



The IoT Evolution

Containers from the Edge to the Cloud

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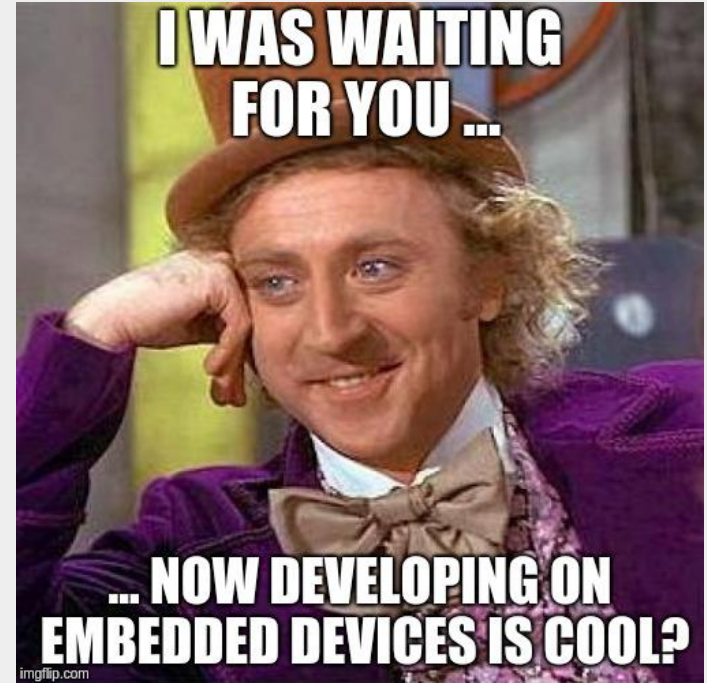
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The IoT expectations in the nerds' minds ...



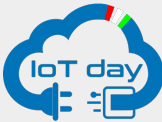
Different reactions from “different” developers ...



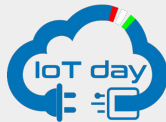
The IoT market promises ...



**... but what has
happened up to
today?**



**It's what I like to
call ... IoT 1.0**

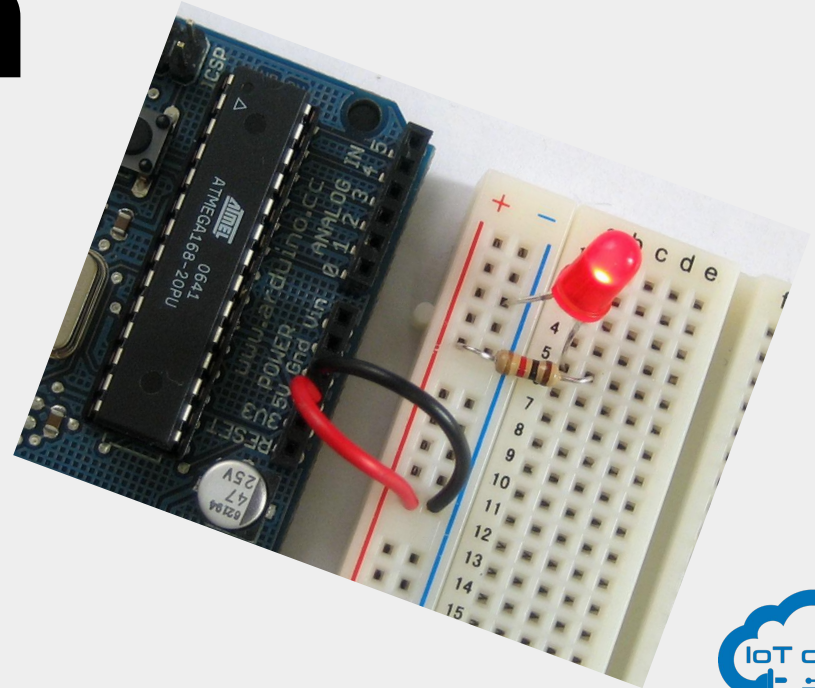


At the beginning ...

