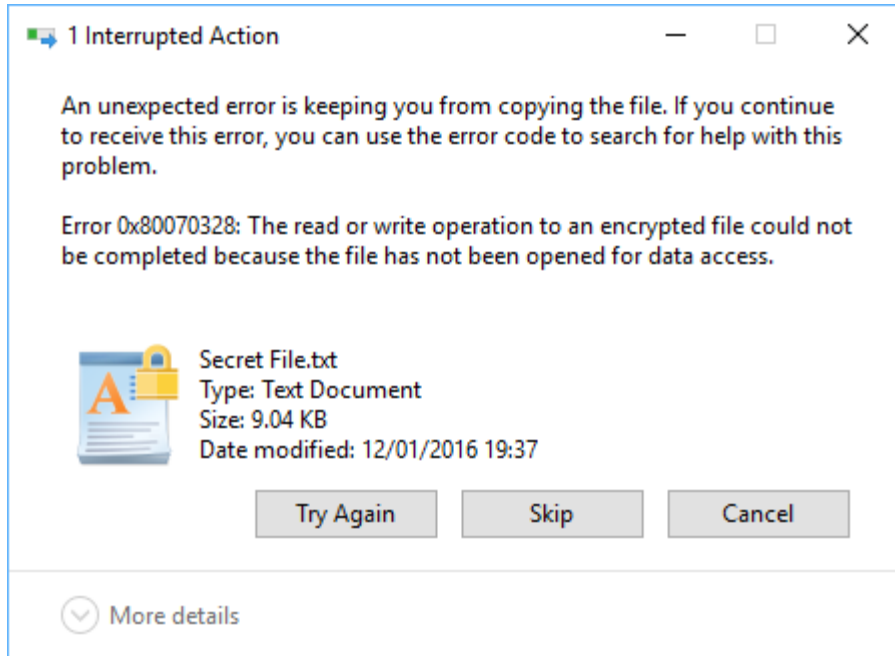


# How to copy Encrypted File System (EFS) files from a mounted disk image

For more information on EFS please see the Microsoft article: <http://windows.microsoft.com/en-gb/windows/what-is-encrypting-file-system>

When copying EFS encrypted files from a mounted disk image you may see the following error:



Error 0x80070328 The read or write operation to an encrypted file could not be completed because the file has not been opened for data access.

When an EFS encrypted file is copied from a foreign file system using Windows Explorer the file is protected from regular copy and paste operations causing Explorer to fail the copy with the above error. Fortunately, Windows includes a file copy utility called RoboCopy (Robust File Copy) that includes parameters to copy encrypted files in RAW format that can be decrypted automatically on the original file system.

## To copy EFS encrypted files back to your source file system

1. **Start a command prompt** with elevated privileges. See [Running an elevated command prompt](#)
2. To copy an entire folder (and sub-folders) containing one or more encrypted files, **type the following command** and press enter:

```
robocopy "I:\SOURCE" "C:\TARGET" /COPY:DATS /EFSRAW /R:2 /W:0 /E /ETA
```

Where "I:\SOURCE" is the source folder on the mounted image. **Note:** Do not include a back slash at the end of the path

For reference the command line switches are detailed below:

Switch	Description
/COPY:DATS	D Data, A Attributes, T Time stamps, S NTFS access control list (ACL)
/EFSRAW	Copies all encrypted files in EFS RAW mode.

/R:2	Specifies the number of retries on failed copies. The default value of N is 1,000,000 (one million retries).
/W:0	Specifies the wait time between retries, in seconds.
/E	Copies subdirectories.
/ETA	Shows the estimated time of arrival (ETA) of the copied files

3. To copy a single file (or group of files using \* wild cards) , **type the following command** and press enter:

```
robocopy "I:\SOURCE" "C:\TARGET" "FILENAME.TXT" /COPY:DATS /EFSRAW /R:2 /W:0 /ETA
```

**Note:** "FILENAME.TXT" can be the full file name or can contain wild cards using an asterisk. e.g, \*.TXT will copy all files with a '.TXT' file extension.

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