

C:\>RoboCopy /?

ROBOCOPY :: Robust File Copy for Windows

Started : Wed Feb 11 12:22:53 2015

Usage :: ROBOCOPY source destination [file [file]...] [options]

source :: Source Directory (drive:\path or \\server\share\path).
destination :: Destination Dir (drive:\path or \\server\share\path).
file :: File(s) to copy (names/wildcards: default is "*.*").

::
:: Copy options :
::
 /S :: copy Subdirectories, but not empty ones.
 /E :: copy subdirectories, including Empty ones.
 /LEV:n :: only copy the top n LEVels of the source directory tree.

 /Z :: copy files in restartable mode.
 /B :: copy files in Backup mode.
 /ZB :: use restartable mode; if access denied use Backup mode.
 /EFSRAW :: copy all encrypted files in EFS RAW mode.

/COPY:copyflag[s] :: what to COPY for files (default is /COPY:DAT).
 (copyflags : D=Data, A=Attributes, T=Timestamps).
 (S=Security=NTFS ACLs, O=Owner info, U=aUditing info).

 /DCOPY:T :: COPY Directory Timestamps.

 /SEC :: copy files with SECurity (equivalent to /COPY:DATS).
 /COPYALL :: COPY ALL file info (equivalent to /COPY:DATSOU).
 /NOCOPY :: COPY NO file info (useful with /PURGE).

 /SECFIX :: FIX file SECurity on all files, even skipped files.
 /TIMFIX :: FIX file TIMES on all files, even skipped files.

 /PURGE :: delete dest files/dirs that no longer exist in source.
 /MIR :: MIRror a directory tree (equivalent to /E plus /PURGE).

 /MOV :: MOVE files (delete from source after copying).
 /MOVE :: MOVE files AND dirs (delete from source after copying).

/A+:[RASHCNET] :: add the given Attributes to copied files.
/A-:[RASHCNET] :: remove the given Attributes from copied files.

/CREATE :: CREATE directory tree and zero-length files only.
 /FAT :: create destination files using 8.3 FAT file names only.
 /256 :: turn off very long path (> 256 characters) support.

 /MON:n :: MONitor source; run again when more than n changes seen.
 /MOT:m :: MONitor source; run again in m minutes Time, if changed.

/RH:hhmm-hhmm :: Run Hours - times when new copies may be started.
 /PF :: check run hours on a Per File (not per pass) basis.

 /IPG:n :: Inter-Packet Gap (ms), to free bandwidth on slow lines.

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    /SI :: copy symbolic links versus the target.

/MT[:n] :: Do multi-threaded copies with n threads (default 8).
          n must be at least 1 and not greater than 128.
          This option is incompatible with the /IPG and /EFSRAW options.
          Redirect output using /LOG option for better performance.

::
:: File Selection Options :
::
    /A :: copy only files with the Archive attribute set.
    /M :: copy only files with the Archive attribute and reset it.
    /IA:[RASHCNETO] :: Include only files with any of the given Attributes set.
    /XA:[RASHCNETO] :: eXclude files with any of the given Attributes set.

/XF file [file]... :: eXclude Files matching given names/paths/wildcards.
/XD dirs [dirs]... :: eXclude Directories matching given names/paths.

    /XC :: eXclude Changed files.
    /XN :: eXclude Newer files.
    /XO :: eXclude Older files.
    /XX :: eXclude eXtra files and directories.
    /XL :: eXclude Lonely files and directories.
    /IS :: Include Same files.
    /IT :: Include Tweaked files.

    /MAX:n :: MAXimum file size - exclude files bigger than n bytes.
    /MIN:n :: MINimum file size - exclude files smaller than n bytes.

/MAXAGE:n :: MAXimum file AGE - exclude files older than n days/date.
/MINAGE:n :: MINimum file AGE - exclude files newer than n days/date.
/MAXLAD:n :: MAXimum Last Access Date - exclude files unused since n.
/MINLAD:n :: MINimum Last Access Date - exclude files used since n.
            (If n < 1900 then n = n days, else n = YYYYMMDD date).

    /XJ :: eXclude Junction points. (normally included by default).

    /FFT :: assume FAT File Times (2-second granularity).
    /DST :: compensate for one-hour DST time differences.

    /XJD :: eXclude Junction points for Directories.
    /XJF :: eXclude Junctionpoints for Files.

::
:: Retry Options :
::
    /R:n :: number of Retries on failed copies: default 1 million.
    /W:n :: Wait time between retries: default is 30 seconds.

    /REG :: Save /R:n and /W:n in the Registry as default settings.

