Silverblue: On the way to the future of Fedora Workstation

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“Fedora system for living in the container world.”
Matthew Miller, Flock 2019
Silverblue

- Next generation desktop OS
- Parts of the filesystem are mounted as read-only
- Utilizing the OSTree and rpm-ostree projects
- Atomic updates
  - necessary to restart into the new deployment
- Primarily the end-user focused system
Benefits

● Robustness
  ○ atomic updates, minimal base OS, read-only parts, rollbacks
● Security
● Known deployment (for administrators)
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Base OS is the most important part - into a degree it doesn't matter if a container breaks or an application doesn't run, but it's totally unacceptable to not have the main OS working.
Could Silverblue replace the current Fedora Workstation?
Only if certain criteria are met.
Software delivery

- Containers (CLI, GUI) and Flatpaks (GUI)
  - Preferred way
  - Software decoupled from the base OS
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  - Preferred way
  - Software decoupled from the base OS
- Package overlaying
  - A way to install traditional RPM packages
  - Should be used with caution to kept the base OS minimal and robust
Flatpaks

Fedora
- `rpm2flatpak`

Flathub
- `source2flatpak` (in most cases)
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Fedora Flatpaks - current problems

● No automation - automatic rebuilds when any RPM package changes (currently blocked on the lack of notifications)
● No policy set for the long term support and maintainer’s role in it (package maintainer vs. Flatpak maintainer)
● Too few applications available
  ○ ~1000 packages with desktop files, target is to have around 30% available as Flatpaks
● No support for delta updates
● No localization
● No caching when doing builds locally
● SPEC files have to be adapted or fixed
  ○ /app vs. /usr
Toolbox

- Moving development and playground away from the main OS
- Easy way to get the traditional Fedora
- CLI and GUI applications
- Toolboxes per projects
- Specialized Toolboxes
  - Software that’s hard to install/configure
  - Tensorflow, ...

Toolbox

- Shell wrapper around the Podman project
- Golang rewrite
  - Podman and its regressions
- Integration into the OS
  - GNOME Terminal
GNOME Software

- GUI for common and advanced OS operations
  - Currently only the update (rpm-ostree upgrade) is supported
  - System upgrade (rpm-ostree rebase)
  - Rollbacks (rpm-ostree rollback) and persistent rollbacks
  - Flatpak rollbacks
Update cadence

- Are we updating too often?
  - Based on the feedback - yes
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- Slow down the cycle to 2 - 3 weeks
  - Need to cooperate with Fedora QA
  - More time to test the update as a unit (manually and automatically)
  - Early adopters
  - Opt-in for regular cadence
  - Critical vulnerabilities pushed asynchronously
Other problems

- Read-only base OS (/usr not writable)
  - Drivers
  - 3rd-party software
- Debugging experience
  - Debuginfo packages installation
- Dual boot UX
Official site:
silverblue.fedoraproject.org

Discussions:
discussion.fedoraproject.org/c/desktop/silverblue

Documentation:
docs.fedoraproject.org/en-US/fedora-silverblue

Issue tracker:
github.com/fedora-silverblue/issue-tracker

Planning:
teams.fedoraproject.org/project/silverblue
Questions?
Thank you for your attention!