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Title:

RC8000/ADP

CPM - CPMSYS - CPMTAK - CCPM - fdformat

User's Guide

Keywords:

RC8000, RC8000C, Attached Device Processor (ADP),
CPM, CCPM, Flexible Disc.

Abstract:

This manual describe some programs intended for maintenance of files residing on CPM or CCPM diskettes in an RC8000 environment.

(32 printed pages)

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1. Introduction.

The programs described in the following are mainly meant to be used for maintenance purposes , and only on RC8000 computers that have acces to the Flexible Disc Device hosted by the RC8000 Attached Device Processor (ADP). The programs are meant to support maintenance of files residing on a CP/M or CCP/M organized diskette.

The programs: cpm , cpmsys , cpmbak and ccpm are designed to be run in a conversational mode. This is why the function is always prompted for; nothing prevents you from specifying call and parameters in a prepared file , though.

When , in the following , the term "CP/M" is used , one is referring to a file system implemented on physical 5 1/4" diskettes:

Physical organization of the diskette:

cyl	side	dens.	sectors	bytes/sector	seq.
0	0	low	26	128	1
0	1	high	26	256	1
1..76	0/1	high	15	512	4

Generally cylinders '0' and '1' are used for system purposes and are operated upon by the program "cpmsys". Cylinders '2' to '76' are used for the CP/M file system and handled by the program "cpm". The program "cpmbak" operates on the entire diskette. Further the program "fdformat" is described and may be used , as suggested by the title , to format diskettes according to the above described format as well as others.

When the term "**CCP/M**" is used , one is referring to a file system implemented on physical 5 1/4" diskettes:

Physical organization of the diskette:

<u>cyl</u>	<u>side</u>	<u>dens.</u>	<u>sectors</u>	<u>bytes/sector</u>	<u>seq.</u>
0..76	0/1	high	8	1024	1

Please refer to: "RC8000/adp Flexible Disc Process Reference Manual , RCSL 99-1 10543" for a comprehensive explanation of any of the above used terms; "seq." is short for "sector sequence".

2. Cpmsys.

The program cpmsys is intended for copying the part of a CP/M diskette that is not included in the file system (cylinder '0' and '1') to or from a disc file on RC8000.

fp call ::= cpmsys <flop>

<flop> ::= Flexible Disc Process name.

After calling "cpmsys" the program prompts for the function parameter. The <RC-file> parameter may be entered in a conversational mode i.e. if carriage return ("NL") is entered "cpmsys" prompts for the required parameter.

function parameters ::=

- read <RC-file>
- ! write <RC-file>
- ! help
- ! end

<RC-file> ::= RC8000 file name.

2.1 Functional description:

Read . If <RC-file> does not exist cpmsys attempts to create the file. Shortclock is inserted in the entry tail. The contents of cylinders '0' and '1' from <flop> are copied to <RC-file>. Upon successful completion the number of bytes transferred is indicated in word 10 of the catalog entry tail of <RC-file> and word 9 is set to '0'.

Write - the contents of <RC-file> are copied to <flop> starting at the first sector of cylinder '0' ending at the last sector of cylinder '1' or until the file <RC-file> has been exhausted , whichever happens first. If word 10 of the catalog entry tail of <RC-file> indicates a bytecount to be transferred (if so word 9 of the catalog entry tail must be '0') the value is used in the above described termination check.

Help writes the following guidance text on current output:

```

read  :   reads system part from CP/M floppy.
write :   write system part to CP/M floppy.
help  :   write this menu.
end    :   exit this program.

```

The above text is also written the first time "cpmsys" encounters a syntactical error with respect to the mentioned parameters.

End writes the message "end cpmsys" and terminates the program.

2.2 Informative messages.

"CP/M system part moved to <RC-file> bytes <bytecount>"

"<RC-file> moved to CP/M system part bytes <bytecount>"

will appear after a succesfull move to/from
the CP/M diskette.

"end cpmsys"

will appear when the end function has been
called.

"select function ?"

prompt for function parameter.

"RC8000 file name ?"

prompt for RC8000 file name.

2.3 Error messages.

***cpmsys fp syntax"

The program was not called with the correct fp syntax ("cpmsys <flop>"). The program is terminated.