    /TBD :: wait for sharenames To Be Defined (retry error 67).

::
:: Logging Options :
::
    /L :: List only - don't copy, timestamp or delete any files.
    /X :: report all eXtra files, not just those selected.
    /V :: produce Verbose output, showing skipped files.
    /TS :: include source file Time Stamps in the output.

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  /FP :: include Full Pathname of files in the output.
/BYTES :: Print sizes as bytes.

  /NS :: No Size - don't log file sizes.
  /NC :: No Class - don't log file classes.
  /NFL :: No File List - don't log file names.
  /NDL :: No Directory List - don't log directory names.

  /NP :: No Progress - don't display percentage copied.
  /ETA :: show Estimated Time of Arrival of copied files.

  /LOG:file :: output status to LOG file (overwrite existing log).
  /LOG+:file :: output status to LOG file (append to existing log).

  /UNILog:file :: output status to LOG file as UNICODE (overwrite existing log).
  /UNILog+:file :: output status to LOG file as UNICODE (append to existing log).

  /TEE :: output to console window, as well as the log file.

  /NJH :: No Job Header.
  /NJS :: No Job Summary.

  /UNICODE :: output status as UNICODE.

::
:: Job Options :
::
  /JOB:jobname :: take parameters from the named JOB file.
  /SAVE:jobname :: SAVE parameters to the named job file
    /QUIT :: QUIT after processing command line (to view parameters).
    /NOSD :: NO Source Directory is specified.
    /NODD :: NO Destination Directory is specified.
    /IF :: Include the following Files.
```

Details that 'C:\>RoboCopy /?' Doesn't Explain Well:

/Z - It is used mostly when you are copying files over the network, it allows RoboCopy to deal with dropped packets. If you are copying files locally you do not require restartable mode, because it tends to slow things down.

/B - will allow RoboCopy to override file and folder permission settings (ACLs). Normally RoboCopy respects the ACL restrictions. Backup mode requires RoboCopy to be run from an account with enough privileges to override the file and folder ACLs (maybe do this as a member of Backup Operators?)

/EFSRaw - <http://www.geektank.net/2011/08/using-robocopy-to-copy-efs-files>

Using "RoboCopy" to Copy EFS Files

/EFSRAW switch allows for the copy of encrypted files from one location to another without having to decrypt the data

/SecFix - copies just the security information for files that exist at both the source and destination (but doesn't copy the files)

/TimFix - similar to /SecFix

Attributes:

R = READONLY

H = HIDDEN

S = SYSTEM

A = ARCHIVE

C = COMPRESSED

N = NOT INDEXED

L = Reparse Points

O = OFFLINE

P = Sparse File

I = Not content indexed

T = TEMPORARY

E = ENCRYPTED

/Mon - When Monitoring is specified, RoboCopy never terminates. Instead, it enters a loop that performs a normal RoboCopy pass and then monitors the source directory tree for changes, until both n changes have been detected and m minutes have elapsed. When both conditions are met, another RoboCopy pass is started. This whole process of copying and monitoring is repeated, ad infinitum, until the user manually terminates the RoboCopy process.

/RH:hhmm-hhmm - Run Hours - times when new copies may be started (the .EXE will be resident in memory the whole time, checking the clock to know when it can run, which eliminates the need to terminate it). I think this can be run with or without /Mon.

/PF - makes more frequent checks to see if starting new copies is allowed (per file rather than per pass). Useful in stopping copy activity more promptly at the end of the run hours time slot.

/SL - a symbolic link is a special type of file that contains a reference to another file or directory.

To find them, do 'Dir C:\ /S /AL'

<https://social.technet.microsoft.com/forums/windows/en-US/5c663dab-3da8-4aa4-a690-de61fe258313/the-dangers-of-robocopy-and-symbolic-links>

RoboCopy...got caught in an endless loop of copying the C:\Users\\Application Data link (and filled up the drive)

Use RoboCopy to fix it with "Not Logic"

- 1) Create an empty folder, something like c:\junkola
- 2) RoboCopy c:\junkola x:\Your-folder-to-delete /PURGE /E

Because the junkola folder is empty it will remove all files/folders from the bad directory. Just make sure you replace x:\Your-folder-to-delete with the full path of YOUR bad directory.

<http://stackoverflow.com/questions/9042542/what-is-the-difference-between-ntfs-junction-points-and-symbolic-links>

What is the difference between NTFS Junction Points and Symbolic Links? [closed]

A symbolic link, as created by Windows, is similar to a directory junction, but unlike a directory junction it can point to a file or a remote network file or directory. The target may be defined as a path relative to the symbolic link position, or an absolute path in the current volume or another one. Also note that symbolic links to files are different from symbolic links to directories and the target must match the definition.

<https://social.technet.microsoft.com/Forums/windows/en-US/d314d324-ffd7-490d-9e2e-a039110d8042/mklink-junction-vs-symlinkd>

mklink - <JUNCTION> vs <SYMLINKD>

Hard Link - A hard link directly points to the file, and acts to the operating system as if it is the file itself. You'll want to use this option the majority of the time if you are trying to fake an application's directory.

Soft Link - A soft link is essentially a shortcut to a file or folder - if you are using Windows explorer, you'll be redirected to the directory if you double-click on a shortcut, it won't pretend its part of the filesystem. You can still directly reference or open a file with the symlinked path, and it mostly works.

When it comes to using links across SMB boundaries, JUNCTIONs cannot be used. Instead, SYMLINKDs still can!

<https://technet.microsoft.com/en-us/magazine/2007.02.vistakernel.aspx>

Inside the Windows Vista Kernel: Part 1 by Mark Russinovich

A file system feature many have considered missing from NTFS, the symbolic file link (or as it's called in UNIX, the soft link) finally arrives in Windows Vista. The Windows 2000 version of NTFS introduced symbolic directory links, called directory junctions, which allow you to create a directory that points at a different directory, but until the Windows Vista version, NTFS has only supported hard links for files.

A major difference in the way Windows resolves symbolic links and directory junctions is where the processing takes place. Windows processes symbolic links on the local system, even when they reference a location on a remote file server. Windows processes directory junctions that reference a remote file server on the server itself. Symbolic links on a server can therefore refer to locations that are only accessible from a client, like other client volumes, whereas directory junctions cannot. To address this, Windows Vista supports the new symbolic link type for both files and directories.

http://answers.microsoft.com/en-us/windows/forum/windows_7-files/how-to-copy-a-directory-with-all-permissions-and/373353a9-7bc2-468e-ac20-04850c105e3f

How to copy a directory with all permissions and junctions intact?

