

# digikam, Meld and my favourite tools

omitting Emacs, Orgmode, Python and Git

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Like Dropbox but without the cloud - <https://syncthing.net/>

















## SyncThing

- peer-to-peer – just between your machines
- secure, authenticated and fast
- Fast, and robust
- one-way sync possible
- Linux, Mac, Windows and Android ...


# Syncthing web-based GUI


## Folders


 Family photos Preparing to Sync

 Folder ID	ew9bc-3uaof
 Folder Path	C:\Users\User\Desktop\Family photos
 Global State	 813  88  ~1.96 GiB
 Local State	 664  68  ~1.63 GiB
 Out of Sync Items	367 items, ~734 MiB
 Rescans	 1h  Enabled
 Shared With	Android phone, Mac laptop
 Last Scan	2020-08-03 22:23:02

|| Pause 🔄 Rescan ✎ Edit


 Music & films Up to Date











 Study materials Unshared

 Work documents Up to Date


|| Pause All 🔄 Rescan All + Add Folder


## This Device


 Windows desktop

 Download Rate	19.9 KiB/s (2.18 MiB)
 Upload Rate	13.4 KiB/s (2.06 MiB)
 Local State (Total)	 664  68  ~1.63 GiB
 Listeners	2/3
 Discovery	3/5
 Uptime	5m
 Version	v1.7.1, Windows (32 bit)

## Remote Devices

 Android phone Syncing (56%, 862 MiB)

 Linux server Connected (Unused)

 Mac laptop Syncing (93%, 128 MiB)

|| Pause All 🕒 Recent Changes + Add Remote Device

<https://www.digikam.org>

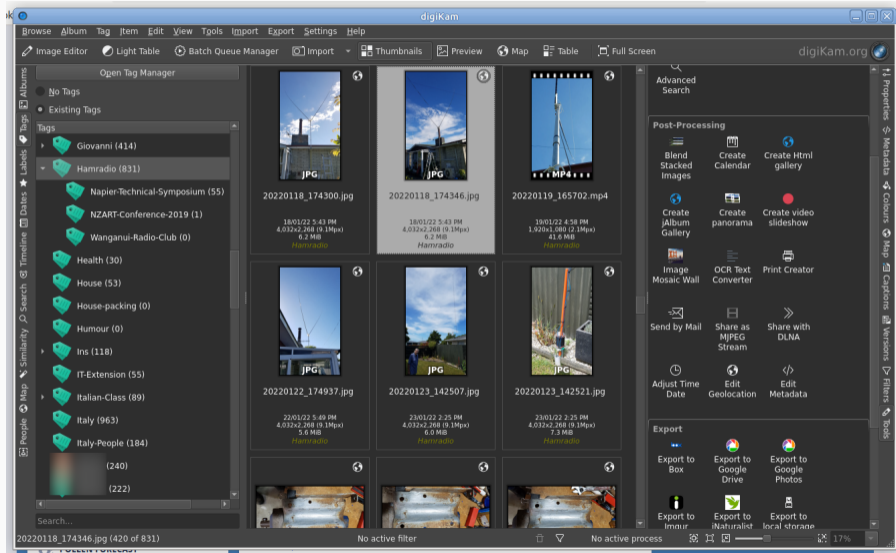
digiKam: advanced digital photo management tool – runs on Linux, Windows, and macOS

## **DigiKam can**

- import and manage photos & videos
- add tags
- add rating (stars)
- manage captions
- manage geotags
- find faces
- export to ... lots ...

DigiKam stores metadata in sidecar (.xmp) files and SQLite database

# DigiKam Screenshot



## locate - rapidly locate files by name

```
locate -i <pattern>
```

```
e.g. locate -i g5rv          # look for filenames containing g5rv
```

RESULTS:

```
/home/me/Analyser/CIR/G5RV.CIR
```

```
/home/me/Analyser-abc/CIR/G5RV.CIR
```

```
/home/me/Electronics-Collected/Antenna-Modelling/4NEC/models/HFsimple/G5RV.nec
```

# Find - recursively list files and directories by name/property

find is old, so parameters only use single dash (-name NOT --name)

