

CLOUD POWER

NREN collaboration in GÉANT
to enable and facilitate
the Research and Education community
to use online services
on a large scale, with the right conditions

@ eduPERT

MARCH 19

Andres Steijaert



Collaboration on online (cloud) services
from technical components,
to organizational and financial aspects;

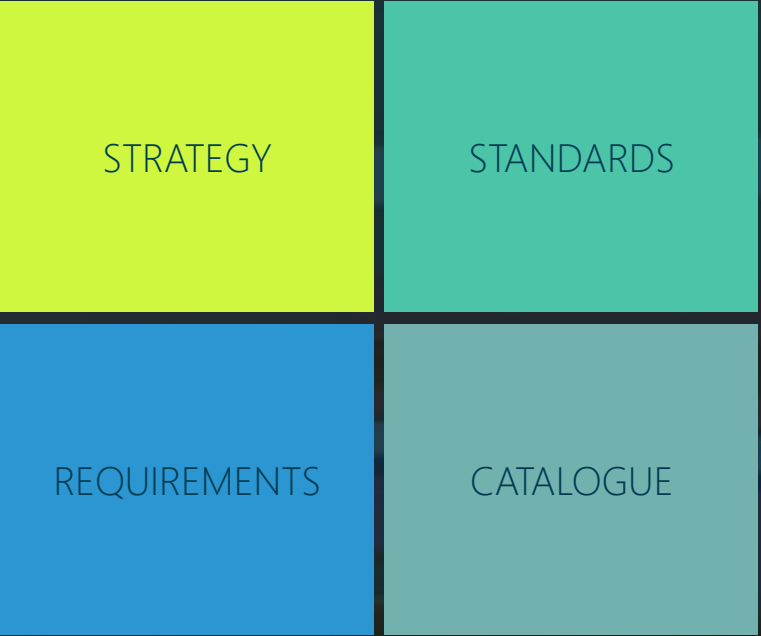
aggregation of demand and expertise,
joint service delivery.

Needs for metering and billing
the opportunities for eduPERT
and how we can collaborate on this.

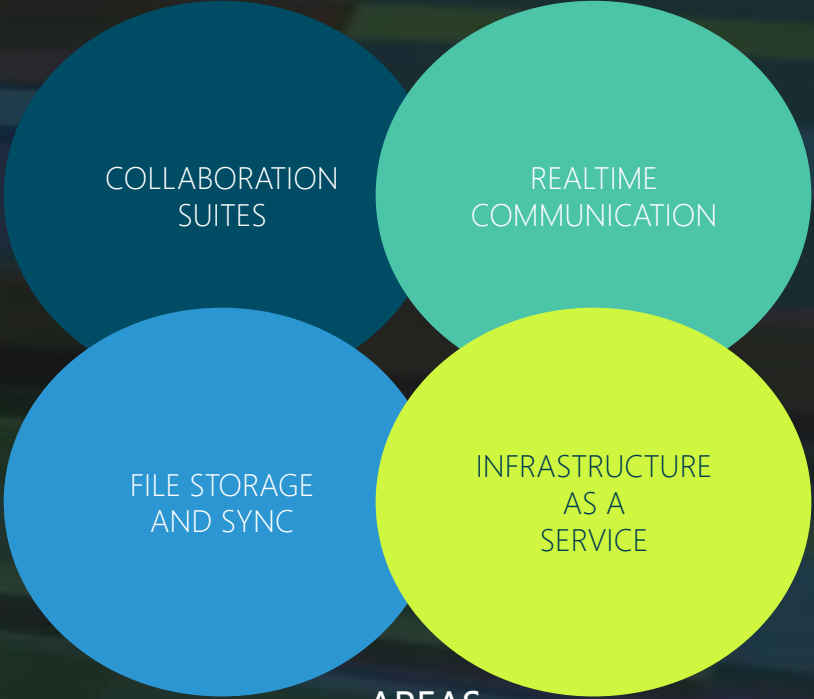
GÉANT DOES NOT BUILD OR OPERATE A
CLOUD INFRASTRUCTURE

OTHERS DO,
R&E PROJECTS & INSTITUTIONS
COMMERCIAL PROVIDERS





FOUNDATION



AREAS

Collaborate,
to enable and facilitate our community
to use online services
on a large scale, with the right conditions

