

KIT in Open Cirrus

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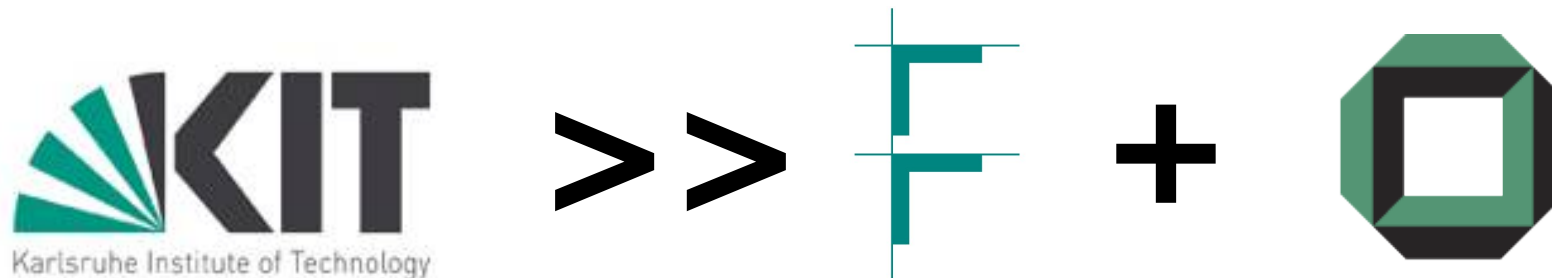
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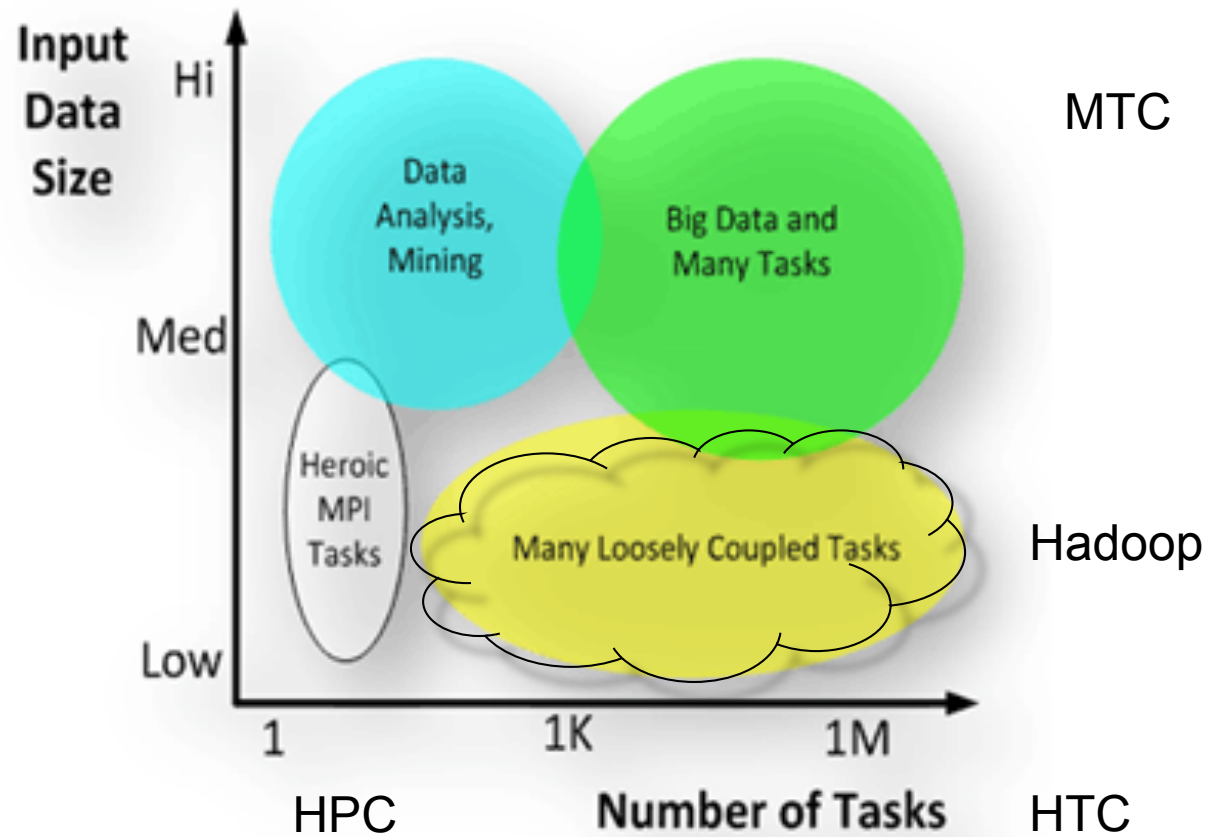
Karlsruhe Institute of Technology (KIT)