```
set userRoot=C:\Users\Media
set oldFolder=%userRoot%\AppData\Roaming
set newFolder=%userRoot%\Application Data
mklink /J "%newFolder%" "%oldFolder%"
attrib +H +S "%newFolder%" /L
```

Do the above 4 lines for each link you need to reproduce. You can get a list of these via using: `dir "%UserProfile%" /AL` (see below).

For clarification for others, the option you need to use to resolve the 'looping' issue is /XJ (exclude junction points). However as Jimnms has said, it will not actually make a copy of the junction point itself. I'm not sure how / if you can do this.

/XX, /XL, /IS, /IT

<http://superuser.com/questions/314503/what-does-robocopy-mean-by-tweaked-lonely-and-extra>

What does RoboCopy mean by tweaked, lonely and extra?

Tweaked - a tweaked file is defined to be one that exists in both the source and destination, with identical size and timestamp, but different attribute settings.

Same - same files are identical in every way

Lonely - a lonely file is present in source but not destination; excluding lonely will prevent any new files being added to the destination.

Extra - an extra file is present in destination but not source; excluding extras will prevent any deletions from the destination.

/FFT

<http://serverfault.com/questions/354764/robocopy-falsely-marks-files-as-newer>

RoboCopy falsely marks files as newer

...will reduce the timestamp to about 2 seconds difference when comparing file changes

<https://www.conetrix.com/Blog/post/Robocopy-Incorrectly-Detects-Files-as-Newer-When-Copying-Between-Different-File-Systems.aspx>

RoboCopy Incorrectly Detects Files as Newer When Copying Between Different File Systems

...what this does is force RoboCopy to use FAT style time stamps which are 2-second granularity. It allows enough flexibility to account for the way the time is recorded when doing a file copy from NTFS to another file system. This is needed when going between and NTFS and Linux/Unix/FAT or emulated file system.

`/QUIT` - quits after processing the command line. No files will be copied. Use `/QUIT` with `/JOB` to view job file contents.

`/NOSD` - declares that no source directory is specified. Useful in template Jobs for which the source is provided at run time.

`/NODD` - declares that no destination directory is specified. Useful in template Jobs for which the destination is provided at run time.

`/IF` - includes files with the specified names, paths, or wildcard characters. Intended for use in Job files only.

`/SD:path` - explicitly specifies the source directory for the copy. Intended for use in Job files only.

`/DD:path` - explicitly specifies the destination directory for the copy. Intended for use in Job files only.

Other helpful RoboCopy links:

- <http://compdocs.blogspot.com/2007/01/robocopy-switches.html>