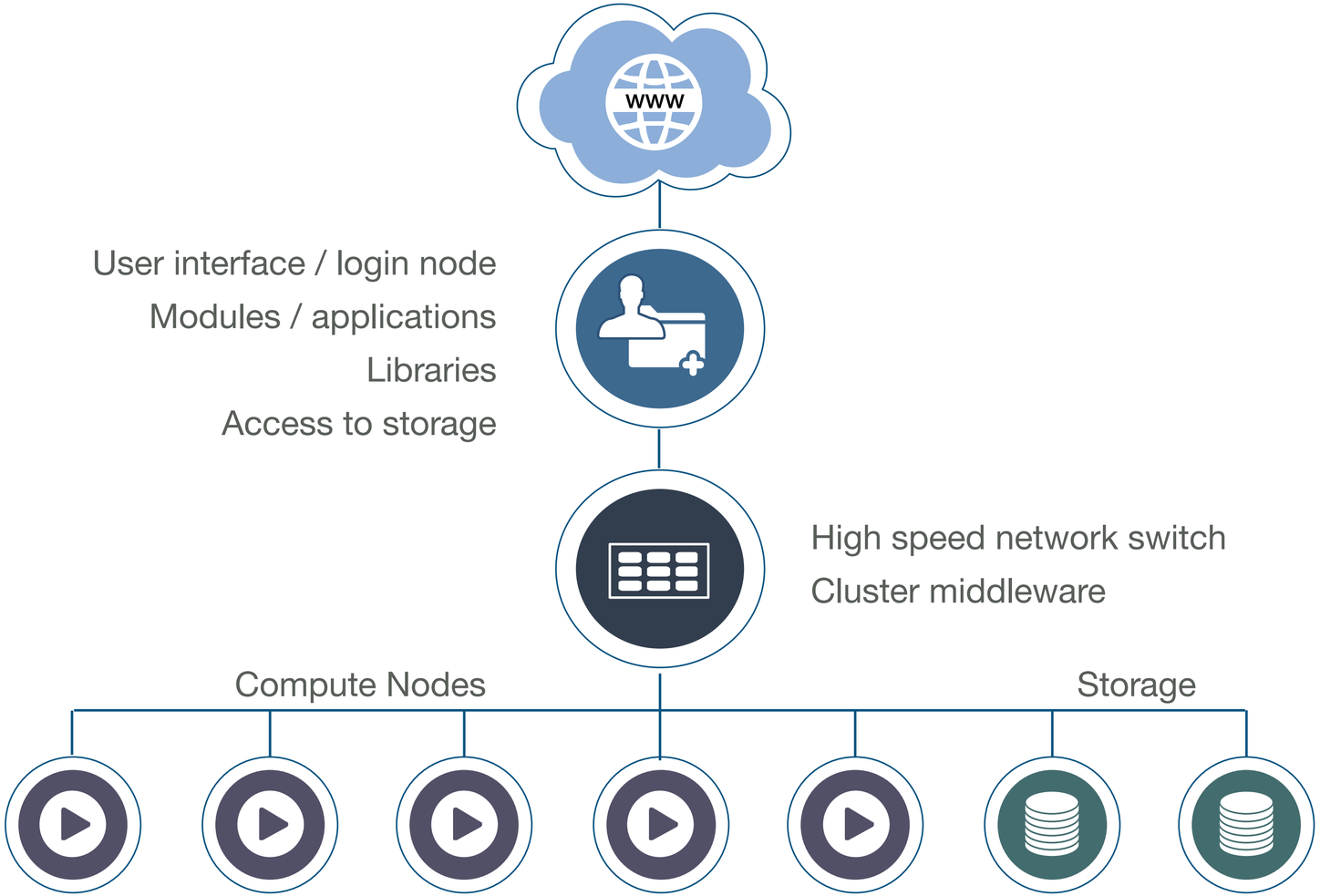
TYPICAL HPC CLUSTER ARCHITECTURE

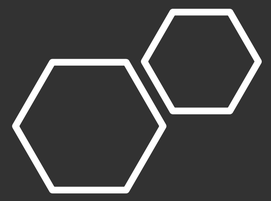


What’s available

Category	# of Nodes	Type	# of CPU	Cores/CPU	Cores/node	# of Cores	Memory
Thin nodes	**692**	**2 x HPE XL190r Gen10 Xeon-Gold 6230 (2,1 GHz/20 core/125W) Processor kit**	**2**	**20**	**40**	**27.680**	**192 GB**
GPU nodes	**40**	**2 x HPE XL190r Gen10 Xeon-Gold 6230 (2,1 GHz/20 core/125W) Processor kit**	**2**	**20**	**40**	**1.600**	**192 GB**
Fat nodes	**55**	**2 x HPE DL360 Gen10 Xeon-Gold 6230 (2,1 GHz/20 core/125W) Processor kit**	**2**	**20**	**40**	**2.200**	**1.536 GB**
Login nodes	3	2 x HPE DL380 Gen10 Xeon-Gold 6230 (2,1 GHz/20 core/125W) Processor kit	2	20	40	120	192 GB
Database nodes	3	2 x HPE DL360 Gen10 Xeon-Gold 6230 (2,1 GHz/20 core/125W) Processor kit	2	20	40	120	192 GB
Web Service nodes	4	2 x HPE DL360 Gen10 Xeon-Gold 6130 (2,1 GHz/16 core/125W) Processor kit	2	16	32	128	192 GB
Head nodes	2	2 x HPE DL360 Gen10 Xeon-Gold 6230 (2,1 GHz/20 core/125W) Processor kit	2	20	40	80	192 GB
Total	799					31.928	

- Note the difference between the thin and fat nodes in terms of amount and memory
