The OpenEdge Project

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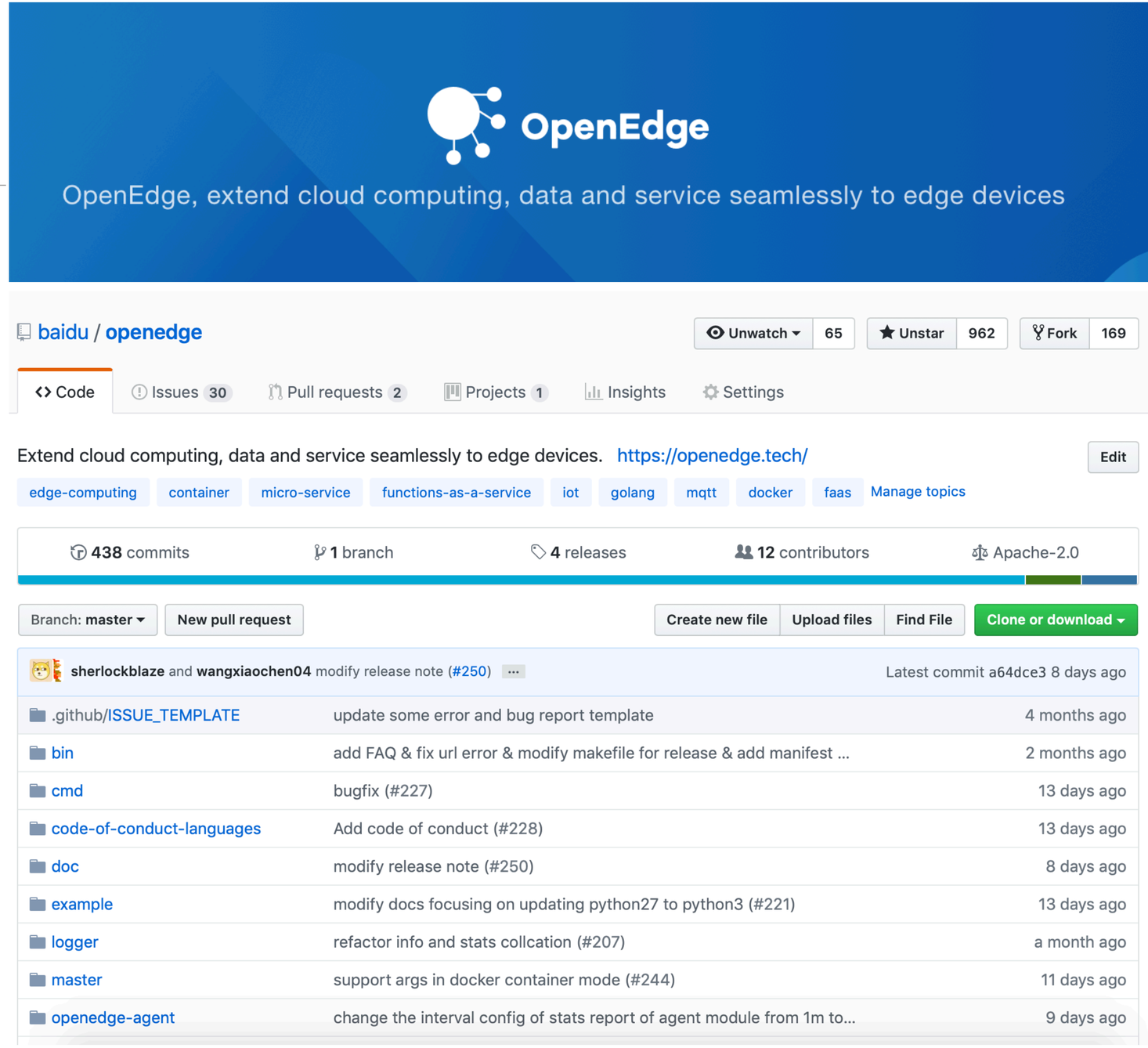
Outline

