Case study: SME cloud service provider in HNSciCloud PCP

The journey of an SME towards the European Open Science Cloud

Marc-Elian Bégin
CEO, Co-founder

e-IRG, June 2017
Established in Geneva, Switzerland, since 2007

Cutting-edge software development with Swiss & European innovation
We are... **software artisans**, expert in Cloud Computing and Application deployment automation

We provide... solutions for **Edge Computing**, **DevOps**, **Big Data**, **Smart City** and **IoT**

We help... customers **take real advantage** of cloud computing technologies and services

We deliver... **cost reduction** and **gain in productivity**, quality and **security**

We are... multi-cultural team of **highly skilled software engineers** and system administrators
Our products and services portfolio

engineering, transformation and innovation
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engineering, transformation and innovation
Who uses our products and services?
What people say about us?

"SixSq delivers the type of fluid and secure cloud solutions for application deployment automation that are critical to successful businesses."

William Fellows, Analyst, Research Vice President and Co-founder, 451 Research

"Using SlipStream is like driving a Tesla. It’s that good!"

Jurry de la Mar, Head of International Sales, Public Sector, T-Systems
The NuvlaBox provides a flexible platform to host multi-purpose and complex data intensive applications, as part of the PANOPTESEC project, which delivers a cyber defence decision support system.

What people say about the NuvlaBox?

“
The nuvlabox allowed us to deliver a simple, fully bootstrapped cloud in a box to small businesses. With SlipStream it is a great solution for containerised application.

Sebastien Goasguen, Senior Open Source Architect, Citrix

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Douglas Wiemer, Director, Cyber Security Solutions, RHEA Group
H2020 Projects

- **CYCLONE**: Complete dynamic multi-cloud application management
- **PaaSword**: Secure storage in the cloud
- **SCISSOR**: Security in SCADA and Smart Grids
- **mF2C**: bring cloud computing capabilities closer to the end-device and users
- **EU-SEC**: studying ways to improve approaches to trust, assurance and compliance in the ICT market
- **Cloud for Europe (FP7)**: cloud brokerage for public administration

Yes we heavily leverage this investment in HNSciCloud and our journey towards the European Open Science Cloud
HNSciCloud RHEA Team

Consortium Members

- T·Systems
- exoscale
- sixsq
- CYFRONET
High-level solution

User

Nuvla (Management)

Open Telekom Cloud (IaaS)

Exoscale (IaaS)
The hybrid/multi-cloud service evolution

- **Role of SixSq in Helix Nebula**
  - Initial (2011): cloud subject matter expert
  - First service experiment (2013): Helix Nebula Marketplace, based on SlipStream technology and supplier IaaS (Atos, T-Systems, Orange, Exoscale, etc)
  - HNSciCloud (2016-today): leveraging Nuvla, with evolutions
Building the European Open Science Cloud

- **DNA of the EOSC**
  - Multi-cloud: both commercial and private/academic
  - Hybrid-cloud: applications deployed concurrently on different cloud services
  - Support *Most Economically Advantageous Tender* (MEAT), for each provisioning action
- Build on existing infrastructures:
  - GEANT for networking
  - eduGain, ELIXIR, etc. authentication federations
- Continuous monitoring of SLA
Many small technical hurdles that should not be underestimated:

- Bulk purchase definition (what are you buying and under what terms?)
- Account and sub-account creation and configuration
- Quota management
- Federated identity management integration and maintenance
- Continuous testing and monitoring of end-to-end service availability and performance
- Many more…

Practice makes perfect!!
Brokerage layer fundamental in the overall success of EOSC:
- Unify and harmonise cloud providers’ SLA (they are different)
- Provide trusted comparative metrics for MEAT selection
- Remove friction in resource provisioning and migration
- Negotiate bulk purchase and share resulting savings

- We charge 10% for this basic service and believe its is cost effective
- … but requires volume to be profitable
Education:

- Native cloud applications will best leverage cloud environments
- Build applications without cloud dependencies (hidden lock-in)
- Promote best practices: object store, container technology for packaging, deployment automation, ...

- Education is key and could accelerate transition towards cloud native applications and resulting savings
Building the European Open Science Cloud (5)

- **Current SixSq challenges:**
  - Support 1’000’000 VMs under Nuvla management by 2019
  - Automate accounting and billing, including federated identity management
  - Support both traditional (distributed file system) and native (object store) data management models, at scale (>100 PB)
  - Simplify SLA definition and monitoring for better MEAT support
Conclusion

- HNSciCloud PCP is a key stepping stone towards EOSC
- Our SME status provides high rate of innovation and necessary independence between buyers and providers
- Volume is required to make the eco-system sustainable and
- Early adopters have a unique opportunity to shape it as anchor tenants

- It’s by doing that we get better!!
Thanks :-)  
sixsq.com