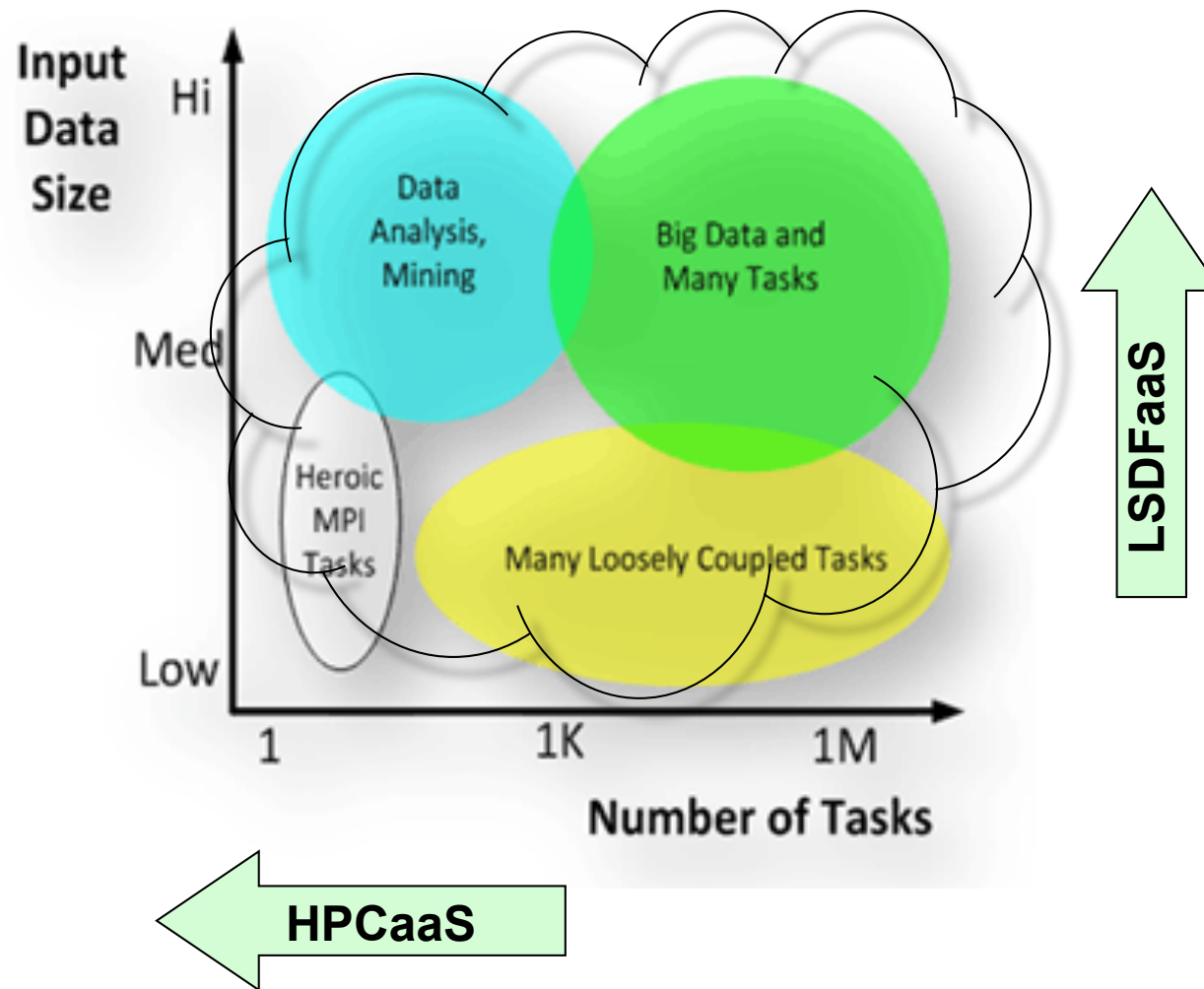
- Cooperation between research centre Karlsruhe und Karlsruhe university
- Largest scientific center in Germany
- 8.000 scientists, 18.000 students
- Annual budget: > 500 Million Euro
- R&D focus: Energy research and nano-technology



