MSP Tekniset kokeilut, selvitysten tulokset ja OCRE

2019-05-06 Dan Still

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Presentation Overview

- Background

- CSC as a Managed Service Provider & Multi Cloud Orchestration

- Resources & Cloud Framework Agreements

- The Aalto & CSC MSP Pilot

- The End-User Perspective: CSC & Microsoft Cloud Survey

Background

- The committee for the bank of Ideas (Ideatoimikunta, Ideapankki) agreed in 20.9.2018 that CSC should study the possibility to act as a MSP for the higher education institutions, researchers and teachers. The idea was presented for discussion in a cloud services workshop 5.11.2018 in Oulu to build up a network of HEI's expert's in the field

- Many IT departments do not have enough control over the cloud solutions that their employees have been using in recent years – often on their own initiative. Cloud Management Platforms offer a solution to this issue.

- CSC is now investigating whether there would be potential to act as MSP (managed service provider) for both community and selected commercial cloud services.

The Task at Hand

- The goal is to provide a portal for academics and teachers to deploy the most appropriate services for their needs - offering a portal or parts of a portal for international and national services, orchestrated by CSC to the local level where the university provides the overall service.

- The solution would help HEI organizations' IT operations to better monitor, control and manage the cloud services their staff has deployed in recent years - often spontaneously and without IT department support or blessing.

Resources

GÉANT

Finnish universities already today have the possibility to use GÉANT's framework agreements for Microsoft Azure and others.

CSC leads a task (GN4-3 Service development: cloud offerings) in the GÉANT GN4-3 project. MSP is a target area for investigation.

NRENs participating: GARR, PSNC, GRNET, CESNET, KIFU, RENATER, SURFnet and NORDUnet.

The goal of the task is similar to the Nordforsk funded Nordic Cloud project(s) (Glenna-1 and Glenna-2)

NeIC/Nordforsk Glenna2 Project and Waldur Hybrid Cloud framework.

MSP at SURFnet

- Hybrid Cloud Platform provided by CloudBolt Software Inc.

- Caters to approx. 40 organizations (out of 300).

- 2 M€ yearly consumption of commercial cloud services.

- Selection: different flavors of VM:s, MariaDB Microsoft SQL.

- Direct invoicing to customer organizations.

- One organization per tenant (Azure).

- Consumption reporting in portal.

- 4-5 FTE:s yearly effort.

Pilot Current Status 15.03.2019

Our partner OpenNodeLLC has provided a test site (msp.csc.fi) utilizing their Waldur open source framework with some basic offerings:

- A marketplace currently offering Microsoft Azure PostgresSQL and Azure virtual machines (VM:s) (one flavor; multiple sizes) enabling the users to start VM:s and PostgresSQL.

- also in the marketplace: OpenStack (CSC Pouta) VM:s.

- HAKA integration (test account).

- The work during February focused on enabling Azure in the Waldur hybrid cloud framework.

Portal Screenshot: msp.csc.fi
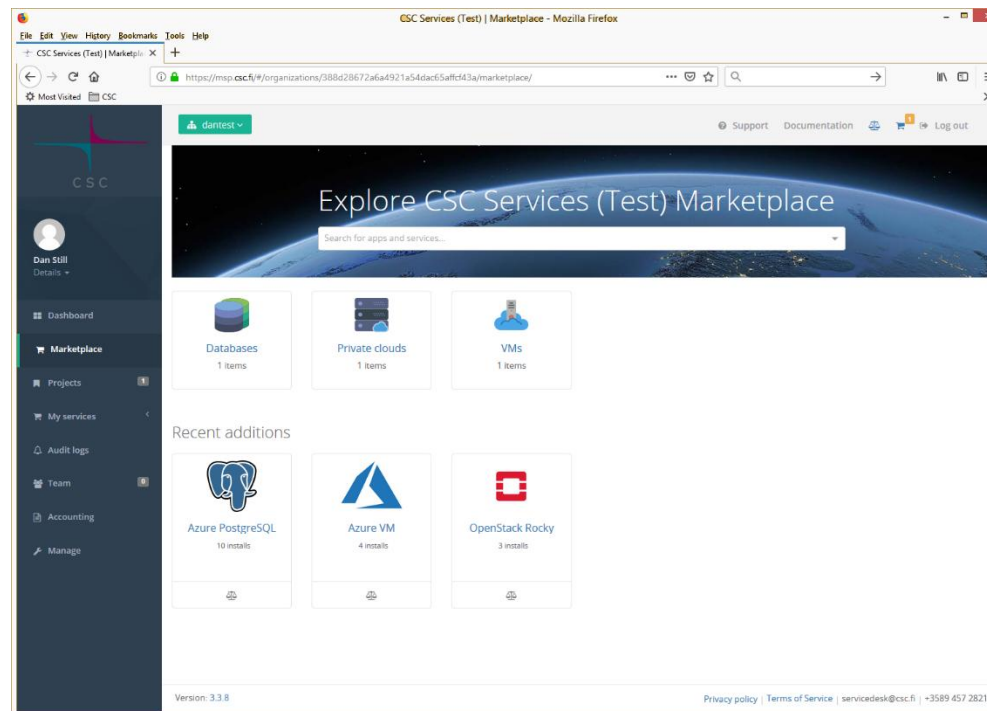
Portal Next Steps

