Reworking the desktop distribution

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What's a desktop distribution made of?

Packages, Packages, Packages

Every installation is "custom"

- What's actually on user's system is not tested

- Can't distinguish between corrupted and modified

- Upgrades are unreliable

Basic Idea

- Operating System Image

- Self-contained applications

- Flexible development environments

OS'es that do this

- OLPC
- Android
- ChromeOS
- Endless OS

Fedora Workstation

- Pure GNOME (mostly)
- General purpose
- With a focus on developers

Fedora "Atomic" Workstation

- Pure GNOME (mostly)
- General purpose
- With a focus on developers
- **ostree images**
- **Using flatpak for apps**

OSTree

- "git" for binary trees

- Used:

  - GNOME Continuous

  - RHEL/Fedora Atomic Host

  - Endless OS

  - Flatpak

How do we make
an operating system image?

Packages, Packages, Packages

Why packages?

- Reuse years of packaging work

- Share security streams

- Don't have to rebuild the world for small changes

- Reduce inter-ostree deltas

rpm-ostree

- Build ostree's from rpm packages

- Layer over ostree for upgrades

  - Show which packages have changed

- Package layering

Package layering

- `rpm-ostree pkg-add`

- List of packages that are layered on top of each upstream tree

- Need to reboot to add/remove/update

The more you layer,
The more you have package pain

ostree admin unlock

- Layer a writable layer on top of /

- Do whatever you want

- Gone on reboot

Flatpak

Where do we get flatpaks

- Where everybody else gets them
- But *also* rebuild app packages

"Atomic" Workstation Status

- OSTrees:
  - Unofficial OSTrees now
  - Built in Fedora infrastructure for F25
- GNOME Software flatpak support: pretty good
- GNOME Software ostree support: in progress
- Flatpaks from RPMs: prototype – F26?

Demo

What about developers?

Types of development

- **Server development**
- **Native application development**
- **GNOME desktop development**
- Scientific computing / Big data
- Low level system development (kernel + friends)
- Mobile app development
- Game development

Development principles

- Environment is not your workstation OS

- Environment is reproducible

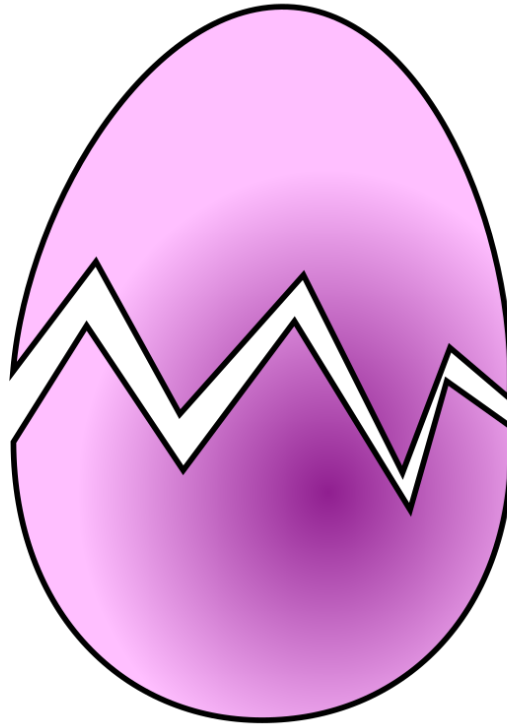- Environment works across different hosts

Server Development

(excluding Java)

- Lots of terminal usage

- Various editors used, few IDE's

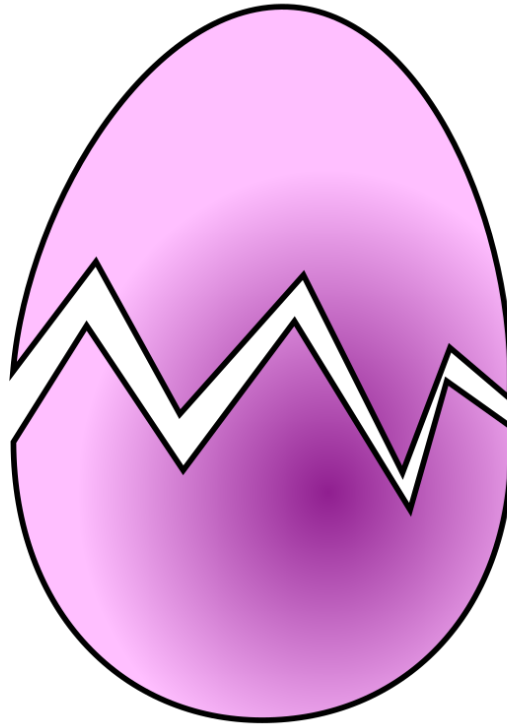- Every language/project has its own way of working

Demo

PurpleEgg

Demo

PurpleEgg

Code name!

PurpleEgg

- Easy set up a scratch container

- Stick close to upstream

- Slick desktop integration

Native app development

- Flatpak, flatpak, flatpak

Whither jhbuild?

- No longer needed for **app** development

- Can also use flatpak for **library** development

- But what about **gnome-shell**, **gnome-online-accounts**, etc.?

- How do you *uniformly* hack on GNOME?

Questions?

These Slides:

http://fishsoup.net/Guadec2016

Trying it out: (*carefully*)

https://pagure.io/fork/walters/workstation-ostree-config/branch/f24-continuous

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http://blog.fishsoup.net