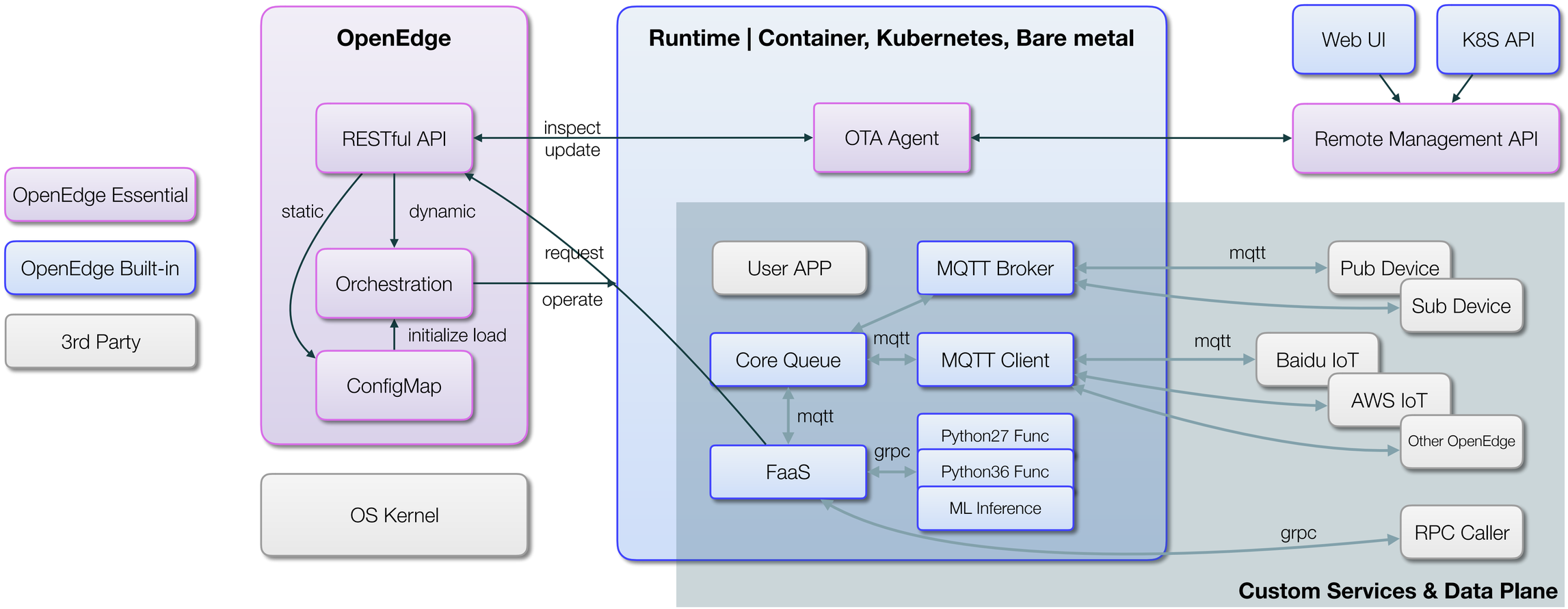
- Profile of OpenEdge Project
- Architecture
- Roadmap and Upcoming release feature
- Application PoC 1
- Application PoC 2
- OpenEdge in Education