HPC vs. HTC vs. MTC (Many Task Computing)



Extension of the Cloud Space



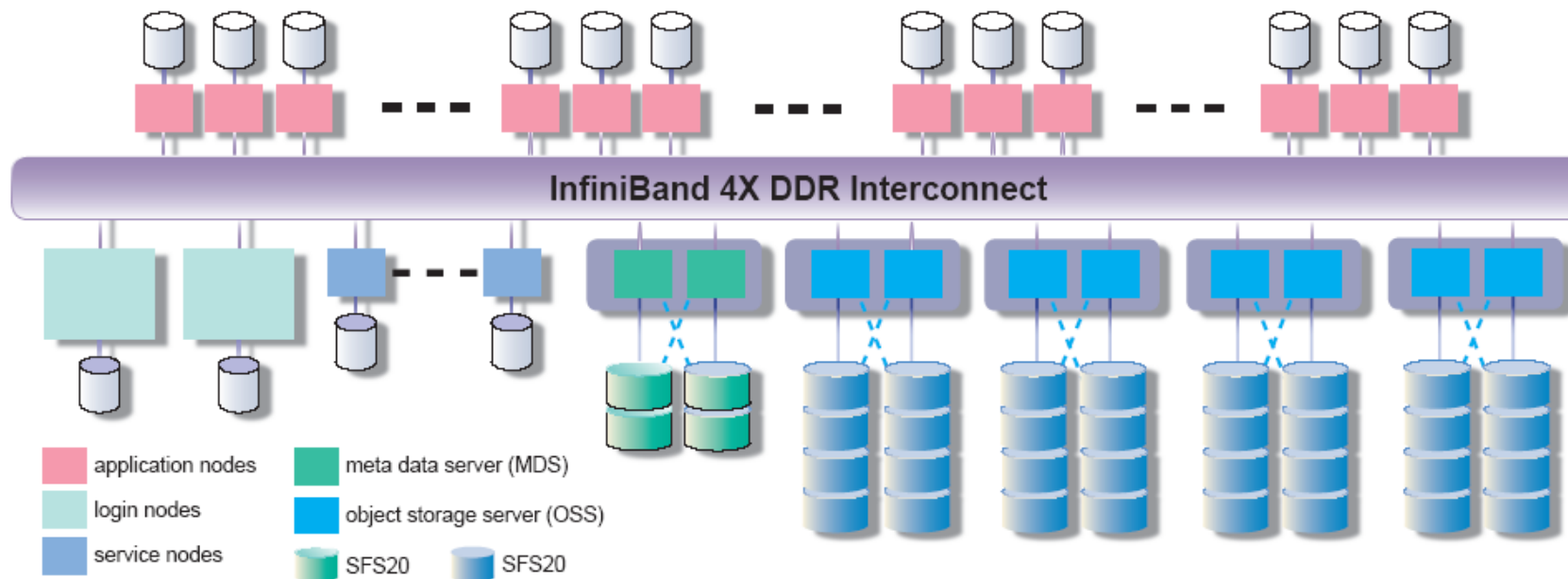
LSDFaaS

- Large Scale Data Facility as a Service
 - Particle physics
 - Biotechnology
 - Material research
- Long-term data filing due to legal requirements
- Development of data services for Open Cirrus

HPCaaS

- High Performance Computing as a Service
- Interesting Fields for R&D in Open Cirrus
 - Development of MPI services in the cloud
 - Development of scheduling services in the cloud
 - Management of software licenses in the cloud
 - Cluster management (KITE)
- Procurement of 332 HP T2 servers w/ Infiniband in July