## find files by name

```
find . -type f -name '*g5rv*'
find . -type f -iname '*g5rv*'
find . -type d -name '.git'
find . -type l
```

## find by username

```
find . -user root
```

## find by size

```
find . -size +5M
find . -size +2G
```

# Use the results of find

## Delete the named files:

```
find . -name '*.bak' -delete
```

## Find all text files containing MIT License clause:

```
find . -name '*.txt' -print0 | xargs -0 grep 'MIT License'
```

```
find . -name '*.txt' -print0 | xargs -0 egrep 'MIT License|MIT Licence'
```

## How this works:

- *find* outputs a list of textfile names separated by nulls (so spaces in filenames are handled properly).
- a stream of file names is sent to *xargs*. Because of the '-0', it will to split the names at the null.
- 'xarg' then runs *grep* or *egrep* on each file to search it for the MIT license phrase.



# Meld – Compare files or directories and show differences side-by-side

```
XAPrbd_digiKam-Meld-my-Fav-tools.org — digiKam-Meld-my-Fav-tools.org
Meld File Edit Changes View
Save Undo
XAPrbd_digi... Fav-tools.org x
XAPrbd_digiKam-Meld-my-Fav-tools.org | digiKam-Meld-my-Fav-tools.org
* Syncthing web-based GUI
#+attr_latex: :height 0.9\textheight
[[file:images/syncthing-gut.png]]
* DigiKam
https://www.digikam.org
digiKam: advanced digital photo management tool -- runs on L
** DigiKam can
- import photos
- add tags
- add rating (stars)
- manage captions
- export to ... lots ...
- manage geotags
- find faces
{{{[pause]}}}
DigiKam stores metadata in sidecar (.xmp) files and SQLite d
* locate - rapidly locate files by name
: locate -i <pattern>
: e.g. locate -i g5rv # look for filenames containing
#+begin_small
RESULTS:
: /home/ne/Analyser/CIR/G5RV.CIR
: /home/ne/Analyser-abc/CIR/G5RV.CIR
: /home/ne/Electronics-Collected/Antenna-Modelling/4NEC/mo
#+end_small
Unicode (UTF-8) Ln 1, Col 1
passw0ru 11
```

Install using apt or see <https://meldmerge.org/> – also handles three-way for merging

Find duplicate files by name, content

- good with pictures
- lots of options
- available for Linux (& Ubuntu PPA), Windows, Mac

<https://dupeguru.voltaicideas.net>

Script things that we want to do

- repetitively
- erratically - so we don't forget steps or get them in wrong order

reduces errors . . .

## **Automate tasks**

- check a lockfile before starting DigiKam
- backup a subset of our files

# Check a lockfile before starting digiKam

DigiKam stores metadata in SQLite database - not multi-user

## Stop concurrent access to digiKam

1. create the symlink `digikamDirect` -> `digikam-5.8.AppImage`

```
cd ~/bin
```

```
ln -s digikam-5.8.AppImage digikamDirect
```

2. Have a script that

- if lockfile DOESN'T exist:  
write the hostname into the lockfile AND starts digiKam

This isn't bulletproof but as long as Syncthing can sync the `~/Pictures` directory before running `digikam`, it's good enough ...

## Digikam Lockfile - save the following to `~/bin/digikam`

```
#!/bin/bash

digikamDirect="$HOME/bin/digikamDirect"
lockfile="$HOME/Pictures/digikam-sync.lock" # SYNCED BY SyncThing

if [ -f "$lockfile" ] # lockfile exists
then
    lockcontents=$(cat "$lockfile")
    echo "DigiKam is running on the host named: $lockcontents"
    echo "If you are certain DigiKam is NOT running,"
    echo "delete the file: $lockfile"
else
    hostname > "$lockfile"
    $digikamDirect
    # only remove the lockfile if digikam exists cleanly
    if [ $? -eq 0 ]
    then
        rm "$lockfile"
    fi
fi
```

# Borg Backup for Linux & Mac

BorgBackup - a **deduplicating** archiver with compression and encryption

- Generational Backups
- Secure, authenticated encryption **OPTIONAL**
- Compression: lz4, zstd, zlib, lzma or None
- Mountable backups with FUSE
- available for Linux, macOS, BSD
- Backed by a large and active open source community