OpenEdge, Open Source

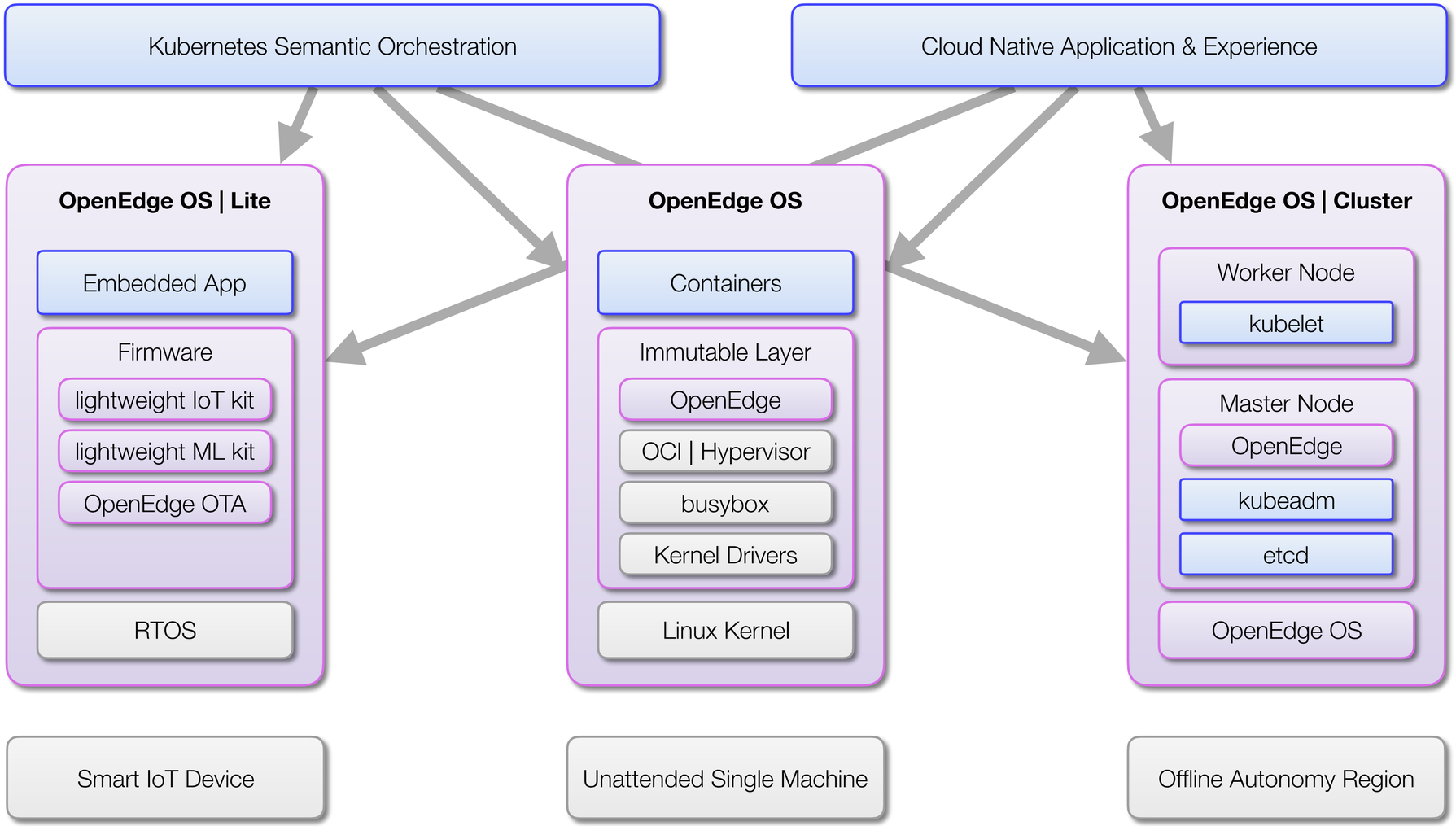
- https://github.com/baidu/openedge
  - Moving to openedgetech/openedge in next release
- First release in Dec. 2018
  - 4 Releases
  - 12 Contributors
  - 900+ stars on github.com
- Focus
  - Cloud Native infrastructure on Edge
  - Large-scale mgmt of unattented equipments
  - Toolkits & services for creating applications
- Vision
  - Edge Operating System
  - Edge Toolchain for Developers
  - Cloud, Edge and IoT data collaboration