- Note that you will only be able to book **180 out of the 192gb** memory at a thinnode due to overhead.
- Don’t block a fat node unless you need more than 180 GB of memory

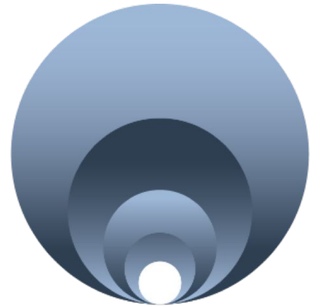
Costs for computing and storage (approx.)



- Note the difference in CPU setup from C1 to C2 (in case you inherit old C1 scripts)
- You are always charged for a full node
- Storage cost are calculated as the highest peak per month

COMPUTEROME 1	COMPUTEROME 2
Features	
CPUs per node: 28/32	CPUs per node: 40
Memory per thin node: 125gb	Memory per thin node: 192gb
Memory per fat node: 1000gb	Memory per fat node: 1536gb
8PB storage	11.4PB storage
Snapshot backup	Snapshot backup (cd .snapshot in any directory)
Pricing	
Storage: DKK 250 /TB	Storage: DKK 91,70 /TB
DKK 3,08 / thin node hour DKK 3,52 / fat node hour	DKK 3,87 / CPU node hour DKK 6,46 / GPU node hour

COMPUTEROME systems

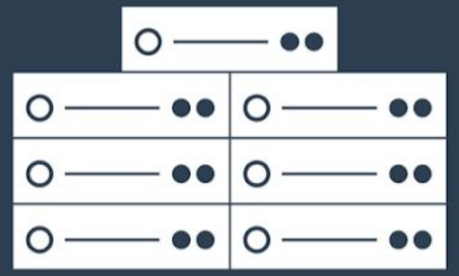


3 different systems:

- ‘normal’ computerome (computerome HPC)
- sandbox
- secure cloud

COMPUTEROME HPC

HPC Computing Nodes (600+)



