)*

LS *(PSD)*
Enables the use of load map symbols Load program and use map 10 option to create symbol file restore program and invoke PSD open VPSD symbol file on any unit for reading give LS command and close unit

MAP *(PSD)*
Prints load map symbols and definitions

MO { **D16S** | **D32S** | **D32R** | **D64R** | **D64V** | **D32I** } *(PSD VPSD)*
Sets address mode

MONITOR [start-add] [a] [b] address *(I VP PSD)*

Traces the object program for a memory reference instruction whose effective address equals **address**

NOT-EQUAL block-start block-end n-match [mask]
Searches memory block for words not equal to **n-match** under an optional **mask** (a 16 bit logical AND)

OPEN filename file-unit key *(PSD VPSD)*
Opens a file to be used either as a DUMP output file or symbol table input file **Filename** must be $\leq$ six characters **Key** is the same as for PRIMOS OPEN

PATCH patch-loc branch-loc *(I VI)*
Replaces instruction at **branch-loc** by a jump to **patch-loc,** inserts the previous contents of branch loc at patch loc and enters ACCESS at patch loc so you can key in a patch and return Patch loc must either be in the same sector as branch loc or in sector 0

PRINT *(PSD VPSD)*
Prints CPU PSD parameters in octal as follows
p breakpoint a b x keys relcon

PROCEED [address] [a] [b] [x] [keys] *(PSD VPSD)*
Removes the current breakpoint optionally sets a new breakpoint at **address,** and resumes execution

QUIT *(PSD VPSD)*
Returns to PRIMOS (or SEG for SEG s VPSD)

RELOCATE value
Sets a new **value** for the access mode relocation counter

RUN [start-add] [a] [b] [x] [keys]
Runs the executable program starting at **start-add**

SB seg-no word-no *(VPSD)*
Loads the stack base register with a segment number and a word number

SEARCH block-start block-end match-word [mask]
Searches memory block for words equal to **match-word** under an optional **mask**

SN seg-no *(VPSD)*
Sets a segment number for all commands where only a word number is entered such as UPDATE DUMP etc

SYMBOL $\left\{\begin{matrix}1\\0\end{matrix}\right\}$ *(PSD)*

Controls the use of symbols in address typeout **1** symbols **0** no symbols

TRACE [start-add] [a] [b] $\left[\left\{\begin{matrix}\textbf{p-val [0]}\\\textbf{-1 interval}\end{matrix}\right\}\right]$

Dynamically traces program by interpretive execution of each instruction and diagnostic printout **P-val** causes printout only when program counter = p val P val 0 means printout the first time program counter = p val and every instruction thereafter **-1 interval** means printout every interval instructions HALT instructions always cause printout followed by return to command mode

UPDATE location contents

Puts **contents** into **location** and prints the old and new contents

VERIFY block-start block-end copy

Verifies block of memory by comparing it with another block starting at **copy** Locations that do not match are displayed as

location block-contents copy-contents

VERSION *(PSD VPSD)*

Prints the version number and restart address of the utility as an aid in restarting

WHERE *(PSD VPSD)*

Lists all currently installed breakpoints and their remaining proceed counts A proceed count of 1 is not listed

XB seg-no word-no *(VPSD)*

Loads temporary base register with a segment number and word number

XR value *(VPSD)*

Loads the X register with **value**

YR value *(VPSD)*

Loads **value** into the Y index register (P350 and up)

ZERO [location] *(PSD VPSD)*

Removes breakpoint at specified **location** or the breakpoint at the current program counter location

EDITOR SUBSYSTEM

ED [filename]

Edits existing or new file. Carriage return inputs a line from the terminal. For more information refer to the NEW USER'S GUIDE TO EDITOR AND RUNOFF.

Defaults:

Erase character	"
Kill character	?
Tab character	\
Default tab settings	6 12 30
Command input line terminators	or carriage return

EDITOR SUBCOMMANDS

APPEND string
Appends **string** to end of current line.

BOTTOM
Moves pointer to bottom of work file.

BRIEF
Suppresses verification output.

CHANGE/string-1/string-2/[G] [n]
Replaces **string-1** with **string-2**, on **n** lines once or generally **[G]**.