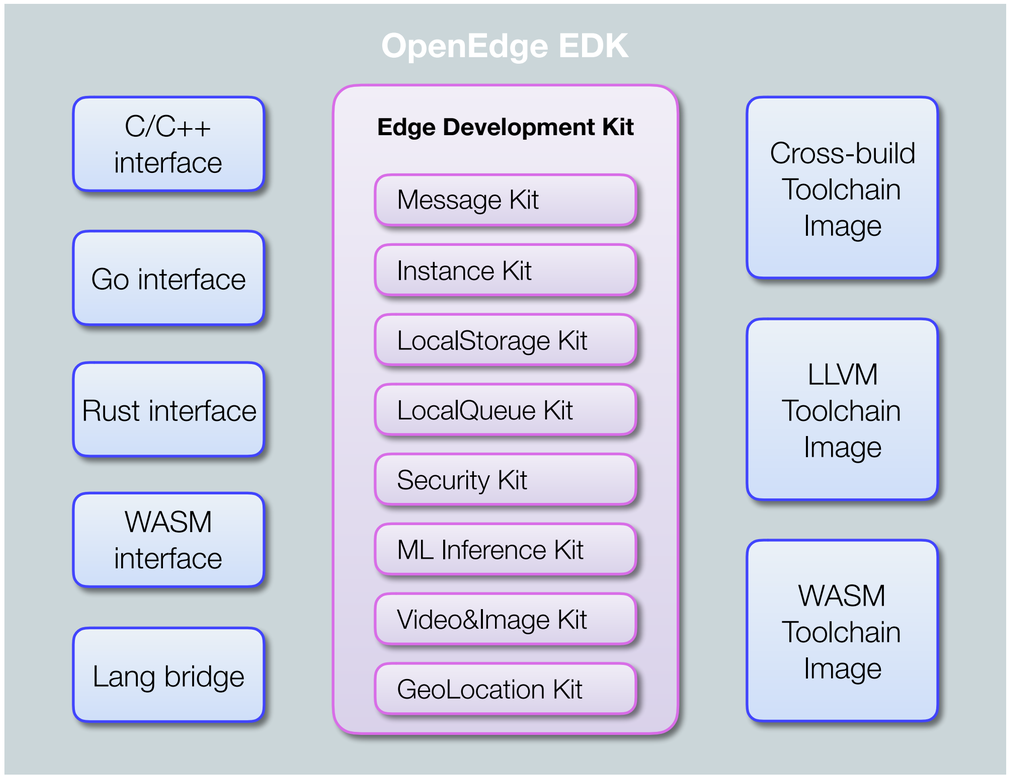
Architecture

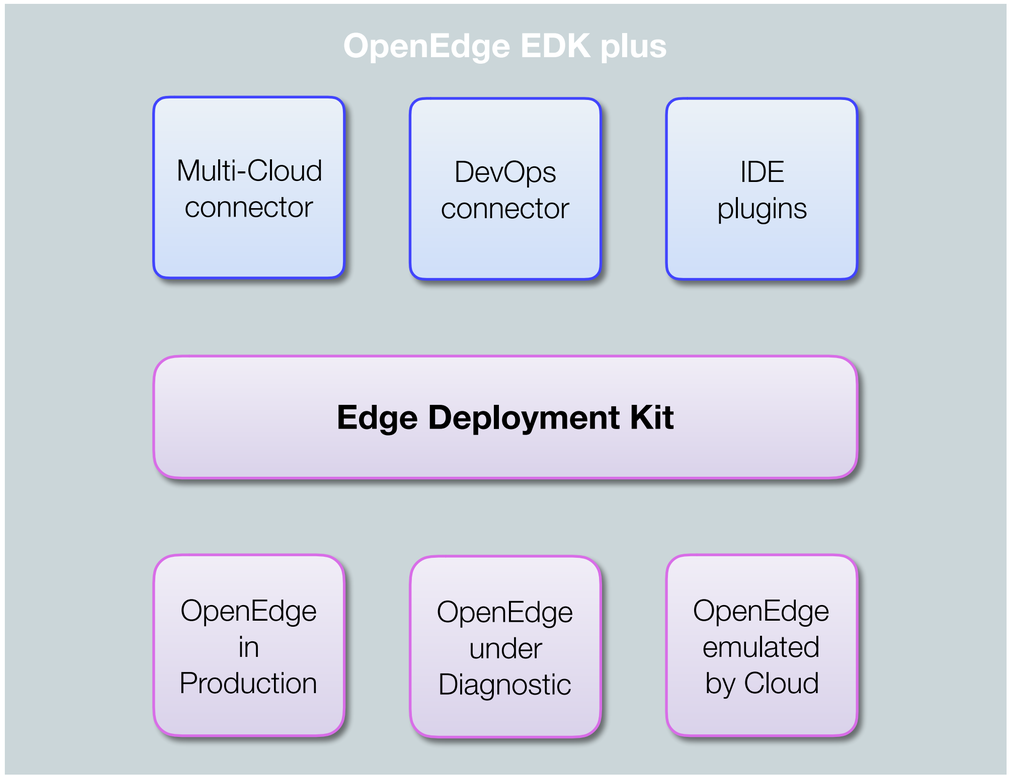


