Windows: Robocopy

Der Kopierprofi unter Windows lautet „Robocopy“. Mit seiner Hilfe ist es möglich, über die Kommandozeile (cmd.exe) komplexe Kopiervorgänge abzuhandeln. Seine Features sind z. B.:

- Kopieren über das Netzwerk, auch über UNC-Pfade.
- Spiegeln von Verzeichnissen, sodass Änderungen, Löschungen, etc. ebenfalls gespiegelt werden.
- Umfangreiches Logging während des Kopiervorgangs, auch in separater Datei.
- Pflegen von Ausnahmen, die beim Kopieren nicht berücksichtigt werden.

Robocopy ist seit Windows Server 2003 Bestandteil der Resource Kit Tools und seit Server 2008 Bestandteil des Betriebsystems. Die Resource Kit Tools bekommt man unter

> http://www.microsoft.com/downloads/en/details.aspx?familyid=9d467a69-57ff-4ae7-96ee-b18c4790cffd&displaylang=en

oder man lädt Robocopy direkt hier herunter (Windows 7 Version): (Link folgt).

Parameterliste

```
Syntax
      ROBOCOPY Source_folder Destination_folder [files_to_copy] [options]

Key
   file(s)_to_copy : A list of files or a wildcard.
                           (defaults to copying *.*)

  Source options
                /S : Copy Subfolders.
                /E : Copy Subfolders, including Empty Subfolders.
 /COPY:copyflag[s] : What to COPY (default is /COPY:DAT)
                      (copyflags : D=Data, A=Attributes, T=Timestamps
                       S=Security=NTFS ACLs, O=Owner info, U=aUditing info).
             /SEC : Copy files with SECurity (equivalent to /COPY:DATS).
          /DCOPY:T : Copy Directory Timestamps. ##
          /COPYALL : Copy ALL file info (equivalent to /COPY:DATSOU).
           /NOCOPY : Copy NO file info (useful with /PURGE).

                /A : Copy only files with the Archive attribute set.
                /M : like /A, but remove Archive attribute from source
files.
            /LEV:n : Only copy the top n LEVels of the source tree.

         /MAXAGE:n : MAXimum file AGE - exclude files older than n
days/date.
         /MINAGE:n : MINimum file AGE - exclude files newer than n
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days/date.
                    (If n < 1900 then n = no of days, else n = YYYYMMDD
date).

              /FFT : Assume FAT File Times (2-second date/time granularity).
              /256 : Turn off very long path (> 256 characters) support.

   Copy options
                /L : List only - don’t copy, timestamp or delete any files.
              /MOV : MOVe files (delete from source after copying).
             /MOVE : Move files and dirs (delete from source after copying).

                /Z : Copy files in restartable mode (survive network
glitch).
                /B : Copy files in Backup mode.
               /ZB : Use restartable mode; if access denied use Backup mode.
            /IPG:n : Inter-Packet Gap (ms), to free bandwidth on slow lines.

              /R:n : Number of Retries on failed copies - default is 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).

   Destination options

    /A+:[RASHCNET] : Set file Attribute(s) on destination files + add.
    /A-:[RASHCNET] : UnSet file Attribute(s) on destination files - remove.
              /FAT : Create destination files using 8.3 FAT file names only.

           /CREATE : CREATE directory tree structure + zero-length files
only.
              /DST : Compensate for one-hour DST time differences ##
            /PURGE : Delete dest files/folders that no longer exist in
source.
              /MIR : MIRror a directory tree - equivalent to /PURGE plus all
subfolders (/E)

   Logging options
                /L : List only - don’t copy, timestamp or delete any files.
               /NP : No Progress - don’t display % copied.
         /LOG:file : Output status to LOG file (overwrite existing log).
      /UNILOG:file : Output status to Unicode Log file (overwrite) ##
        /LOG+:file : Output status to LOG file (append to existing log).
     /UNILOG+:file : Output status to Unicode Log file (append) ##
               /TS : Include Source file Time Stamps in the output.
               /FP : Include Full Pathname of files in the output.
               /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.
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              /TEE : Output to console window, as well as the log file.
              /NJH : No Job Header.
              /NJS : No Job Summary.

 Repeated Copy Options
            /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.

 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.

Advanced options you'll probably never use
           /EFSRAW : Copy any encrypted files using EFS RAW mode. ##
           /MT[:n] : Multithreaded copying, n = no. of threads to use
(1-128) ###
                     default = 8 threads, not compatible with /IPG and
/EFSRAW
                     The use of /LOG is recommended for better performance.

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

               /XO : eXclude Older - if destination file exists and is the
same date
                     or newer than the source - don’t bother to overwrite
it.
         /XC | /XN : eXclude Changed | Newer files
               /XL : eXclude "Lonely" files and dirs (present in source but
not destination)
                     This will prevent any new files being added to the
destination.
               /XX : eXclude "eXtra" files and dirs (present in destination
but not source)
                     This will prevent any deletions from the destination.
(this is the default)

/XF file [file]... : eXclude Files matching given names/paths/wildcards.
/XD dirs [dirs]... : eXclude Directories matching given names/paths.
                     XF and XD can be used in combination  e.g.
                     ROBOCOPY c:\source d:\dest /XF *.doc *.xls /XD
```

```
c:\unwanted /S

   /IA:[RASHCNETO] : Include files with any of the given Attributes
   /XA:[RASHCNETO] : eXclude files with any of the given Attributes
              /IS : Include Same, overwrite files even if they are already
the same.
              /IT : Include Tweaked files.
              /XJ : eXclude Junction points. (normally included by
default).

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

            /BYTES : Print sizes as bytes.
                /X : Report all eXtra files, not just those selected &
copied.
                /V : Produce Verbose output log, showing skipped files.
              /ETA : Show Estimated Time of Arrival of copied files.
```

