Fedora IoT

who, what, when, where, why, how?

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Fedora IoT Overview

- Who?
- What?
- When?
- Where?
- Why?
- How?

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Who?

Who is Fedora IoT

- Initiative started by me
- Role provided by SVP of RHEL Engineering
- Investigate IoT from a Fedora/RHEL perspective
- Not to start from ground zero
- A small but growing community
- First full time team member starts Monday!

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Who is the Audience

- The Fedora community for IoT
- An initial focus on certain use cases
  - Industrial IoT AKA “Industry 4.0”
  - Oil and Gas
  - Smart cities
  - Automotive
  - Smart home
- New users to Linux with an interest in IoT
- Existing Fedora/elX users

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What?

What is Fedora IoT

- An official Fedora Council Objective
- Moving to a Fedora Edition soon
- Based on Fedora
- Stands on the shoulders of Fedora giants
- Using Red Hat tech such as ostree, systemd, podman, fwupdmgr
- Same puzzle pieces, different picture
- Upstream participation in IoT ecosystem, standards and initiatives

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When?

When?

- Initiative almost 3 years
- First official release as a spin was F-29
- Released F-30
- Promotion to Edition RSN
- Generally monthly feature releases
- Started slowly, evolving quickly

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Why?

Why do Fedora IoT?

- A traditional rpm/yum based distro isn't good for IoT, if it breaks you need to "roll trucks"
- Fedora is a good base for an IoT distro
- Fast moving to allow quick innovation
- Don't throw away good knowledge of how to do an OS, security, updates and process
- New use case, no legacy users so no need to support the billions of use cases of a traditional distro so can be actively opinionated on changes and break the mold

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How?

How do we do it?

- rpm-ostree and other Atomic/CoreOS tech
- Uses OCI container stack (podman, skopeo etc)
- Simple compose process, will support ImageBuilder
- Big focus on security inc TPM2, IMA, systemd, seccomp, SELinux, secure-boot
- Similar OS to the data centre without the physical security
- Currently MVP and moving forward quickly

How do we do it?

- Components seen as key to complete management stack at scale
  - OS updates: Update/rollback, auto scale
  - OS config management inc eventual consistency
  - App management and updates
  - Device management including HW failures, firmware updates
  - Provisioning support and standardisation
- Support for deployments of millions of devices
- Eventual consistency for occasional connected

Where?

Where can I find it?

- https://iot.fedoraproject.org/
- https://teams.fedoraproject.org/project/fedora-iot/kanban
- @FedoraIoT on twitter
- #fedora-iot freenode IRC
- https://lists.fedoraproject.org/admin/lists/iot.lists.fedoraproject.org/

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Questions?

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