Master Copy

MCP.EXE

The Better XCOPY

Version 1.20

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INTRODUCTION

MCP (Master Copy) is kind of like XCOPY, but it normally only overwrites older files and it can move files. It was written primarily for use in keeping directory structures shared by different people (or by the same person on different computers) in synchronization with each other. It is also a quick way to implement disk mirroring style backups.

If you have a PostScript printer, you can print this document by copying MCP.PS to it. If not, use MCP.TXT.

RUNNING MCP

MCP is a DOS command line utility with a syntax that is an extension of the XCOPY that comes with DOS:

MCP *source [destination] [switches]*

Switches can be:
/A = copy only files with **A**rchive bit set (leave source archive bit set).
/B = ask permission **B**efore overwriting each existing destination file.
/C = **C**opy & overwrite all files except those with identical date, time & size.
/D = copy files with **D**ate the same or later than Date given **/D:***mm-dd-yyyy* **/D:***dd.mm.yyyy* **/D***mm/dd/yy* **or /D***dd.mm.yy*.
/F = **F**orce overwrite of system, hidden, and read only files.
/H = Copy system and **H**idden files as well.
/I = **I**nhibit actual copy. Tests what MCP would do.
/J = **J**ust copy files that already exist in destination directory.
/L = **L**ist lots of loud verbose output (for troubleshooting).
/M = copy only files with archive bit set (**M**odify source archive bit).
/N = **N**o overwrite.
/O = **O**verwrite destination files.
/P = **P**rompt before copy.
/Q = **Q**uiet (report only errors).
/R = **R**ename or move files.

/S = **/E** = recurse through **S**ubdirectories (& create **E**mpty ones).
/T = Stop **T**wirling "propeller" (useful for redirection).
/U = **U**pdate (overwrite only older files -- the default mode).
/V = This switch doesn't cause an error message, but it doesn't do anything. It is included so that batch files written for XCOPY can use MCP with the same switches. (/V turns verify on in XCOPY). To turn on verify, use the DOS command **VERIFY ON** before using MCP.
/W = **W**ait for keystroke before starting copy
/? = Show help screen.

On the command line, **source** is a file name or directory name, which may optionally include drive and path. It may also include DOS wild cards ? and *. If the source is a drive or directory, the file specification *.* is assumed.

The **destination** is a file name or directory. If no destination is specified, the current directory is assumed. If there are wild card characters in the destination file name, they will be filled in with the corresponding characters in the source file name. If it is not obvious if the destination is a file or directory, you may be asked which you meant. To ensure that the destination is interpreted as a directory instead of a file, end the directory name in "\" or ensure that the destination directory already exists. **If the destination directory does not exist, it will be created.**

Switches all start with "/" (not "-", since - is a valid file name character in DOS), and may be before, between, and/or after the source and destination. Switches may be combined. In case of a conflict between switches, the one that is farthest to the right on the command line takes precedence. For brevity, command line switches may be run together after a single "/". Switches are not case sensitive.

/A (**A**rchive) and **/M** (**M**odify archive) both specify that only files that have the DOS directory archive bit set (indicating that they have been changed since they were last backed up) should be copied. /A does not alter the archive bit on the source file. /M clears the archive bit of the source file to indicate that it has been backed up. The archive bit of the destination file is always set when using MCP. These options can be used for backing up data when the largest file you want to back up will fit on your destination media. If the largest file you want to back up is bigger, a regular backup program is more appropriate than MCP.

However, for some small but important files, backing up with a copy command like MCP makes more sense, because the file itself is not altered, making restoration possible even without the original backup program.

For example,

```
MCP /A C:\WORK\DOC\*.* A:
```

copies all files in C:\WORK\DOC to the floppy disk in A: that have not been marked as backed up.

/B (ask **B**efore overwrite) causes MCP to stop and ask if you want to copy each file for which the destination file already exists.

/C (**C**opy & overwrite all but identical date, time & size) will cause all destination files with the same name but different (older or newer) date & time or different size (smaller or larger) to be overwritten.

/D (**D**ate) is always followed by a date, with no space in between the /D and the date. The colon following the D is optional. The order of the date is month day year if you use "/" or "-" to separate the numbers in the date. If you use "." to separate the numbers in the date, the order is day month year. The year can be specified with either the last two digits or all four digits. If you specify the last two digits, the year is assumed to be in the range 1980 through 2079. The month must be expressed as a number between 1 and 12. Leading zeros on month and day are optional.

