

Backup to USB drives in a group or family context: strategies

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Objectives

- Review ideas about filesystems and their pros and cons
- Review some aspects of use of rsync and other backup / copy methods
- Mainly an intro-level presentation, but include some ideas of interest to others
- Generate some discussion

Background

- External USB disks offer
 - inexpensive capacity (<\$100 for 2 TB)
 - reasonable transfer speed
 - portability
 - generally easy use via FUSE to automount
- But can be awkward to share between several members of a family or group
 - permission / owner issues depending on filesystem
 - especially when files are shared / common
- Are there work-arounds that are reasonable

The disk

- External USB2 case for 2.5" drive
- WD3200BEVE
- 500GB PATA
- In an inexpensive USB 2 case

- disk came out of a decommissioned KoolU server
(Anyone want it with 80GB drive?)
- call it ***XUSB***

Formatting XUSB

- parted to create /dev/sde1 extended
 - sde5 = btrfs
 - sde6 = ext4
 - sde7 = ntfs
 - sde8 = xfs
 - sde9 = fat32
 - sde10 = exfat, created unformatted, then
 - sudo mkfs.exfat -n BUTTER /dev/sde10
 - Not sure why parted cannot do this itself.

When XUSB drive plugged in...

```
john@john-j6-18 ~ $ ls -al /media/john/
total 20
drwxr-x---+ 5 root root 4096 Feb 23 15:53 .
drwxr-xr-x  3 root root 4096 Jun 28 2016 ..
drwxr-xr-x  2 root root 4096 Dec  9 11:45 J6R
drwxr-xr-x  2 john john 4096 Dec 12 17:36 J6X
drwxr-xr-x  2 john john 4096 Dec  9 15:55 Rebecca
```

```
john@john-j6-18 ~ $ ls -al /media/john/
total 176
drwxr-x---+ 11 root root  4096 Feb 23 17:30 .
drwxr-xr-x  3 root root  4096 Jun 28 2016 ..
drwxr-xr-x  1 root root      0 Feb 23 17:17 Butter
drwx----- 1 john john 131072 Dec 31 1969 EXFAT
drwxr-xr-x  3 root root  4096 Feb 23 17:17 EXT4
drwxr-xr-x  2 john john  4096 Dec 31 1969 FAT32
drwxr-xr-x  2 root root  4096 Dec  9 11:45 J6R
drwxr-xr-x  2 john john  4096 Dec 12 17:36 J6X
drwxrwxrwx  1 john john  4096 Feb 23 17:17 NTFS
drwxr-xr-x  2 john john  4096 Dec  9 15:55 Rebecca
drwxr-xr-x  2 root root    6 Feb 23 17:17 XFS
```

Notes:

- first listing pre-plugin

- some partitions are NOT on USB drive (J6R, J6X, Rebecca)

- ownership differs!

- permissions differ

- Note: For each directory that is listed, preface the files with a line `total BLOCKS', where BLOCKS is the total disk allocation for all files in that directory.
- Have edited out partitions NOT on the test drive.

Issues with ownership and permissions

Prepare files in a directory owned by *john*

```
john@john-j6-18 ~/current/OCLUG1704rsynctest/jj $ ls -al
total 7056
drwxr-xr-x 2 john john    4096 Feb 14 17:37 .
drwxr-xr-x 4 john john    4096 Feb 23 17:40 ..
-rw-r--r-- 1 john john     73 Feb  1 21:29 jdollyaddress.txt
-rw-r--r-- 1 john john 7211736 Jan 27 21:33 jFROHN_NL_PDFs_2017.zip
```

Copies OK to XUSB partitions FAT32 and NTFS

```
john@john-j6-18 /media/john/FAT32 $ ls -al
total 7056
drwxr-xr-x  2 john john    4096 Feb 23 17:43 .
drwxr-x---+ 11 root root    4096 Feb 23 17:30 ..
-rw-r--r--  1 john john     73 Feb  1 21:29 jdollyaddress.txt
-rw-r--r--  1 john john 7211736 Jan 27 21:33 jFROHN_NL_PDFs_2017.zip
```

```
john@john-j6-18 /media/john/NTFS $ ls -al
total 7053
drwxrwxrwx  1 john john    4096 Feb 23 17:45 .
drwxr-x---+ 11 root root    4096 Feb 23 17:30 ..
-rwxrwxrwx  1 john john     73 Feb  1 21:29 jdollyaddress.txt
-rwxrwxrwx  1 john john 7211736 Jan 27 21:33 jFROHN_NL_PDFs_2017.zip
```

Issues (cont.)

- But copy fails “cannot create file” for EXFAT, BTRFS (Butter) and EXT4
 - the mount points are owned by *root*
- Can change owner of mount point
 - `sudo chown john Butter`
 - then copies OK

Filesystem choices

- Journal or not
 - may limit OS compatibility for external drive
 - but journal could help avoid data corruption
 - have not got good performance information!
- Some caveats on the file size mix
 - e.g. XFS claimed good for large files, but many small ones may be slow
- Keeping permissions/ownership?
- Expand and shrink (XFS cannot be shrunk)

My choices

- Since I mostly want
 - to save data (not program structures)
 - to share with *mary*
 - avoid permission/owner issues
 - probably best with exFAT
- For regular tasks, write bash scripts to avoid typos and other errors.
 - Check!, check!, check!

Copying etc.

- in scripts use *rsync*
 - *grsync* looks interesting, but I've not used it much
- DoubleCommander very helpful
 - configurable (though I've found some glitches)
 - apparent active development
 - I like 2 panes (from on L, to on R) to avoid fumbles
 - GnomeCommander seems moribund
 - *mc* useful in terminal environment (and used)

Some other stuff....

- OCLUG live distro progress
 - http://wiki.oclug.on.ca/doku.php?id=start#technical_projects
 - See also 2016 meeting presentation notes
 - hack session ?? April 22 at 18 Spyglass 13:30 – 16:30
 - Planning notes on wiki
 - Scotts notes on EFI boot posted
 - my own notes still to be posted re: GUI setup

Another update

- Latex to epub issues

- re-ran several “recipes” with a standardized source and recorded notes
- put these in my BookMaking project on Gitlab

<https://gitlab.com/nashjc/BookMaking/wikis/home>