

Universal Packages

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Introduction

What are packages?

A **package** is an archive containing a collection of executable files or source code, along with metadata, which represent a computer program.

What is a package format?

A **package format** is an organizational structure for delivering packages to users.

Why do we need package formats?

- They provide a common way to bundle executables, libraries, assets, etc. for deployment on user machines.
- They provide metadata about programs for use in package managers.
- It would suck if we had to go find the source code for every single program we want to use and compile from source.¹

¹Actually, some package formats do require compilation from source (for example some AUR packages) but at least it helps automate this process.

A bit of history

- 1994 `dpkg` — the package format behind `apt` and `apt-get`. Used by Debian-based systems.
- 1997 `RPM` — the package format behind `yum` and `dnf`. Used by RHEL-like systems.
- 2002 `pacman` — the package manager for Arch Linux. It just uses tar files.
- 2004 `klik/PortableLinuxApps` (2011)/`AppImage` (2013) — a package format built to be Linux-distro agnostic.
- 2006 `nix` — a purely functional package format. Primarily used by NixOS.
- June 2016 `snapt` — the Canonical-backed universal package format is ported to a wide range of Linux distros.
- June 2016 `Flatpak` — the Red Hat-backed universal package format becomes generally available.

Universal Package Formats

Common objectives

- Linux distro agnosticism
- Solve the “dependency hell”
- Create a “single” deployment target for all of Linux

ApplImage

Why is ApplImage cool?

- **ApplImage does not require installation.** The ApplImage file is just its compressed image that is mounted with FUSE when it runs.
- **ApplImage does not require root permission.** The application is run as the user and the base system is left untouched.
- **The ApplImage itself is executable.** Just `chmod +x the .AppImage` file and run.
- **Linus says so**

"This is just very cool."

~ Linus Torvalds

Live Demo: Running an ApplImage

snapd

flatpak

nix

Love to Hate Them

Proprietary enterprise applications are coming to Linux

Currently, when enterprises want to make a cross-platform application, they see this:

macOS .dmg

Windows .exe

Linux .deb and .rpm and PKGBUILD and ...then deal with the dependency hell

However, when companies like Canonical come in and say “just target snaps”, all of a sudden, it may tip the scale at enterprises for them to start targeting Linux. If they create a snap, then they capture all of the Linux market, not just the subset that uses a particular format.

Pros and cons

Pros

- More application availability.

Cons

- The applications are going to be crap. Electron, enterprise crap.

Live Demo

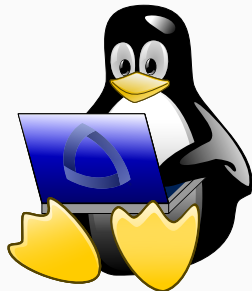
Questions?

- `https://`

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