

# CSC Cloud Services: cPouta & ePouta

cPouta course 17.10.2017

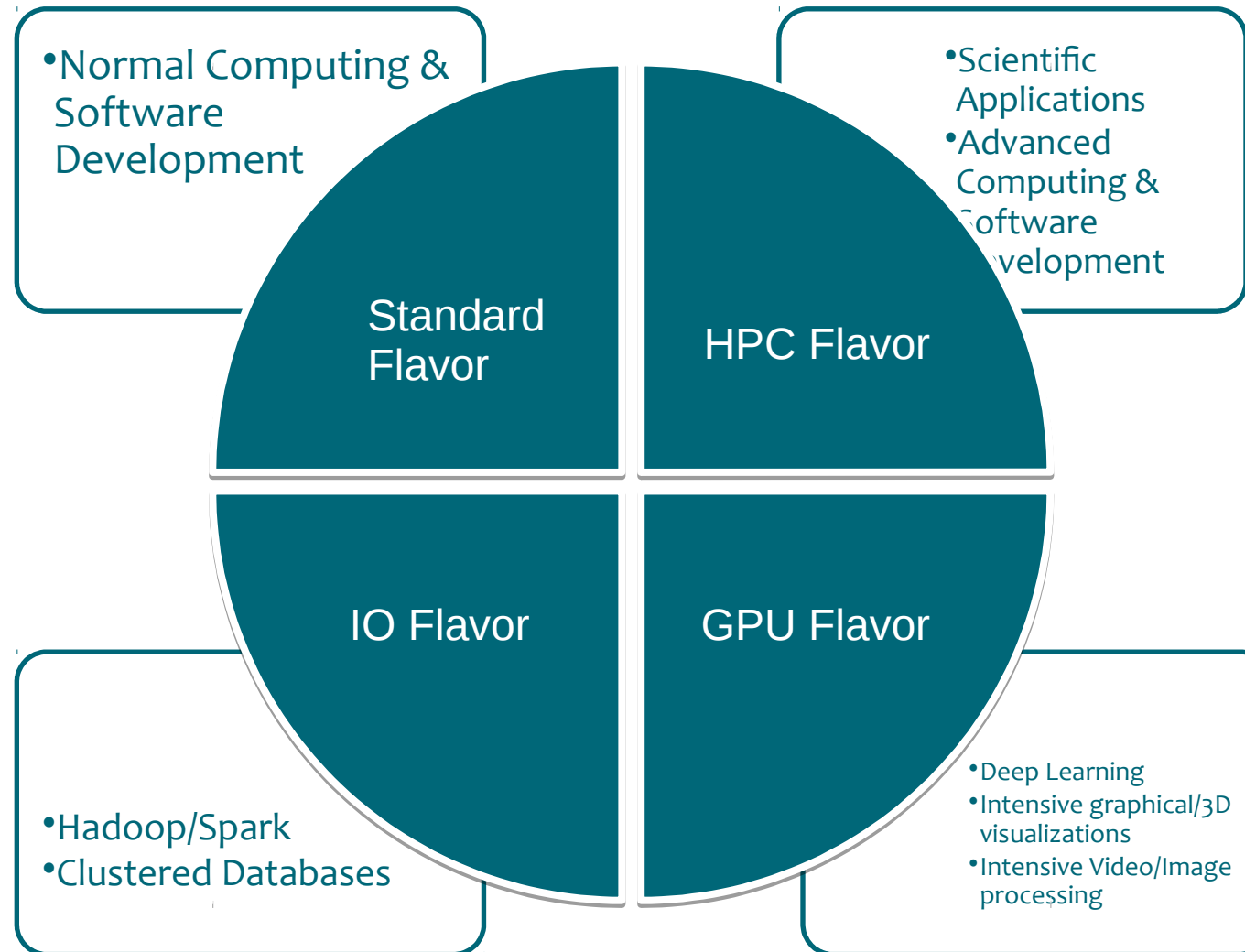


*CSC – Finnish research, education, culture and public administration ICT knowledge center*

# CSC's Cloud services

- CSC provides two Infrastructure as a Service (IaaS) cloud services for research and education:
  - **cPouta**
  - **ePouta**
- Both Pouta services are suitable to host plethora of use cases ranging from:
  - Digital Education,
  - Big Data Crunching/Analytics,
  - Scientific modeling and application development in life sciences, Bioinformatics, Astronomy, Material Sciences, Earth sciences, Financial Analytics etc.
  - And many more..
- True IaaS experience: Deploy your own virtual machines, networks and storage as per your project needs.
- Powered by OpenStack.
- Simple to create and modify VMs: Web UI, CLI and REST API interfaces supported.