- Most about experimenting the “new” Internet of Things world
 - It was just the “embedded devices” world before, but it wasn’t so cool :-)
- Getting more developers to learn “electronic” stuff
 - Excited “web” developers turning on leds :-) ... but using JavaScript :-/
- Getting people to know that HTTP is not the only one protocol
 - MQTT and AMQP 1.0 but even BLE, LoraWAN ... became more popular
 - If you don’t know about them, you should start right now! ;-)
- A tons of startups were born
 - Kickstarter projects, embedded devices, Cloud platforms, ...
 - How many of them are still alive? :-)
- Big companies started to prototype
 - I think that most of them are still prototyping, trying to understand what to do :-)
 - Others have their own first IoT business working “quite” well



**Ok, I am great
to turn on a
led ... now?**

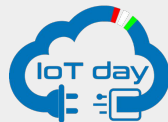


Now it's time to address the real challenges!

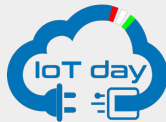
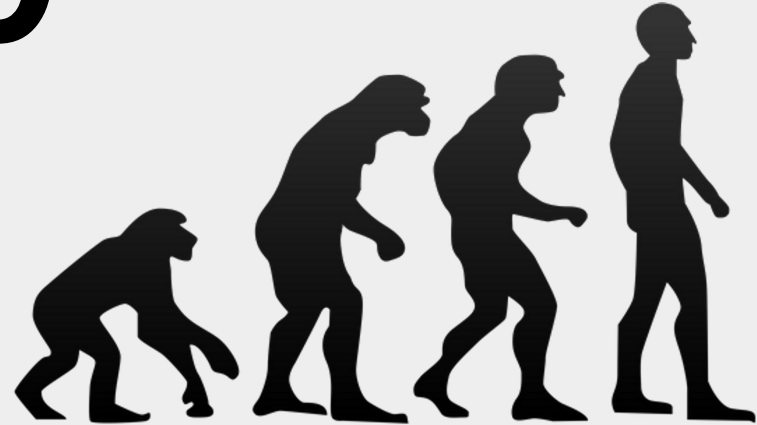


Just a few of them ...

- IoT devices
 - Improving security
 - Simplifying the upgrades and the vulnerabilities fixes
 - Providing applications isolation
 - Making them more extensible
 - Improving portability
- IoT Cloud platforms
 - Handling from one to ... billions of devices
 - Traffic load balancing
 - Autoscaling on traffic bursts
 - High availability
 - Embracing failures → Fault tolerance, Resilience
 - Simplifying features updates, bug fixes and having them fast → Microservices architecture



**Here the IoT
“evolution” comes
to be ... 2.0**



New technologies in the “town”

Containers!

- At the Edge
 - Devices
 - Gateways
- In the Cloud
 - Microservices

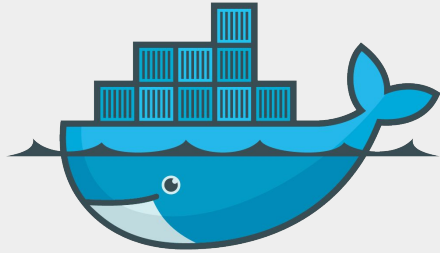


Orchestrators!

- At the Edge
 - Not on devices: do you want to put a nail with the Thor's hammer? :-)
 - On gateways: for moving workload from the Cloud
- In the Cloud
 - IoT microservices orchestration



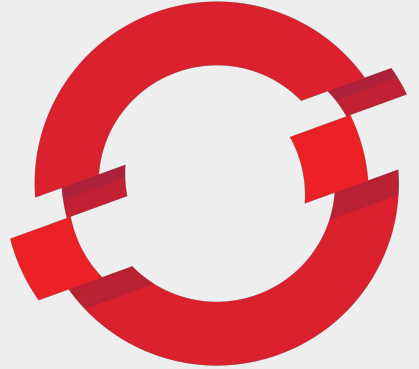
The IoT 2.0 enablers!



docker



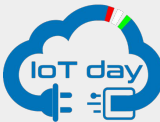
kubernetes



OPENSIFT



cri-o



Let's use them all together ...



Thanks !

Questions ?