***cpmsys syntax"

A syntactical error was encountered. The first time this happens the "help" function is called implicitly. Cpmsys will prompt for the function parameter to resume operation.

***cpmsys <file name> <device status specification>"

A device status of some sort was encountered. File name may refer to <RC-file> or <flop>. The program call is terminated.

***cpmsys connect <RC-file> <error indication>

The attempt to connect <RC-file> did not succeed , the reason is given in <error indication>.

3. Cpmbak.

The program cpmbak is a backup program for Cp/m or equally formatted (see: 1.0 Introduction) diskettes.

fp call ::= cpmbak <flop>

<flop> ::= Flexible Disc Process name.

After calling "cpmbak" the program prompts for the function parameter. The <RC-file> parameter may be entered in a conversational mode i.e. if carriage return ("NL") is entered "cpmbak" prompts for the required parameter.

function parameters ::=

	read <RC-file>
	! write <RC-file>
	! help
	! end

<RC-file> ::= RC8000 file name.

3.1 Functional description:

Read . If <RC-file> does not exist cpmbak attempts to create the file. Shortclock is inserted in the entry tail. The entire contents of flop are copied to <RC-file>. Upon successful completion the number of sectors transferred is indicated in word 10 of the catalog entry tail of <RC-file> and word 9 is set to '0'.

Write - the contents of <RC-file> which is supposed to be the result of a previous call of "cpmbak" using the read function , is copied to <flop>.

Help writes the following guidance text on current output:

```

read  :   reads CP/M floppy.
write :   write to CP/M floppy.
help  :   write this menu.
end   :   exit this program.

```

The above text is also written the first time "cpmbak" encounters a syntactical error with respect to the mentioned parameters.

End writes the message "end cpmbak" and terminates the program.

3.2 Informative messages.

"CP/M diskette moved to <RC-file>"

"<RC-file> moved to diskette"

will appear after a succesfull move to/from
the CP/M diskette.

"end cpmbak"

will appear when the end function has been
called.

"select function ?"

prompt for function parameter.

"RC8000 file name ?"

prompt for RC8000 file name.

3.3 Error messages.

***cpmbak fp syntax"

The program was not called with the correct fp syntax ("cpmbak <flop>"). The program is terminated.

***cpmbak syntax"

A syntactical error was encountered. The first time this happens the "help" function is called implicitly. Cpmbak will prompt for the function parameter to resume operation.

***cpmbak <file name> <device status specification>"

A device status of some sort was encountered. File name may refer to <RC-file> or <flop>. The program call is terminated.

***cpmbak connect <RC-file> <error indication>

The attempt to connect <RC-file> did not succeed , the reason is given in <error indication>.

4. Cpm.

The cpm program is intended for transferring files between a CP/M organized diskette and the RC8000 bs file system. Functions to erase and display files residing on the CP/M diskette are also implemented.

fp call ::= cpm <flop>

<flop> ::= Flexible Disc Process name.

After calling "cpm" the program prompts for the function parameter. The parameters <RC-file> and <CP/M-file> may be entered in a conversational mode i.e. if carriage return ("NL") is entered "cpmbak" prompts for the required parameter.

function parameter ::= rtxt <RC-file> <CP/M-file>
 ! rbin <RC-file> <CP/M-file>
 ! wtxt <RC-file> <CP/M-file>
 ! wbin <RC-file> <CP/M-file>
 ! del <CP/M-file>
 ! dir
 ! help
 ! end

<RC-file> ::= RC8000 file name.

<CP/M-file> ::= CP/M file name. Specified as in CP/M systems i.e. "flip.sss" ; small letters are converted to capital letters.

4.1 Functional description.

Upon call the catalog part of the CP/M diskette is read and verified for consistence. The CP/M catalog is re-written after any function that modifies the catalog ('wtxt' , 'wbin' and 'del'). The function 'dir' will allways read and verify the CP/M catalog.

The **rtxt** function will copy <CP/M-file> from the diskette to <RC-file>. If <RC-file> does not exist an attempt will be made to create it. Before the transfer is started the shortclock field of <RC-file> entry tail is set to "now". All "CR" characters (value=13) are discarded and a "SUB" character (value=26) is replaced by "EM" (value=25) which indicates end of file. After a succesfull transfer the bytecount will be set in word 10 of <RC-file> entry tail.