## **Borg Backup - GUIs & extensions**

<https://www.borgbackup.org> AND <https://github.com/borgbackup/community>

# Getting started with Borg backup

Create a directory to hold the backups (a repository) on USB

```
$ cd /media/me/USB-drive
$ borg init --encryption=repokey borg-archive      # create borg repo
```

Backup ~/src and ~/Documents directories into an archive called **Monday**:

```
$ borg create borg-archive::Monday ~/src ~/Documents
```

The next day create a new archive called **Tuesday**:

```
$ borg create --stats borg-archive::Tuesday ~/src ~/Documents
```

Extracting files - *mount* command is easier than *extract* – Browse as usual

```
$ borg mount borg-archive::Monday /tmp/monday-backup
```

# My Scripted Borg Backup to USB Drive

```
#!/bin/sh
```

```
now=`date +%Y-%m-%d--%H%M`
```

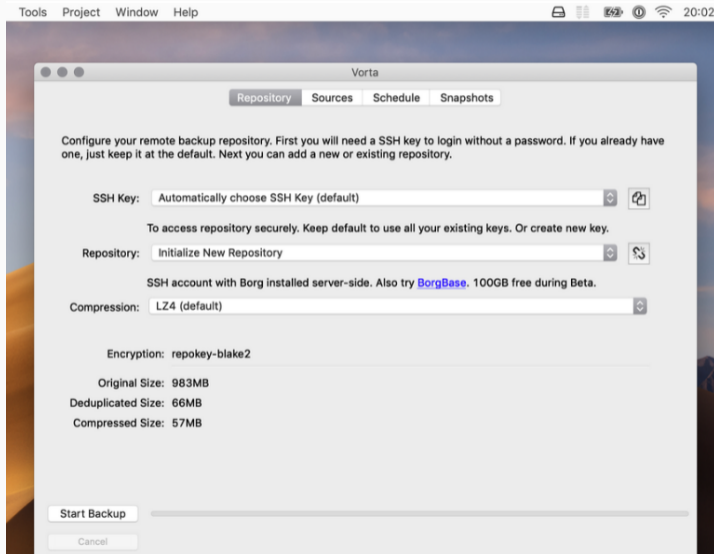
```
cmd="borg create -v \  
    --progress --stats\  
    --list\  
    --filter=AME\  
    --exclude /home/me/snap\  
    --exclude /home/me/.cache\  
    --exclude /home/me/.thumbnails\  
    --exclude-caches \  
    Archival-Backup::${now}--All-Home--$1 /home"
```

```
echo $cmd
```

```
sudo $cmd
```



# Vorta - BorgBackup GUI - remote backup via SSH



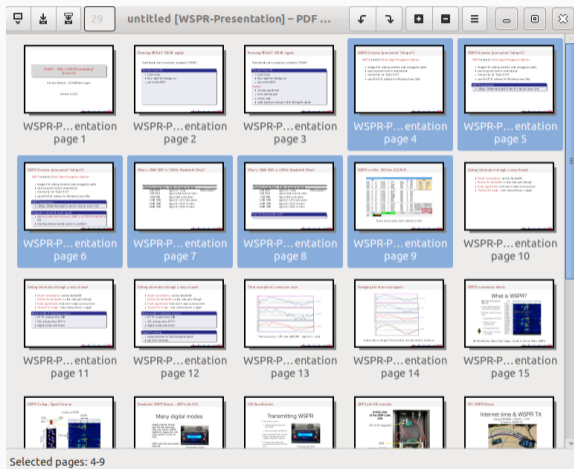
Used for archiving web pages

- <https://www.zotero.org> - full bibliographic manager
- <https://www.printfriendly.com> - reformat web pages and convert to PDF

## Merge or split PDF documents

- rotate
- delete
- crop
- rearrange page order
- export selected pages

PDF Arranger previously named  
PDF-Shuffler.



## Honourable Mentions

- Audacity
- OBS
- gLabels
- git
- Emacs & Orgmode and Latex
  - this presentation was created using orgmode
  - then exported to a LaTeX/Beamer presentation

Questions?