MAKE & BUY
IN-HOUSE & OUTSOURCED



ADOPTION



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 services through the
institutions' purchasing structures:
Predictable cost models (prevent bill shock)

Limit network traffic costs

Log in with institutional account

GET OUT

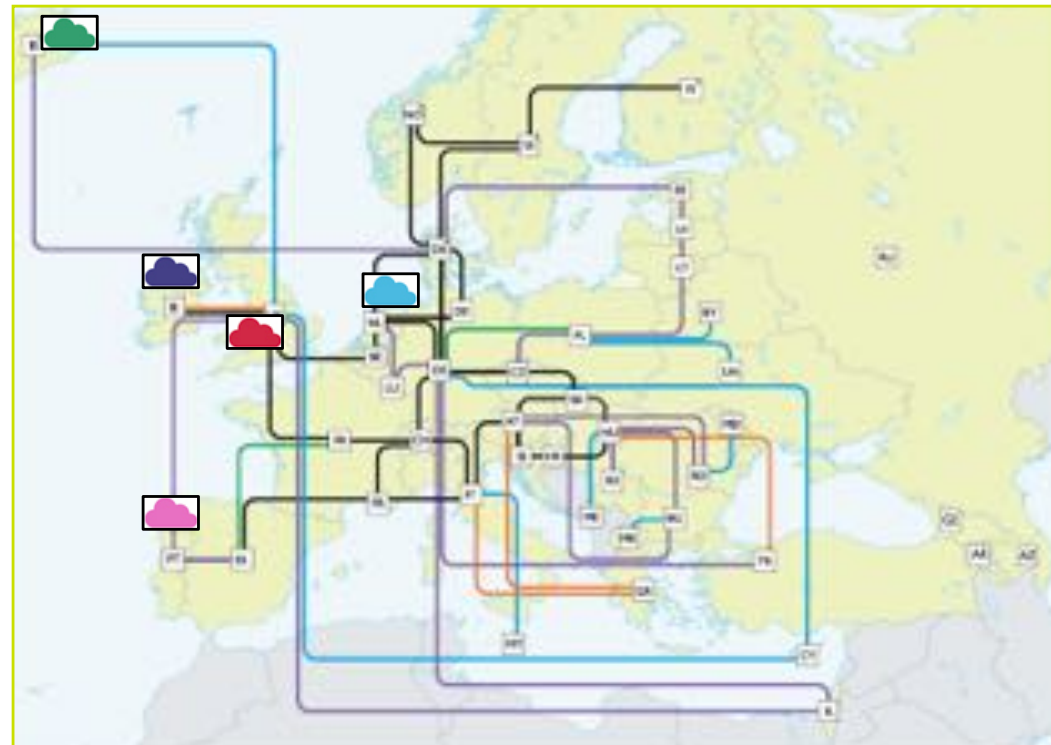
Be able to to move data
(to another provider)