The **rbin** function will transfer <CP/M-file> from the diskette to <RC-file> with no character transformation. The bytes transferred will be a multiplum of 128 as this is the logical record size of the CP/M file system. If <RC-file> does not exist an attempt will be made to create it. Before the transfer is started the shortclock field of <RC-file> entry tail is set to "now". After a succesfull transfer the bytecount will be set in word 10 of <RC-file> entry tail.

The **wtxt** function will copy <RC-file> to <CP/M-file>. If <CP/M-file> exist in the catalog is it deleted (imlicates writing of the CP/M-catalog to the diskette). The <CP/M-file> is inserted in the catalog. All "NL" characters (value=10) are replaced by the sequence "CR","NL" (values: '13','10'). An "EM" character indicates end of file and a "SUB" character (value=26) is transferred. After a succesfull transfer the CP/M catalog is transferred to the diskette.

The **wbin** function will copy <RC-file> to <CP/M-file>. If <CP/M-file> exist in the catalog is it deleted (imlicates writing of

the CP/M-catalog to the diskette). The <CP/M-file> is inserted in the catalog. No character conversion takes place. If word 10 of the entry tail of <RC-file> indicates a bytecount value (word 9 must be zero) the transfer is terminated when the bytecount is exhausted or when <RC-file> is exhausted , whichever happens first. After a succesfull transfer the CP/M catalog is transferred to the diskette.

The **del** function will delete <CP/M-file> from the CP/M catalog and write the catalog to the diskette.

The **dir** function will read the CP/M catalog from the diskette and display the contents in manner similiar to the "dir" command of CP/M.

The **help** function will display the following text:

```
rtxt  :   read textfile from CP/M diskette
rbin  :   read binary file from CP/M diskette
wtxt  :   write textfile to CP/M diskette
wbin  :   write binary file to CP/M diskette
del   :   delete file on CP/M diskette
dir   :   write directory on CP/M diskette
help  :   write this menu
end   :   exit this program
```

The help function is implicitly called the first time "cpm" encounters a syntactical error.

The **end** function terminates the program.

4.2 Informative messages.

"<CP/M-file> moved to <RC-file> bytes <bytecount>"

"<RC-file> moved to <CP/M-file> bytes <bytecount>"

will appear after a succesfull move to/from
the CP/M diskette.

"select function ?"

prompt for function.

"RC8000 file name ?"

prompt for RC8000 file name.

"CP/M file name ?"

prompt for CP/M file name.

"<CP/M-file> deleted"

will appear after a delete operation.

"end cpm"

will appear when the end function has been
called.

4.3 Error messages.

****cpm fp syntax"

The program was not called with the correct fp syntax ("cpm <flop>"). The program is terminated.

****cpm syntax"

A syntactical error was encountered. The first time this happens the "help" function is called implicitly. Cpm will prompt for the function parameter to resume operation.

****cpm <file name> <device status specification>"

A device status of some sort was encountered. File name may refer to <RC-file> or <flop>. The program call is terminated.

****cpm connect <RC-file> <error indication>

The attempt to connect <RC-file> did not succeed , the reason is given in <error indication>.

****cpm catalog full"

An attempt to create or extend <CP/M-file> went wrong because no free entries could be found in the catalog.

"***cpm disc full"

An attempt to extend <CP/M-file> went wrong
because no free data blocks could be found.

"***cpm directory inconsistence blockno <block no>"

The verification of the CP/M catalog went
wrong. Either the refered blockno was
rubbish , or the block is refered to by
more than one file in the catalog. The
diskette may only be used for read access.
You may try to re-read the directory using
the dir function.

"***cpm directory inconsistent - only rtxt, rbin, dir and end
allowed"

Attempt to use wtxt, wbin or del function
after a directory inconsistence.

5. Ccpm.

The ccpm program is intended for transferring files between a CCP/M organized diskette and the RC8000 bs file system. Functions to erase and display files residing on the CCP/M diskette are also implemented.

fp call ::= ccpm <flop>

<flop> ::= Flexible Disc Process name.

