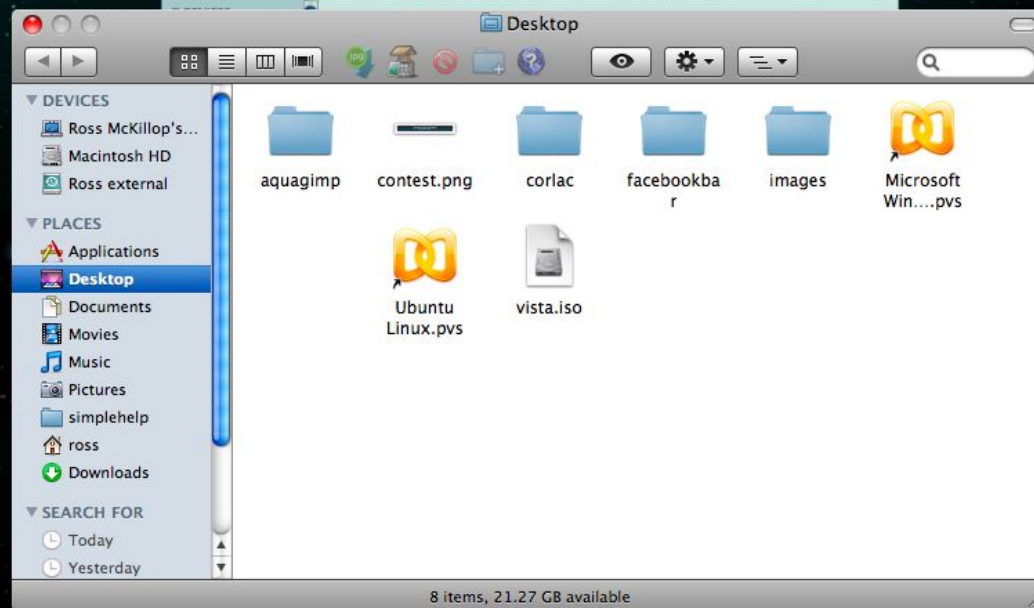


Time Machine Alternatives for Linux

Bob Igo
SSBBQ 2013

Time Machine



Today

Now

Cancel

Today (Now)

Restore

What is it, Really?

- Incremental backups
- Housekeeping
- GUI

Incremental Backups

- rsync does this already
- `rsync --link-dest=$PREV_BACKUP $SRC $TGT`
 - You can adopt a traditional backup into your incremental backups by pointing to it with `--link-dest`
- Uses hard links.

Hard Links

- User-level consequences
 - Each incremental (daily/hourly/monthly) backup directory contains the full state of your files at the time of the backup.
 - Doesn't use a lot of disk space.
 - Old incremental backups can be removed without breaking others.
 - A file isn't gone unless you delete each reference to it.

This is Good and Bad



Housekeeping

- inodes
 - Hard links aren't copies of files, but they need to reference files.
 - Max# of references varies by file system.
 - On EXT4, you can reference at most 22,839,296 files.
 - Most I'm using anywhere now is 9%.
 - JFS and XFS have no limits?
 - per-directory limits also

Housekeeping

space

Each unique file you back up needs to live on the disk.



Housekeeping

- Lots of ways to do this.