Network peerings with cloud providers

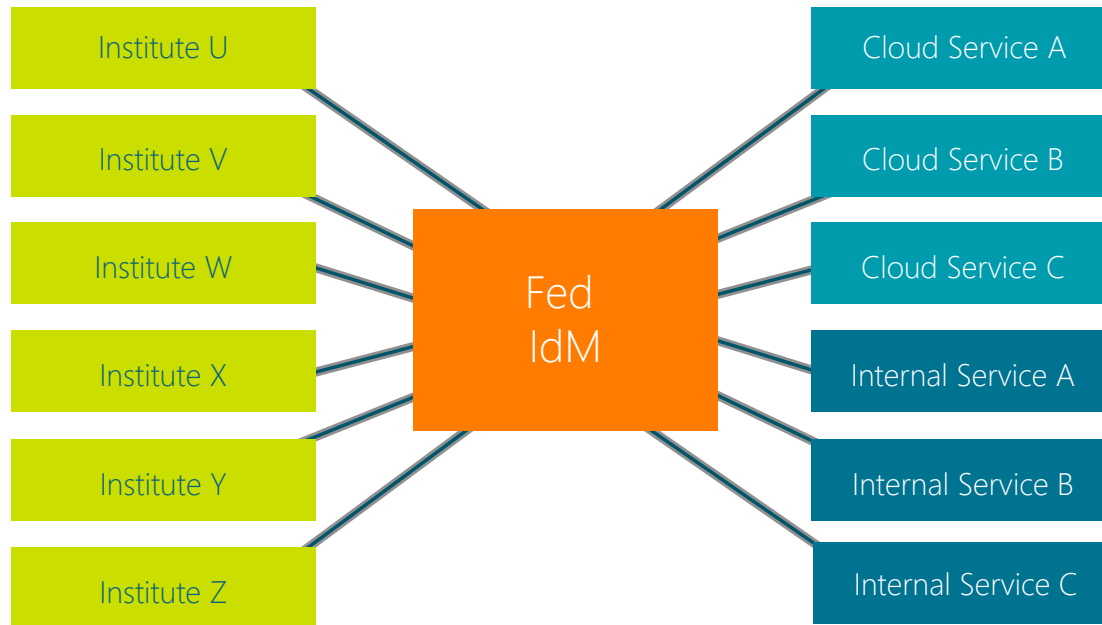


Best, most direct connection
between providers and
R&E community;
latency, bandwidth,
data protection.

Reduce network ingress and
egress charges, to achieve more
predictable cost models



One safe account for the cloud
Connect providers to eduGAIN





FOUNDATION FOR ONLINE SERVICES

Enable joint
delivery and adoption

Essential conditions of use – bring trust



Compact set of pre-conditions

which cloud providers are expected to meet

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

Providers' responses are made available in the **GÉANT Cloud Catalogue** online services directory

- Provide clarity
 - to cloud providers, regarding the *requirements* of the Research and Education community
 - to the Research and Education community, regarding *capabilities* of cloud providers
- Provide choice



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

Requirements for Cloud Service Providers

2 Requirements for Cloud Service Providers

The following sections outline a number of technical, commercial and contractual objectives of a typical user when selecting cloud services. It is intended that they will form the basis of an SCP's self-assessment.

2.1 Intellectual Property Rights and Ownership

2.1.1 Intellectual Property Rights

All intellectual property rights, including any copyright or database right in the Data (i.e. the analysis files with the Data) will at all times remain owned by Institution, the User concerned, or their respective licensors.

2.1.2 CSP Data Control

The CSP is a data processor, which should be clearly stated in any subsequent Service Agreement. The CSP will process the Data in a proper and careful manner, and in accordance with the applicable regulations. The CSP is responsible for the quality and availability of the CS. Controlling authority over the Data is vested in the Institution under the User concerned.

2.1.3 Data Ownership

Data is and remains under ownership of Institution/User producing data, or by the entity that is storing the Data. If the Data producer has passed its rights to such an entity, all its data will be a provider's rights to any Data, for any other purpose than providing the CS. This may include transferring, storing, processing, archiving and reporting purposes affecting the operation of the CS and the improvement of features that involve the deletion of, and protection against, erasing and moving records to the user (such as backups or copies).

2.2 Legal Aspects

2.2.1 Governing Law

If requested by the Institution, the CSP will need to grant the Institution the ability to sign subsequent Service Agreements under its own national law.

2.2.2 Concurrence with National Privacy Act(s)

If requested by Institution, the CSP will produce annual verification of private data security compliance in the provided CS, as requested by the Institution's national privacy act.