After calling "ccpm" the program prompts for the function parameter. The parameters <RC-file> and <CCP/M-file> may be entered in a conversational mode i.e. if carriage return ("NL") is entered "ccpmbak" prompts for the required parameter.

```
function parameter ::=  rtxt <RC-file> <CCP/M-file>
                        ! rbin <RC-file> <CCP/M-file>
                        ! wtxt <RC-file> <CCP/M-file>
                        ! wbin <RC-file> <CCP/M-file>
                        ! del <CCP/M-file>
                        ! dir
                        ! user
                        ! help
                        ! end
```

<RC-file> ::= RC8000 file name.

<CCP/M-file> ::= CCP/M file name. Specified as in CCP/M systems i.e. "flip.sss" ; small letters are converted to capital letters.

5.1 Functional description.

Upon call the catalog part of the CCP/M diskette is read and verified for consistence. The CCP/M catalog is re-written after any function that modifies the catalog ('wtxt' , 'wbin' and 'del'). The function 'dir' will allways read and verify the CCP/M catalog.

The **rtxt** function will copy <CCP/M-file> with the current userid from the diskette to <RC-file>. If <RC-file> does not exist an attempt will be made to create it. Before the transfer is started the shortclock field of <RC-file> entry tail is set to "now". All "CR" characters (value=13) are discarded and a "SUB" character (value=26) is replaced by "EM" (value=25) which indicates end of file. After a succesfull transfer the bytecount will be set in word 10 of <RC-file> entry tail.

The **rbin** function will transfer <CCP/M-file> with the current userid from the diskette to <RC-file> with no character transformation. The bytes transferred will be a multiplum of 128 as this is the logical record size of the CCP/M file system. If <RC-file> does not exist an attempt will be made to create it. Before the transfer is started the shortclock field of <RC-file> entry tail is set to "now". After a succesfull transfer the bytecount will be set in word 10 of <RC-file> entry tail.

The **wtxt** function will copy <RC-file> to <CCP/M-file> with the current userid. If <CCP/M-file> exist in the catalog is it deleted (imlicates writing of the CCP/M-catalog to the diskette). The <CCP/M-file> is inserted in the catalog. All "NL" characters (value=10) are replaced by the sequence "CR","NL" (values: '13','10'). An "EM" character indicates end of file and a "SUB" character (value=26) is transferred. After a succesfull transfer the CCP/M catalog is transferred to the diskette.

The **wbin** function will copy <RC-file> to <CCP/M-file> with the current userid. If <CCP/M-file> exist in the catalog is it deleted (implicates writing of the CCP/M-catalog to the diskette). The <CCP/M-file> is inserted in the catalog. No character conversion takes place. If word 10 of the entry tail of <RC-file> indicates a bytecount value (word 9 must be zero) the transfer is terminated when the bytecount is exhausted or when <RC-file> is exhausted , whichever happens first. After a succesfull transfer the CCP/M catalog is transferred to the diskette.

The **del** function will delete <CCP/M-file> with the current userid from the CCP/M catalog and write the catalog to the diskette.

The **dir** function will read the CCP/M catalog from the diskette and display the contents of entries with the current userid in a manner similiar to the "dir" command of CCP/M.

The **user** function sets current userid to the value specified (0..15). The value of current userid is significant when accesing files in the CCP/M directory , as only files with a the current userid value are considered in any , including "dir" , operation. The default value of user id is zero.

The **help** function will display the following text:

```
rtxt : read textfile from CCP/M diskette
rbin : read binary file from CCP/M diskette
wtxt : write textfile to CCP/M diskette
wbin : write binary file to CCP/M diskette
del   : delete file on CCP/M diskette
dir   : write directory on CCP/M diskette
user  : set current userid (0..15)
help  : write this menu
end    : exit this program
user no is : <userid>
```

The help function is implicitly called the first time "ccpm" encounters a syntactical error.

The **end** function terminates the program.

5.2 Informative messages.

"<CCP/M-file> moved to <RC-file> bytes <bytecount>"

"<RC-file> moved to <CCP/M-file> bytes <bytecount>"

will appear after a succesfull move to/from
the CCP/M diskette.

"select function ?"

prompt for function.

"RC8000 file name ?"

prompt for RC8000 file name.

"CCP/M file name ?"

prompt for CCP/M file name.

"<CCP/M-file> deleted"

will appear after a delete operation.

"end ccpm"

will appear when the end function has been
called.

5.3 Error messages.

***ccpm fp syntax"

The program was not called with the correct fp syntax ("ccpm <flop>"). The program is terminated.

