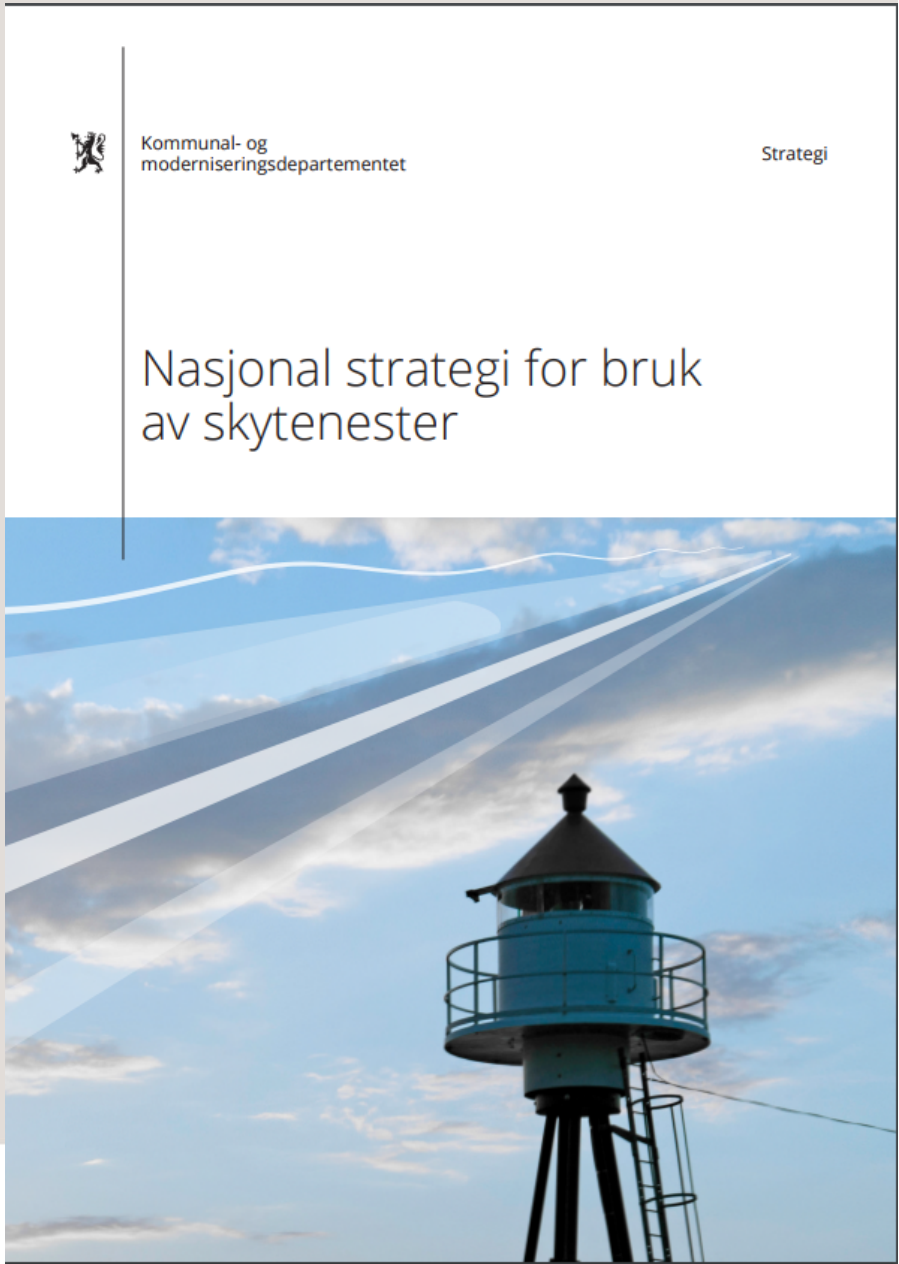

Virtualized architecture
for research and operations
Arnstein Orten

National strategy

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



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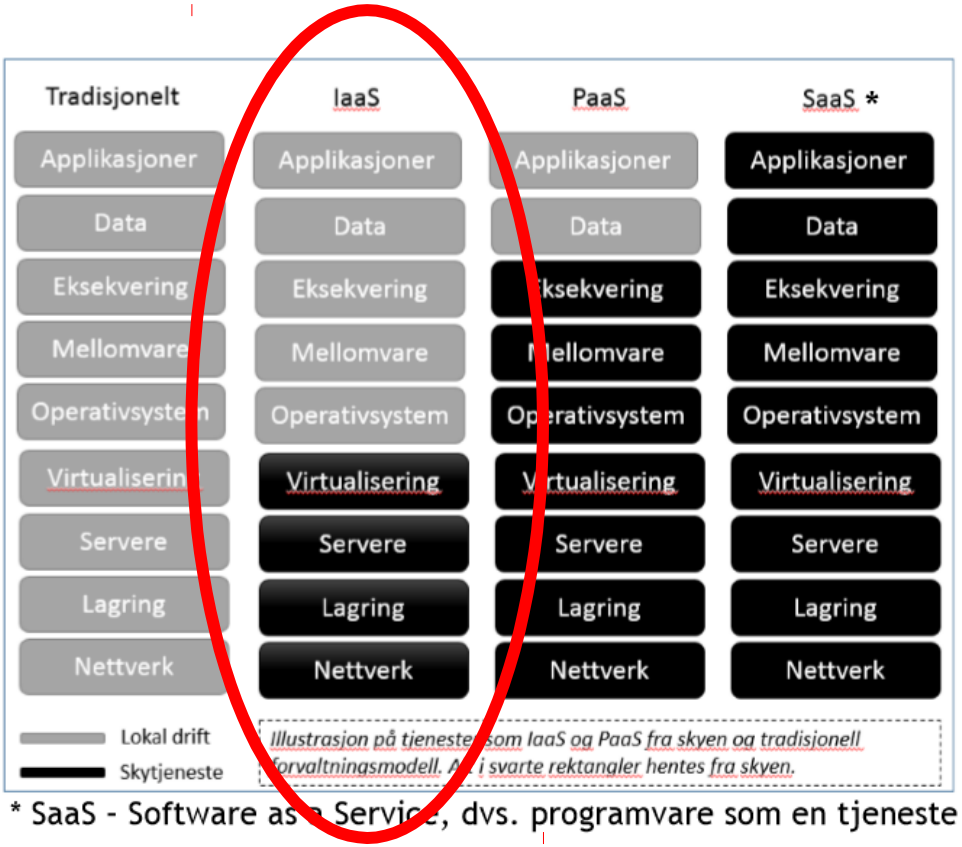
Cloud technology and services