DELETE [n]
Deletes **n** lines.

DELETE TO string
Deletes lines from file until **string** is found.

DUNLOAD filename [n]
Copies and deletes **n** lines from file.

DUNLOAD filename TO string
Copies and deletes line until **string** is found.

ERASE character
Makes **character** new erase character.

FILE [filename]
Files work file under **filename** or current filename.

FIND string
Finds first line below current containing **string**.

FIND(n) string
Finds first line below current containing **string** in column **n.**

GMODIFY
Alters current line as specified See RUNOFF guide, Section 8

Subcommands:

A/string/	Copy current line and append **string**
B n	Move pointer back **n** spaces
C character	Copy up to but not including **character**
D character	Skip up to but not including **character**
E n	Skip next **n** characters
F	Copy to end of line
I/string/	Insert **string** starting at current column
M n	Copy **n** characters
n	Test for "not character" in next C or D command
O/string/	Overlay **string** starting at current column
R/string	Retype using **string**, from current column
S	Move pointer to column 1

INPUT device
Takes input from either (ASR) (PTR) or (TTY) *(default)* device

INSERT newline
Inserts **newline** below current line

KILL character
Makes **character** new kill character

LINESZ [n]
Makes **n** maximum line length

LOAD filename
Copies **filename** into workfile

LOCATE string
Finds first line below current line containing **string.**

MODE COLUMN
Displays banner at start of INPUT Mode

MODE NCOLUMN
De activates column banner *(default)*

MODE COUNT initial increment width { **BLANKS** | **ZEROES** | **SUPPRESS** }
Activates counter symbol with these values

MODE NCOUNT
De-activates counter

MODE NUMBER
Activates printing of line numbers

MODE NNUMBER
De-activates printing of line numbers *(default)*

MODE PROMPT
Displays prompts for INPUT and EDIT Modes

MODE NPROMPT
De-activates Mode prompts *(default)*

MODE PRALL
Do not flag character case *(default)*

MODE PRUPPER
Treat as case-flagged uppers line default upper

MODE PRLOWER
Treat as case-flagged uppers line default lower

MODIFY/string-1 string-2 [G] [n]
Changes **string-1** to **string-2** without changing line alignment

MOVE buffer-1 { **buffer-2** / **string** }
Moves **string** or contents of **buffer-2** into **buffer-1**

NEXT(n)
Moves pointer **n** lines

NFIND(n) string
Moves pointer to next line not containing **string**

OUTPUT { (DISPLAY) / (TTY) }
Sends verification output to specified device *(default* = **TTY)**

OVERLAY string
Superimposes **string** on current line

PAUSE
Freezes EDIT session goes to PRIMOS level (return via START)

POINT n
Moves pointer to line **n.**

PRINT [n]
If $n>0$ prints **n** lines if $n<0$ backs up n lines and prints one line

PSYMBOL
Prints list of current reserved characters

PTABSET ptab-1 ptab-2
These are current physical tab stops on device

PUNCH [n] {(ASR) / (PTP)}
Punches **n** lines on indicated device

QUIT
Leaves EDITOR without saving results of session

RETYPE string
Deletes current line replace with **string**

SYMBOL name character
Makes **character** current value of symbol **name**

Special Symbol Name	Character
KILL	?
ERASE	"
WILD	!
BLANKS	#
TAB	\
ESCAPE	↑
CPROMPT	$
DPROMPT	&
SEMICOLON	;
COUNTER	@

TABSET tab-1 tab-2 tab-8
Sets these logical tab stops for EDITOR tab symbol

TOP
Moves pointer to top of file

UNLOAD filename [n]
Copies **n** lines into filename

UNLOAD filename TO string
Copies lines into **filename** until **string** is found

VERIFY
Turns on verification output **[default]**

WHERE
Prints current line number

XEQ buffer
Executes contents of **buffer** as a command line

^[n]
Repeats preceding commands on line either **n** times or until TOP/BOTTOM reached