- Waldur proof-of-concept has been successful

- Aalto IT will perform a "customer journey" survey

- Decide on funding for continued development

- Decide on whether to evaluate any other frameworks

The GÉANT IaaS Framework

- Introduction

- The benefits of a Digital Single Market for cloud services for research and education have

- proven themselves beyond expectations. The first stage of the collective NREN cloud efforts has been completed in the GÉANT GN4-2 project. The positive impact is clear:

- 300+ institutions are currently consuming services through the GÉANT IaaS Framework

- at a total expenditure to date of ~€13 million (status March 2019).

- Institutions welcome the collective NREN efforts on clouds in GÉANT.

- Most framework agreements are valid until year-end 2020.

OCRE: the Upcoming Tenders

- The next phase of the cloud collaboration is even more ambitious and split across two projects:
  - GÉANT GN4-3 (in WP4)
  - Open Clouds for Research Environments (OCRE)

- In OCRE, GÉANT coordinates a consortium with partners CERN, RHEA and Trust-IT.

- OCRE facilitates the usage of commercial cloud (IaaS, PaaS, SaaS) and Earth Observation services, which leverage the EU DIAS platforms (Data and Information Access Services), where the Copernicus sentinel data is stored, by the European research community.

- OCRE aggregates requirements and demand of the research community into a public procurement / tender, to select capable service providers.

- OCRE stimulates adoption through ready-to-use agreements with suppliers and by making available €9.5 million in EC adoption funding to researchers, via vouchers.

- The project is part of the EC European Open Science Cloud (EOSC) and receives funding from the EC under grant agreement no. 824079.

Which services will be included in the upcoming tenders?

The three-year (2019 – 2021) Open Clouds for Research Environments (OCRE) project is the successor to the GÉANT IaaS and Helix Nebula Science Cloud (HNSciCloud) tenders.

The services included in the OCRE tender will encompass:

a) Infrastructure as a Service (IaaS): Compute, storage, network and related services.

b) Platform as a Service (PaaS): Compute, storage, network and related services.

c) Software as a Service (SaaS): File storage (sync and share), online collaboration, simulation and virtualisation tools. Suppliers likely to respond include Microsoft (Azure and potentially Office365), Amazon (AWS), Google (GCP and potentially G-Suite), IBM, Oracle and European suppliers such as CloudFerro, Cloudsigma and T-Systems.

d) Secure Earth Observation commercial services: building on the Copernicus Data and Information Access Services (DIAS).

GN4-3: Education Learning Management Systems Tender

Parallel to OCRE, in the GN4-3 project, the GÉANT project cloud team will run a tender for education learning management systems (LMS), which will use the same timeline. Both tenders will have an approach that is similar to the earlier GÉANT 2016 IaaS tender (the current IaaS framework), where the NRENs have a pivotal role, to act as national service delivery hubs.

Examples of Virtual Learning Environments (VLE) and LMS services are Moodle, Canvas, Blackboard Ultra/Learn, SAKAI, Brightspace, itslearning.

Dates and duration

End of July:
Draft tender document

October
publish tender,

Q1 2020:
Evaluation completed and
agreements signed

Framework agreements signed
between suppliers and GÉANT.

Not 1 winner takes all.
Portfolio of services.
GÉANT will sign the framework
agreements with the suppliers.
Valid for 4 years.

Important Dates

Preparation

31 May 2019

- NREN response due: Will your NREN participate in the tenders, to coordinate a national buyer group and make the services available in your country? Yes/No.
- Which role will you take in the tender? Referrer/ Underwriter.
- Provide a first estimate on the type and amount of services which are expected to be consumed by institutions in your country in the next four years.

31 July 2019

- Provide national legal requirements, if applicable.
- Buyer groups in place. NRENs provide the GÉANT cloud team with the list of eligible institutions, who can use the tender outcomes and information on the expected uptake, preferably with an aggregated, expected minimum consumption per year, for the 4-year contract duration.
- OCRE publishes a draft version of the tender, for suppliers to prepare for the tender.
- 500.00 euro in EC cloud adoption funds (vouchers) for researchers to use the services in the GÉANT IaaS framework.