2.2.3 External Security Audit Certificates

Companies operating in the European Union are not allowed to send personal data to countries outside the European Economic Area unless there is a guarantee that it will receive adequate levels of protection. The Safe Harbour Privacy Principles allows US companies to register their certification if they meet the European Union requirements.

Instead of any actual certified contract, the GÉANT Customer will require the ability to request certificates of independent security audit to confirm that the CSP's processes are in accordance with the applicable legislation.

For CSPs based in USA, it will be mandatory that they are Safe Harbour certified. Note that for CSPs based in the EU, the USA, the European Economic Area (EEA) or countries which the European Commission considers to have acceptable levels of data protection, it should be assumed that the personal data processors will apply.

2.2.4 Subcontractors

If the CSP is using subcontractors of any kind in any part of the delivery process, including the support for the CS, then there is a need that subcontractor is also based in the EU, USA, a country or EU (or with adequate privacy protection, or that the subcontractor provides an adequate privacy protection substantiated by other means, such as an auditable User consent option.

2.2.5 Protection of Minors as Users

The CSPs should safeguard, at least in a written notice, that all actions taken by minors as Users of CS are reasonable, accepting online Terms and Conditions) will be properly authorized by their parents or legal guardians.

2.2.6 Service Level Agreement

The CSP will ensure that an appropriate SLA with the GÉANT Customer is in place concerning the type of CS offered. In general, this means a User-availability target for the CS of at least 99%, that the Users will be notified in advance of expected downtime if it is impossible to avoid it, and that the CSP will provide a support desk to Users in 24/7 regime.

2.3 Confidentiality

2.3.1 Data Protection

The CSP must treat all data as though it were confidential, regardless of its classification. The CSP should have no ownership of customer data. Such responsibility should also be transferred down to relevant third parties.

2.3.2 Requests for Data Access from Third Parties

The CSP will conclude a written agreement with any third parties concerned that specifies, in any case, that said third parties also act in accordance with all provisions of the Agreement between the CSP and Institution.

The CSP will make every effort to safeguard data access and the interests of the Institution in case the authorities requested access to Data. The CSP will check if there is a legal obligation to comply with the request and will not cooperate if there is no legal obligation. The CSP will report to the request where appropriate, and will only release a minimum GÉANT. The CSP is obliged to inform the sector of the Data (holders) of any such request as soon as possible.

2.3.3 Personnel

The CSP will ensure that all people it employs sign a confidentiality statement regarding handling and management of confidential data.

2.3.4 Liquidated Damages

For every contravention of its confidentiality obligation by the CSP, the GÉANT Customer will be entitled to seek a service credit of no less than one month of service fees. Note that this service should not affect the GÉANT Customer's other revenues within any relevant agreement.

2.3.5 Portability

After the contract has been terminated, for whatever reason, all Data and materials held by the CSP must be readily requested and deleted from all the CSP sites, including backup sites, by the current CSP.

2.4 Billing

The CSP's billing infrastructure must support cost-effective invoicing/management processing, and include hierarchical rates for MREs (national and regional rates), and institutions that are MREs (Institutional users, Universities, Research Institutes, Schools, etc.).

2.5 Technical Requirements

2.5.1 AAA

Where appropriate, and subject to a request by and Users, the CS will support authentication provided by oGSI/ACS, which is the standard pan-European, SAML based authentication and authorization infrastructure for single-sign-on/SSO.

2.5.2 User Provisioning

If there is need to provision Users, then the CSP will provide practical provisioning methods, e.g. auto-provisioning, batch-provisioning, or similar.

2.5.3 Reporting / Metering / Sales Estimates

The CSP is requested to implement appropriate means of monitoring current usage of the CSs, appropriate reporting facilities and monthly/annual sales estimates, which are updated dynamically. All reports should be made available online and need to be accessible on a per-site, Institution, or User basis.

