Platform-as-a-Service freedom or lock-in

Francesco D’Andria

www.cloud4soa.eu

FIA, Aalborg, Session 2.3, Interoperability between Clouds
Outline

- Portability vs Interoperability
- Problems & Challenges
- PaaS Interoperability and Portability - Who benefits?
- The Perfect case study
- Portability and Interoperability Issues
- Cloud4SOA: Multi-Cloud Application-Management PaaS
- Conclusion
Portability vs Interoperability

- **PaaS Interoperability:**
  Ability for different cloud to talk to each other at three different levels (Software, PaaS, IaaS)

- **PaaS Portability:**
  the capability to operate software on different platforms without the need for changes

- **Lock-in:**
  When there is significant cost to switch cloud vendors
Problems & Challenges

- Young and fragmented market:
  The actual PaaS market is, quite young, chaotic and highly fragmented, dominated by a few providers which use and promote their incompatible standards and formats.

- Vendor Lock-in:
  Their Cloud solutions lock customers in a single platform preventing the portability of
Interoperability and Portability

**Who benefits?**

- **Providers**
  - Smaller providers and startups can enter market with services compatible to users' current Cloud investment
  - Enable different
- **Customers ( Developers)**
  - Compare and choose among Cloud offerings with different characteristics
  - Switch between Cloud providers when needed without setting data and applications at risk
to assess PaaS Interoperability/Portability ...
Portability/Interoperability Issues

- Different products, different programming models
- Different implementations of similar PaaS products
  - A great diversity in frameworks, toolsets and SDKs (proprietary)
- Lack of common and standardized PaaS APIs to access to the PaaS Cloud
- Unified way to deploy artefacts in PaaS (e.g. GIT support as standard de facto?)
- Heterogeneous data types and storing
Cloud4SOA: Multi-Cloud Application-Management PaaS

Cloud4SOA system

Developer

Search and deploy

Cloud4SOA ecosystem

CloudBees

Amazon Web Services

Canopy

Google

CloudControl
Portability/Interoperability Issues

- Different products, different programming models
- Different implementations of similar PaaS products
  - A great diversity in frameworks, toolsets and SDKs (proprietary)
- Lack of common and standardized PaaS APIs to access to the PaaS Cloud
- Unified way to deploy artefacts in PaaS (e.g. GIT support as standard de facto?)
- Heterogeneous data types and storing
Conclusion

- Cloud standards are a difficult road, currently making advances in IaaS but PaaS layer still far off.
- PaaS Interoperability and Portability solutions are still possible, more difficult with fragmented segment and lack of standards, but can still provide users (developers) greater flexibility.
- Such solutions can propel smaller providers into the market, featuring