Execution

1 October 2019

- Tender goes live. Publication of tender documents (OJEU notice).

Q1 2020

- Tender evaluation completed.
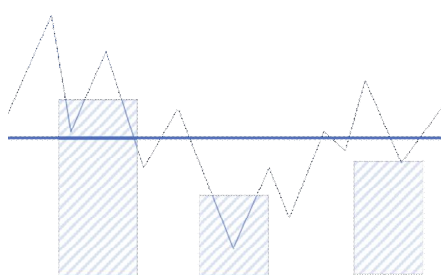- Framework Agreements signed.
- Services available.

2020 and 2021

- 9 million euro in EC adoption funds for usage of the services selected in the OCRE tender

Q1 2020 up until Q1 2024

- Consumption through call-offs.

Explore different usage models

On-demand

Reserved instances

Spot instances / Pre-emptible instances

Basic discount levels available to all institutions

Volume discounts for buyer groups committing to certain spending levels

Vouchers/Credits

Test Suite, packaging several scientific applications

The GÉANT IaaS tender includes a cost recovery fee of 0.5% to compensate the coordinator (GÉANT) for its efforts.
Paid by the suppliers, to GÉANT, from the money they receive from customers.
NRENs (buyer groups) can also add a service charge for their national adoption and support efforts.
This is decided inside each group (by this community). Such a fee is added on top of the supplier's price.

Consumption through a range of usage models

ECadoption funds 9.5 MEUR.
Available through OCRE
Services are free-at-the-point-of-the-user,

Stage 1: From July 2019
500 KEURO. For individual researchers.
Usage of services in GÉANT IaaS framework.
Voucher system. Distributed via organisations who represent or have access to researchers. First participating organisation is Eurodoc: *The European Council for Doctoral Candidates and Junior Researchers*
Start usage, raise awareness, use-cases. Experience with vouchers.

Stage 2: 2020, until end of 2021
individual researchers, institutions (in buyer groups)
4.25 MEUR million for IaaS, PaaSand SaaS
4.75 MEUR for Earth Observation
Services selected in OCRE tender

OCRE | Open Clouds for Research Environments

Three steps into the cloud

OCRE | Open Clouds for Research Environments

Level 1: no cloud	Level 2: small clouds	Level 3: big clouds
• Digital services run locally at the institutions: installed and managed on-premises. • No collaboration between institutes on collective vendor management and procurement. • No NREN involvement	• First digital services are moved off campus, to the cloud. • Involves e-mail, lift-and-shift of virtual machines and cloud experimentation. • Single or a few suppliers. • Institutions buy individually. • Institutions look to their NREN for delivery of core components: network, identity management and contracts. • NRENs as referrer.	• Institutions have a digital transformation strategy, which includes cloud deployments, through structured sourcing decisions. • Services are bought from more suppliers. Services encompass more specialist tools. Use of Machine Learning and AI. • Multi cloud usage and management in production environments. • Institutions aggregate volume purchases and look to their NREN for implementation and usage support. • NRENs as underwriter and cloud competence center

Higher Education Needs for Public Cloud Services - Report

Report on the CSC & Microsoftin joint venture: CNB Systems Ari-Pekka Syvänne – *"Pilvitransformaatioanalyysi Yhteenvetoraportti"* 23.4.2019 (63 pages)

The preliminary results of the survey on the public cloud usage needs of higher education institutions have been compiled. Some highlights from the results of the survey:

- the degree of maturity of higher education institutions varies and the use is largely decentralized and low utilization rates. Universities are promoting this, but mostly alone.

- The expectations of what CSC is supposed to do, also seems to vary

- Higher Education Information Management may not always have a clear overall view of what and how researchers and students use clouds

Haastattelut

Korkeakoulu	Haastatteluja	Haastateltuja
Aalto-yliopisto	4	6
Haaga-Helia	1	2
Helsingin yliopisto	3	4
Jyväskylän yliopisto	1	1
Kaakkois-Suomen ammattikorkeakoulu	1	2
Lapin yliopisto	1	2
Tampereen yliopisto	2	3
Turun yliopisto	1	1
Vaasan yliopisto	1	2
Yht.	**15**	**23**

Funktio korkeakoulussa		Haastateltuja
IT		18
Digitalisaatio		2
Opetus/Tutkimus		3
Yht.		**23**

Organisaatio	Haastatteluja	Haastateltuja
CSC	5	6

- Haastattelut pidetty
  - 21.2. – 17.4.2019
- Haastattelujen yhteenvetoihin on pyydetty haastatelluilta korjaukset/lisäykset ja mahdolliset muutokset huomioitu

// CNB SYSTEMS

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