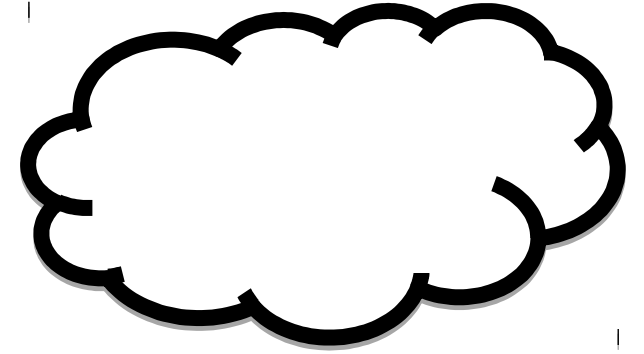
# CSC's Cloud services



Diverse set of hardware options to support your computing needs

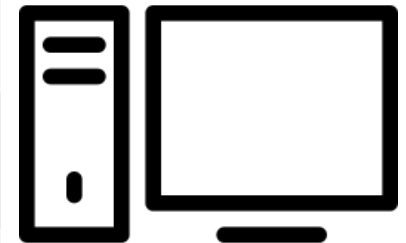
# cPouta Cloud

- OpenStack based cloud.
- Serving cloud computing needs of Finnish research institutes & universities since 2013.
- VM and Control plane can be accessed via public internet.
- Customers may decide access to VMs by creating firewall rules at OpenStack level known as “Security Groups”.
- ISO27001 certified .
- Can support modern DevOps, Agile, CI/CD etc. environments
- Could be used for hosting:
  - Scientific applications,
  - Custom services such as Web servers, File servers, load balancer etc.,
  - Virtual Computer class,
  - Research Data Sharing etc.



# cPouta VM Flavors

Flavor	Cores	Memory	Disk (root)	Disk (ephemeral)	Disk (total)	Memory/core	Billing Units/h
standard.tiny	1	1000 MB	80 GB	0 GB	80 GB	1000 MB	0.5
standard.small	2	2000 MB	80 GB	0 GB	80 GB	1000 MB	1
standard.medium	3	4000 MB	80 GB	0 GB	80 GB	1333 MB	2
hpc-gen1.1core	1	3750 MB	80 GB	0 GB	80 GB	3750 MB	2
hpc-gen2.2core	2	10000 MB	80 GB	0 GB	80 GB	5000 MB	4
io.70GB	2	10000 MB	20 GB	70 GB	90 GB	5000 MB	5
hpc-gen1.4core	4	15000 MB	80 GB	0 GB	80 GB	3750 MB	8
io.160GB	4	20000 MB	20 GB	160 GB	180 GB	5000 MB	10

