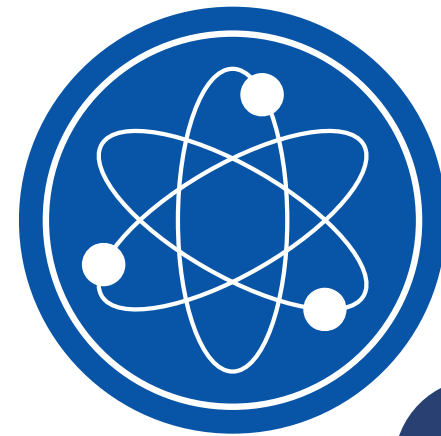


game-data-packager

A data-driven, cross-distribution installer
for commercial game assets.



Background

- Many old games were either **re-released** as free software or reverse engineered
 - But most times it's only the game engine, not the data
- There well exists free alternative data sets for some games
 - FreeDoom (*Doom I & II*)
 - OpenTTD (*Transport Tycoon Deluxe*)
 - Lgeneral (*Panzer General*)
- Other engines, while being free software; are useless on their own, so they end up in alternate repositories:
 - Debian: `contrib`, or `non-free` if there's a non-commercial clause
 - Fedora: these goes in alternative RPMFusion repository

Acquiring non-free data

- Most shareware games can only be distributed as a copy of the original archive; commercial game assets cannot be distributed at all.
- `game-data-packager` existed in Debian since 2005 as a tool that creates `.deb` packages for local use.
- Other distributions are providing similar scripts, that also involves `wget`, `md5sum`, `unzip`, ...
... and a lot of duplicated work.
<https://aur.archlinux.org/cgit/aur.git/tree/PKGBUILD?h=heretic1-wad>
- Fedora & Mageia are using `autodownloader` that saves data in `/home/`.
- Each game engine has detailed instructions to follow by hand.



Download



13 Steps



Happy new year 2015

- A new data-driven engine was committed to git around 2015/01/01 :
 - engine is written in Python3
 - per-game definitions are stored in human-writable machine-readable YAML files.
 - a plug-in system can handle individual game quirks
- An authoring tool is then added, all the existing shell scripts got rewritten pretty fast.
- By end of 2015 about 200 games are supported, including most ScummVM games



« Wow that's huge »

Objective

Our objective is to automate:

- downloading
- unpacking
- patching
- verification
- repacking in a `.deb` or `.rpm`
- extra niceties when applicable:
 - Icons
 - `.desktop` files
 - launcher scripts



Downloading

- Plain HTTP/FTP with mirror list support
- `lgogdownloader` integration
- Steam integration with either
 - Linux native client
 - Windows client (optionally running in Wine)
 - `steamcmd i386` command line utility, that will also happily run on ARM platform through QEMU user emulation
- TODO: Multi-CD-ROM support [#800590](#)

Unpacking

- Archives with support built into Python: `.zip`, `.tar.*`
- All kinds of other formats:
 - Innoextract, unshield, cabextract
 - Ancient v1 `.zip` files
 - RAR, LHA, ARJ, 7z
 - ISO archives as provided by GOG.com;
that are typically mounted in the provided `dosbox.conf`.

Patching

- downloading replacement files
- downloading extra files (* .pk?)
- Patching with xdelta (only with official patches)
- TODO: reverse-engineer RTPatch format used by many games starting from DOOM.

Current workaround: use DOSBox to apply the patch manually.

http://www.pocketsoft.com/rtpatch_binary_diff_games.html

Verification

- These information are stored in the YAML definition for each single file:
 - Size in bytes
 - MD5, Sha1 (+ Sha256)
 - Possible names to look for
- The YAML format hold lists of all known good alternatives & known bad version of each file:
 - e.g.: `doom.wad` has 5 known good versions, the 7 others won't work with the current free engines.
- Some packages also have various possible alternatives:
 - e.g.: there are 3 versions of Wolfenstein 3D 1.4 that will make the engine segfault if not run with the correct binary.



Repacking

- Heavy work is handled by either `dpkg-deb` or `rpmbuild`.
- Packages can either be not compressed at all for immediate consumption on the local host; or XZ compressed for long storage.
- Even if these packages are not meant to be uploaded; they try to follow all applicable policies & have been checked with `lintian`, `rpmlint`,...
- TODO: define a new 'local' component in the Debian Policy (vs `main`, `contrib`, `non-free` & *<firmware something>*).
Minor changes are needed in `aptitude`, `vrms`,...too.
This would also benefit more enterprise-y stuff. [#704233](#)

