The Crew

Founders

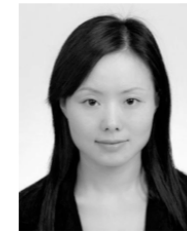Gilles Haiwu

Scientists

Mircea Oleg

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Ester Cathy

Core Developers

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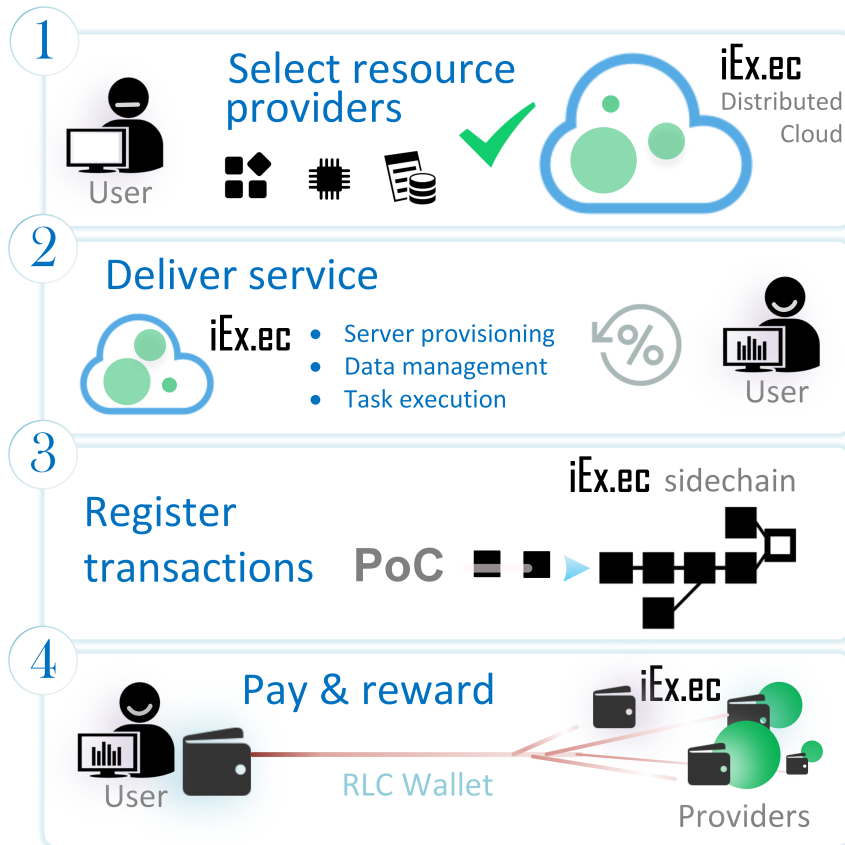
Marketing & Community

Agnes Julien Freya

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Global Market for Computing Resources

1 Select resource providers

User

iEx.ec Distributed Cloud

2 Deliver service

iEx.ec
- Server provisioning
- Data management
- Task execution

User

3 Register transactions

iEx.ec sidechain

PoC

4 Pay & reward

User

RLC Wallet

iEx.ec

Providers

- Market Network based on the Ethereum blockchain

- Computing resources are advertized through smart contracts deployed on the blockchain

- Applications/users can provision resources directly from the blockchain
  - Applications/data/servers

- Blockchain provides
  - Decentralized market place (no trusted authority)
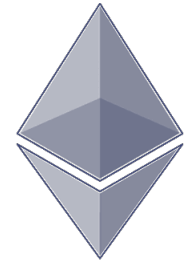 - Transparency, traceability, security

Low cost, Secure and Scalable Decentralized Cloud

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For which Applications ?

- **Blockchain-based Distributed Application (Dapps)**
  - iEx.ec provides access to off-chain computing resources:
    - servers (CPU & GPU), applications, data-sets

- **Legacy applications**
  - High Performance Computing (HPC), Big Data
    - Simulations, 3D rendering, bio-medical research, analytics, machine learning, finance, business intelligence scientific computing, etc…

- **Emerging distributed applications**
  - when the centralized Cloud become a bottleneck !
    - IoT + Big Data, Fog/EDGE Computing, micro-services, distributed machine learning, ambiant IA, VR,, and more…

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Origin of the Technology : Desktop Grid Computing

Using Idle PCs on the Internet to Execute Parallel Applications :

