National Analysis Facility (NAF)
Atlas Tier3 TaskForce

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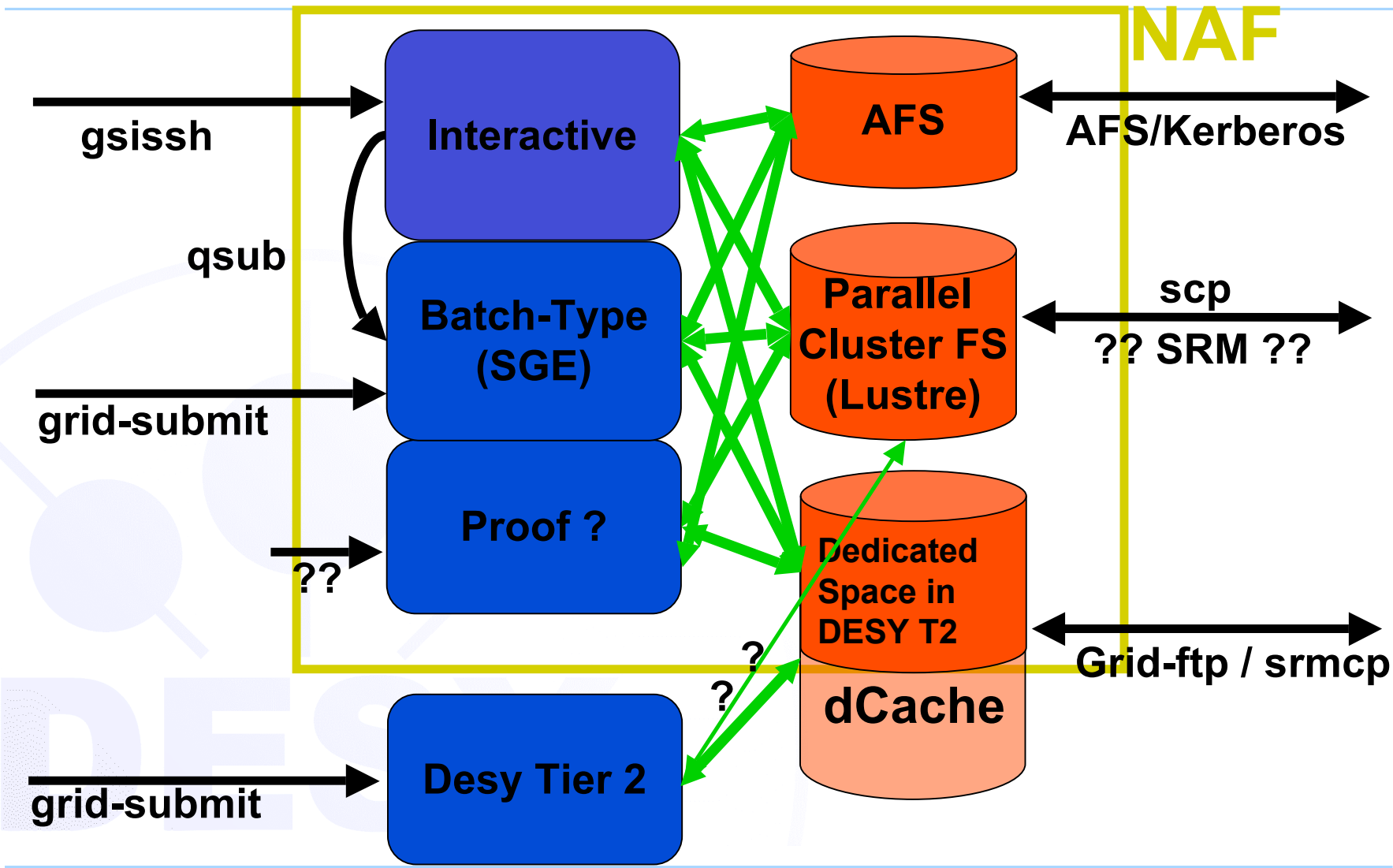
DESY Atlas meeting 1.11.2007

NAF: timeline

- Since June:
  - Started discussion with experiments
  - Started internal conceptual and technical discussions
- Mid November: First hardware should arrive
- 3-5rd December:
  - Physics at the Terascale: Kick-off Workshop
  - NAF Pilot will be presented to the public
  - Be there and give feedback!!!!!
- 2008: Adapting NAF to users feedback and first operational experiences
  - Prepare for the first data mid 2008!

NAF: Schematic basic layout



Open questions (some of them...)