For example, the following commands all copy everything with a file date on or after December 25, 1991 from the current directory to D:\SAVE\.

```
MCP /D12/25/91 *.* D:\SAVE\
MCP /D:12/25/91 *.* D:\SAVE\
MCP *.* D:\SAVE\ /D12/25/1991
MCP /D12-25-91 *.* D:\SAVE\
MCP *.* /D12-25-1991 D:\SAVE\
MCP /D25.12.91 *.* D:\SAVE\
MCP /D:25.12.1991 *.* D:\SAVE\
```

/F **F**orces overwriting of Hidden, System, and Read Only files. WARNING: use this option with caution. It is very useful for some situations, but could have some undesired side effects if you overwrite some files of this type.

/H (**H**idden & system) allows files with the system and hidden attribute to be copied. Note that the XCOPY that comes with MS-DOS 5.0 and MS-DOS 6.0 will not copy hidden files, but earlier versions will. The system and hidden attributes will be applied to the destination files when they are present in the source files. Note: copying the two hidden system files from a boot drive to another drive will not necessarily make the destination bootable. Use the DOS **SYS** command for that purpose.

/J (**J**ust existing) causes only those files that already exist in the destination directory to be copied over (and then only if they are older, the /o switch is used, or the /b switch is used and you answer Y for yes).

/L (**L**oud) causes extra screen output to be generated, including the names of all files that are skipped.

/N (**N**o overwrite) prevents any destination files from being overwritten, regardless of the file dates and attributes involved. The default is to allow overwrites of destination files with an earlier file date. This is the opposite of /O (Overwrite always).

/O (**O**verwrite always) causes destination files to be overwritten regardless of its file date. The default is to allow overwrites only of destination files with an earlier file date. This is the opposite of /N (No overwrite).

/P (**P**rompt) asks you if you want to copy each file with a Y/n prompt. "N" or "n" will cause the file to be skipped. Most other keys, including "Y" and "y" will cause the file to be copied. The "Enter" key need not be pressed after the "y" or "n".

For example,

```
MCP /P *.* A:
```

lets you pick exactly which files you want to copy to drive A:, one by one.

/Q (**Q**uiet) suppresses all screen output except for error messages and the help screen in response to a command line error or /?.

For example,

```
MCP /Q /M C:\WORK\*.* F:\MASTER\FRED\
```

in a network login script would be a subtle way to back up some critical directory on a user's hard disk to a network directory, where it could be moved to tape or something.

/R (**R**ename or move) causes files to be renamed if the source and destination are on the same disk, or copied then the original deleted (after a successful copy) if the source and destination are on different disks. If the copy fails, the original is left intact. When used with the /S option, emptied subdirectories are not removed.

For example,

```
MCP C:\STUFF\*.DOC D:\OLDJUNK\ /R
```

moves every .DOC file in C:\STUFF\ to D:\OLDJUNK\.

/S or **/E** (**S**ubdirectory copy) copies files and subdirectories from the destination to the source, making subdirectories as needed. Empty

subdirectories are created as well. Using /S and/or /E on the command line of MCP is the same as using both /S and /E on the command line of XCOPY.

/U (**U**pdate) overrides a previous /o, /b, or /n on the command line and returns MCP to its default handling of existing destination files (overwrite them only if they are older).

/V does nothing. To turn verify on, use the command **VERIFY ON** before running MCP.

/W (**W**ait) causes the prompt "Press a key when ready to start copy..." to be displayed, and the program to pause until you hit a key before starting the copy process. This is for use with floppy only systems, where the MCP command may reside on a disk other than the one you want to do the copy on.

/? (Help) shows the help screen.

MOVING FILES

Since moving files is a fairly common operation, you may want to define a doskey alias to move files (DOSKEY MV=MCP /R $*) or use the MV.BAT batch file. If you are using a version of DOS prior to 3.3, delete the @ from the beginning of the MCP command. This command lets you move files safely. Note that the original file will not be deleted if it is marked as "system" or "read only." Note also that when moving entire directory structures, source subdirectories are not deleted. To delete entire directory structures or to delete system or read only files, you can use the DELETE command (also written by Mike Johnson).

