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Introduction

CCPZ is a replacement for the CP/M Console Command Processor (CCP) which is designed to run as part of CP/M on Z80-based microcomputers. In most cases it is upward-compatible with the original CP/M Version 2.2 CCP.

CCPZ, however, provides many extensions to the CP/M CCP. Included in these extensions are the following features:

A LIST function is available which works in the same manner as TYPE but pages its output

The DIR command has been extended to allow the display of the system files or all files

The ERA command now prints out the names of the files it is erasing

The current user number is included as part of the command prompt; if the user is under a number other than 0, the prompt is of the form 'du>' (like 'A2>' or 'B10>'), and, if the user is under 0, the prompt is 'd>'.

The SUBMIT facility has been changed in two basic ways:

- the prompt changes to 'du\$' or 'd\$' when the SUBMIT command is printed
- the \$\$\$.SUB is executed from drive A:, the CCP-GROUP definition of an Indirect Command File now applies, and this definition is that any sequence of commands which may be issued from the console is also a valid sequence of commands for execution from an Indirect Command File; hence, the sequence:

```
DIR  
B:  
DIR  
A:
```

may be issued from either the console or an Indirect Command File, and the results of the execution of this sequence are the same. Basically, this says that Indirect Command Files are upward-compatible to the console input (but not necessarily that the contents of an Indirect Command File may be issued at the console without modification).

A command-search hierarchy is now implemented which is executed roughly as follows:

- the user's command is checked against the CCP-resident commands and executed immediately if a match is found
- failing that, the current user number on the current disk is scanned for the COM file; the COM file is loaded and executed if found
- failing that, a default user number (initially 0 but can be reset with the DFU CCP-resident command) on the current disk is scanned for the COM file; the COM file is loaded and executed if found
- finally, failing that, the default user number on disk A: is scanned for the COM file; the COM file is loaded and executed if found or an error message (COMMAND?, where COMMAND was the user's command name) is printed

The numeric argument for the SAVE command can be specified in hexadecimal so that the user may employ the values presented by tools such as DDT exactly as they are given

A GET command which loads a file at a specified memory address and a JUMP command which "calls" the subroutine at a specified memory address have been added; a GO command which "calls" the subroutine at 100H (subset of the JUMP capability) has also been added

Usage Instructions and Explanation of Commands

The following instructions are written with the assumption that the reader is quite familiar with how to use CP/M 2.2 and its CCP. CCPZ is written as a logical extension of the CP/M 2.2 CCP philosophy and should be addressed as such.

The CCPZ Command Hierarchy Search

The first, and most basic thing, to learn about CCPZ is the order in which it searches for a COM file for execution or a file specified by the GET command. Under the CP/M 2.2 CCP, if the specified COM file command was not found on the current drive in the current user area, the CCP aborted with an error message. CCPZ, however, continues searching from this point a maximum of two more levels. This command hierarchy search was outlined above and is described here in further detail.

1. If the command is of the form 'COMMAND' and NOT 'd:COMMAND', the CCP-resident command list is searched for a match. If the match is found, the CCP-resident command is immediately processed. If the match is not found or the command is of the form 'd:COMMAND', the next step is taken. Note that the 'd:COMMAND' form is good for executing a command COM file which has the same name as a CCP-resident command (such as SAVE or DIR).
2. If the command is of the form 'd:COMMAND', disk drive 'd:' is temporarily logged in for the purpose of the command search. Otherwise, the currently logged-in drive is used.
3. Now the file named COMMAND.COM is searched for. If found, it is loaded into memory starting at 100H and executed. If not, proceed to step 4.

4. Now that the first search for COMMAND.COM has failed, the CCP checks to see if the user is under the current Default User Number. The Default User Number will either be '0' or that set by the user via the DFU command. Default User Number 0 is in effect if DFU has not been issued since the last Warm or Cold Boot, and DFU is in effect if it was issued since the last Warm or Cold Boot. If the user is NOT under the current Default User Number, CCPZ temporarily logs him into it and searches the directory. If COMMAND.COM is found, it is loaded as described above and executed. If not, CCPZ proceeds to the next step.
5. The user is now in the Default User Number, and at this point, CCPZ checks to see if the user is on disk drive A:. If not, it temporarily logs into A: and searches the default user number of A: for COMMAND.COM. If found, it is loaded as described above and executed. If not, CCPZ prints the command name as an error message and returns to command input mode, aborting the SUBMIT file if COMMAND came from it.

In all cases of the search above, if COMMAND.COM is found, after it is loaded into memory, CCPZ resets the user to his original disk drive and user number. Hence, the files referenced by the user by default are obtained from this environment.