BINARY EDITOR

EDB { **input-file** / **(PTR)** } { **output-file** / **(PTR)** }

The binary editor is used mainly for building and maintaining subroutine libraries **(PTR)** = paper-tape input or output For more information refer to the Software Library manual

Subcommands

BRIEF
Suppresses display of subroutine names and entry points

COPY { **filename** / **ALL** }
Copies main programs and subroutines from EDB pointer up to **filename** or end of infile

FIND { **filename** / **ALL** }
Moves pointer to subroutine **filename** or end of infile In VERIFY mode display subroutine and entry names

INSERT treename
Copies **treename** to outfile *(pointer unchanged)*

NEWINF treename
Closes outfile opens **treename** as new input file

OPEN treename
Closes outfile opens **treename** as new output file

QUIT
Closes *all* files returns to PRIMOS

REPLAC name treename
Replaces subroutine **name** or containing name with **treename**

RFL
Writes reset forceload flag block in outfile

SFL
Writes set forceload flag block in outfile

TERSE
Enters terse mode (displays *first* entry point *only*)

TOP
Moves pointer to top of file

VERIFY
Enters VERIFY mode (displays all subroutine names and entry points) (Default)

FORTRAN IV COMPILER

FTN { **treename [options]** | **[option] -INPUT treename [options]** }

Invokes FORTRAN compiler. For more information refer to the FORTRAN Programmer's Guide

Options: (• indicates Prime supplied defaults)

Specify Input/Output Devices

-BINARY { **treename** | **NO** | **[YES]** }

Specifies binary (object) file

-INPUT treename

Specifies source program file

-LISTING { **treename** | **[NO]** | **YES** | **TTY** | **SPOOL** }

Specifies listing file

-SOURCE treename

Same as INPUT

Enable Listings/Cross References

	-ERRLIST	Print error-only listing
•	**-ERRTTY**	Print error messages at user terminal
	-EXPLIST	Print listing including assembler output
•	**-LIST**	Print source program and error listing
	-NOERRTTY	Suppress error messages to terminal
•	**-NOTRACE**	Suppress global trace
•	**-NOXRLF**	Suppress cross-reference listing
	-TRACE	Enable global trace
	-XREFL	Print full cross-reference listing
	-XREFS	Print partial cross-reference listing

Memory Usage

-BIG	Handle arrays spanning segment boundaries *(64V only)*

	-DEBASE	Conserve loader base areas
	-DYNM	Enable dynamic allocation of local storage *(64V only)*
•	**-NOBIG**	No arrays spanning segment boundaries
•	**-SAVE**	Static allocation of local storage
•	**-32R**	Generate code to run in 32R mode
	-64R	Generate code to run in 64R mode
	-64V	Generate code to run in 64V mode

Operations

	-DCLVAR	Flag undeclared variables
•	**-FP**	Generate floating point skip instructions
	-INTL	INTEGER default is INTEGER*4
•	**-INTS**	INTEGER default is INTEGER*2
•	**-NODCLVAR**	Do not flag undeclared variables
	-NOFP	Suppress generation of floating point skip instructions
	-SPO	Special library compilation

FUTIL — FILE MANIPULATION UTILITY

FUTIL is the interactive file manipulation utility. It responds with a prompt character > and waits for subcommands. For more information refer to the PRIMOS Commands manual.

Subcommands

ATTACH pathname
Attaches to new directory, make it home.

CLEAN prefix [level]
Deletes files beginning with **prefix** for indicated number of **levels** *(default 1)*.

COPY from-name [to-name] [,from-name [to-name]]
Copies named SAM or DAM files from FROM directory to TO directory. If **to-names** are omitted, copies have same names as originals.

COPY {from-position} [{to-position}]
Copies from one segment directory to another. If **to-position** is omitted, copy goes to same position as original.