- 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



* SaaS - Software as a Service, dvs. programvare som en tjeneste

- 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
- ...

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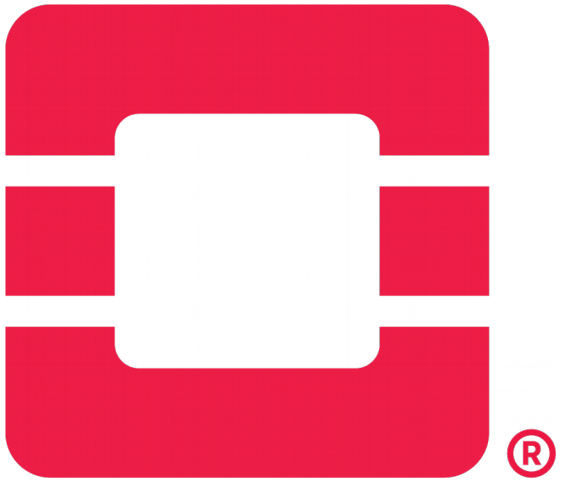
These reasons are also why we have our own cloud services!



OpenStack

A free and open-source software platform for cloud computing.

«OpenStack software controls large pools of compute, storage, and networking resources throughout a datacenter, managed through a *dashboard* or via *the OpenStack API*...

Hundreds of the world’s largest brands rely on OpenStack to run their businesses every day, reducing costs and helping them move faster...»

OpenStack: IaaS for Met.no

Please go to

https://arnsteio.github.io/Met-OpenStack-2019/

to continue with the workshop

FINISHED

- After here should be thrown away

UH-sky: OpenStack IaaS

- 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-IaaS-mini-workshop/

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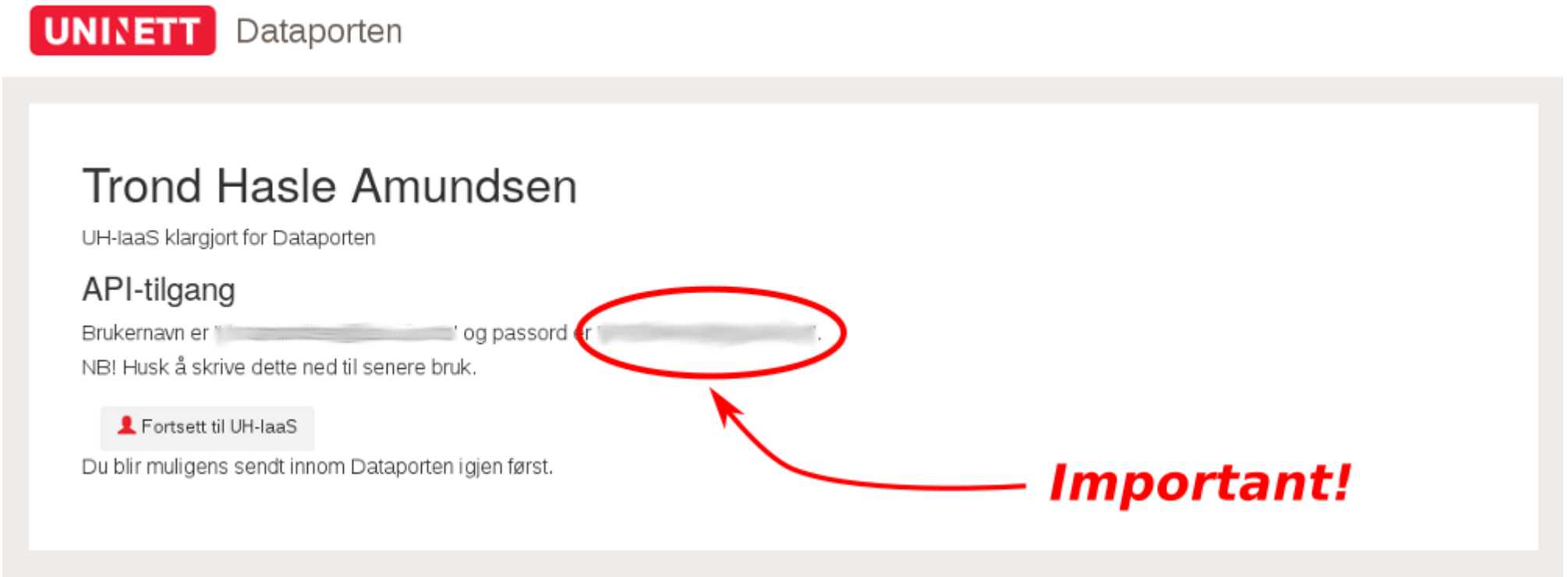
Install command-line interface

- 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@☠:~$ cat 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