Roadmap: Edge Operating System



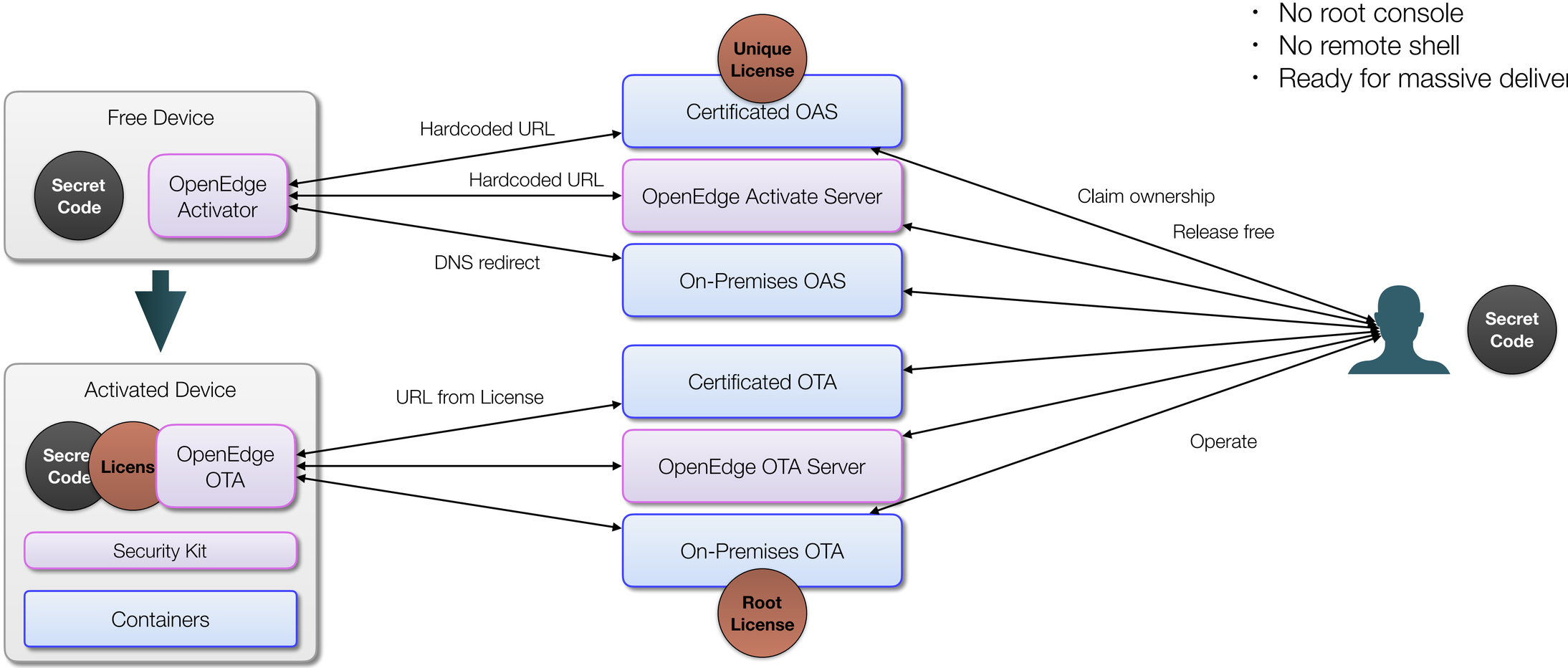
Roadmap: Edge Toolchain for Developers





