NREN collaboration on clouds

Cloud opportunities

GN4 SGA1 – SA7
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November 2, 2015
Agenda

Why collaborate on clouds?
Progress in our collaboration
Opportunities for NRENs, for service delivery and adoption
INTRODUCTION
Why collaborate on clouds and our approach
Our goal

To enable and facilitate the European Research and Education community to use cloud services on a large scale, with the right conditions.
Organisational, technical and financial structures in Research and Education institutions often don't map on the way cloud providers offer their services.

**GET IN**
Assure data is handled safely and meets European and national regulations.

Acquire and use services through the institutions’ structures:

- Affordable and predictable cost and purchasing models (prevent bill shock)
- Limit network traffic costs and provide network integration
- Log in with institutional account

**GET OUT**
Be able to move data (to another provider)
Meeting user needs:
Providing the right choices

• Faster and easier access to a range of useful cloud services by creating the environment.

• Creating a strong community voice, based on the aggregation of demand across GÉANT members, to get the optimum technical and commercial solutions from vendors.

• Adapted to common community requirements.
Community effort: By the community – for the community

• NRENs act on behalf of the community in a collaborative effort, leveraging the benefits of the GÉANT network, federation and combined expertise.

• Sharing resources, experiences and knowledge, establishing common standards and requirements

• Aggregating demand, enabling efficiency and economy of scale
GÉANT DOES NOT BUILD OR OPERATE A CLOUD INFRASTRUCTURE

OTHERS DO,
R&E PROJECTS & INSTITUTIONS, NRENs
COMMERCIAL PROVIDERS

GÉANT is a service delivery gateway
for those providers
Our role

GÉANT connects demand and supply
Providers with right capabilities
Bring choice to the research and education community
Service delivery: hybrid approach

MAKE AND BUY

ADDED VALUE FROM NRENS

TRUSTED ADVISORS, BROKERS, PROVIDERS
= RIGHT CONDITIONS FOR COMMUNITY
Meeting user needs: Cloud collaboration areas

- Collaboration Suites
- Realtime Communication
- File Storage and Sync
- Infrastructure as a Service
CLOUD CATALOGUE
baseline, showroom, clarity, recommendation role
Cloud Catalogue

Intellectual property rights and ownership, legal aspects, security, continuity, confidentiality, communication, billing, technical requirements

Cloud requirements
Six pages; easily readable

available at:
http://services.geant.net/clouds/Activities/Pages/Supporting_Suppliers.aspx
Cloud Suppliers in the Catalogue

- advania data centres
- AXESS SYSTEMS
- CARNet
- CloudSigma
- CODE42
- edu zone
- Google
- Microsoft
- netskope
- Ultimum Cloud
- box
- grnet
- Dropbox
- zettabox
GÉANT Cloud Catalogue

Requirements for Cloud Service Providers

1.1. Intellectual Property Rights

The Cloud provider shall ensure that any use of the Cloud Service is in accordance with the applicable legal and regulatory requirements. The Cloud Service may include services such as data storage, processing, and transmission of data. The Cloud Service shall be provided in a manner that respects the intellectual property rights of the Cloud provider and any other parties involved.

2. Data Ownership

Data is owned by the Cloud provider and stored on behalf of the user. The user shall be provided with access to their data upon request. The Cloud provider shall ensure that the data is protected against unauthorized access and use.

2.2. Legal Aspects

2.2.1. Governing Law

The Cloud Service Agreement shall be governed by the laws of the jurisdiction in which the Cloud provider is located. Any disputes arising from the Cloud Service Agreement shall be resolved through the courts of that jurisdiction.

Cloud providers: advania, okeanos, box, Office 365, CrashPlan

Advania OpenCloud IaaS

Advania provides a new IaaS cloud solution called Advania OpenCloud. The solution is based on Cloudland and is an easy-to-use self-service web console for computer and storage. OpenCloud supports standard APIs such as ESXi2 and ESXi5. OpenCloud is hosted in our TierI datacenter in London when runs on 100% green and renewable energy resources. Advania is also connected directly to the Norsnet Network so there are no extra charges for bandwidth for Danish partners.

Okeanos

Okeanos is a Cloud service provider that offers a range of cloud-based solutions for businesses and organizations. Okeanos is dedicated to providing high-quality services that are designed to meet the needs of customers in the cloud computing industry. The company is committed to delivering reliable and secure cloud services that are tailored to the specific requirements of each customer.

Box

Box is a secure way to share content and improve collaboration for organizations of any size. On any device, desktop, tablet or mobile. The company believes technology should not limit innovation and productivity of enterprises. Box is the preferred choice of 270,000 businesses and 92 million users.

Office 365

Microsoft Office 365 is a subscription service providing municipalities with tools to stay productive and connected no matter where staff or student are working.

