SCALE-UP (151-011)

Services for the Swiss Cloud for Academic and Learning Experts

This application is based on the CUS P-2 White Paper for a Swiss Information Provisioning and Processing Infrastructure 2020 (14.4.2014) and in particular on recommendation CC-2: “Cooperative integration projects which involve aspects of cloud computing and propose or implement solutions. The subject areas include access management, reporting, charging, legal solutions, hybrid cloud and integration into international e-infrastructures.“

This proposal builds on CC-1, i.e. the current SCALE project and includes some extended infrastructure elements: “The development of cloud services on a national level (service description, SLA, marketing, advisory board).” It includes CC-3: “Pilot projects which use the services on offer.“ and CC-5 “Training modules for the use of cloud resources.“

SWITCH created and implemented an Infrastructure as a Service (IaaS) model in the SCALE project (Mai 2014 – Mai 2015). This included construction and operation of virtual machines and of storage resources, initial implementation of monitoring and reporting for these infrastructures, construction and exemplary pilot software as a service as well as training for users of these infrastructures.

The current successful SCALE project work shows the following three main findings:

1. The SCALE infrastructure is considered by many institutions and their researchers to be highly valuable.
2. The logical step to bring SCALE “up” to the next level, is to provide academic software and services.
3. The institutions currently using the SCALE infrastructure as well as further interested parties have expressed a strong interest to participate in the project to help create relevant services for the academic community.

SCALE-UP is based on strong *partnerships* in the whole academic community. It brings together a team of institutions that shares the enthusiasm and the commitment to create high-value services for researchers in Switzerland. As a “cooperative integration project” it brings the current SCALE infrastructure UP to the service and community level. This is a logical next step and helps to create many user-driven distinctions and benefits for Swiss higher education and differentiates itself strongly from public cloud providers.

The proposed services have a *high relevance for the academic community*, since they are based on user needs and feedback from existing SCALE users as well as from users of our partner institutions. It is important that SCALE-UP provides from the start generic academic software services, which can be used in a variety of disciplines and university types. Many of the work packages have two main tracks – a technical track and a best-practice track. By this we want to make sure that we provide not just a collection of technical tools but rather a well designed overall environment (or ecosystem) in which to provide these services. This includes also high-level aspects such as university processes, service procurement, best practices or governance.

To ensure all of the above, the project brings together a *high-caliber academic consortium*, lead and coordinated by SWITCH, that is able to provide an ever-growing portfolio of appropriate and relevant academic cloud services. The partners were chosen across Switzerland for their wide and varied expertise. Additionally, the advisory committee provides strategic input and guidance. The committee

consists of 9 members from academic institutions, some of which are now participating actively in SCALE-UP.

While being open to larger institutions, SWITCH is targeting especially the user segment of medium and small-sized institutions, i.e. the “long tail”. These will thus be given the opportunity to obtain services of this kind within the community in line with their needs, while at the same time benefiting from economies of scale. As the main building blocks SWITCH uses proven open-source technologies (OpenStack, Ceph). By this we avoid a vendor lock-in, ensure scalability and offer the services at reasonable cost.

Approved projects in the CUS P-2 program can use the cloud resources created by this project free of charge. Projects can be accommodated within the limits of available capacity. Resources will be allocated by agreement between the CUS P-2 program managers and SWITCH.