To illustrate this command hierarchy search consider the following examples:

Example 1: Default user number is 0

```
B10>           <-- User is on Drive B:, User Number 10
B10>ASM TEST    <-- User wishes to assemble TEST.ASM in Drive B:, User 10
      <-- At this point, CCPZ looks on B:/10 for ASM.COM, fails, looks on B:/0,
          fails, and finally looks on A:/0; it finds ASM.COM here and goes back
          to B:/10 for the file
```

Example 2: Default user is 0 and DFU issued

```
B10>           <-- User is on Drive B:, User Number 10
B10>DFU 5       <-- User Selects User 5 as default
B10>ASM TEST.BBZ <-- As above
      <-- At this point, CCPZ looks on B:/10 for ASM.COM, fails, look on B:/5,
          fails, and finally looks on A:/5; it fails here also and prints ASM?
          as an error message
```

Example 3: Default user is 0

```
B>           <-- User is on Drive B:, User Number 0
B>ASM TEST.BBZ <-- As above
      <-- At this point, CCPZ looks on B:/0 for ASM.COM, fails, looks on A:/0,
          fails, and prints error message
```

Example 4: Default user is 0

```
A10>           <-- User is on Drive A:, User Number 10
A10>ASM TEST    <-- As above, but file on A:
      <-- At this point, CCPZ looks on A:/10 for ASM.COM, fails, looks on A:/0,
          fails, and prints error message
```

Another Example:

For example, if the user is logged into Drive B: in User Area 10, the Default User Number is 0, and the following COM files are present as indicated:-

WM.COM on Drive A: in User 0
MBASIC.COM on Drive A: in User 0 and on Drive B: in User 0
TEST.COM on Drive B: in User 10 and Drive B: in User 0

then the following happens when the following commands are issued from the console (or Indirect Command File):

B10>WM TEST2.TXT
 \ \ \ File to be edited
 \ \ Invoke the WM.COM file (Word Master editor)
 \ User is on Drive B: in User Area 10

Results:

CCPZ searches B: User 10, B: User 0, and A: User 0 for WM.COM; it finds WM.COM in A: User 0, loads it, logs the user back into B: User 10, and executes it.

B10>MBASIC
 \ \ Invoke the MBASIC.COM file (MBASIC Interpreter)
 \ User is on Drive B: in User Area 10

Results:

CCPZ searches B: User 10 and B: User 0 for MBASIC.COM; it finds MBASIC.COM in B: User 0, so it doesn't bother to look on A: User 0. MBASIC.COM is then loaded and executed as described in the previous example.

B10>TEST
 \ \ Invoke the TEST.COM file (TEST program)
 \ User is on Drive B: in User Area 10

Results:

CCPZ searches B: User 10 for TEST.COM; it finds TEST.COM in B: User 0, so it doesn't bother to look further (if it had, it would have found TEST.COM in B: User 0). TEST.COM is then loaded and executed as described above.

B10>TEST2
 \ \ Invoke the TEST2.COM file (TEST2 program)
 \ User is on Drive B: in User Area 10

Results:

CCPZ searches B: User 10, B: User 0, and A: User 0 for TEST2.COM; it doesn't find it, so it issues the error message 'TEST2?', which says it couldn't find TEST2.COM.

The CCPZ-Resident Commands

The following pages describe the CCPZ-Resident Commands. These are commands located within CCPZ itself which are executed from within CCPZ. The phrases <afn> and <ufn> refer to ambiguous file name and unambiguous file name as per the CP/M convention.

Command: DIR

Function: To Display a listing of the names of the files on disk

Forms:

DIR <afn>	<-- Displays \$DIR files
DIR <afn> S	<-- Displays \$SYS files
DIR <afn> A	<-- Displays both \$DIR and \$SYS files

Examples:

DIR *.ASM	<-- All \$DIR .ASM files
DIR *.COM S	<-- All \$SYS .COM files
DIR *.COM A	<-- All .COM files

Notes:

If a file is scanned for and no such name exists on disk, the 'No Files' message will appear. However, if a file is scanned for and the name exists as a \$SYS file and \$DIR files are being scanned for, no file name is displayed but the 'No Files' message does NOT appear. For example, if TEST.COM is a \$SYS file and 'DIR TEST.COM' is issued, no message appears. If 'DIR TEXT.COM' is issued and TEXT.COM does not exist on disk, the 'No Files' message is displayed.