- Mature technology

- Advanced features: security, virtualization, QoS

- Many applications : Finance, Bio-medical, Chemistry, High Energy Physics etc...
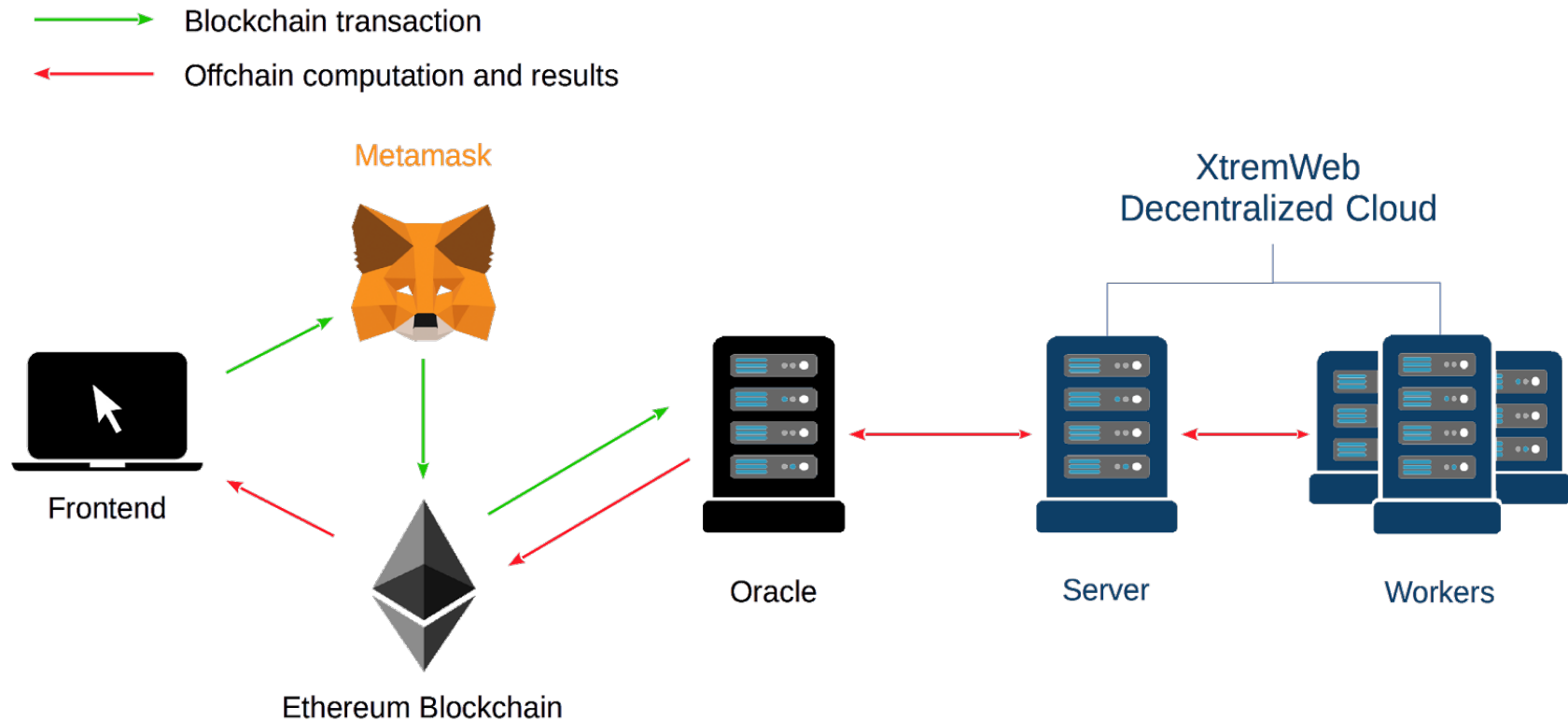
- European Desktop Grid Infrastructure

  - http://desktopgridfederation.org

XtremWeb-HEP

- Grid & Cloud
- Highly secure
- Virtualization
- Hybrid public/private Infrastructure

Aka Volunteer Computing

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iEx.ec Proof-of-Concept

Blockchain transaction

Offchain computation and results

Metamask

Frontend

Ethereum Blockchain

Oracle

XtremWeb
Decentralized Cloud

Server

Workers

http://xw.iex.ec/dashboard

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Generation of Vanity Bitcoin Address

1SFYLchkShTD5DSDRYdr92epmTFtuC7jp

DApp

- **Bitcoin address that starts with a specified pattern**
  - too intensive to run on-chain, trivial parallelism
  - same pattern for many crypto related issues:
    - altcoin relay, homomorphic computing, zk-snarks, etc…
      Ethereum