ZERO LENGTH FILES

Unlike XCOPY, MCP copies zero length files and, if copying subdirectories, always copies empty subdirectories. It also duplicates the file attributes (system, hidden, read only) of the source file in the destination file, except for the archive bit, which is always set in the destination file.

PROMPTS

There are several prompts possible in MCP. At each of the prompts, the default answer (if applicable) is indicated with a capital letter. Answers to the prompts are not case sensitive, and are all only one keystroke. Pressing "Enter" after a letter is not required. The "Enter" key is ignored at all prompts except for the "Press a key when ready to start copy . . ." prompt caused by the /W option. In addition to the listed responses at any prompt, "Esc", "Ctrl-C", and "Ctrl-Break" will terminate MCP. "Ctrl-Break" will also terminate a copy in progress, even if the program is not looking for an answer to a question.

filename Y/n?

This is the format used in asking if you want to copy a particular file when you put /P on the command line. "N" means that you do not want to copy the file, and most other keys (including "Y") mean that you do want to copy the file.

Only 512 bytes available on A:. *filename* requires 1234 bytes. Retry with new disk, Try new disk later, Skip, or Cancel (r/T/s/c)?

If your destination is on a fixed disk, press "S" to skip just this file or "C" to cancel and exit MCP. If your destination is a removable disk, you may skip the current file or cancel as with a fixed disk destination. You may also wish to change disks and then press "R" to retry copying the current file, or press "T" to try copying the next file (which may fit) and add the current file to a list to be tried again later (on a different floppy disk). Most other keys act the same as "T".

No more room on drive A:
Retry with new disk, Skip or Cancel (R/s/c)?

Your destination disk has no more room on it. Change the disk and press "R" to retry, or "C" to exit the MCP program.

Error writing to filename.
Retry, Skip, or Cancel (r/S/c)?

MCP encountered one of many possible errors (insufficient network rights, bad disk sectors, hardware failures, disk full even though it had enough room to start the copy, etc.). "R" restarts the copy from the beginning of the file. "S" skips this file and tries the next. "C" cancels the copy and exits MCP.

```
Does destination specify a File name
or Directory on the target (f=File, D=Directory)?
```

The destination directory is not an existing directory and the name does not end with "\", and there may be more than one source file (indicated by wild cards in the name or a /S or /E switch). Press "F" if you intended that the destination is a file name, or "D" if you intended that the destination is a directory. If you decide that the command line was in error, press "Esc".

```
Press a key when ready to start copy . . .
```

You used the /W option. Press "Esc", "Ctrl-C", or "Ctrl-Break" if you decide you really didn't want to copy anything after all, or press any other key to start the copy process.

ERROR MESSAGES

```
No matching files found.
```

No files matching the file specification you provided were found to copy. Check the spelling of your source file(s), the existence of those files, and the network rights pertaining to those files.

```
Break!
```

You pressed Ctrl-Break, Ctrl-C, or Esc to halt the program.

```
Unable to create filename
```

The destination file name may have been on an invalid drive, have contained invalid characters, been in the root directory with all directory entries filled, been on a network directory with insufficient rights, been too long for DOS or the network operating system to create, or some other similar problem.

```
Files may not be copied onto themselves.
```

The first step in copying a file is to create a new file of zero length with name of the destination file. If the source and destination files are the same, this action would destroy the source file. It is also possible to get this error message when the source or destination drive is invalid.

```
Destination path is too long.
```

The most likely cause of this error message is starting a recursive copy command (like MCP /S C:*.* C:\SUBDIR\). This causes everything in the root directory of drive C: to be copied to C:\SUBDIR\ and C:\SUBDIR\SUBDIR\ and C:\SUBDIR\SUBDIR\SUBDIR\ and so on. Older versions of XCOPY allow this, the latest one does not. MCP allows the recursion to go on until the resulting path name exceeds DOS limits. This is a great way to fill up a hard disk in a hurry.

`Not enough memory to run MCP.EXE`

Try reducing the number of TSR programs, or if you are shelled out to DOS from another program, exit that other program.