COPYDAM
Same as COPY but sets file type of copy to DAM

COPYSAM
Same as COPY but sets file type of copy to SAM

CREATE directory [owner-passwd [non-owner passwd]]
Creates **directory** in current TO directory (with optional passwords)

DELETE { **file-a [file-b] ...** | **(position-a) [(position-b)].** }
Deletes from FROM directory named files or in segment directories, deletes files at specified positions

FORCE { **ON** | **[OFF]** }
ON forces read-access rights in FROM for LISTF LISTSAVE, SCAN UFDCPY and TRECPY **OFF** stops FORCE action *(default)*

FROM pathname
Defines FROM directory for subsequent commands such as COPY LISTF etc

LISTF [level] [FIRST] [LSTFIL] [SIZE]
[PROTEC] [RWLOCK] [TYPE] [DATE]
[PASSW]
Lists files and attributes at terminal (and into optional file named LSTFIL)

LISTSAVE filename [level] [FIRST] [SIZE]
[PROTEC] [RWLOCK] [TYPE]
[DATE] [PASSW]
Same as LISTF, with the LSTFIL option specified but writes output to **filename.**

PROTECT filename [owner-access [non-owner-access]]
Sets protection attributes for **filename.**

SCAN filename [level] [FIRST] [LSTFIL]
[SIZE] [PROTEC] [RWLOCK]
[TYPE] [DATE] [PASSW]
Searches FROM directory tree for all occurrences of specified **filename** and prints requested attributes

SRWLOC filename lock-number
Sets per-file read/write lock

TO pathname
Defines TO directory for subsequent commands such as CREATE and all copying commands

TRECPY directory-a [directory-b] [directory-c [directory-d]]
Copies directory tree(s) in FROM directory into TO directory

TREDEL directory-a [directory-b]
Deletes directory tree(s) in FROM directory

TREPRO pathname [owner-access [non-owner-access]]
Sets protection rights for directory and contents *(default 7 0)*

TRESRW pathname lock-number
Sets per file read write locks for all files in **pathname**

UFDCPY
Copies *entire* FROM directory into TO directory

UFDDEL
Deletes *entire* FROM directory

UFDPRO [owner-access [non-owner-access [level]]]
Sets protection attributes for *entire* FROM directory

UFDSRW lock-number n-levels
Sets per file read/write lock for **n-levels** in FROM directory

Lock number	Meaning	Code
0	Use system R/W lock	SYS
1	n readers OR 1 writer	W/NR
2	n readers AND 1 writer	1WNR
3	n readers AND n writer	NWNR

LOAD SUBSYSTEM
Invokes virtual loader for loading sectored and relative code in one segment (64K maximum — see SEG LOAD) Treenames may be used to specify files except in ATTACH and SAVE External

LOAD SUBCOMMANDS

ATTACH [directory] [password] [disk] [key]
Attaches to specified UFD

AUTOMATIC base-length
Inserts base area of specified length at end of routine if > 300 locations loaded since last base area

CHECK [symbol-name] [offset-1] [offset-9]
Checks value of current PBRK against symbol or number **Symbol-name** is a 6 character symbol defined in the

symbol table **Offset-1** thru **9** are summed to form an address or offset from symbol name Numbers preceded by '-" are negative

COMMON address

Moves top/starting COMMON location to **address**

DC [END]

Defers definition of COMMON block **[END]** turns off DC

ENTIRE treename

Saves entire state of loader as runfile, along with temporary file for building overlays

ERROR n

Determines action taken in case of load errors

n	Meaning
0	SZ errors treated as multiple indirect others act as n=1
1	Display multiple indirects on ITY but continue LOAD abort load of file for all other errors
2	Abort to PRIMOS

EXECUTE [a] [b] [x]

Starts execution with specified register values

F/ { **FORCELOAD** / **LIBRARY** / **LOAD** } **treename [parameters]**

Forceloads all modules in specified object file See LOAD for parameters

HARDWARE definition

Specifies expected level of instruction execution

CPU	Definition	
P400	57	
P300/FP	17	FP = Floating Point
P300	3	
P200/HSA	1	HSA = High speed
P100/HSA	1	arithmetic
P200	0	
P100	0	

HARDWARE if given must precede loading of UII library

INITIALIZE [treename] [parameters]

Initializes LOADER and optionally does a LOAD See LOAD for parameters

LIBRARY [treename] [loadpoint]
Loads specified file from library UFD

LOAD treename [parameters]
Loads the specified object module The parameters may be entered in three formats