***ccpm syntax"

A syntactical error was encountered. The first time this happens the "help" function is called implicitly. Cpm will prompt for the function parameter to resume operation.

***ccpm <file name> <device status specification>"

A device status of some sort was encountered. File name may refer to <RC-file> or <flop>. The program call is terminated.

***ccpm connect <RC-file> <error indication>

The attempt to connect <RC-file> did not succeed , the reason is given in <error indication>.

***ccpm catalog full"

An attempt to create or extend <CCP/M-file> went wrong because no free entries could be found in the catalog.

***ccpm disc full"

An attempt to extend <CCP/M-file> went wrong because no free data blocks could be found.

***ccpm directory inconsistence blockno <block no>"

The verification of the CCP/M catalog went wrong. Either the refered blockno was rubbish , or the block is refered to by more than one file in the catalog. The diskette may only be used for read access. You may try to re-read the directory using the dir function.

***ccpm directory inconsistent - only rtxt, rbin, dir and end
allowed"

Attempt to use wtxt, wbin or del function after a directory inconsistence.

6. Fdformat.

The fdformat program is intended for formatting diskettes. Various "formats" may be specified. The default, though, is the format known to "cpmsys" and "cpm" (see: 1. Introduction).

fp call ::= fdformat (help) ! (<flop> <mode specification>)

<mode specification> ::= dside.(yes!no)
 ! ddens.(yes!no)
 ! trackf.(0!1!2!3)
 ! std. (yes!no)
 ! check.(yes!no)

<flop> ::= Flexible Disc Process.

6.1 Functional description.

The **help** parameter will display the following text:

fdformat call syntax::=

fdformat <floppy name> (floppy attributes) 0/*

floppy attributes::=

dside.(yes/no) ; double/single side.
 ddens.(yes/no) ; double/single density.
 std.(yes/no) ; std.no means that cylinder 0
 ; is formatted as the data part.
 check.(yes/no) ; check/no check- read.
 trackf.(0..3) ; 0=128,1=256,2=512,3=1024 bytes/sec.

default::= dside.yes ddens.yes std.yes trackf.2 check.no

In the following the parameters are listed together with their (default in **bold** letters) values:

dside = double sided diskette - **yes**/no.

ddens = diskette in double density - **yes**/no.

trackf = bytes/sector (0=128,1=256,2=**512**,3=1024).

std = standard format pattern - **yes**/no.

std.yes , in combination with "ddens" and "dside" parameters , gives the following format patterns for cylinder '0':

side '0' allways:	128 bytes/sector single density.
side '1' (ddens.no)	128 bytes/sector single density.
side '1' (ddens.yes)	256 bytes/sector double density.

std.no means that all tracks are equally formatted.

check = read check to be performed - yes/no.

To format diskettes to be used by the "**cpm**" , "cpmsys" and "cpmbak" programs , use the default values of "fdformat".

To format diskettes to be used by the "**ccpm**" program use the folowing combination of parameters: "std.no" and "trackf.3".

To format diskettes to be used by the "**fdinit**" , "fdload" and "fdsave" programs , the value of the "std" parameter must be true. Other parameters must follow the specified format ("fdinit").

Please observe that certain combinations of 'ddens' and 'trackf' are incompatible: "trackf.3 ddens.no" and "trackf.0 ddens.yes".

6.2 Informative messages.

"<flop> formatted ok"

will appear after a succesfull fdformat call.

6.3 Error messages.

***fdformat syntax"

will appear after a syntactical error and will be followed by the text written by the help command.

***fdformat unknown param"

the parameter specified is unknown.

***fdformat <flop> <device status> (cylinder < cyl.no>)"

A device status of some sort was encountered. Depending on the error a cylinder index may be specified.

***fdformat incompatible values of trackformat and density"

one of the combinations "trackf.0 ddens.yes" and "trackf.3 ddens.no" were attempted. Please refer to Functional description (ch. 6.1).

Appendix A.

References:

1. RCSL No: 99-1 10543
RC8000/ADP
Flexible Disc Process
Reference Manual
2. RCSL No: 99-1 10628
RC8000 Attached Device Processor
User's Guide for RC8420
3. RCSL No: 31-D596
Utility Programs for Flexible Disc Handling



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