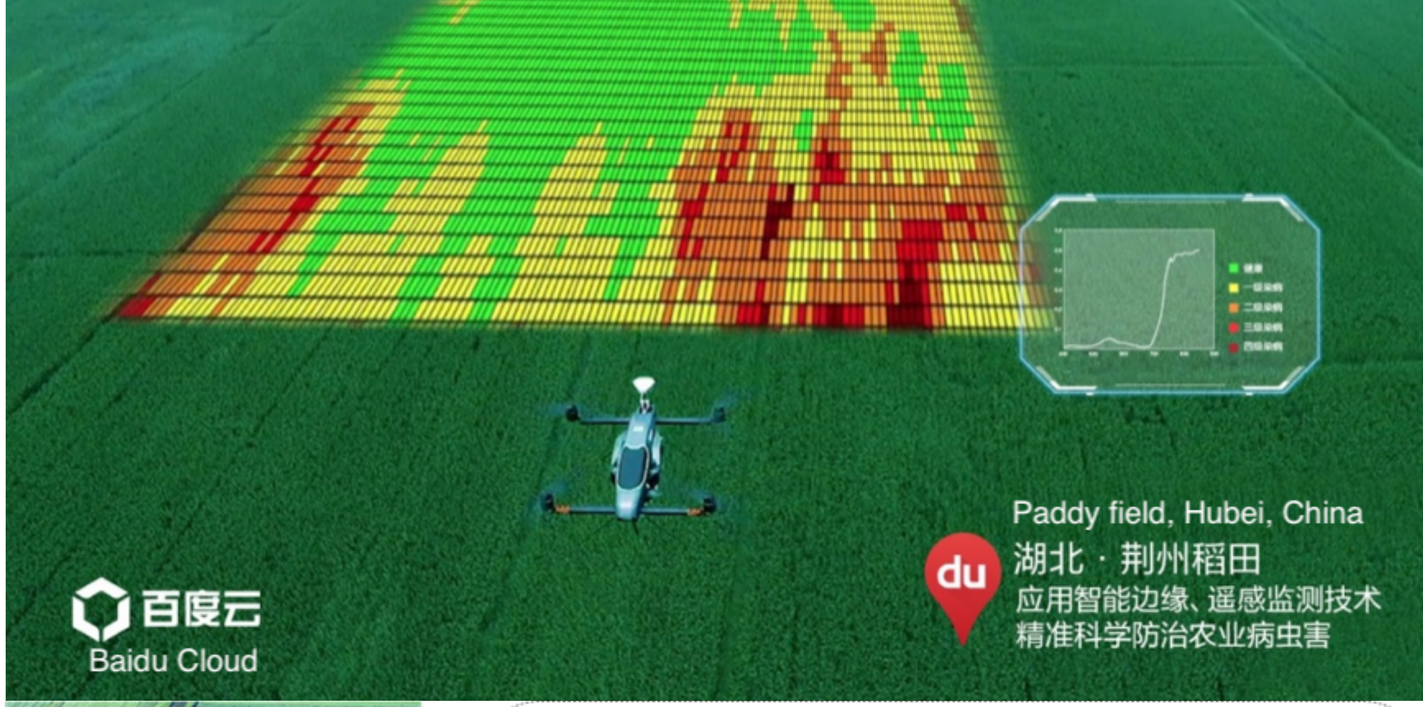
Upcoming: Device Activation and End-to-End Security