1 **loadpoint [setbase-1] [setbase-8]**
2 *** [setbase-1] [setbase-9]**
3 **symbol [setbase-1] [setbase-9]**

In form 1 **loadpoint** is the starting location of the load In form 2 the load starts at the current PBRK location **(*)** In form 3 the load address can be stated symbolically **(symbol)** The remaining numeric parameters **(setbase-1,** etc) specify the size of linkage areas to be inserted before and after modules during loading If the last parameter is 177777 the loader requests more setbase values

MAP [treename] [option]
Generates load state map If **treename** is omitted map is displayed at TTY

Option	Meaning
0	Load state base area symbol storage map, symbols sorted by address *(default)*
1	Load state only
2	Load state and base area
3	Unsatisfied references only
4	Same as 0
5	System Programmer map
6	Undefined symbols sorted alphabetic
7	All symbols sorted alphabetic
10	Special symbol map for PSD (in a file)

MODE { D32R | D64R | D16S | D32S | D64V | D32I }
Specifies address resolution mode for next load module (32K Relative is *default*) If used MODE must precede other LOAD commands

P/ { **FORCELOAD** / **LIBRARY** / **LOAD** } **[parameters]**

Begins loading at next page boundary See LOAD for parameters

PAUSE

Leaves loader to execute internal PRIMOS command Return via START

PBRK { **[symbol-name] [offset-1]. [offset-9]** / ***offset-1 [offset-2]...[offset-9]** }

Sets a program break to value of **symbol** plus **offset** or a number * treats sum of numbers as offset from current PBRK Offsets 2 thru 9 may be negative

QUIT

Deletes temporary file, closes map file (if loader opened it), and returns to PRIMOS

SETBASE { **[base-start] [base-range]** / ***base-range** }

Defines starting location and size of base area * is current value of PBRK

SS symbol-name

Save symbol Exempts specified symbol from action of XPUNGE

SYMBOL { **symbol-name [offset-1]...[offset-6]** / ***offset-1 [offset-2].. [offset-6]** }

Establishes locations in memory map for common blocks, relocation load points, or to satisfy unsatisfied references * is current value of PBRK **Offsets** are summed, 2 thru 6 may be negative

SZ { **YES** / **[NO]** }

Permits/prohibits links in sector zero

VIRTUALBASE base-start to-sector

Copies base sector to corresponding locations in **to-sector.** Used for building RTOS modules

MAGNET MAGNETIC TAPE UTILITY

MAGNET is an interactive magnetic tape utility that transfers non Prime format magnetic tapes to and from PRIMOS disk files MAGNET prints a release number and a date and then requests the user to enter an option

The user may then issue one of the four option commands. Each option conducts a dialog The queries and responses are described below

POSITION

Positions the tape to a specified file and record number Absolute position rewinds tape before spacing Relative position allows tape to be moved forward or backward from the current position

READ

Transfers a file from magnetic tape to disk, optionally providing unblocking and EBCDIC or BCD translation

WRITE

Similar to READ but transfers file from disk to tape WRITE also provides facilities for blocking and character translation

COPY

Copies a file (or files) from one magnetic tape to another No character translation is provided for this operation

MAGNET DIALOG QUERIES

Prompt	Response
MTU #	Physical unit number followed by /7 (seven-track) or 9/ (nine-track - default)
RELATIVE OR ABSOLUTE?	ABSOLUTE file and record numbers are relative to beginning of tape Must be positive RELATIVE file and record number are relative to current position May be positive (forward) or negative (backward) 0 = current position
FILE # OR MT FILE	Absolute file number of relative number of records to forward or backspace
LOGICAL RECORD SIZE	Number of bytes in a disk record Must be 2K or less
BLOCKING FACTOR	Number of logical records (line images) in one tape record
ASCII, BCD, BINARY OR EBCDIC?	Type of translation desired between tape and disk ASCII = none BCD = BCD to ASCII, etc

FULL OR PARTIAL?	FULL translate entire line PARTIAL = translate specified fields
ENTER PARTS OF etc	Enter starting/ending column numbers one pair per line Terminate with CR
OUTPUT FILENAME	Disk file to be created during READ
INPUT FILENAME	Disk file used as source of WRITE
'FROM' tape	MTU # of tape to be copied
'TO' tape	MTU # of tape to relative copy