Command: ERA

Function: To Erase the specified \$R/W files from disk

Forms:

ERA <afn>	<-- Erase both \$DIR and \$SYS files
-----------	--------------------------------------

Examples:

ERA *.ASM	<-- Erase all .ASM files
ERA **	<-- Erase all files

Notes:

If a \$R/O file is encountered, a BDOS error message will be displayed and the procedure is stopped. The user is unsure at this time as to which files have been erased and which have not and should check.

Command: LIST

Function: To List the specified file on the CP/M CON: device

Forms:

LIST <ufn>	<-- List the file with the paging default
LIST <ufn> P	<-- List the file with the paging default negated

Examples:

LIST TEST.TXT	<-- List the TEST.TXT file with paging
---------------	--

Notes:

If the file has a \$SYS attribute, it will be found as well as those with \$DIR attributes. When the display pauses during paging, type any char to continue or ^C to abort. ^S also works. Also see TYPE notes below.

Command: TYPE

Function: To List the specified file on the CP/M CON: device

Forms:

TYPE <ufn> <-- Print the file

Example:

TYPE TEST.TXT

Notes:

If the TYPE command (or LIST command) is preceded by a ^P then the file will be output to the CP/M LST: device.

Command: SAVE

Function: To Copy the TPA starting at 100H to disk

Forms:

SAVE <Number of Pages> <ufn> <-- <Number of Pages> in DEC

SAVE <Number of Pages>H <ufn> <-- <Number of Pages> in HEX

SAVE <Number of Sectors> <ufn> S <-- Number of sectors

SAVE <Number of Sectors>H <ufn> S <-- Number of sectors

Examples:

SAVE 15 MYFILE.TXT <-- 15 pages saved

SAVE FH MYFILE.TXT <-- 15 pages saved

SAVE 10H MYFILE.TXT S <-- 16 sectors (8 pages) saved

Notes:

-None-

Command: REN

Function: To Change the name of a disk file

Forms:

REN <ufn new>=<ufn old>

Examples:

REN NEWFILE.TXT=OLDFILE.TXT

Notes:

-None-

Command: USER (or .)

Function: To Change the current user number

Forms:

USER <User Number> <-- <User Number> in DEC

USER <User Number>H <-- <User Number> in HEX

Examples:

USER 15 USER FH .0 .15

USER <-- Same as USER 0

Notes:

-None-

Command: DFU

Function: To Temporarily Change the default user number for the command hierarchy search

Forms:

DFU <User Number> <-- <User Number> in DEC
DFU <User Number>H <-- <User Number> in HEX

Examples:

DFU 15 DFU FH DFU 0
DFU <-- Same as DFU 0

Notes:

See above for explanation.

Command: JUMP

Function: To "call" the subroutine at the specified page address

Forms:

JUMP <Address> <CmdParms> <-- <Address> in HEX

Examples:

JUMP E000 or JUMP E000H <-- Jump to E000H
JUMP <-- Jump to 000H
JUMP 0 <-- Jump to 000H

Notes:

JUMP performs a subroutine "call", so the called routine may return to the CCPZ by either a RET or a Warm Boot.

Command: GO

Function: To "call" the subroutine starting at 100H

Forms:

GO <CmdParms> <-- Execute reentrant at 100H

Examples:

GO *.ASM <-- Assuming XDIR is loaded,
 gives directory of *.ASM

Notes:

This command is identical in function to JUMP 100H.

Command: GET

Function: To load a file from disk into memory starting at the specified page

Forms:

GET <Address> <ufn> <-- <Address> in HEX

Examples:

GET 8000 TEST.80 <-- Load TEST.80 starting at 8000H
GET 100 TEST.80 or GET 100H TEST.80 <-- Load TEST.80
 starting at 100H
GET 0 TEST.80 <-- Load TEST.80 starting at 000H

Notes:

GET searches for the specified file according to the same command hierarchy search employed by the CCPZ command scanner. Hence, if the user is on B:/10 and the file is on A:/0 with the current default user number at 0, GET will search from B:/10 to B:/0 to A:/0 in looking for the file.

CCPZ Error Messages

The following are the error messages issued by CCPZ and their meanings.

Message	Meaning
?	Printed after a command or an argument means that such was invalid
No File	From DIR, this means that DIR did not locate any files. Also from ERA with the same meaning
All?	Issued in response ERA **, asks the user if he really wants to erase all the files. Unlike under the original CP/M 2.2 CCP, single character input is required (Y or y for yes and anything else for no) with NO <CR> to end the line
Full	From SAVE, means that there is not enough space on disk From GET or command load by CCP, means that there is not enough space in memory
File Exists	From REN, means that the new file name specified already exists on disk