



# Next Gen Tooling (For Release Engineering)

Presented by  
Adam Miller

Fedora Engineering, Release Engineering Team

# Today's Topics

---

## 1. Background

### a. What is:

- i. Release Engineering
- ii. An Operating System
- iii. An application
- iv. A package
- v. A Distribution

### b. Fedora Rings

## 2. Build Tooling Today

## 3. Build Tooling Tomorrow

Background



# What is Rel-Eng?

---

- From Wikipedia
  - “is a sub-discipline in software engineering concerned with the compilation, assembly, and delivery of source code into finished products or other software components”
- Goal (surely you jest):
  - Maintain sanity in the pipeline of source code to something consumable
    - Produce/maintain tooling to facilitate in that goal
  - <https://fedoraproject.org/wiki/ReleaseEngineering/Overview>
  - <https://fedoraproject.org/wiki/ReleaseEngineering/Philosophy>

# Operating Systems?

---

- What is an Operating System?
  - “software that manages computer hardware and software resources and provides common services for computer programs”
    - (also from Wikipedia)

# Applications?

---

- What is an Application?
  - “set of computer programs designed to permit the user to perform a group of coordinated functions, tasks, or activities. Application software cannot run on itself but is dependent on system software to execute.”
    - (also from Wikipedia)
  - Thing to note and think about: “is dependent on the system software to execute”



# Packages?

---

- What are Packages?
  - Build artifacts that can be consumed and used
    - What “consumed” and “used” will vary based on content vs code and end delivery format/mechanism
      - (Fonts, Icon sets, qcow images, rpm-ostrees, etc)
  - What about things that aren't rpm?
    - pip, gem, npm, maven, etc.

# Distro?

---

- What is a Distribution?
  - “an operating system made as a software collection based on the Linux kernel and, often, on a package management system.”
    - (Also from wikipedia)
- What does this mean today vs yesterday?
  - Distros used to be one-stop-shop
  - Today it's the base layer where some things come from the distro but not all