2.5.4 Quality Review

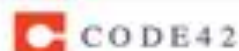
If an Institution has a reasonable suspicion that the CSP is non-compliant with provisions of the Service Agreement, and not being complied with, the Institution may request that the CSP carries out a quality review. Prior to the review process, the Institution and CSP will agree on who will perform such a review, and estimate costs of the review process. The costs for such quality review shall be borne by the Institution unless the findings of said review show that the CSP was found to comply with the provisions of the Agreement. If that is the case, the costs will be borne by the CSP.

The CSP will provide periodical reports to the Institution on data security and any security incidents in the last period.

The CSP will provide adequate and timely information regarding new released updates, release calendar and the roadmap of the CS.

Search:

Sort by:



Code42 

Code42 connects people to the files they need on the devices they love, enabling continuous data protection and secure access for people and businesses everywhere. 35,000 business and leading educational institutes globally use our products.



GRNET 

The Greek Research and Technology Network provides networking and cloud services to the Greek academic research and education community and beyond.



CloudSigma 

CloudSigma is a pure-cloud Infrastructure-as-a-Service provider that offers highly available, flexible, enterprise-class cloud servers and cloud hosting solutions.



Edu Zone 

Dedicated to provide cloud services exclusively to the Research and Education community, through a specially designed platform that follows NRENs and institutions business logic.



Box 

Box is the secure way to share content and improve collaboration for over 275,000 organisations and 32 millions users as we believe that technology should never limit the invention and productivity of enterprising minds



Microsoft 

Microsoft Corporation develops, licenses, markets, and supports software, services, devices and cloud services comprising Office 365, Dynamics CRM Online and Microsoft Azure worldwide.



Netskope 

Netskope™ is the leader in cloud app analytics and policy enforcement.

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Initial ▾

Add Service



CloudSigma Public Cloud IaaS

CloudSigma is a pure-cloud Infrastructure-as-a-Service provider that offers highly available, flexible, enterprise-class cloud servers and cloud hosting solutions. CloudSigma is one of the most customizable cloud providers on the market. Customers are able to provision CPU, RAM, Storage and bandwidth independently to allow the best combination of cloud resources without the limitation of fixed sizes. Any operating system and software can be installed with complete administrator/root control.



Okeanos

The GÉANT Cloud Service



EduZone EZ-Infrastructure

Our service is custom designed with research & education users in mind. Rent anything you need: servers, networking devices, storage and data center space by using your eduGAIN account. Together with our partners we provide simple accessible IaaS platforms available with all major operating systems based on bare-metal or virtual technologies. All at your disposal - ready in few seconds.



Current services in the cloud catalogue



Collaboration suites, realtime communication

Microsoft Office 365
EduZone EZ-Moodle
Pending: Google Apps

Infrastructure as a Service

Advania
CloudSigma
Eduzone EZ-Infrastructure
Okeanos
Microsoft Azure
Pending: Amazon AWS

File storage and sync

BOX
Crashplan
Shareplan

Other

EduZone EZ-AntiSPAM
Netskope Cloud Access Security Brokerage

Community cloud collaborations



- A group of NRENs, is collaborating on file storage platforms (including using OwnCloud).
- Another group of NRENs is exploring joint efforts in IaaS solutions (through GRNET Okeanos and OpenStack)
- RENATER is offering their Rendez-Vous web conferencing service to other NRENs (<https://rendez-vous.renater.fr>)
- Several NRENs, including CARNET and CESNET are offering the Office 365 collaboration suite to their community.