MAGNETIC TAPE RESTORE UTILITY

MAGRST [-7TRK]

Restores files, directory trees or partitions from a magnetic tape created with MAGSAV Under PRIMOS III IV or V the tape unit must be ASSIGNED The MAGRST dialog is as follows

Query	Possible Responses
TAPE UNIT	(0-7) Physical unit number
ENTER LOGICAL TAPE NUMBER	1 = 1st logical tape 2 = 2nd etc Rewinds and positions tape 0 = tape already positioned
READY TO RESTORE	**YES** (Restore entire tape) **NO** (Request new tape drive and logical tape numbers) **PARTIAL** (Restore part of tape) **$I [filename] n** print index to n levels to terminal or optional filename **NW n** print n level index at terminal but do not update disk (debugging)
TREENAME.	Enter treename for partial restore

MAGNETIC TAPE SAVE UTILITY

MAGSAV [option]

Writes a PRIMOS disk file directory tree or partition to 7 or 9 track magnetic tape. Under PRIMOS III, IV or V the tape unit must be ASSIGNed.

Options

LONG	1024 word records (*default* 512)
INC	Incremental dump
UPDT	Set DUMPFD bit
7TRK	7 track tape format (*default* 9 track)

The MAGSAV dialog is as follows:

Query	Possible responses
TAPE UNIT	(0-7) physical tape unit
ENTER LOGICAL TAPE NUMBER	1 1st logical, 2 2nd, etc. Rewinds and repositions tape 0 already positioned
TAPE NAME	Any number
DATE	Valid date in format mm/dd/yy (*default* current date)
REV NO	Any number
NAME	filename to be saved or one of the following: $A Change home UFD $Q Terminate logical tape and return to PRIMOS $R Do $Q and rewind tape $I **[filename] n** Index to n levels MFD Save entire disk (*Must be attached to MFD*) . Save current directory

Record Sizes 448 word (PRIMOS) or 1024 word (Storage Module)

PRIME MACRO ASSEMBLER

PMA filename [option-1 ... option-n]

{ INPUT / LISTING / -BINARY } **filename**

Invokes Prime's Macro Assembler. For more information, refer to the PMA Programmer's Guide.

Options:

-EXPLIST	Full assembly listing, reset A-register bit A2, set bit A3, force listing file generation
-ERRLIST	Generate error only listing, reset bit A3, set bit A2, force listing file generation
-RESET	Resets A, B, and X registers

SEGMENTATION UTILITY

SEG treename

Invokes SEG for loading, modifying and running segmented (V-mode) code. PRIMOS IV, V only. See the PMA manual.

DELETE [filename]

Deletes a saved SEG runfile.

HELP

Prints abbreviated list of SEG commands at terminal.

[V]LOAD [treename]

Defines runfile name and invokes virtual loader for creation of new runfile.

[V]LOAD * [treename]

Specifies existing runfile and invokes virtual loader for appending.

LOAD SUBPROCESSOR COMMANDS

ATTACH [ufd-name] [password] [ldisk] [key]

Attaches to directory.

A/SYMBOL symbolname [segtype] segno size

Defines a symbol in memory and reserves space for it using absolute segment numbers.

COMMAND { **[ABS]** / **REL** } **segno**

Relocates COMMON using absolute or relative segment numbers.

D/ { **IL** / **LOAD** / **LIBRARY** / **FORCELOAD** / **PL or RL** }

Continues a load using parameters of previous LOAD. *Note*: D/ and F/ may be combined, as in D/F/LI.