# Thinking about Fedora

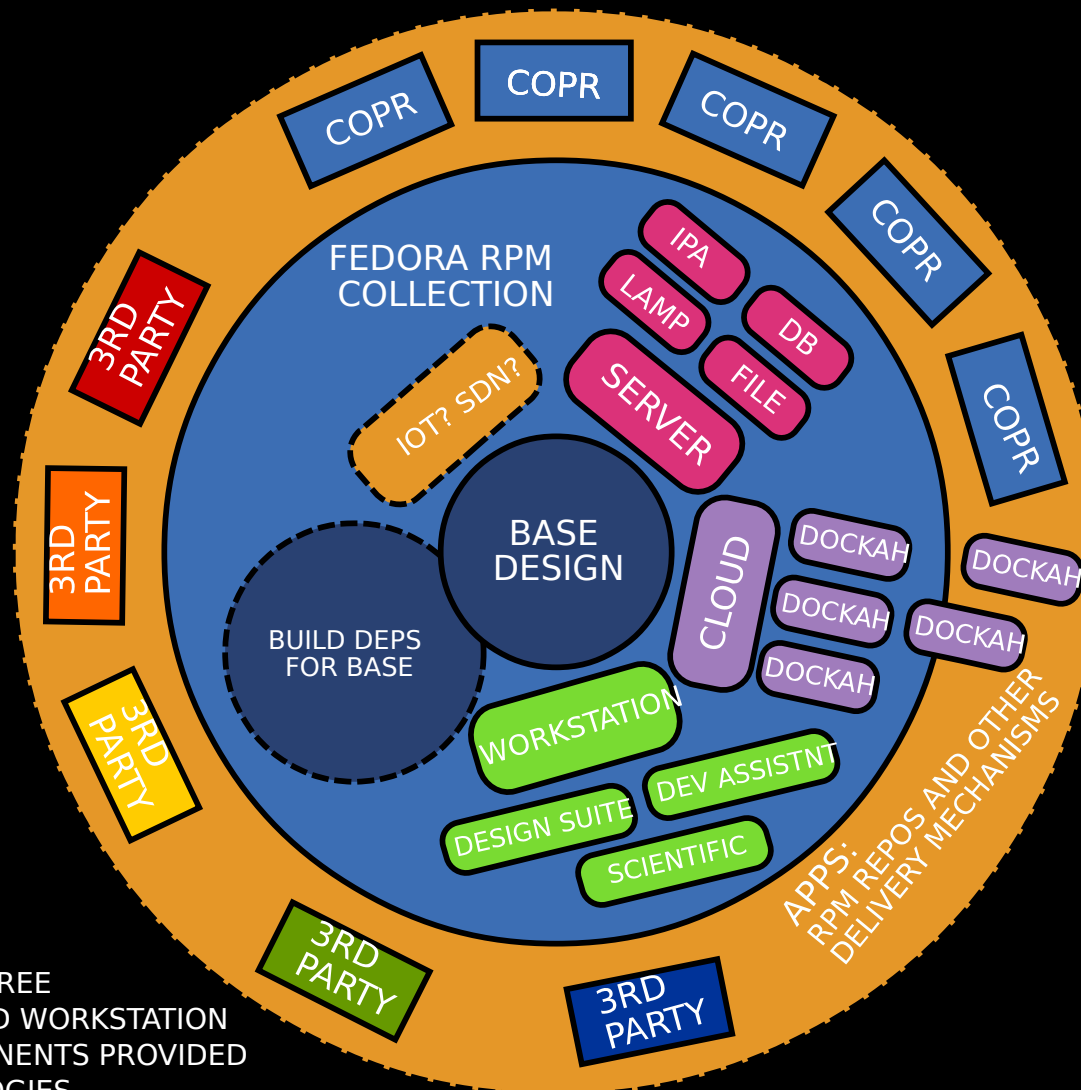
---

- Where does the Operating System end and the Application begin?
- What if those things weren't tightly coupled?
  - Docker, Rocket(rkt), xdg-app, \$other(?)
- Examples:
  - Android
  - iOS
  - FirefoxOS
  - ChromeOS

# Fedora Rings!

FEDORA.NEXT  
RINGS MODEL  
CONCEPT

SPRING 2015



BASE DESIGN AS RPM-OSTREE  
WITH SERVER, CLOUD, AND WORKSTATION  
AS OVERLAYS; SUBCOMPONENTS PROVIDED  
VIA CONTAINER TECHNOLOGIES

# Fedora Rings?

---

- What does Fedora Rings mean to RelEng?
  - We need to be able to adapt more rapidly for build artifact delivery (things change faster than they used to)
  - Still need to make sure the Operating System doesn't turn into the wild west.
    - Rel-Eng criteria still need to be met
      - Reproducible
      - Auditable
      - Definable
      - Deliverable



Tooling Today

# Today

---

- (Yesterday too)
- Koji
  - RPM-centric
  - ImageFactory Integration
  - LiveCD Creator
- Pungi
- Lorax
- Bodhi
- Wild West: COPR