Extras

- Icons

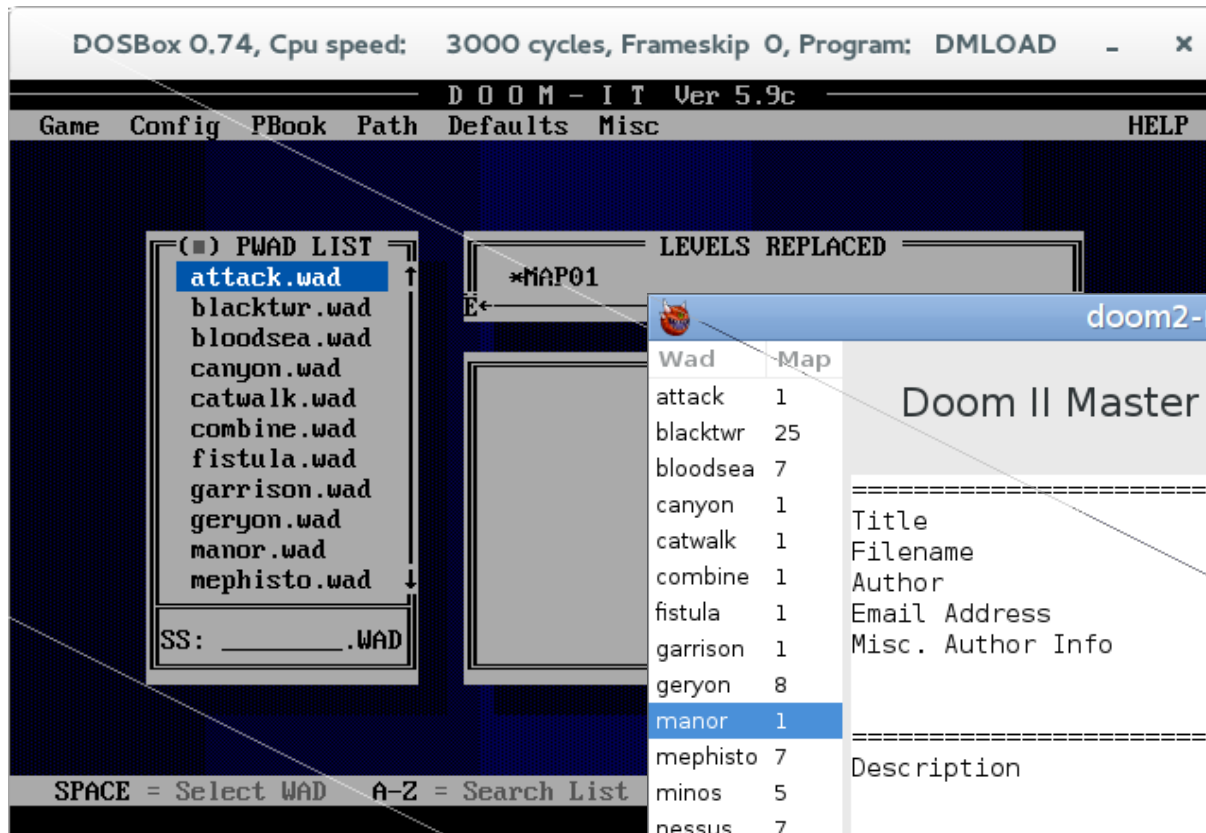


- A few DFSG Free icons, either home-made or re-purposed
 - TODO: extract graphics from game assets or .exe with tools like `deutex` or `icoutils` [#803930](#)
 - TODO: ... or have someone draw nice .svg icons
- `.desktop` files, needed for all multiple-games engines like ScummVM, checked with `desktop-file-validate`

Extras

- Auto-generated launcher scripts:
 - run text-modes games (*Zork*, *H2G2*) from the command-line
 - language detection from `$LANG...` well maybe support for `-q` best or `-q auto` in ScummVM would make more sense.

```
#!/bin/sh
GAME_LANG=$(
echo $LANGUAGE $LANG en | tr ':' '\n' | cut -c1-2 | while read lang
do
[ "$lang" = "en" ] && echo $lang && break
[ "$lang" = "de" ] && echo $lang && break
[ "$lang" = "fr" ] && echo $lang && break
[ "$lang" = "it" ] && echo $lang && break
done
)
if [ "$GAME_LANG" = "en" ]; then
    scummvm -p /usr/share/games/goblins3 gob3
else
    scummvm -q $GAME_LANG -p /usr/share/games/goblins3 gob3
fi
```



Replacement launcher for
"The Master Levels for Doom II"
 with extra features like
 hyperlinks to DoomWiki.

Making it cross-distro

- This is a Debian-native project, but it only had few Debian-specific bits and most were already isolated in nice object-oriented model.
- A few games needed a « Fedora » override in their definition :

```
engine: wolf4sdl
```

```
packages:
```

```
  wolf3d-v14-id-data:
```

```
    longname: Wolfenstein 3D v1.4 - id Software
```

```
    install_to: usr/share/games/wolf3d
```

```
  fedora:
```

```
    engine: wolf4sdl-registered-id
```

```
    install_to: usr/share/wolf3d/registered-id
```

```
steam:
```

```
  id: 2270
```

```
  path: common/Wolfenstein 3D
```

```
gog:
```

```
  url: wolfenstein_3d_and_spear_of_destiny
```

```
  game: wolfenstein_3d
```

Next Steps

- Please provide missing details for rare game versions/dubs.
 - Unofficial high-quality dubs are welcome !
- Port to OpenSuse & Mageia should be trivial; but need a bit of help from each individual engine maintainer to tell where each engine lookup it's data.
- Port to Arch: still at the proof-of-concept stage; a maintainer is needed.
- Convince right owners to make either their old games :
 - free software
 - or free-as-in-beer
 - or at least for sale again on some digital distribution platform
- Provide a nice GUI