EXECUTE [a] [b [x]
Saves loaded image on disk and executes program

F/ { IL / LOAD / LIBRARY / FORCELOAD / PL / RL } **[filename] [addr psegno lsegno]**

Forceloads all routines in object file

IL [addr psegno lsegno]
Loads impure FORTRAN library IFTNLIB

INITIALIZE [*treename*]
Initializes and restarts load subprocessor

LIBRARY [treename] [addr psegno lsegno]
Loads library file (from LIB=UFD, if no treename specified)

LOAD [treename] [addr psegno lsegno]
Loads object file

MAP [filename] option
Generates load map (see SEG - level MAP command)

MIXUP { [ON] / OFF }

Mixes procedure and data in segments and permits loading of linkage and common areas in procedure segments *Not* reset by INITIATE

MV [start-symbol move-block desegno]
Moves portion of loaded file (For libraries) If options are omitted, information is requested

OPERATOR option
Enables or removes system privileges 0 = enable, 1 = remove *Caution* this command is intended only for knowledgeable creators of specialized software

PL [addr psegno lsegno]
Loads pure FORTRAN library PFTNLB

P/ { IL / LOAD / LIBRARY / FORCELOAD / PL / RL } **[filename] option [psegno] [lsegno]**

Loads on a page boundary The options are **PR** = procedure only, **DA** = link frames only, **none** = both procedure and link frames

QUIT
Returns to PRIMOS command level

RETURN
Returns to SEG command level

RL treename [addr psegno lsegno]
Replaces a binary module in an established runfile

R/SYMBOL symbolname [segtype] segno size
Defines a symbol in memory and reserves space for it using relative segment assignment (*Default* = data segment)

SAVE [a] [b] [x]
Saves the results of a load on disk

SE segno length
Creates base area for desectorization

SS symbol-name
Saves symbol prevents XPUNGE from deleting symbolname

SPLIT { **segno addr** | **addr** | **addr ssegno saddr lsegno** }
Splits segment into data and procedure portions Formats 2 and 3 allow you to run from R mode, if all loaded information is in segment 4000

STACK size
Sets minimum stack size

SYMBOL [sname] segno addr
Defines a symbol at specific location in a segment

S/ { **IL** | **LOAD** | **LIBRARY** | **FORCELOAD** | **PL** | **RL** } **[filename] addr psegno lsegno**
Loads an object file in specified absolute segments

XP dsymbol dbase
Expunges symbol from symbol table and deletes base information

dsymbol	Action
0	delete only entry points leaving COMMON areas
1	delete all defined symbols - including COMMON area

dbase	Action
0	retain all base information
1	retain only sector zero information
2	delete all base information

End of LOAD subprocessor

MAP { **treename-1** | * } **[treename-2] [map-option]**

Prints a loadmap of **treename-1** or current loadfile (*) at terminal or optional **treename-2**

options

0	Full map *(default)*
1	Extent map only
2	Extent map and base areas
3	Undefined symbols only
4	Full map (identical to 0)
5	System programmer's map
6	Undefined symbols alphabetical order
7	Full map sorted alphabetically
10	Symbols by ascending address
11	Symbols alphabetically

MODIFY [filename]
Invokes MODIFY subprocessor to create a new runfile or modify an existing runfile

MODIFY SUBPROCESSOR COMMANDS

NEW treename
Writes a new copy of SEG runfile to disk

PATCH segno baddr taddr
Adds a patch (loaded between baddr and taddr) to an existing runfile and saves it on disk

RETURN
Returns to SEG command level

SK { **ssize** | **segno addr** | **ssize 0 esegno** | **ssegno addr esegno** }

Specifies stack size (ssize) and location **esegno** specifies an extention stack segment

START segno addr
Changes program execution starting address

WRITE
Writes all segments above 4000 of current runfile to disk

End of MODIFY subprocessor

PARAMS [filename]
Displays the parameters of a SEG runfile

PSD
Invokes VPSD debugging utility

QUIT
Returns to PRIMOS command level and closes all open files

RESTORE [treename]
Restores a SEG runfile to memory for examination with VPSD

RESUME *[treename]*
Restores runfile and begins execution

SAVE [treename]
Synonym for MODIFY

SHARE *[treename]*
Converts portions of SEG runfile corresponding to segments below '4001 into R mode like runfiles

SINGLE [treename] segno
Creates and R mode like runfile for any segment

TIME [treename]
Prints time and date of last runfile modification

VERSION
Displays SEG version number

VLOAD
See LOAD

SPOOLER FOR PRINTER/PLOTTER

SPOOL [treename] [option(s)]
Queues disk files for line printer or plotter. For more information refer to the PRIMOS commands manual

