



Greek Research and Technology Network S.A.

GRNET

Success Stories

Platform of

National e-Science/Data Research Centres in Europe (PLAN-E)

2<sup>nd</sup> Meeting

Copenhagen, 9 – 10 April, 2015

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# e-Science Projects at GRNET

- GRNET offers IaaS through its Eucalyptus service.
- Users get resources after they apply for specific projects
- Project resources include:
  - vCPUs
  - RAM
  - Disk
  - Storage
  - Public IPv4 addresses for a specified time period.

Important

What follows is not an exhaustive list!

# Educational Projects

- Information Security Laboratory Course (UoM)
- Advanced Computer Architecture Course (NTUA)
- OSLab (NTUA)
- Open Courseware (NTUA)
- Bioinformatics (UoA)
- ...

# Big Data Projects

- Distributed execution of data mining algorithms using Spark (AUEB)
- Data mining and time series forecasting from newspapers and social media (NTUA)
- Twitter and Facebook social mining (UTH)

# Big Data Projects (Contd.)

- Large scale stream data processing for systemic risk analysis (TUC)
- Entity resolution in web of data (ICS-FORTH)
- Machine learning for large scale exchange rate and financial time series forecasting (DUTH)

# Space & Earth Science

- Large-scale demonstrators in support of GMES and GNSS based services in Athens (NOA)
- Collection and management of geospatial data from the web (ATHENA)
- Modelling and prediction of near-earth environment (ATHENA)
- Hadoop extensions for handling the time dimension in mobility (GPS) data (AUoA)

# Linguistics

- CLARIN-EL, Greek counterpart of CLARIN ESFRI project (ATHENA); includes
  - development
  - testing
  - production
  - hosting of primary data



# Health

- End-to-end personalised disease monitoring and medical data services (UNIPi)
- Bioninformatics component-based workflows (AUTH)
- Identification of patients with similar resource usage (MoH)
- Cloud telemedicine
- Analysis of next generation sequencing data in immunogenetics

# Other

- Autonomous vehicle testbeds (UoA)
- Data visualization (ATHENA)
- Preparing for extreme and rare events in coastal regions (NTUA)
- Application of MapReduce architectures to Constraint Satisfaction Problems

# Security & Defense

- Improving security and safety of cyber and physical infrastructures, with application to ports (UNIPPI)
- IaaS for R&D on Cyber Security (MOD)
- National cyber defense exercises (MOD)

# Lessons Learned

- Users must understand that resources are not for free, even when they given for free.
- It is important that resource usage is justified and time limits applied.
- A major differentiation between GRNET IaaS and other cloud providers is our interaction with the users.
- Users need guidance on how to exploit the resources, especially for big data projects (Hadoop clusters, etc.).
- Users must understand the guarantees that public cloud providers can offer for their services.