Joint demand aggregation and procurement
Bring the economies of scale
to achieve more favourable conditions of use

Started a collective tender for IaaS cloud services

Buying services is difficult

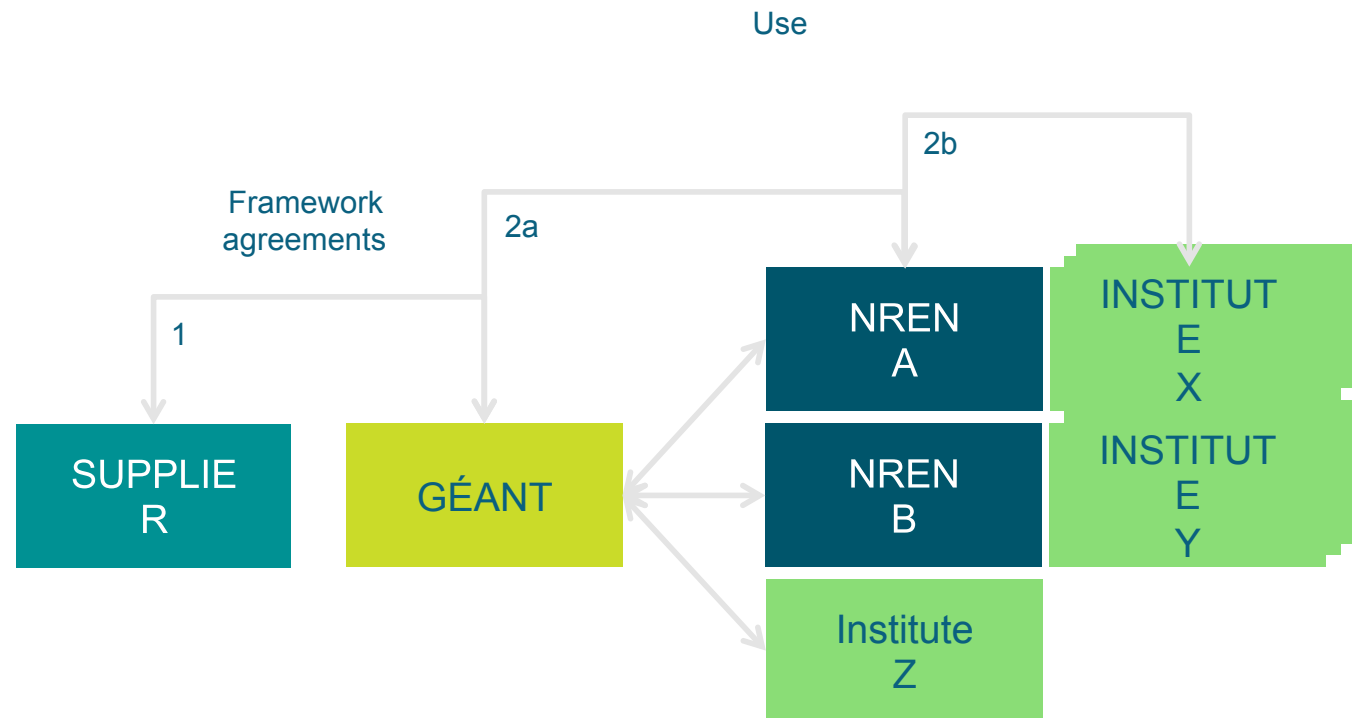
Cloud Providers work with
'end-user credit card models'.
Our community operates
'institutional Purchase Order
based'.

Institutions are afraid of 'bill shock'

OPEX can be big, also due to
network charges.
Costs need to be predictable.
We can use our network
to reduce data network traffic
costs.

TRANSACTIONS

FOR ONLINE SERVICES



METERING



- Peerings with cloud providers
Network performance, network use
- AAI, Identity Management connections
- Use of cloud services
Metering and billing

TROUBLESHOOTING



- What to do in case of problems?
- Complex stack
- Access to all parties and systems involved.
*More difficult in cloud distribution model,
compared to on-premise scenario*
- eduPERT to the rescue!

Join us

Intranet:

<https://intranet.geant.net/SA7/>

News and information sharing

<https://www.yammer.com/geantcloud/>

Cloud aggregation and
procurement project

Workshops

Bi-weekly online meetings

