



GSI Site Report, Vancouver, 2011



HEPiX

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Tasks for GSI HPC department

=> be prepared for **FAIR** computing

- testing new high efficient cooling technics at next scale
 - => be prepared for the 6 level „**Green Cube**“
- Improve scalability of the HPC cluster
- Testing „new“ network methods/topology
 - => be prepared for a **300.000 cores HPC cluster**

New HC Farm prototype

2.000 cores „test“** setup

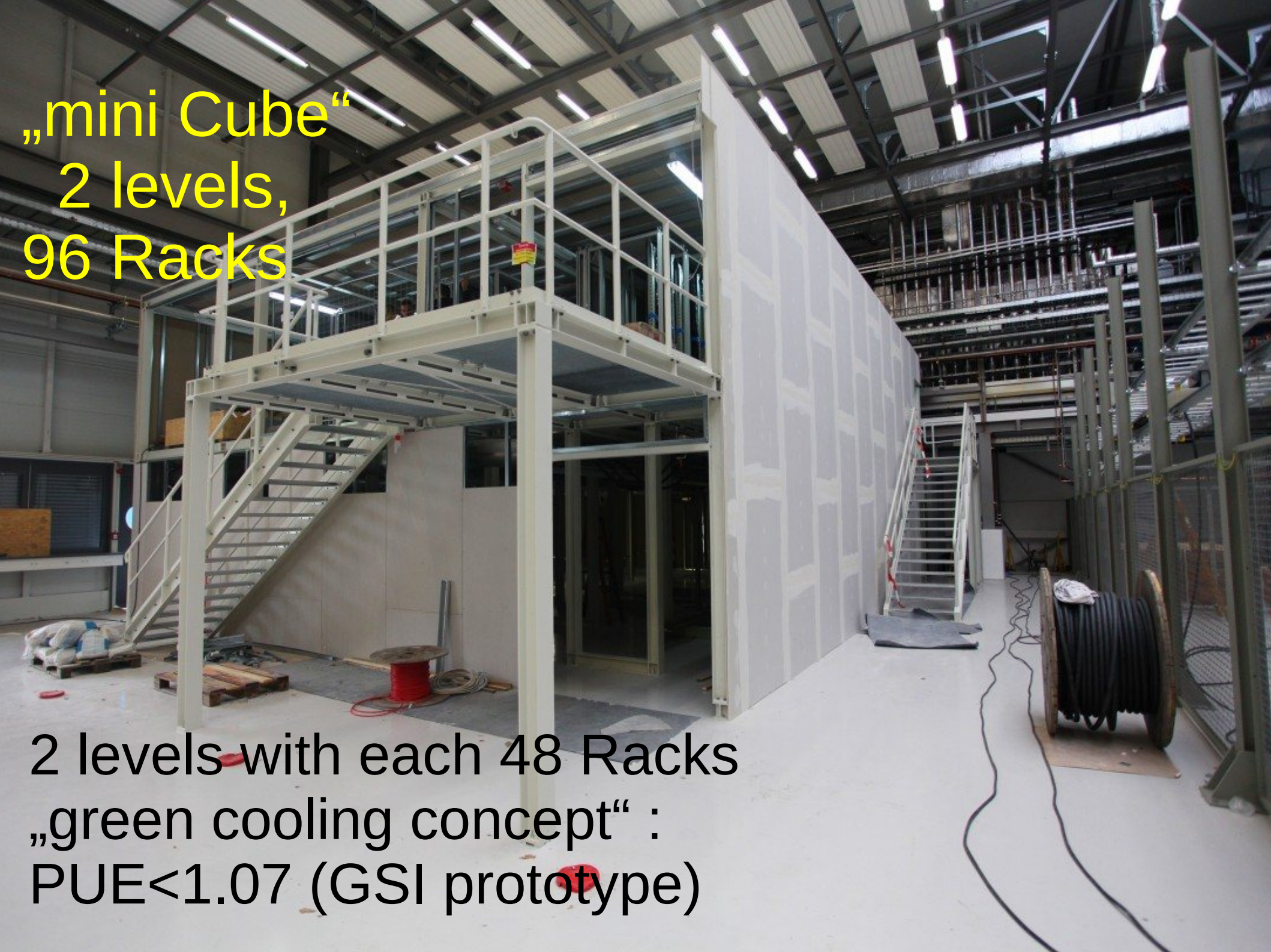
Goal: Test new methods (scalability.....)