Tooling Tomorrow

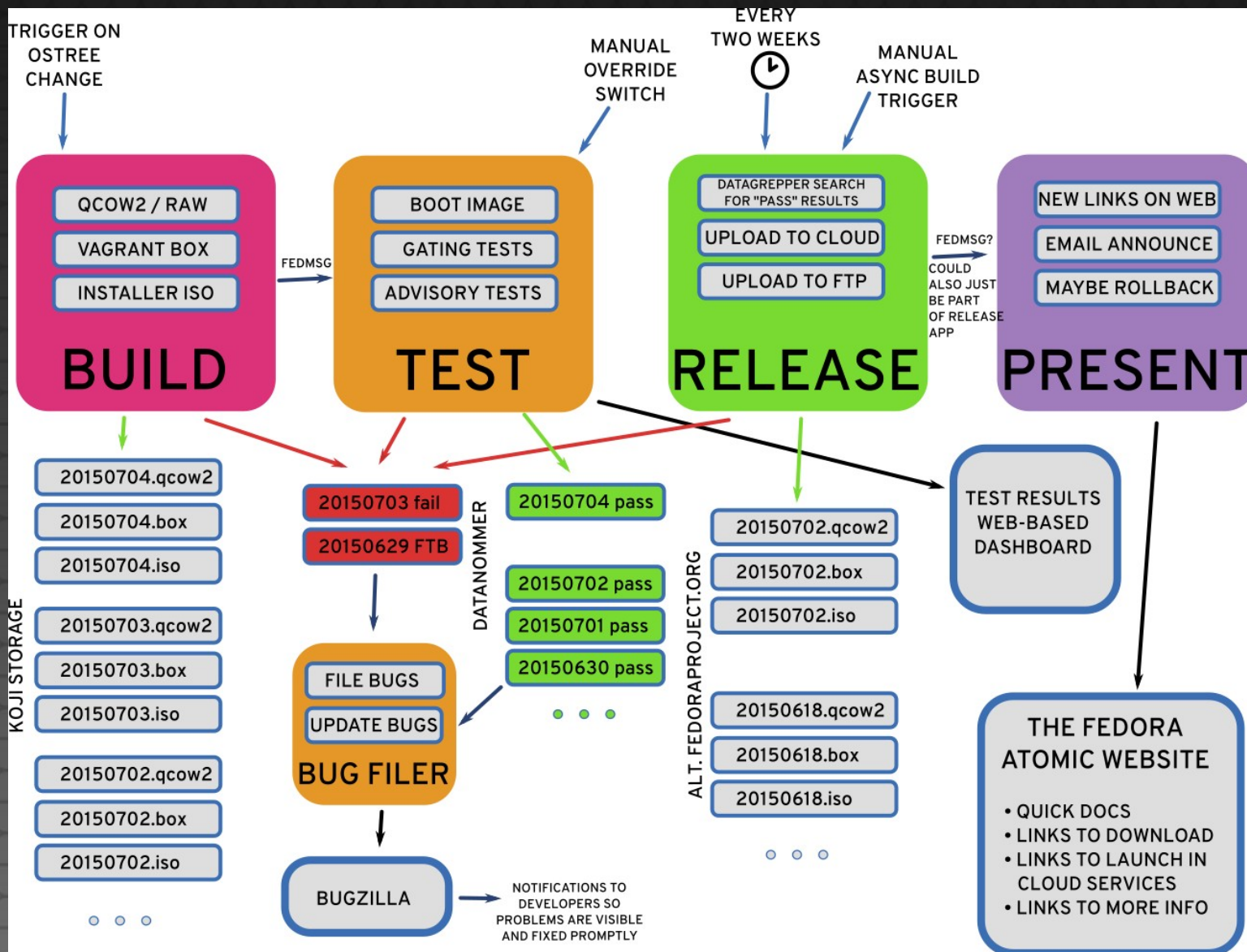


# Tomorrow

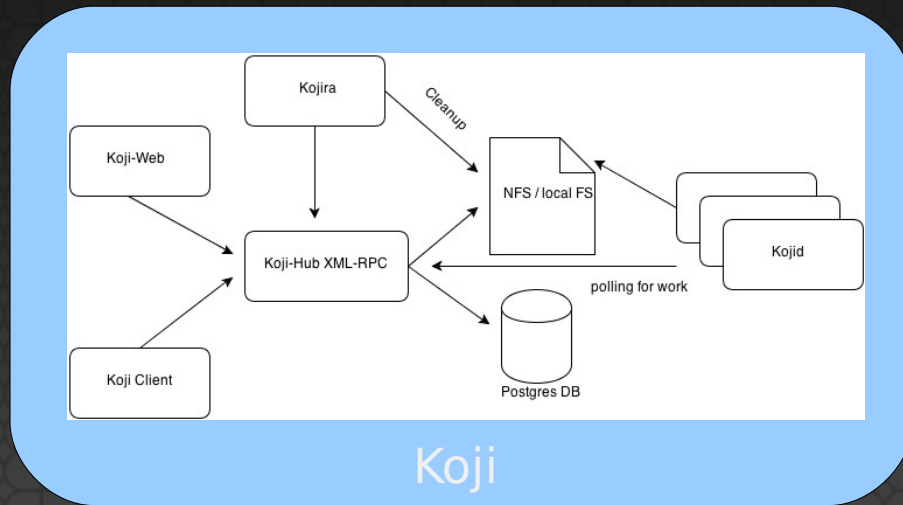
---

- Koji 2.0
  - Content Generator Centric
    - RPM Builds being a first class Content Generator
  - Live Media Creator
  - Secondard Arches in mainline Koji
- Pungi4 (Might go away? Maybe???)
- Layered Image Builds for Containers
- Fedora Atomic Two Week Releases
- Wild West: COPR/DOPR/\$Other?

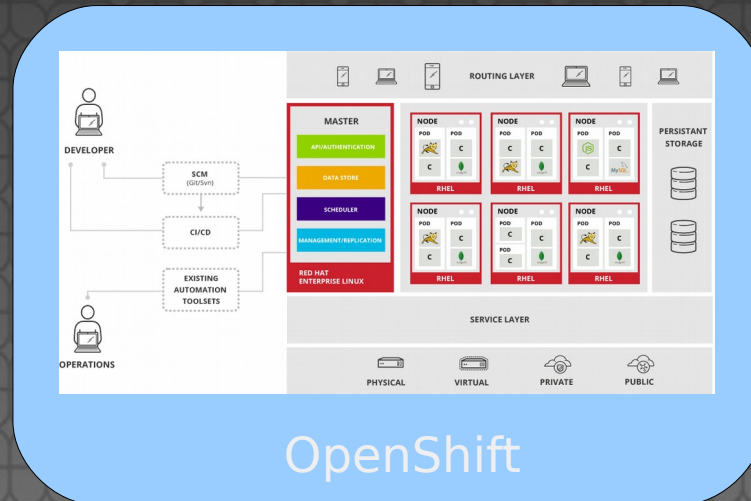
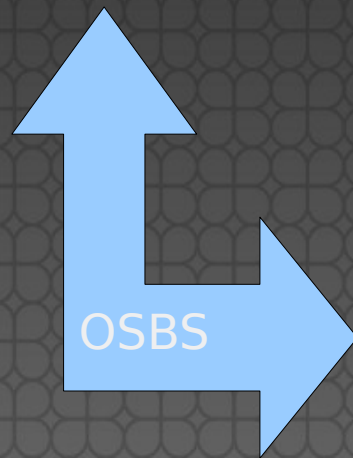
# Atomic Two Weeks



# Layered Image Build



Koji



OpenShift





# Questions?



Contact:

[maxamillion@fedoraproject.org](mailto:maxamillion@fedoraproject.org)

@TheMaxamillion

maxamillion in FAS / on IRC