`Access denied.`

DOS (or some network software) returned an error code indicating that the operation was not allowed. Some things that can do this is trying to create a directory when a file with the same name already exists or trying to write to a network directory where you have insufficient rights.

`Bad file number.`

Something strange is going on that confused DOS and/or MCP, probably some error associated with a multitasking environment.

`Attempt to copy more than one file to file.`

MCP does not concatenate files (use DOS COPY to do that), so copying more than one file to a single file means that all that ends up in the destination file is the last file copied. If this were done with the /R option, all but the last file would be destroyed. Therefore, only one file is allowed to be copied to a file. The trap that catches this is not foolproof (although it is reasonably difficult to fool), so you should still take care on the command line to avoid specifying such an action.

`Unable to open filename`

The specified file name may not be valid, or may be on a network directory where you have insufficient rights.

`Ran out of memory keeping track of files to retry.`

Each file name source and destination that is "remembered" to try later when you run out of room copying to a diskette takes up some conventional RAM. After several thousand of these (more or less, depending on how much RAM you have available), you may run out.

ERRORLEVEL

When running MCP in a batch file, you can test for the following values of ERRORLEVEL after MCP runs:
0 = Normal completion.
1 = No matching files found to copy.
2 = "Ctrl-Break", "Ctrl-C", or "Esc" pressed, or copy canceled with "C".
3 = Unable to write to destination file.
4 = Attempted to copy file onto itself.
5 = Destination path is too long.
6 = Not enough memory to run.
7 = Access denied.
8 = Bad file number error returned by DOS.
9 = Attempt to copy more than one file to one destination file.
11 = Command line error or help requested.
12 = Unable to open input file.
13 = Ran out of memory keeping track of files to retry.

NAME TRIVIA

MCP comes from M as in Master or Mike's and CP as in the name for the UNIX copy command. Call it whatever you like, by renaming it, creating an alias with DOSKEY or a similar utility, or by creating a batch file.

LIMITATIONS

MCP does not do concatenation. It does not get the date format from the DOS country table. It does not do Japanese dates in year-month-day format. All of its error messages are in English. It does not do a full screen interface. It doesn't skip zero length files just because they are zero length. It doesn't skip creation of empty subdirectories when /S is used. /V does absolutely nothing (use the DOS command VERIFY ON before MCP for the same effect). It doesn't remove any subdirectories, nor does it preserve subdirectory attributes (like the hidden bit) when copying subdirectories. It does not copy to devices like LPT1 or PRN. It cannot copy from defective disk media. It doesn't predict winning lottery numbers. On the other hand, it does do some things that I always thought that XCOPY should have done.

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HOW TO CONTACT THE AUTHOR

1. Leave a message at the Rainbow Missions BBS, 303-938-9654. The latest version of this software will be posted there, as well.

2. Write to Mike Johnson, PO Box 1151, Longmont CO 80502-1151, USA.

3. Send electronic mail to CompuServe ID 71331,2332 or Internet address mpj@csn.org.

4. Call Mike Johnson at home at 303-772-1773.

VERSION HISTORY

1.00 5 Sep 92 Initial release.

1.01 7 Sep 92 Modified to allow recursive copies of hidden subdirectories.

1.02 9 Sep 92 Corrected handling of . and .. as source or destination directory name.

1.03 20 Sep 92 Added /C switch to specify overwrites of all but identical files.

1.04 22 Sep 92 Added /B switch to allow individual prompts for overwrites.

1.05 5 Oct 92 Improved safety feature that prevents copying or renaming more than one file to the same destination file. Added /J switch to allow selective copying only of files that already exist in the destination directory.

1.06 11 Dec 92 Added /T switch for better results with redirected output.

1.07 14 Dec 92 Corrected command line scanning error that sometimes caused /D switch to be falsely rejected.

1.08 6 Feb 93 Increased depth of recursion possible for better network compatibility.

1.09 31 May 93 Corrected action with /P and /R when moving to a destination on the same volume.

1.10 3 Jul 93 Added warning message and ERRORLEVEL 1 exit if no source files match the specification on the command line.

1.20 2 Oct 93 Added /I switch.

INVOICE

Remit to:
Mike Johnson
PO Box 1151
Longmont CO 80502-1151

Ship to:
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_____
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I prefer 5.25"____ 3.5"____ disks.

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