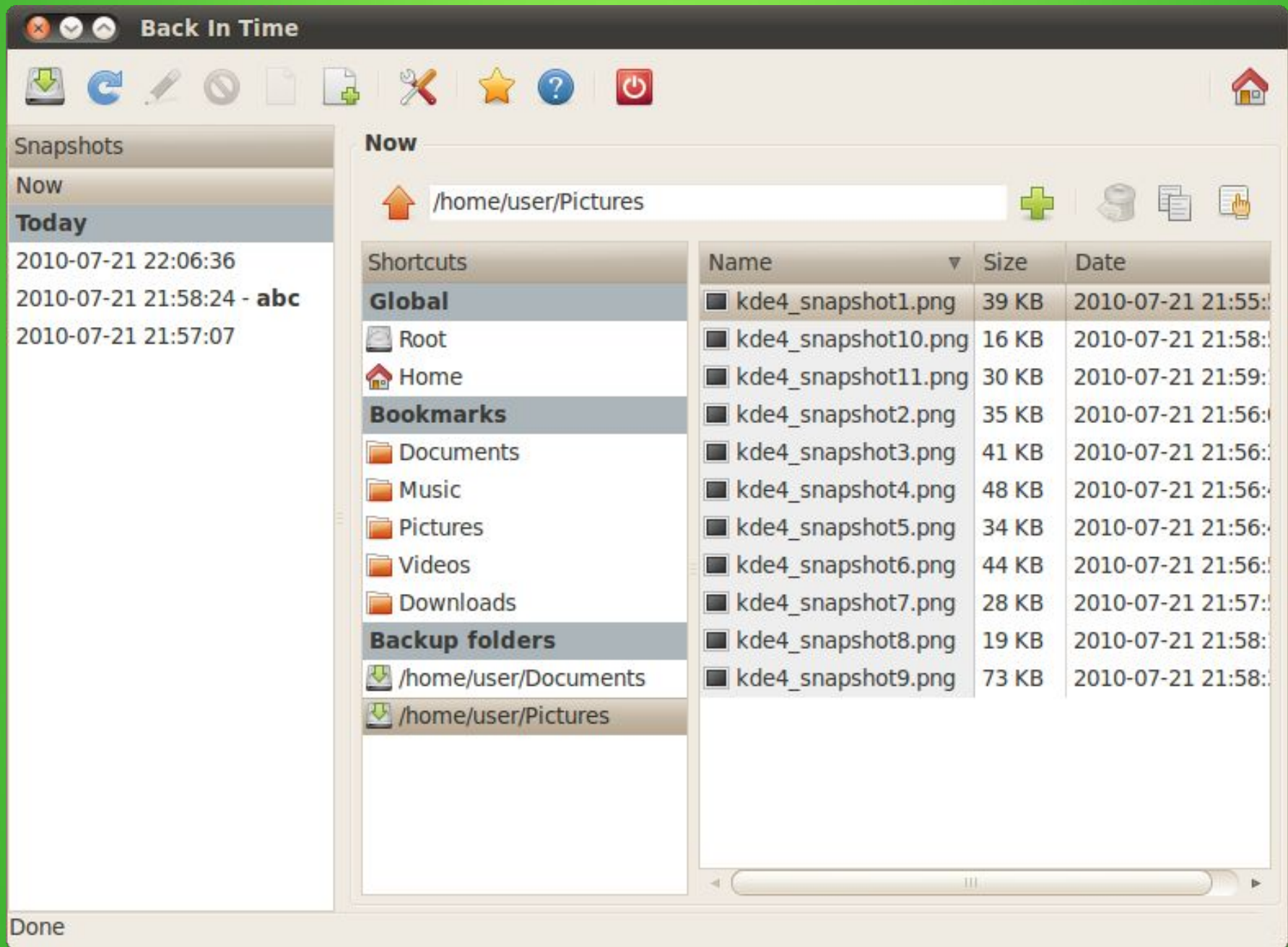
Incremental Backups + Housekeeping

- RBME (CLI/cron) makes it easy
 - Fully configurable
 - Great for headless operation
- rdiff-backup
 - Not rsync-based