Submit jobs via
the queuing system

Pay as you use

Storage

No predefined quota-
pay as you use

Privacy set via file permissions

Data can be copied in and out
from the login nodes via scp/sftp

SANDBOX

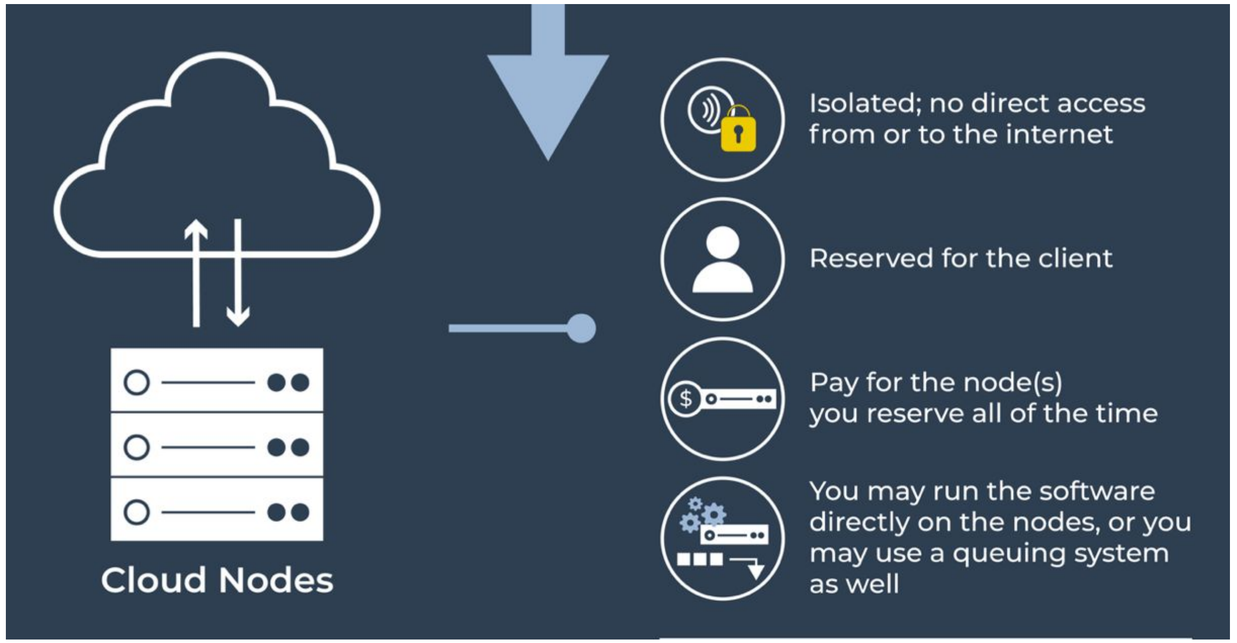
Basically Computerome HPC but:

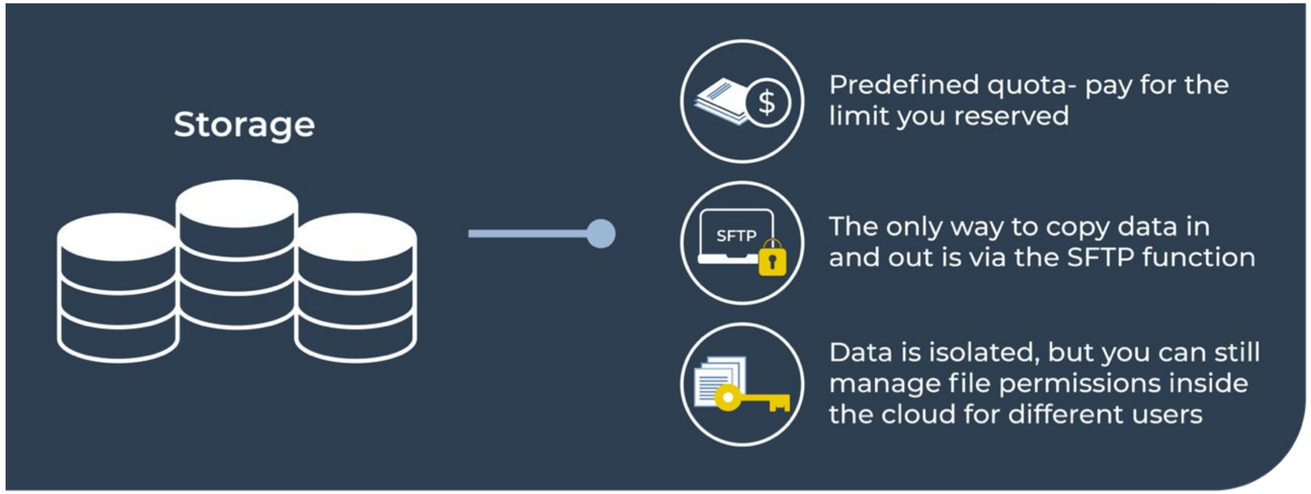
- free
- limited amount of resources
- try stuff out
- time limited account (ca half year)
- this is what we use for the course

