

National strategy

- Cloud services should always be considered
- And chosen where they are cheapest and most expedient
 - Information security must be catered for

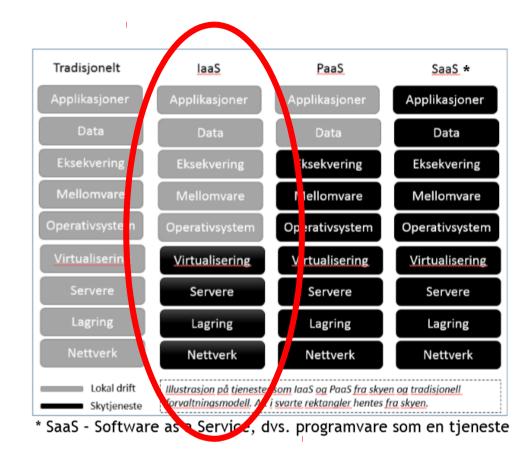






Cloud technology and services

- The Cloud Computing concept refers to physical components, software, services, business models and delivery models.
- It represents a paradigm shift for production, distribution and use of IT services



• Example: Infrastructure as a Service (IaaS) - buy datacentre functionality over the Internet instead of investing locally.

Why choose cloud services?

- Very fast to set up
- No cost to set up a small instance
- Easy scaling
- IaaS: Flexibility

• ...

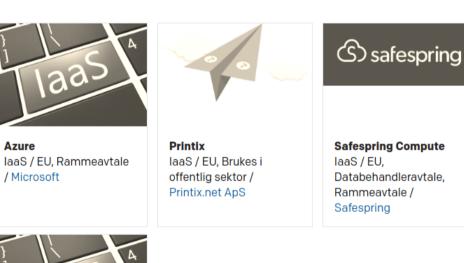
You can do it yourself!!!

Now.

Sector suppliers

UH-sky, https://www.uninett.no/sky

- Safespring
- UH-laaS





UH-sky: OpenStack laaS

- Set up CLI
 - Install openstack command-line interface
 - Log in on web GUI to get the API password
 - Set up CLI
- Use CLI
 - Make a machine
 - Log in on the machine
 - Attach storage
 - Make a new machine and move the storage to that machine
- Play around
 - E.g. install a graphical software package
 - Or install a web server
 - Or install your workflow tools

My lesson notes are at

https://arnsteio.github.io/UH-laaS-mini-workshop/







Install command-line interface

Windows:

- Install Python.
- Ensure that Python directory is defined in the PATH environment variable, then run (as admin):
- C:\>pip install python-openstackclient
- Docs at e.g. https://github.com/naturalis/openstack-docs/wiki/Howto: Installing-and-configuring-the-OpenStack-commandline-tools-on-Windows

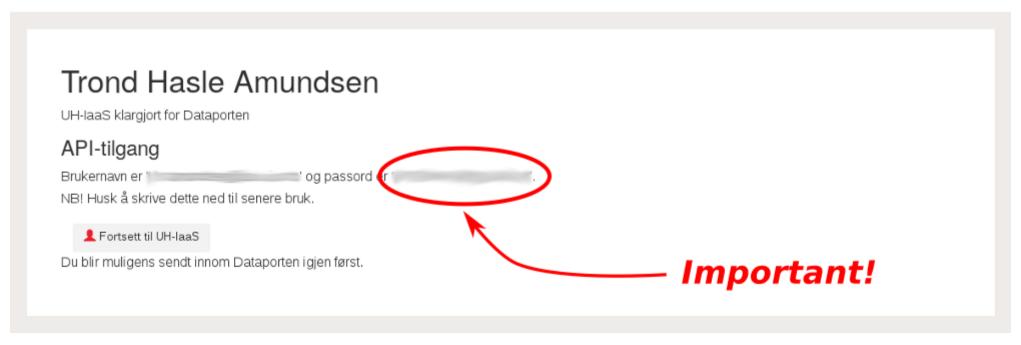
• Linux

- apt-get install openstack-cli
- or
- apt install python3-openstackclient
- or
- apt install python-dev python-pip
- pip install python-openstackclient

Get API password

• Go to https://access.uh-iaas.no/ and log in. Write down the API password!





Set up client interface

```
arnsteio@:\sinc \sinc \sinc \text{at keystone rc.sh}
export OS USERNAME=arnstein.orten@geo.uio.no
export OS PROJECT NAME=DEMO-arnstein.orten.geo.uio.no
export OS PASSWORD=<API-password-from-1st-login>
export OS AUTH URL=https://api.uh-iaas.no:5000/v3
export OS IDENTITY API VERSION=3
export OS USER DOMAIN NAME=dataporten
export OS PROJECT DOMAIN NAME=dataporten
#export OS REGION NAME=bgo
export OS REGION NAME=osl
export OS NO CACHE=1
```

Why not use cloud services?

- Compliance issues. Data protection
- Legacy systems
- SaaS / PaaS: inflexibility
- Uncertain costs
- Skill set