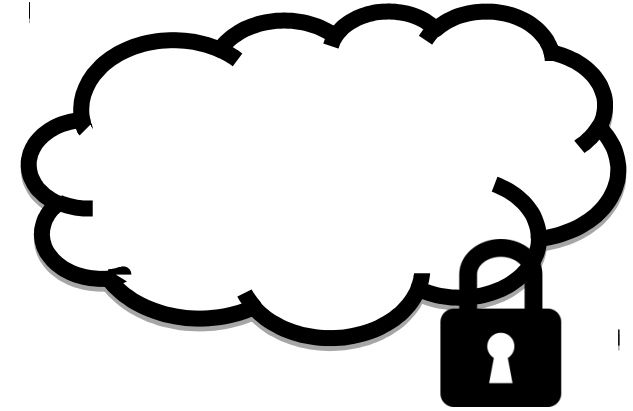


Full list of flavor available at <https://research.csc.fi/pouta-flavours>

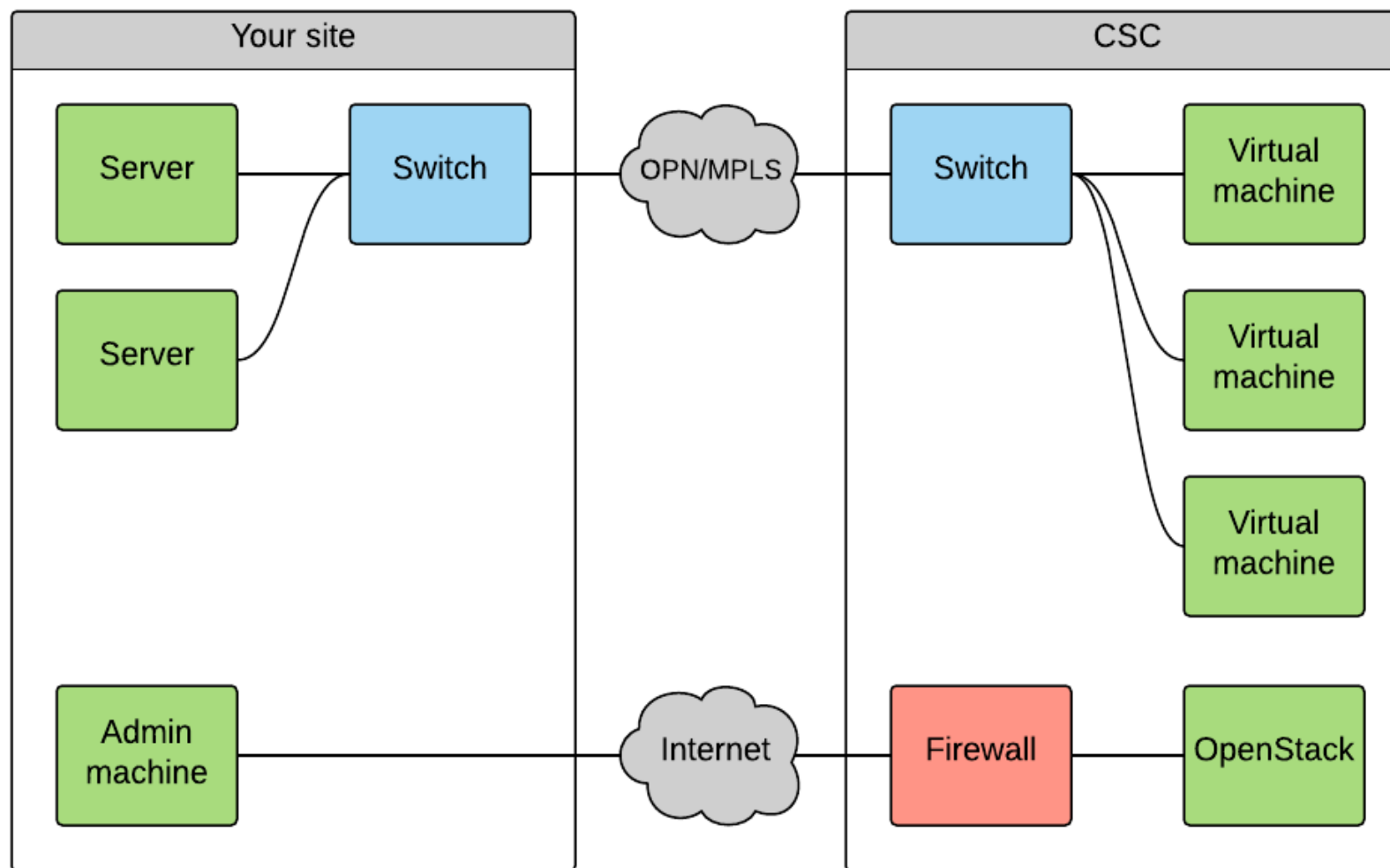
# ePouta Cloud



- OpenStack based cloud.
- Serving cloud computing needs of Finnish research institutes & universities which involves **Sensitive Data**.
- Complete Isolation of VMs from rest of the world and other ePouta customers.
- VMs accessible only from customer network.
- True L2/L3 IaaS: Optical Private Network(OPN) or MPLS VPN connection between the end customer and ePouta VM instances.
- ISO 27001 certified.
- Can support modern DevOps, Agile, CI/CD etc. environments.
- Could be used for hosting:
  - Scientific applications dealing with sensitive data,
  - Sensitive Data Sharing, Archiving etc.



# ePouta Cloud



Typical VM connections between ePouta and customer's network. Such connections are normally coordinated between CSC's cloud team, Funet and customers IT department for initial setup.

# ePouta VM Flavors



Flavor	Cores	Memory (MB)	Disk (root)	Disk (ephemeral)	Billing Units/h
hpc.mini	2	3600	80	0	5
hpc.medium.westmere	8	14400	80	0	8
hpc.small	4	7200	80	0	10
io.haswell.8core	8	40000	20 (SSD/RAID0)	350 (SSD/RAID0)	25
io.haswell.16core	16	80000	20 (SSD/RAID0)	700 (SSD/RAID0)	50
hpc.xlarge.haswell	32	160000	80	0	80
hpc.fullnode.haswell	46	248000	80	0	120
io.haswell.32core	32	160000	20 (SSD/RAID0)	1400 (SSD/RAID0)	100

Full list of flavor available at <http://csc-cloud-manuals.readthedocs.io/en/latest/epouta/epouta-pilot-guide.html#flavors>



# cPouta/ePouta Summary



	cPouta public Cloud	ePouta private Cloud
ISO27001, VAHTI 2/2010	Certified	Certified
Free for Finnish research and education (CSC-KTPO)	Yes	Yes
VM access	Internet	Funet MPLS VPN
Firewall, LB, VM installation, VM auto-recovery, Backups	Self-service	Self-service
Supported Operating Systems	No particular limits; commercial OS's as per vendor licence model	No particular limits; commercial OS's as per vendor licence model
Special features	Scales to thousands of cores and more -> meets high scalability needs	Designed spesifically for storing and processing sensitive data.
Service availability target	99%	99%