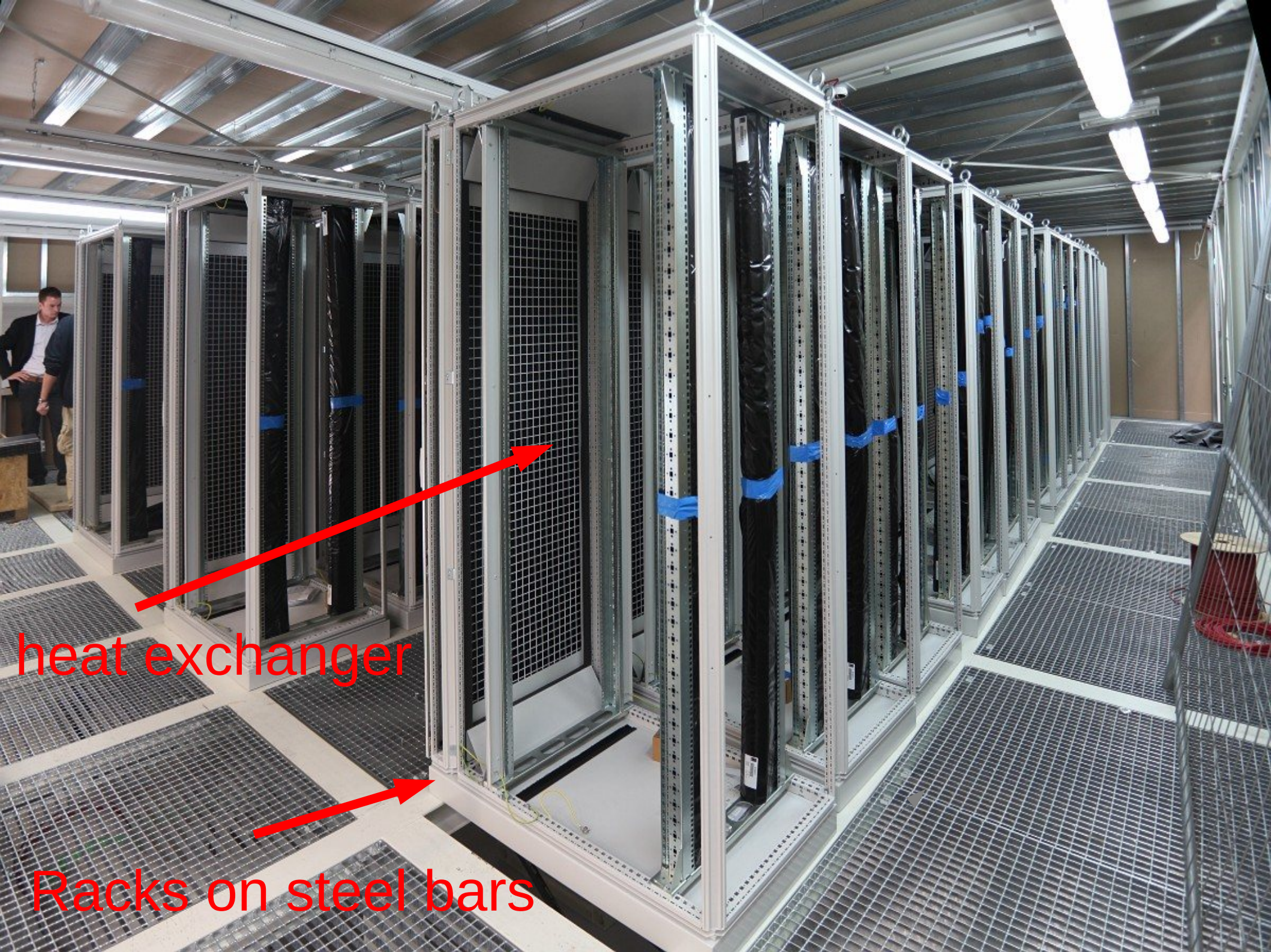
- no more **nfs** mounts /usr/local, /home
- (mass) Data on lustre
- Analysis software deployed via **cvmfs**
- no LSF (expensive licenses) – (S)**GE** instead
- Ruby based **Chef** for IM => Talk from Christo

**in production for ALICE and HADES Analysis,
Testing for PANDA, CBM

„mini Cube“
2 levels,
96 Racks

2 levels with each 48 Racks
„green cooling concept“ :
PUE < 1.07 (GSI prototype)





heat exchanger

Racks on steel bars

water towers + fans



Next Steps:

- 10.000 more cores (AMD „Bulldozer“) in November, setup in „Minicube“
- Network: IB, fat tree topology (new for GSI)
- Smaller fraction as prototype of a 2D torus topology (bleeding edge)

News from Lustre

- Stable & reliable, few hardware issues
- 140 OSS with 5.000 disks lustre
- 50 additional servers in November (2.000 disks more)
- Starting an IB lustre in mini cube
- Connection to Ethernet part with LNET routers