

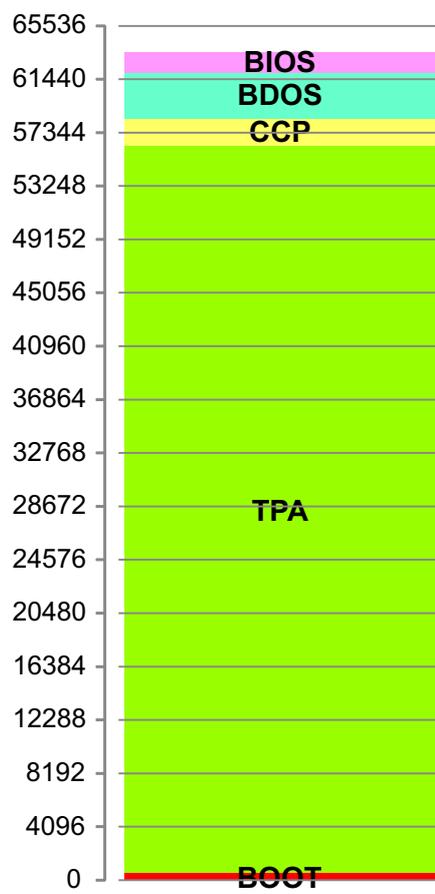
## „62 KB“ CP/M

The bootstrap loader loads and executes first disk sector which contains the IPL.

IPL loads CCP and BIOS and BDOS from tracks 0 and 1, starting with track 0, sector 2.

CCP starts on track 0, sector 2, BIOS in subsequent sectors, BDOS in subsequent sectors,

*(note that track numbers are 0 based, physical sector numbers are 1-based)*



Logical	Physical (via IOBYTE)	BIOS Entry Points	Direction
CON:	TTY:, CRT:, BAT:, UC1:	CONIN, CONOUT, CONST	input, output
RDR:	TTY:, PTR:, UR1:, UR2:	READER	input
PUN:	TTY:, PTP:, UP1:, UP2:	PUNCH	output
LST:	TTY:, CRT:, LPT:, UL1:	LIST, LISTST	output

#### Physical Devices:

TTY: teletype, serial port #1 device (AVR serial)  
 PTR: paper tape reader, serial port #2 (I2C UART)  
 PTP: paper tape punch, serial port #2 (I2C UART)  
 LPT: line printer, parallel port #1 (I2C GPIO)

afn ambiguous file name  
 ufn unique file name

#### CCP Commands

ERA afn erase file(s)

DIR afn list file name(s)

REN ufn1=ufn2 rename file given by ufn2 to file given by ufn1 on the same drive

SAVE n ufn save n pages of memory (256 bytes each) starting from 0x100 to a file given by ufn

TYPE ufn type the content of the file given by ufn to the console device

USER n log user to user area (user group) number n (0...15)

STAT show global information about all disks  
 STAT d: show information about given disk  
 STAT d:afn show information about given file with the number of allocated records, bytes and, extents  
 STAT d:afn \$\$ like STAT d:afn, but with the size in records  
 STAT d:=R/O make disk read-only until next warm or cold start  
 STAT d:afn=\$R/O make file read-only  
 STAT d:afn=\$R/W make file read-write  
 STAT d:afn=\$SYS add system indicator to file  
 STAT d:afn=\$DIR remove system indicator from file  
 STAT VAL: show assignable physical devices for each logical device  
 STAT DEV: show current assignment of physical to logical devices  
 STAT ld1=pd1[,ld2=pd2,...] assign physical device(s) to logical device(s)  
 STAT DSK: show information about all disks  
 STAT USR: show list of user numbers which have files on current disk

#### Some Editing Keys

CTRL-C reboot CP/M  
 CTRL-E end of line, but no CR is sent  
 CTRL-H backspace

CTRL-R	redisplay input line typed so far
CTRL-I	terminale current input, LF
CTRL-M	terminate curent input, CR
CTRL-P	copy subsequent console output to the list device until CTRL-P is pressed again
CTRL-S	stop output temporarily, output rsumes when any key is pressed
CTRL-U	delete line typed so far
CTRL-X	same as CTRL-U
CTRL-Z	ends input, end of file
RUB/DEL	echo last character typed

#### Some PIP Specials

NUL: sends 40 \0 characters

EOF: send CTRL-Z end of file character

INP:

OUT:

PRN: same as LST: except that tabs are expanded to every 8th column, lines are numbered and form feeds inserted every 60 lines