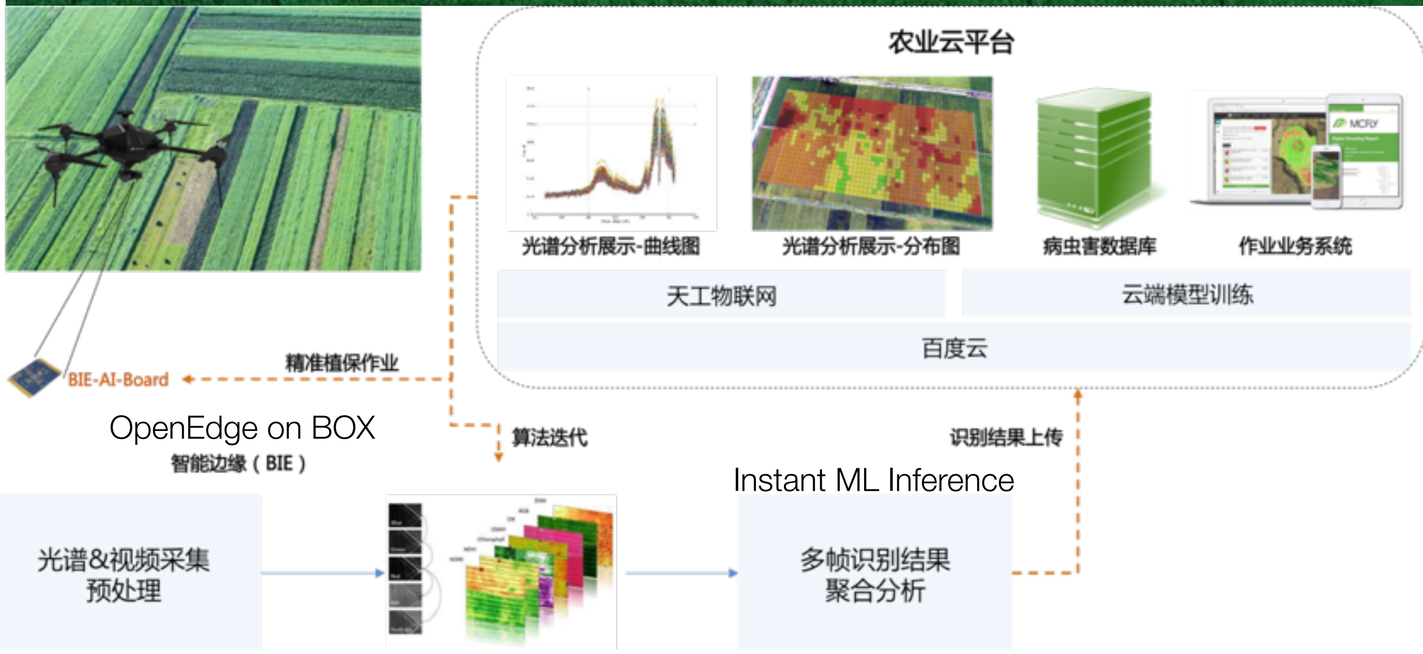
- No password
- No root console
- No remote shell
- Ready for massive delivery



