



New System at University of Tromsø.

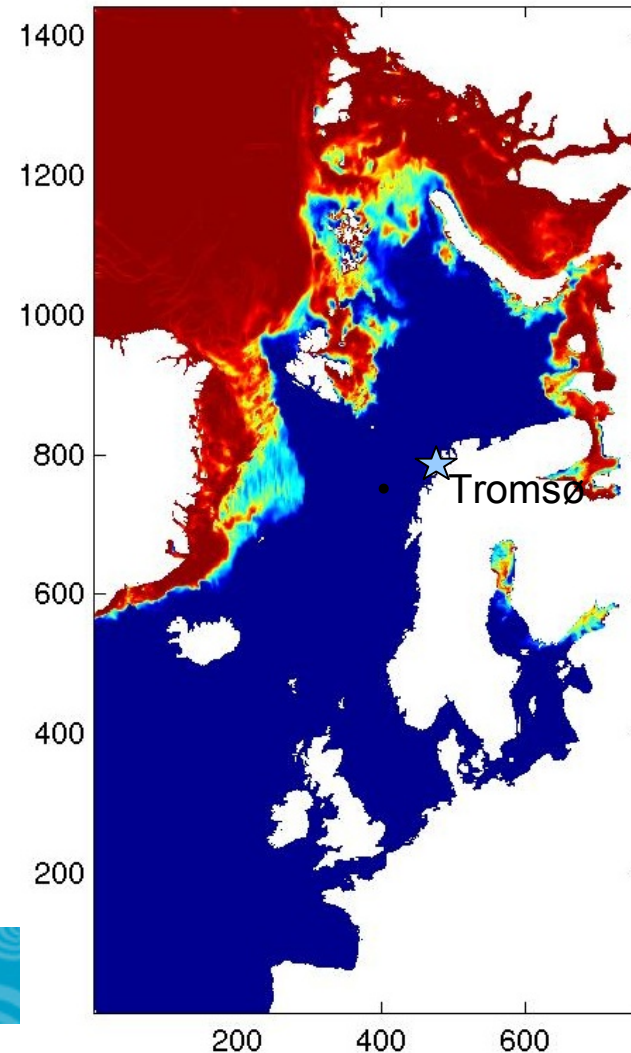
Roy Dragseth,
Team leader, HPC.
royd@cc.uit.no

University of Tromsø

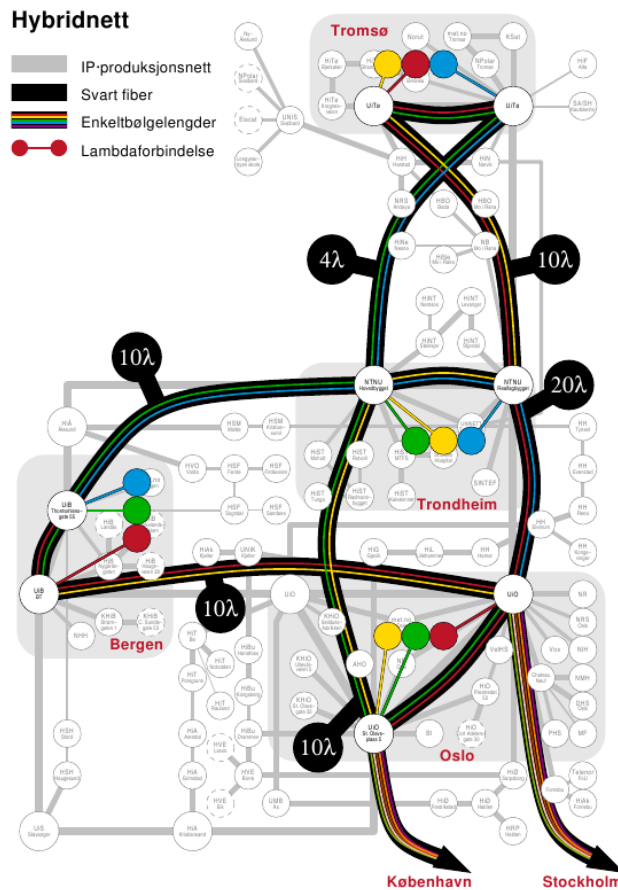


- Northernmost university in the world.
- Staff: 2000
- Students: 6000

Ice Concentration Feb. 2, 2001



Network



- New dedicated lambda network operational Oct. 10th 2007

New systems 2007/2008



- Cray XT4, UIB
- 50TF
- Linux cluster at UiT.
- Delivered by HP.
- 60TF

New system at UiT



- 704 HP BL460c blades with MCS cooling
- INTEL Xeon X5355, 2.66GHz Quad core
- 5632 Cores, 12TB Memory
- IB on 384 nodes

Name: stallo.uit.no



A stallo is the largest troll
in sami mythology:

*“A stallo cannot be
conquered by force, one
must skill and cunning.”*



More specs



- 370kW power
- 16 tons
- 70000 l/h cold water
- 11 compute racks
- 4 storage racks
- 2 service racks
- 128TB net storage
- (176TB raw storage)
- 6GB/s io throughput using HP SFS.