CrashPlan

CrashPlan is the award-winning enterprise data protection solution from Carbonite. Used by more than 50,000 businesses, including the most recognized brands and the most prestigious universities in the world. CrashPlan provides automatic, continuous data protection with no disruptions to the end user.
IaaS
joint tender, ~oceanos & OpenStack
Demand for IaaS: Joint tender

NRENs as intermediary, enabling service use by research and education institutions

Through:
Framework agreements with suitable suppliers
no need for individual institutes to run a tender

Strong supplier interest
Added value for Cloud Service Providers

• One set of requirements, agreements and standards; efficiency and economy of scale, for a large number of institutions.

• Market access to advanced, trusted and reputable institutions and users across Europe

• Approved and promoted by GÉANT and the NRENs – the trusted advisors of the European Research and Education community
Legal basis for procurement activity

EC Procurement Directive (2014/24/EU)
Allows us of Central Purchasing Body (NRENs through GÉANT)

To be implemented by Member States / countries no later than 18th April 16

Framework agreements with suppliers available in July 2016
Community Clouds

- Cloud projects and services initiated by the NREN community
- Complementary to commercial services
- Bottom-up efforts
- Leverage our human networks in spreading knowledge and know-how
- Service specific user requirements
• Computing and Storage IaaS
• Developed by GRNET, 100% Open Source
• Compatible with OpenStack
• Aim: Simplicity and Getting Things Done
• In production for several years
• Also adopted outside GRNET in Europe, US, Asia, ...
• Integrated with eduGAIN

• http://okeanos.grnet.gr and http://okeanos-global.grnet.gr
OpenStack

• Most popular Open Source cloud software and API
• Several NRENs are interested in offering cloud services using OpenStack
• A group has been set up to share knowledge and experience
• OSO: OpenStack Operators
• Mailing list and bi-weekly chats

• [http://www.openstack.org](http://www.openstack.org)
FILE STORAGE

terms & conditions, OwnCloud
SA7 is discussing educational pricing and conditions with four file storage providers:

- BOX
- Code42 (CrashPlan, SharePlan)
- Dropbox
- Zettabox

All of these providers are listed in the GÉANT Cloud Catalogue (Section 3.2).

All are interested in joint adoption efforts.
ownCloud

- Open Source file sync and share provider
- Popular choice for on-premises online file storage
- TERENA negotiated favoured pricing for members
- Several NRENs incorporate ownCloud into the services offered to their members and users
- OpenCloudMesh: allow file sharing between different ownCloud installations; to-date 14 organisations have signed up to participate
- Federated cloud sharing aims at an interconnected mesh of research clouds

- [http://owncloud.org](http://owncloud.org)  [https://owncloud.com/lp/opencloudmesh/](https://owncloud.com/lp/opencloudmesh/)
WEB CONFERENCING
RENDEZ-VOUS
rendez-vous

- Multi-party video conferencing developed by RENATER
- Powered by jitsi.org
- Simple to use
- No plugins or downloads (uses WebRTC)
- Open Source
- Very resource efficient (thousands of conferences on single server)
- Deploy videobridges on the GEANT network
- Orchestrate updates
- Deploy monitoring and discovery services

CLOUD MANAGEMENT
RENDEZ-VOUS, ~okeanos global, OwnCloud
Cloud management (portals)

- Many NRENs have adopted a hybrid cloud strategy, offering a mix of community cloud (built and operated within R&E) and commercial (public cloud) offerings.

- These services have different interfaces, pricing models, reporting and billing mechanisms. A new layer is required to abstract the underlying complexity and to manage these different systems and resources.

- SA7 facilitates joint efforts by the NRENs in this area, including engagement with providers that can deliver these cloud management portal capabilities.
Cloud Management - Institution Requirements

**Single University Scenario** – 30,000 students, significant cloud adaption
- hundreds of end users of cloud accounts – IT admin, Researchers, Lecturers, Students with many different use cases
- Tens of departments / budget holders
- Tens of IAAS cloud accounts
- Multiple IAAS services

**IT Department (service owner) Requirements:**
- How can I ensure users access to services is appropriate and report on usage – compliance /governance
- How do I allocate IaaS service usage to budgets?
- How do I manage invoices e.g. consolidated billing
Cloud Management – Institution Requirements

Billing / Management

- Cloud account management – creating, allocating to budget holders
- User management – enabling, controlling, reporting access to cloud accounts
- Allocating users to cloud accounts i.e. enabling access
- Allocating cloud accounts to budget holders
- Consolidate billing - managing & tracking POs & invoices
- Cost management – quotas
- Export / integration potential to external billing systems?
- Functionality
Cloud Management – Requirements for Different Levels

INSTITUTION
• interested in cloud accounts, budgets, users, usage, costs

NREN
• Large number of institutions per country
• Institution’s usage – Reporting/feedback to measure cloud adaption - usage
• Multicloud Portal service

GÉANT /Management Reporting – Reporting/usage, costs per country & vendor
CLOUD ADOPTION
opportunities for the NRENs
Communication and support – together

Cloud catalogue
IaaS (tender)
File storage
Webconferencing
Cloud management (portals)
Showcase series from 2 November
Survey out now
Adoption workshop spring 2016
Cloud conference spring 2016
Adaptable materials
Presentations at NREN meetings & user conferences
Communication and support

- What do you need from the SA7 team?
- How should it be presented?
Thank you