- **Backup & Archive**
  - What should be covered?
  - How long?
  - Against which failures is it needed?
    - Accidental `rm` of my own files
    - Storage system failures
  - DFG (others?) recommendations for publications primary data

http://www.dfg.de/aktuelles_presse/reden_stellungnahmen/download/empfehlung_wiss_praxis_0198.pdf

- **Storage**
  - User space vs group space: Quotas
  - Space management by “group admins”
  - “Access matrix”: Who can read/write where?
    - User level? Group level? (What is a group?)
  - Can all data be readable by all experiment members?
  - Can all data be readable by all NAF members?
  - What happens to data if someone leaves institute/group/experiment?

More open questions

- **Support model**
  - **“Data manager”: Someone has to decide and organize which data is transferred to NAF space. And delete it when it is not needed anymore.**
  - **The same for software: NAF-admins do not know which software should be installed/can be removed**
  - **Local groups important link between NAF-admins and off-site institutes**
- **Working on the NAF:**
  - **How does the Atlas decision for Panda as production system affect “local/national production”?**
- **User active in >1 experiment:**
  - **Realistic scenario?**
  - **If user changes experiment: What should happen to his data?**
- **PROOF: Can local analysis frameworks work with PROOF?**
  - **Probably beginning 2008: PROOF test setup. Any guinea pigs?**

Planned Hardware for the first setup

- **Hardware Computing:**
  - 6 x 16 DualCPU-Quadcore Blades (HP-Proliant BL460c)
  - 2GB RAM/core, 146 GB HD/Blade
  - Infiniband HCA

- **Hardware Storage:**
  - 7 x SUN thumpers (17.5TB/box at raid 6) for dCache pools & Lustre
  - 8 x DELL Poweredge 2950 with 8x146 GB SAS Disks for infrastructure and AFS

- **Other hardware: Racks, Infiniband Switch, Infrastructure servers, …**

Local users and NAF?

- The NAF is for the whole German community
  - What do the local people do?

  → Still under discussion, some possible ideas:
- "Own" machines
  - Probably still need their own WorkGroup servers for development and quick testing
  - They might need to purchase additional hardware if the consensus NAF setup does not fit their needs
- Shares within NAF
  - If hardware and setup for local users and NAF is identical: Hardware can be integrated into NAF, and quotas defined
- Some DESY-wide facilities (batch farm…) only available for local people
- Who would host and maintain these?

NAF and Grid/Tier2 integration?

- We see the Tier2 resources as governed by the MoU with the experiments
  - No changes to this policy
- Access to NAF outside of MoU with experiments
  - Best effort access possible, but this is to be decided by the national groups
- Storage access: No strict distinction between Tier2/NAF for read-access. Write access on NAF-owned storage restricted
- CPU access: Long-Term plan: Merge NAF-Batch and Tier-2 resources, access governed by quotas and prioritization.

Atlas T3 Task Force

- Atlas has set up a T3 Task Force
- Develop model for T3 and Analysis Facilites
  - Atlas computing model: DPD analysis (interactive and/or batch)
- Planned results
  - Physcs analysis use cases and different T3 sizes
  - Recommendation and documentation for a “typical” Atlas T3 center setup
  - Proposal for software infrastructure
- Weekly phone meetings
- First steps:
  - Review existing efforts
- Planning a workshop imd/end January to present results

Presentations so far

- Amir Farbin: Analysis Model and Tier 3
- BNL: ROOT/PROOF for Atlas Tier 3
  - Propose a Tier 3 setup based on XROOTD/PROOF
  - Current test farm:
    - 9 Data server+PROOF workers with each 2-dualcore 1.8GHz Opteron and 1.8TB local disk
    - One master node
    - One test analysis: 7minutes in root, ~40 sec in PROOF
  - Planning for 50 nodes (200-400 cores) ~25-100 TB of disk storage soon
- Tier3 in Geneva University
  - 53 WNs (188 CPU cores) , ~75 TB in 5 file serves
  - Need local cluster: Interactive and batch
  - Need grid: Data transfers, submit to other sites, others to run job in Geneva
  - NorduGrid chosen: Admin experienced, gLite too invasive (cannot run SLC), low maintenance, stable solution

Presentations so far 2

- IFIC Valencia
  - Three phases:
    - 1) Provide lxplus-like working environment in AFS
    - 2) Have extra WNs and SEs used only by Tier3 users but coupled to Spanish Atlas Tier2 (in progress)
    - 3) PC farm for interactive analysis outside Grid (would be deployed)
  - Closer look at 3):
    - PROOF for DPD analysis
    - Fast access to data: Luster parallel file system, Storm SRM frontend
- NAF (mostly this talk plus some technicalities)
- Tier3 at RomaTre
  - Planning to buy blades, will start with 24 TB SAN, using GPFS for fast access
  - Problems with room and cooling

- **Lot of input from presentations**
- **Now going to work out recommendations**
  - **Some more investigations needed**

- **More information**
  - **Tier3 HyperNews**
  - **Meetings are public, indico pages available**