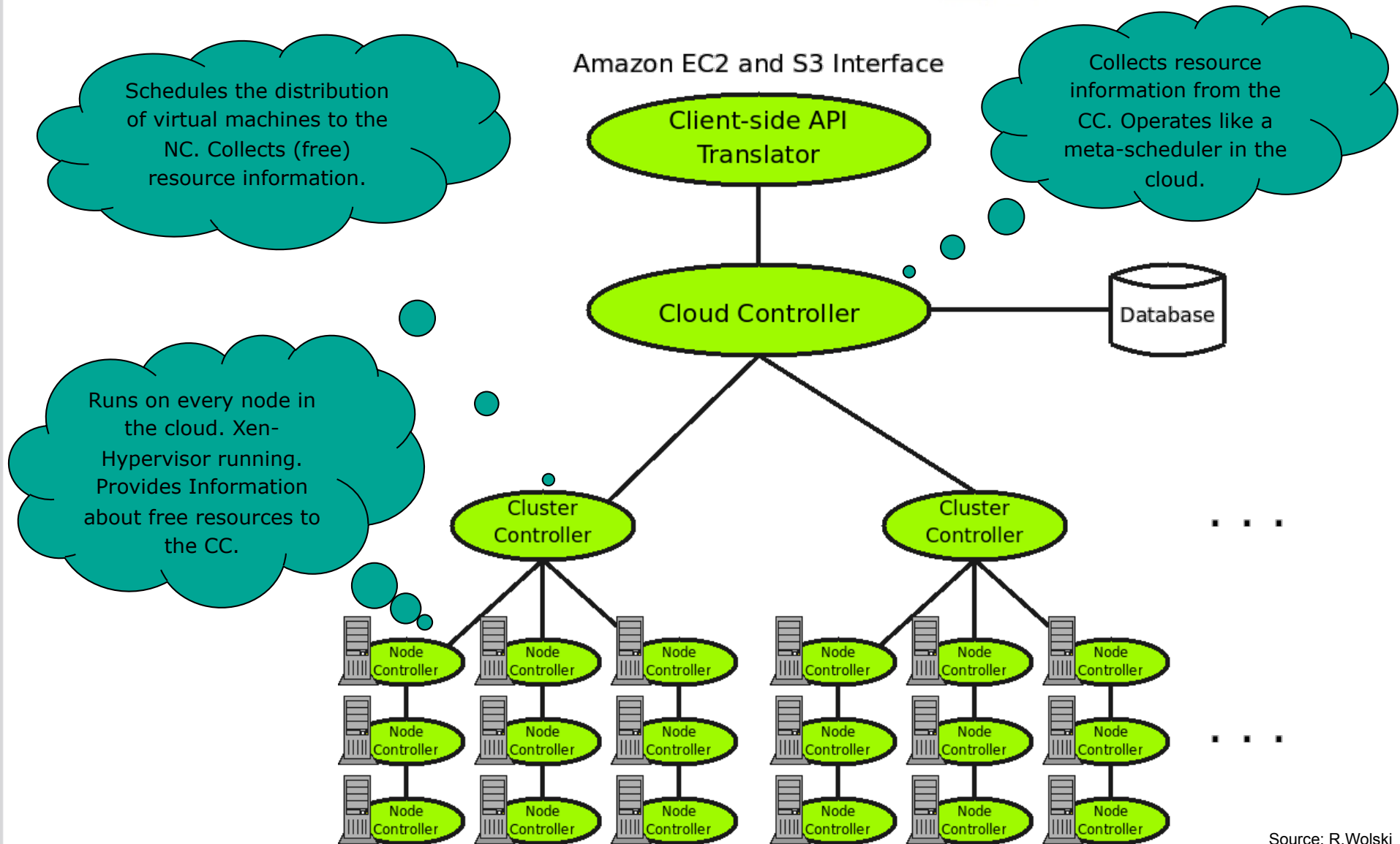
HC3: HP T2 Installation at KIT (July)



2656 Nehalem Cores / 332 Servers / 10 TB Memory
Infiniband QDR Interconnect
192 TB Lustre Filesystem

Eucalyptus: A potential VRS layer

<http://eucalyptus.cs.ucsb.edu>



Source: R.Wolski

Eucalyptus R&D at KIT

- R&D Cloud (Eucalyptus 1.5.1)
 - 5x HP Blade ProLiant BL2x220c
 - Each Blade: 2 Server Nodes
 - 2x Intel Quad-Core Xeon (2,33GHz)
 - 16GB RAM
- Scope
 - Develop methods for private/public cloud bursting
 - Strong interest in some German companies
 - Develop platform services (based on rPath/rBuilder)
 - Study CERNVM development
 - Integrate AppScale environment
 - Implement the Google platform on Eucalyptus

Thank you for your attention!

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