SECURE PRIVATE CLOUD

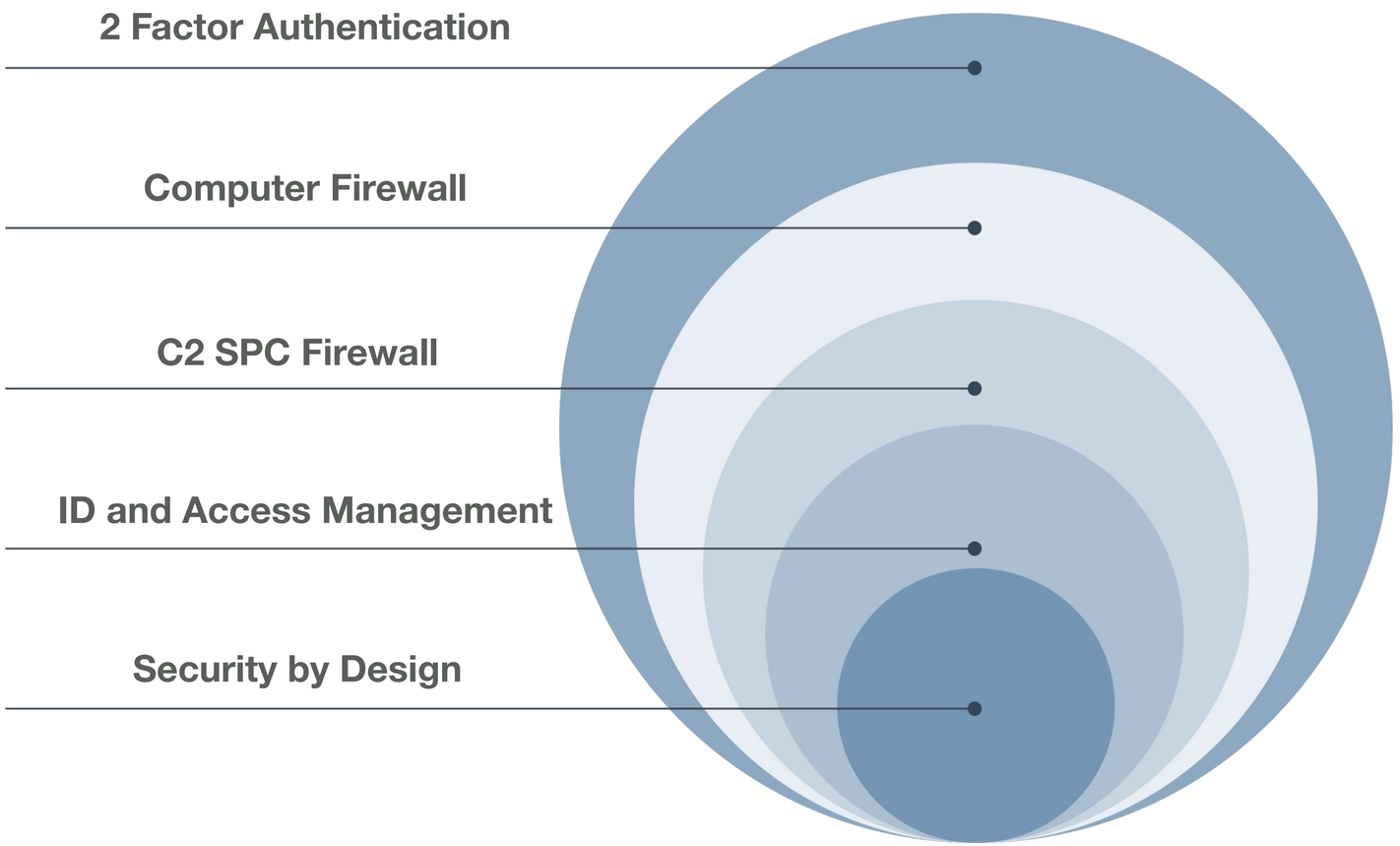
- The Computerome Secure Private Cloud is a Platform-as-a-Service providing the user with a private and dedicated virtual supercomputer, configured and optimised to meet the user's specific needs, special requirements and workload.
- Working with health data, sensitive personal data or working with high-value research or confidential data, the Secure Private Cloud is the optimal choice for health care and life science research users.
- The Secure Private Cloud is a 100% containment of the data, users and compute resources within

SECURE PRIVATE CLOUD





COMPUTEROME 2.0 SPC SECURITY MODEL



5 LAYERS

Physical & Digital Security

COMPUTEROME CONTACT

Computerome

For further information or inquiries about Computerome, please write to:

Computerome@dtu.dk
Computerome.dk

They will be happy to assist you.