Agenda

• Who is talking?
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• Introduction: Oniro Project
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• Blueprints in the Oniro Context
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- Showcases/demos
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• Conclusion
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- Q&A
Presentation

• We're a part of:
  ▪ Eclipse Oniro project
  ▪ Huawei OpenSource Techology Center
Presentation

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  - Huawei OpenSource Technology Center
- Philippe Coval
  - Senior Technical Marketing
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• Andrei Gherzan
  ▪ Principal Solution Architect
• It's a teamwork:
  ▪ Thx @bero, @sudhesh, @stefan, @pidge, Seco's @fabio...
What's Oniro Project?
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- An open source distributed operating system
  - Targeting IoT devices
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- An open source distributed operating system
  - Targeting IoT devices
- Defragment development for embedded sys:
  - Avoid technology silos
  - Unified tooling, common policies
Who is hosting Oniro?
Who is hosting Oniro?

- An Eclipse Foundation top level project
  - supported by an EF working group
Who is hosting Oniro?

- An **Eclipse Foundation** top level project
  - supported by an EF working group
- Designed to be **OpenHarmony** compatible
  - project hosted @ **OpenAtom Foundation**
What's Oniro Platform?
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- Standard software base
  - for making products and solutions
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- Based on mature open source projects
  - Reuse what's best on the "OSS market"
  - Fill gaps
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  - Linux, Zephyr, LiteOS...
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- Common build tooling (bitbake OE/Yocto)
- Point of convergence
  - For product-based projects
Oniro provides
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- Defines and implements best practices:
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  - Open development community
    - CI/CD, Testing
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    - IP Compliance
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- Blueprint projects
Blueprints' projects
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- Minimum Viable Products:
  - Design and implementation
  - Fully opensource
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- Final integration
  - Feature validation and testing
Blueprints' projects

• Minimum Viable Products:
  ▪ Design and implementation
  ▪ Fully opensource

• Final integration
  ▪ Feature validation and testing

• Maintenance with reproducibility in mind
Blueprints' use cases
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• Product foundations based on use-cases:
  ▪ Vending machine, Key Pad
  ▪ Door lock
  ▪ IoT gateway
Blueprints' use cases

- Product foundations based on use-cases:
  - Vending machine, Key Pad
  - Door lock
  - IoT gateway
- Your use-case, your product.
Oniro's Vending machine
Oniro's Keypad
IoT Gateway

Board: Arduino Nano 33 BLE Sense
EUI64: f4ce36508a0473d1
Password: J01NU5
IoT Gateway

Board: Arduino Nano 33 BLE Sense
EUI64: f4ce36508a0473d1
Password: J01NU5

Connected to Wi-fi
<unknown ssid>

Connected to Border Router
OniroThread

My Thread Product
OniroThread

Added
My Thread Product
to OniroThread
Getting started
Getting started

• Refer to reference documentation:
  ▪ https://docs.oniroproject.org/
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• Download Oniro's sources:
  
  ```
  repo init -u https://booting.oniroproject.org/distro/oniro
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Getting started

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• Add blueprints collection:
  
  git clone https://booting.oniroproject.org/distro/meta-oniro-blueprints
Getting started

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- Add blueprints collection:
  
  ```
  git clone https://booting.oniroproject.org/distro/meta-oniro-blueprints
  ```
- Get inspired to add your $custom blueprint along
  - matching the kernel ($flavour) of choice
Build custom blueprint
Build custom blueprint

• Use blueprint's distro configuration:

```bash
export DISTRO="oniro-$flavour-$custom"
```
Build custom blueprint

- Use blueprint's distro configuration:
  ```
  export DISTRO="oniro-$flavour-$custom"
  ```

- Build image to be deployed to device
  ```
  bitbake blueprint-$custom-image # for Linux based BP
  bitbake zephyr-blueprint-$custom # for Zephyr based BP
  ```
Summary

- Oniro is multi-kernel OS for embedded/IoT:
  - Based on Linux or Zephyr or LiteOS...
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  - To satisfy business requirements
  - Easy to reproduce from scratch
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- Try existing blueprints or create
  - Your own Oniro-based demo or product!
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- It includes "Blueprints" projects:
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  - Easy to reproduce from scratch
- Try existing blueprints or create
  - Your own Oniro-based demo or product!
- Visit FOSDEM Oniro Stand for more!
Resources and more:

- https://oniroproject.org/
  - https://docs.oniroproject.org/
  - https://docs.oniroproject.org/projects/blueprints/
  - https://booting.oniroproject.org/
- https://eclipse.org/
- https://yoctoproject.org/
- https://zephyrproject.org/
+ Extras?

- Oniro playlist
- Fosdem 2021
- EclipseCon 2021
- SFSCON2021
Howto: IoT Gateway
Howto: Doorlock
How to: Vending machine
Oniro's Zephyr flavour

- Use mainline zephyr kernel
  - Upstream's Zephyr use west
- Oniro uses bitbake (like on Linux)
  - Uses meta-zephyr + meta-zephyr-bsp
Build Keypad

- repo init -u https://booting.oniroproject.org/distro/oniro
- git clone https://booting.oniroproject.org/distro/meta-oniro-blueprints
- TEMPLATECONF=../oniro/flavours/zephyr ./oe-core/oe-init-build-env build-oniro-zephyr
- export MACHINE=nrf52840dk-nrf52840
- bitbake zephyr-blueprint-keypad
Welcome to Oniro

Video Playback