Procurement timeline



1.6 26MNOK grant approved by Sigma

21.6 ITT published

7.8 Tender deadline

24.8 HP chosen as winner

7.9 Contract signed

1.11 Delivery

Tender process



EU regulations are very strict!

Open procurement without any negotiations.

(Not all vendors got that message.)

Lawyers can be useful...

Tender specs.



- 26MNOK
- Must run Rocks Cluster Distribution.
- Storage: >50TB, >6GB/s
- High speed interconnect on at least 50% of the nodes
- Rack cooling systems needed
- Price/performance most important criterion

New machine room



- 15.5.2007



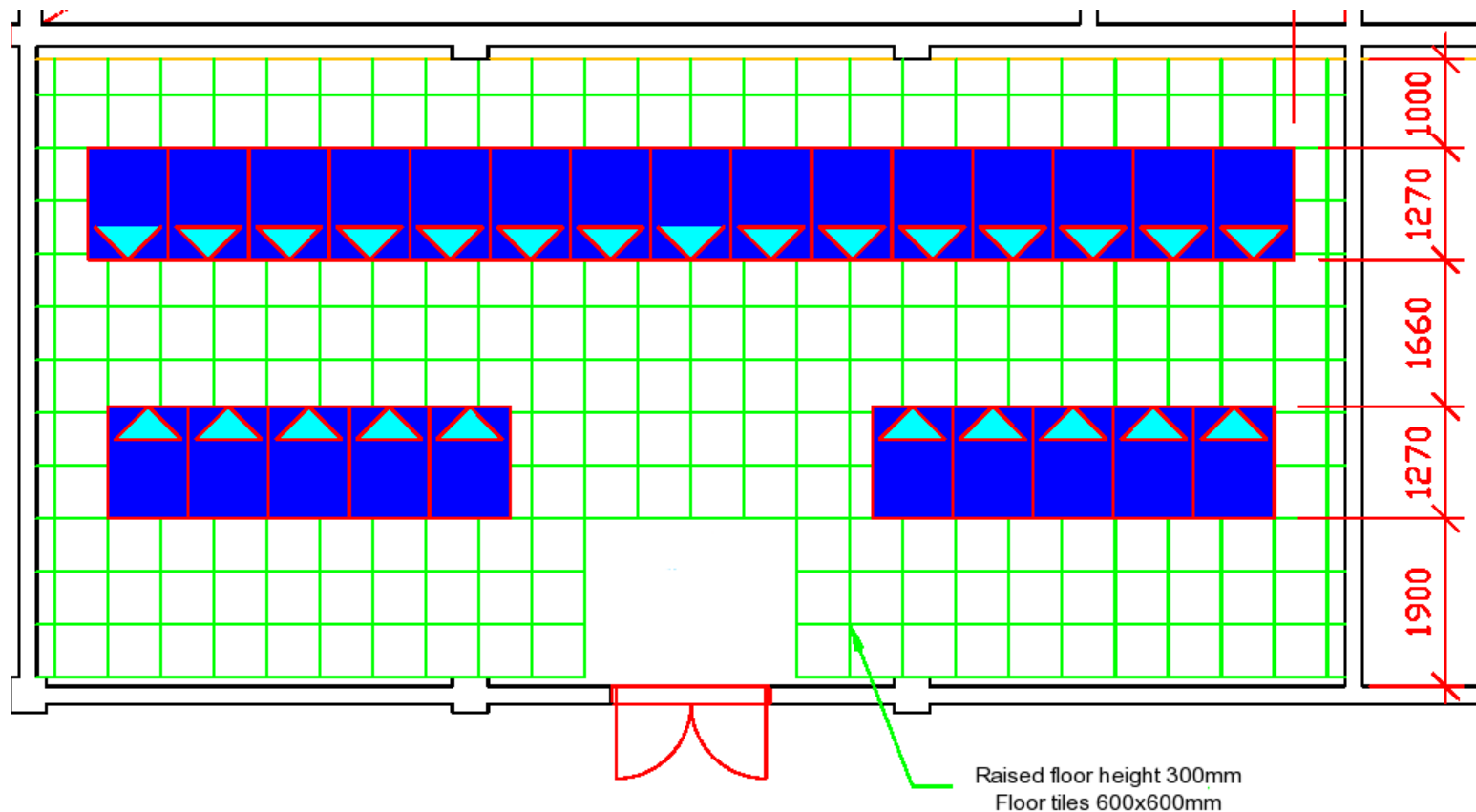
Machine room progress



Machine room progress



Floor layout.



Advice



If you ever want to build a machine room:
GET PROFESSIONAL HELP!!!

Targeted applications



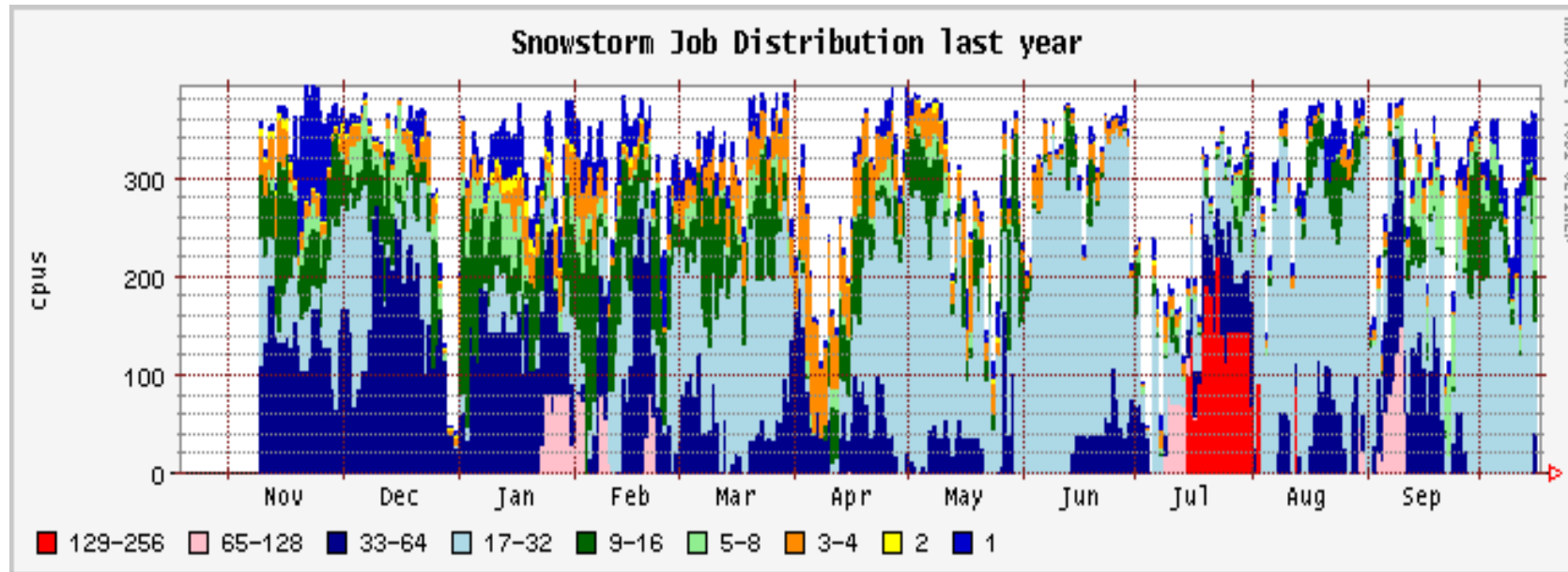
- Dalton
- ADF
- scales to 100cpus
- scale 20-30 cpus

ADF and Dalton use appr. 50% of the capacity on the current cluster.

These two apps were the main benchmarks.

Only throughput benchmarks used.

Current usage profile



- Most jobs are in the 16-64 cpu range.

Lessons learned so far



- It is possible to use standard procurement processes.
- Infrastructure requires more planning and work than software.
- Power cost is becoming painful.



More information

- HPC at UiT: <http://uit.no/itavd/HPC>
- NOTUR: <http://www.notur.no>
- NOTUR
documentation: <http://docs.notur.no>
- Snowstorm live
info: <http://snowstorm.uit.no/>



QUESTIONS?