

EGI technical forum

ECEE

NEON project

Maarten Koopmans, maarten@vrijheid.net

For UNINETT Sigma

More Science.

“The Plan”

- **state-of-the art** of cloud computing;
- **cost** of moving and running **non-HPC** jobs on a cloud computing environment;
- how to do this in **practice**;
- a list of **identified risks/benefits** on a short/long perspective.

Why

- Free up HPC resources
- Elasticity (scale out)
- Cost(?)
- SARA already worked on HPC

How



- Desk research
- Infrastructure test
- Pilots
- Like minded projects / conferences

Pilots

- Cloud backed storage
- eSysbio
- Redcloud

Cloud backed storage

- Completely pluggable, cloud backed
- Highly concurrent
- Simple webdav interface – NO special clients

Cloud backed storage

Access

Metering / quota management

Encryption

S3

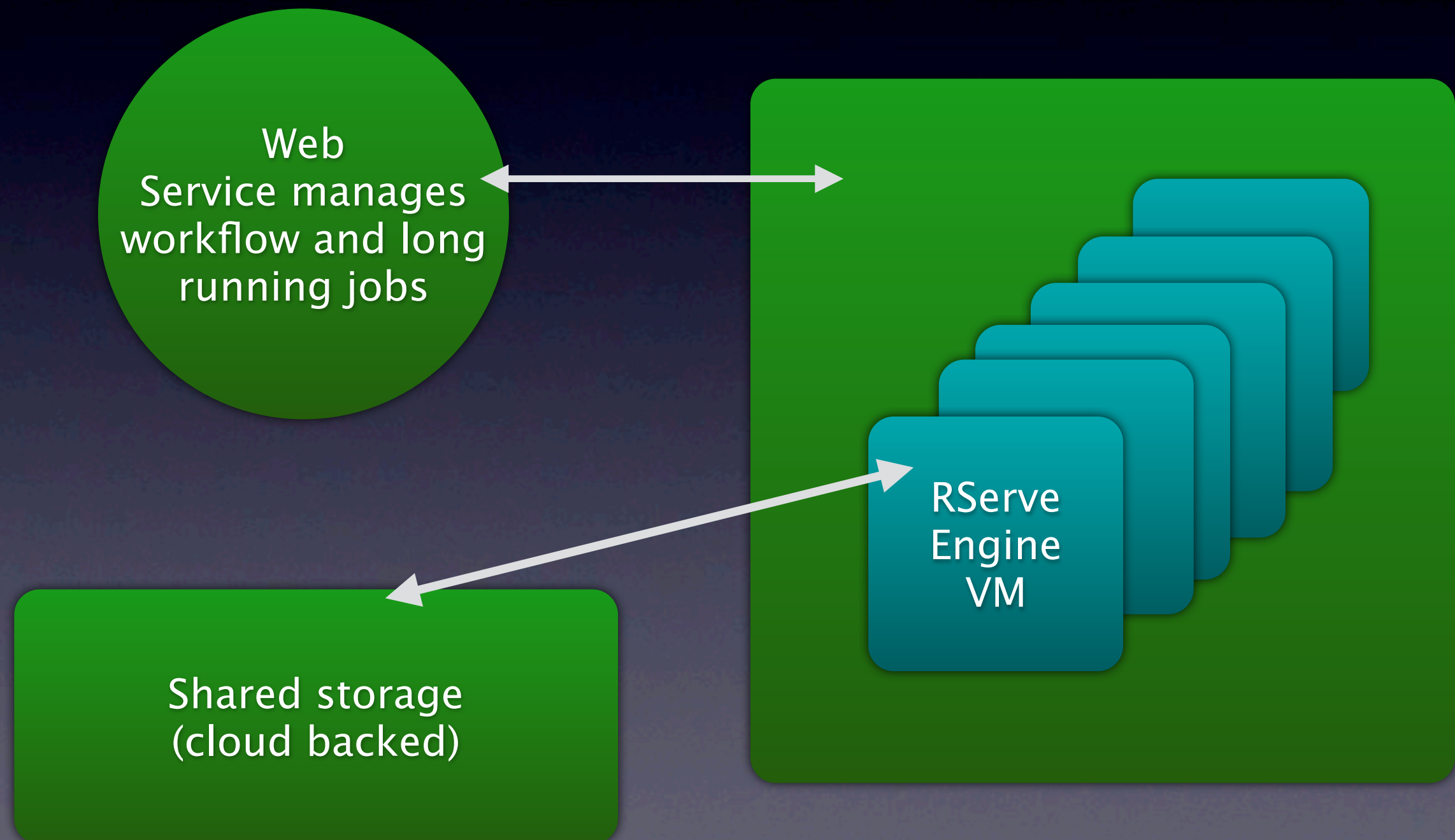
Norstore

...

eSysbio

- Bioinformatics, Norway
- Long running statistical jobs using Rserve engine
- Use cloud backed storage for data share
- Elasticity is key

eSysbio



Redcloud

Comparison

- Open eucalyptus 1.6
- Open eucalyptus 2.0
- Openstack
- Opennebula

Cost

....ongoing. Public clouds become cheaper the less "HPC" you are. Price can be influenced

- Reserved instances
- Spot instances
- Hybrid cloud optimization
- Volume



Findings so far

- Private clouds are maturing, takes at least until mid 2012
 - Multidomain (availability zones)
 - Quota management
 - AAI
- Transitional phase for non-HPC computing in public clouds
- Accessible hybrid cloud backed storage