Options:

-CANCEL PRTxxx	Remove from spool queue
-DEFER [time]	Defer printing until specified **time**
-EXPAND	Expand compressed file before printing
-FORM name	Request to operator to load specified paper form
-FTN	Obey FORTRAN output conventions in file
-FUNIT fileunit	Specify From-unit *(default* = 1) range 1-16
-HOME	Do not print file on remote printer (for Primenet)
-LIST option(s)	List all specified spool-queue entries

options	**meaning**
ALL	All files *(default)*
DEFER	Deferred files
FORM type	Forms of specified type (*default* = ' ')
OWN	Files spooled under users login name
PLOT	File in plot queue
PRINT	Files in print queue

-LNUM	Generate line numbers. Incompatible with FTN option
-NOFMT	No format control (header, generation/pagination) User must inset own line-printer control codes
-OPEN filename 2	Open specified file on file unit 2 for read-only
-PLOT [nwords]	Indicates plot file **nwords** is decimal number of words to be read/output per raster scan (*default* = 128, for 200 raster, inch plotter)
-TUNIT fileunit	Specify To unit (1-16)

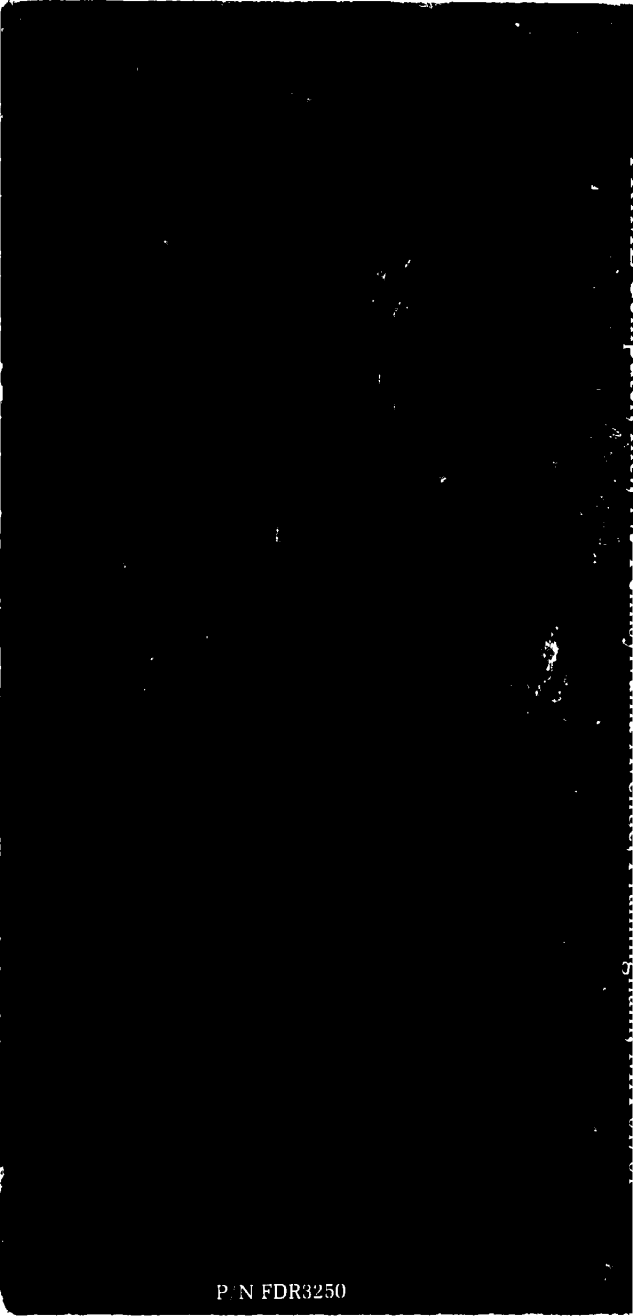
Credits.

Research and copy
Daniel P Dern

Design and production.
William I Agush

Typesetting.
JL Associates

Printing and binding.
CONGRAF



P/N FDR3250