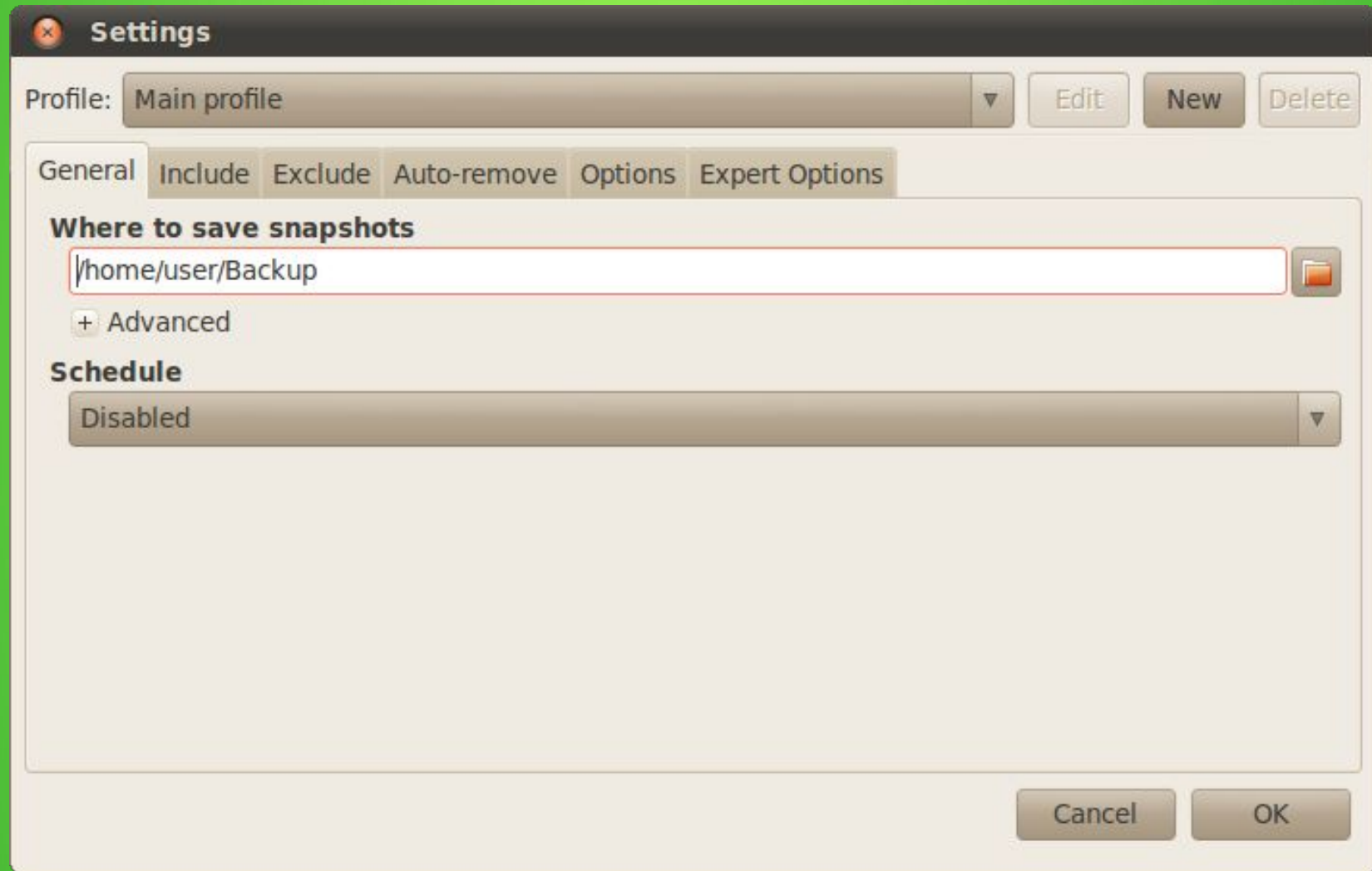
GUI

- Tons of options

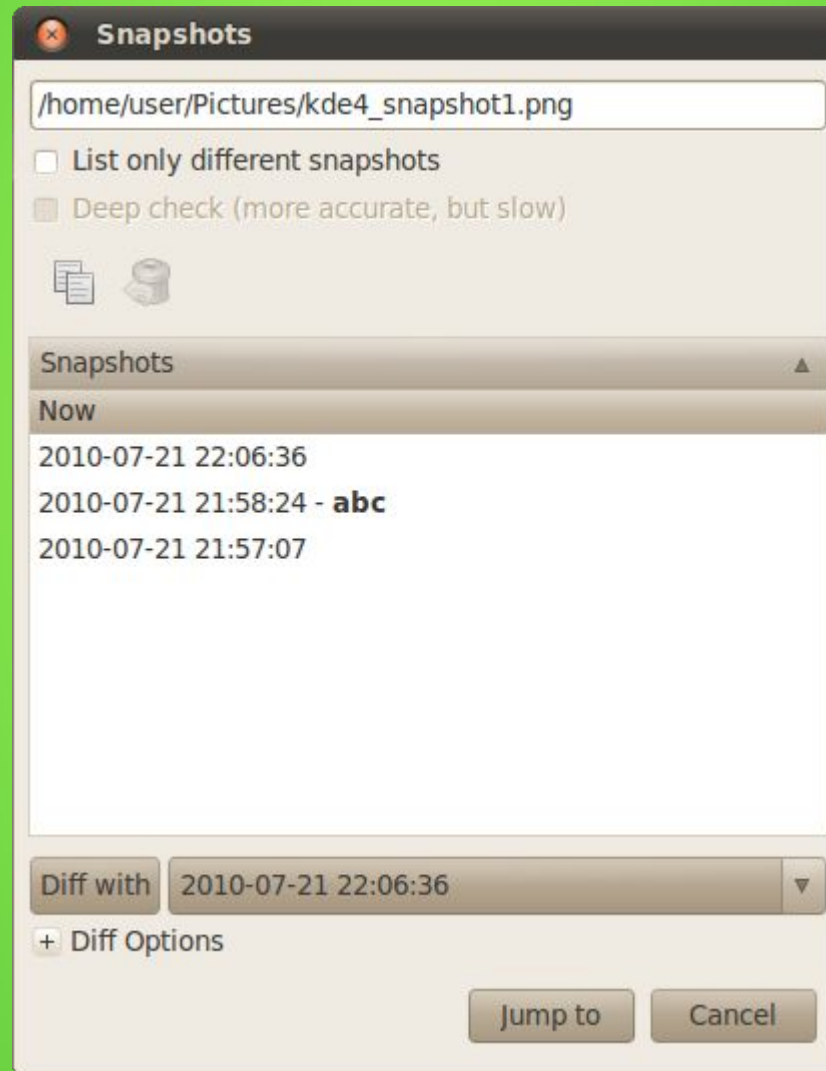
GUI: BackInTime



GUI: BackInTime



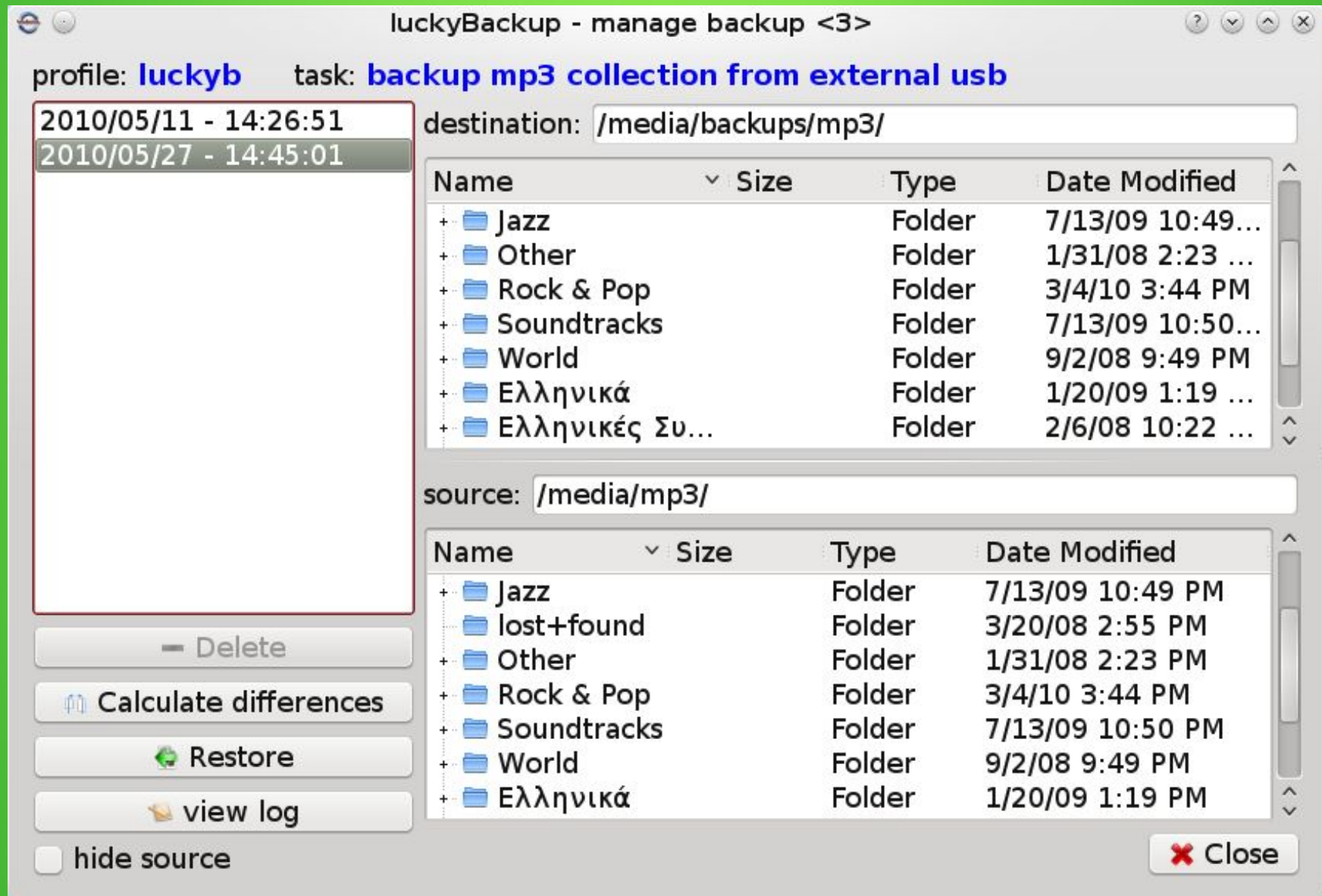
GUI: BackInTime



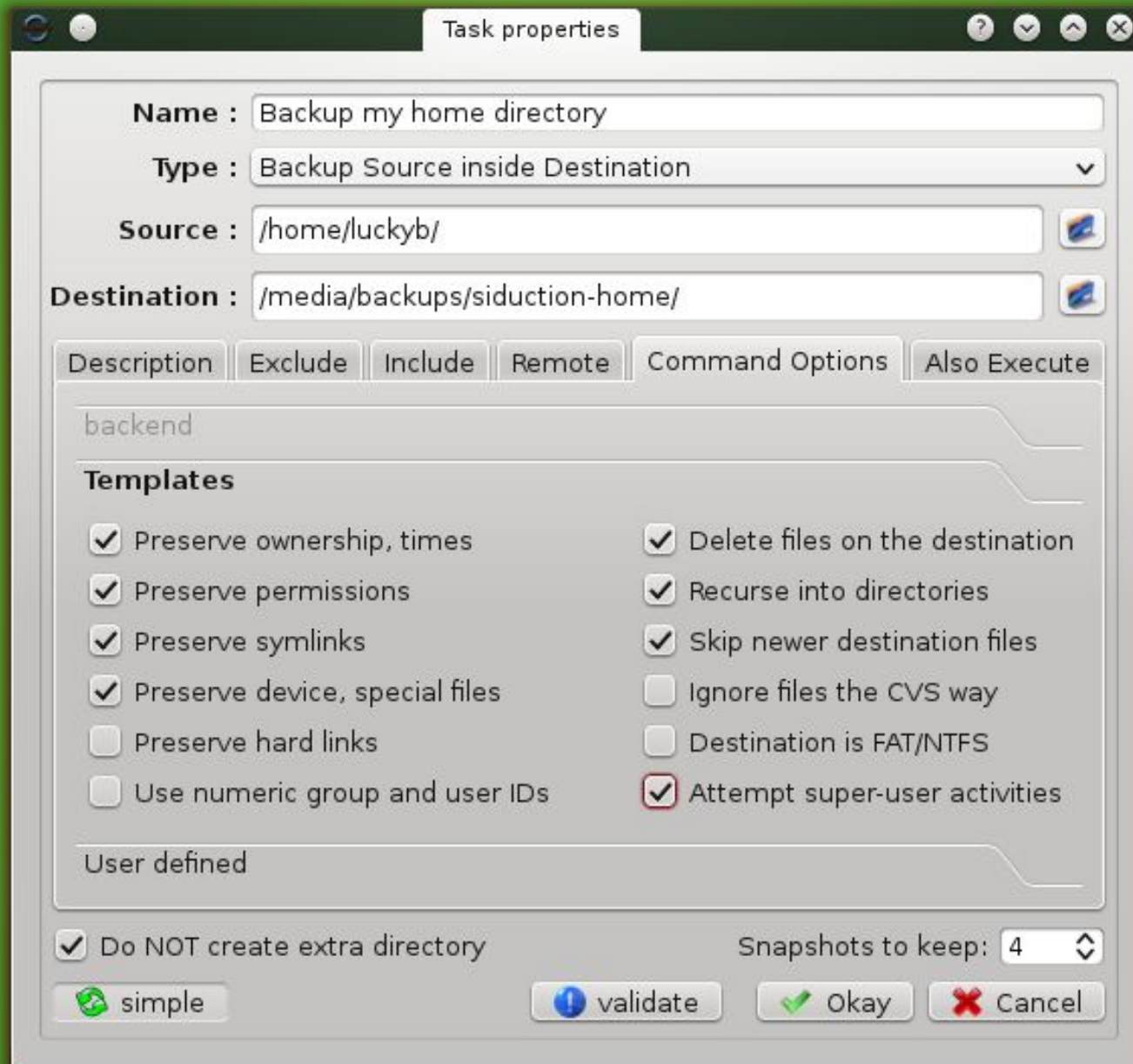
GUI: BackInTime

- Limitations
 - Can't back up *from* a remote host.
 - Arbitrary limitation; based on rsync

GUI: LuckyBackup



GUI: LuckyBackup



GUI: LuckyBackup



GUI: LuckyBackup

- Limitations
 - Bugs
 - Overzealous exclude templates
 - Inconsistent target behavior in full vs incremental mode

References

- RBME
 - <https://github.com/schlomo/rbme>
- rdiff-backup
 - <http://rdiff-backup.nongnu.org/>
- BackInTime
 - <http://backintime.le-web.org/>
- LuckyBackup
 - <http://luckybackup.sourceforge.net/index.html>