Application: Real-time monitoring and crop protection

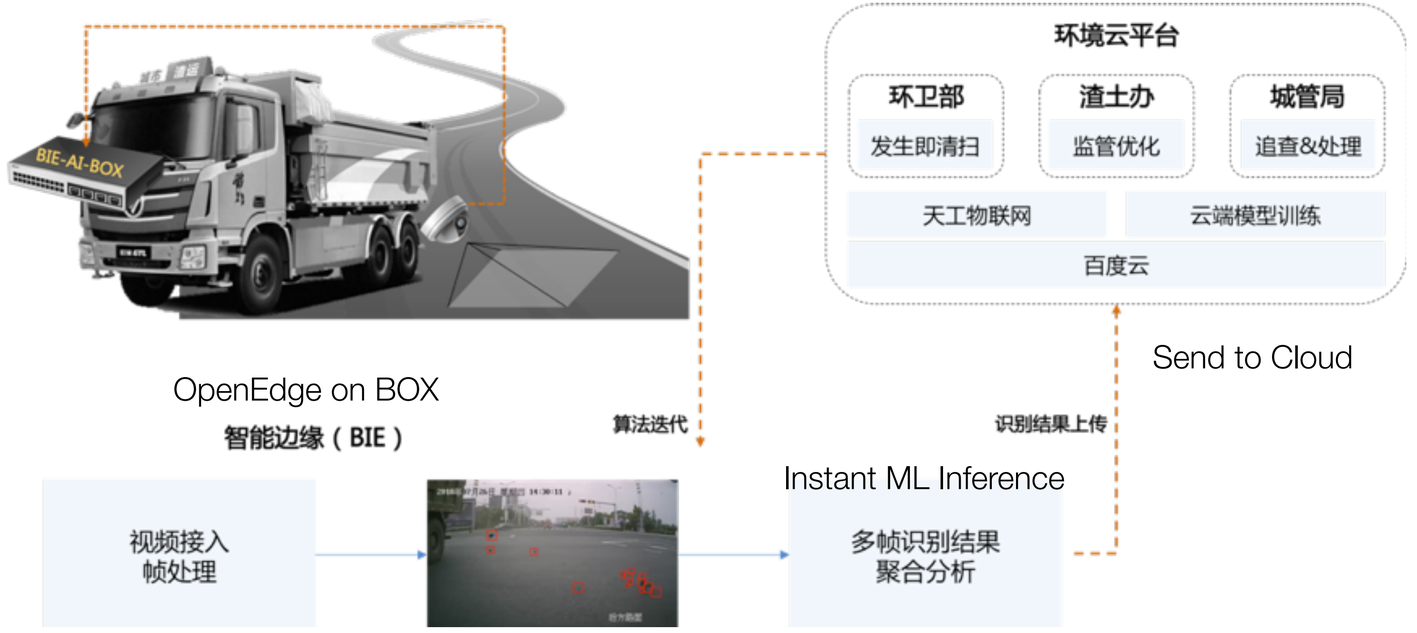
- Background
  - Intelligent Agriculture is now the focus of “13th Five-Year Plan” in China
  - Automatize and intellectualize the process of crop cultivation, plant protection, and insect pest control
  - Edge computing takes the advantage of localized computation and enables spraying the pesticides automatically
- Solution
  - OpenEdge enabled BOX on Drone
  - Baidu IntelliEdge software suite
    - Take video by camera and make ML inference
    - Generate real-time monitor graph





Application: Detect construction dregs and alarm

- Background
  - People are paying more and more attention to the urban environmental sanitation level
  - Discovery of pollutants in advance is more significant
- Solution
  - OpenEdge enabled BOX on truck
  - Baidu IntelliEdge software suite
    - Take video by camera and make ML inference
    - Send structured analyze result to cloud



OpenEdge in Education

OpenEdge, with Baidu IntelliEdge suite

Nvidia Jetson Nano

Baidu IntelliEdge Development Broad

Baidu Cloud Academy Course

Laboratory

Tested and confirmed hardwares

- Common PC & laptops with Linux and macOS
- Limited support on Windows & Windows Container
- Raspberry Pi Model 3B, Linux-armv7, Raspbian stretch
- NXP LS 1043 ARDB, Linux-aarch64, Ubuntu 16.04
- Xilinx ZC702, Linux-armv7
- CT3-CPU-38, Linux-armv7, LinuxRT
- Intel Apollo Lake Atom, Linux-x86_64, Ubuntu 16.04
- Nvidia Jetson Nano, Linux-aarch64