Future Directions

HNSciCloud M-PIL-3.4
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Deployments to continue

- **Exoscale**
  - IaaS, GPUs and Storage
  - 4000 cores/400 TB
  - Until end of Feb. 2019

- **T-Systems**
  - IaaS, Storage and HPCaaS
  - Until end of Dec. 2018
Lessons Learned from earlier projects

- Framework agreements provide structure for procurements in the scientific community
- Call-Offs tailor offers with flexibility
- Volume aggregation across a group of scientific organisations with similar needs
- Commercial clouds offer strategic opportunities to rapidly scale cutting edge technology for R&D deployments
- Vouchers/Credits are a key element to disseminate access
- Need to repatriate data at the end of contracts
Procurement of digital services for the European Open Science Cloud (EOSC)
Procurement Budget: 9.5M euro
Starting Date: 1st of January 2019
Duration: 36 Months
Coordinating Partner: GÉANT

European Commission
Commodity type commercial digital services (PART A)

Infrastructure as a Service (IaaS), Platform as a Service (PaaS)
Software as a Service (SaaS) in the areas of
file storage, online collaboration, simulation and virtualisation tools.

Earth Observation commercial services (PART B)

Data collected by the European Earth Observation programme, Copernicus,
is made available through a number of Data and Information Access Services (DIAS).
OCRE will enable delivery from commercial service providers who create their front-office services on top of the DIAS, to offer their services to the research community.

OCRE aims to remove barriers that are currently hampering a large-scale adoption of these services.

*Slide provided by Andres Steijaert (GÉANT)*
Building on two delivery vehicles

*Slide provided by Andres Steijaert (GÉANT)*
OCRE stages

- Gather requirements and Use Cases across the scientific community
- Run a pan-European tender
- Fit-for-purpose framework agreements with suitable suppliers
- Technically validate suppliers through a “multi-science” test suite

- Manage adoption funds and buy resources from the selected suppliers, to be used by “Adoption Waves”, targeting different user segments
  - Individual Researchers and Early Adopters
  - Small Organisations
  - Groups of Organisations (Buyer Groups) aggregating volume and demand
    - Buyers don’t need to be beneficiaries of the project to run a call-off

- Continue to explore different procurement and access models including pre-paid vouchers (cloud credits)

Stimulate access and adoption of commercial cloud services is the key focus of the project
Examples of use cases

- **Integration of commercial cloud capacity in production batch services**
- **On demand computing facilities generation**
  - Hybrid Cloud auto-scaling with Kubernetes
  - Scientific Data Management integration (Rucio) with commercial clouds
  - DODAS, Lightweight WLCG sites deployments
  - Interactive user analysis services (TOTEM)
- **S3 object stores**
  - Hybrid S3 services for data replication using Ceph
  - Use S3 for AODs for preparatory analysis jobs
- **Deep Learning for Simulation**
  - Scale out model training for Neural Network optimization
  - Extend to other hardware accelerators (FPGAs) for inference
  - Generalise the approach to satellite imagery analysis and medical applications
Procured IaaS/PaaS/SaaS
Pre-Commercial Procurement
Focus: Archiving and Data Preservation Services in commercial clouds
Procurement Budget: 3.4M euro
Starting Date: 1st of January 2019
Duration: 36 Months
Coordinating Partner: CERN

European Commission
Includes Buyers and Experts in the preparation, execution and promotion of the project

Procurers - public organisations that commit funds to contribute to a joint-procurement

Experts - partner organisations bringing expertise in the requirement assessment and promotion activities but are not part of the Buyers Group

In addition, a number of Early Adopters organisations have expressed interest
R&D to demonstrate functionality of services for long-term preservation and archiving (Analysis Preservation, Software capture, reuse, etc.) for scientific data in the PB range under F.A.I.R. principles

- Generalize and expand existing solutions to several scientific domains
- R&D on hybrid data management with access and ingestion at very high rates (1-10 Gbps/day)
- Resulting Services under the OAIS reference model and relevant standards
- Define Business Models for cost-effective services
Suppliers to sign a framework agreement in order to participate in the call-offs

Project over 3 years - 3 Competitive Phases

Jan 2019

Dec 2021

ARCHIVER stages

Preparation

- Requirement Analysis
- Innovation Potential/Risk
- Open Market Consultation
- Relevant Existing Standards
- Engage Potential Suppliers

Execution

N Designs

10%

N-1 Prototypes

40%

N-2 Pilots

50%

Call-off

Call-off

Call-off

Tender
Timeline

2018  2019  2020  2021  2022  2023

Procured Resulting Services
**Summary & Next Steps**

- OCRE will procure services of **ALL** cloud providers across the stack: IaaS/PaaS/SaaS
- Suppliers readiness will be technically validated through a test-suite
- Access to cloud services with vouchers/credits will start in 2019

- ARCHIVER will produce R&D to the next generation of digital archiving
- Open Market Consultation events to kick-off in Q2 2019
- Early Adopters will be able to procure the resulting services from 2021

- Suppliers need to sign a Framework Agreement and participate in call-offs
- Requirements will include GÉANT connectivity and Federated AAI
- Procured services to be integrated on the EOSC catalogue