- **RLC Token: fully ERC20 compliant + Safe Math**

user	RLC Faucet	Spender Allowance	Bitadress.org Priv/pub key	vanity pattern	Vanity + Pub/priv
Ethereum	Faucet SC	Token SC			Vanity Task SC
Off-chain					Worker provisioning &parallel task execution

iEx.ec Testbed Network

Test Bed

xw.iex.ec Cluster Load last custom

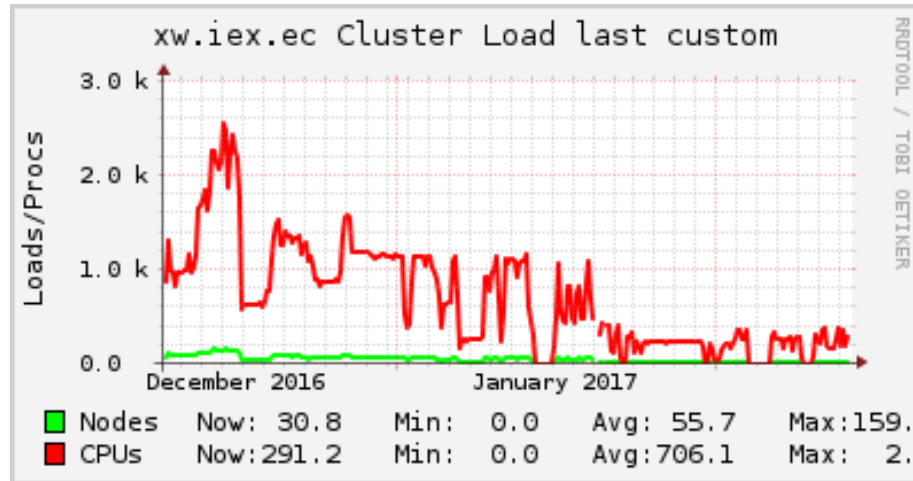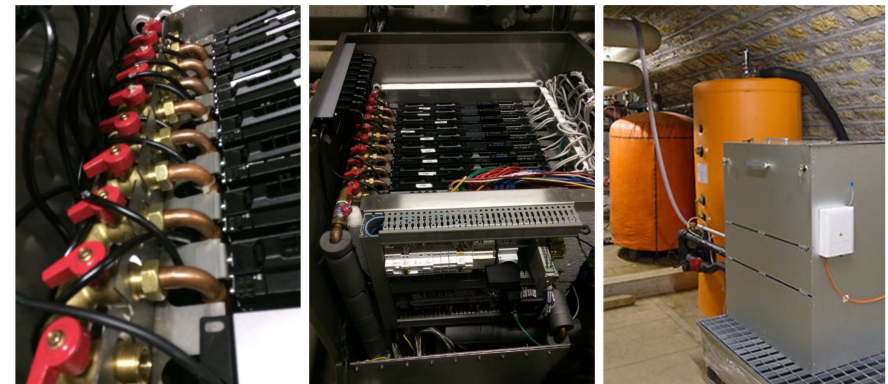|	Now:	Min:	Avg:	Max:
Nodes	30.8	0.0	55.7	159.
CPUs	291.2	0.0	706.1	2.

Testbed for scalability & reliability :
- Grid5000 infrastructure for research in computer science
- one worker/core
- up to **3.000** worker pool

Stimergy: install 10 to 100kW server rooms in buildings and coupling them with their heating system to valorise the heat generated by computers while getting rid of air conditionners

Stimergy

The Stimergy servers, outside/inside. The pipes contain the cooling liquid, which is used to warm the water.
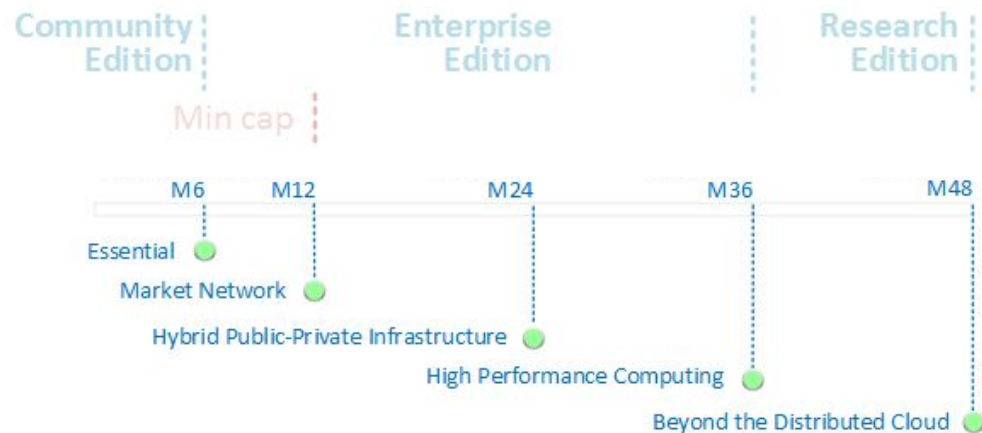
http://xw.iex.ec/ganglia

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Conclusion

iEx.ec distributed cloud :
- allows blockchain-based application to access off-chain computing resources
- use the Ethereum to create a market network of computing resource

Roadmap

White paper/Token release
- join our slack !

iEx.ec: Greener & Smarter Cloud Computing

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