Anwendungsbeispiele

Fileservermigration

Hier über ein Batchfile:

```
@echo off
cls

set xexe=D:\SOFTWARE\Robocopy\robocopy.exe

%xexe% "D:\PUBLIC\SHARED\Video" "\\FSNEU\Video$" /E /Z /COPY:DAT /NP
/LOG+:migration.log
%xexe% "D:\PUBLIC\SHARED\Mail-Archiv" "\\FSNEU\Mail-Archiv$" /E /Z /COPY:DAT
/NP /LOG+:migration.log
%xexe% "D:\PUBLIC\HOMES" "\\FSNEU\Homes$" /E /Z /COPY:DATSO /NP
/LOG+:migration.log

echo "Fertig."
pause

echo on
exit
```

Synchronisation

```
@echo off
cls

set xexe="D:\SOFTWARE\Robocopy\robocopy.exe"

net use T: \\pc1\MUSIK_NEU /user:pc1\sync password /p:n

%xexe% T:\ "D:\MUSIK_NEU" /MIR /Z /NP /LOG+:sync.log /TEE

net use T: /delete /y

echo Fertig.
pause

echo on
exit
```

Backup-Rotationsskript

```
echo %date% %time% Rename auf NAS gestartet

net use b: \\nas\backup\Serverbackup /user:admin XXX

mkdir c:\temp\leer

timeout /t 6
echo %date% %time% Zwischenstand
b:
dir /S
timeout /t 6
echo %date% %time% Zwischenstand

mkdir c:\temp\leer

robocopy /mir /w:1 /r:30 c:\temp\leer \\nas\backup\Serverbackup\letzte

rd /s /q "letzte"
REM rename  "letzte"  "vorletzte"
rename  "aktuell"  "letzte"
mkdir b:\aktuell
mkdir b:\aktuell\server1
mkdir b:\aktuell\server2
mkdir b:\aktuell\server3

c:

rd /s /q c:\temp\leer

timeout /t 6
echo %date% %time% Zwischenstand
```

```
net use b: /delete /Y
echo %date% %time% Rename auf NAS beendet
```

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