Tier-2 @ DESY
Grid Tools for Atlas

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on behalf of DESY IT

Grid @ DESY

- DESY operates the DESY Production Grid since August 2004
- Grid resources spread among two sites: Hamburg and Zeuthen
- Support of many different experiments/VO:
  - Running: H1, Zeus, Hermes, Calice
  - About to start: Atlas, CMS, (soon LHCb)
  - Construction/planning phase: ILC, IceCube
  - Other: Geant4, ILDG, GHEP, …

Grid @ DESY

- Generic infrastructure:
  - Single infrastructure for all VOs
  - Has proven to be best operational model
    - Best support
    - Best resource sharing
    - Easiest deployment of new components
- ScientificLinux 3 (Migration to SL4 on the way)
- gLite Middleware

→ The Atlas T2 is an “application” on the Desy-Grid Cluster

Resources @ DESY Grid Cluster

HAMBURG • ZEUTHEN

- CPU cycles:
  - 700 CPU cores (700 job slots) in 5 different clusters
  - 1020kSI2k
  - Caveat: Shared among all experiments!!!!
    - Atlas share (fairshare to be precise) is 33%
    - Atlas does not have 33% at all times! (neither the other groups)
- Grid storage:
  - ~150 TB disk, ~40 TB dedicated to Atlas
  - Tape backend exists, but not planned in the Tier2 context
- Network:
  - Officially 1Gbit/s WAN connection shared by all groups
  - 1Gbit/s or 10Gbit/s LAN and VPN Hamburg-Zeuthen
- Core services: Resource Broker, VOMS server, LFC …

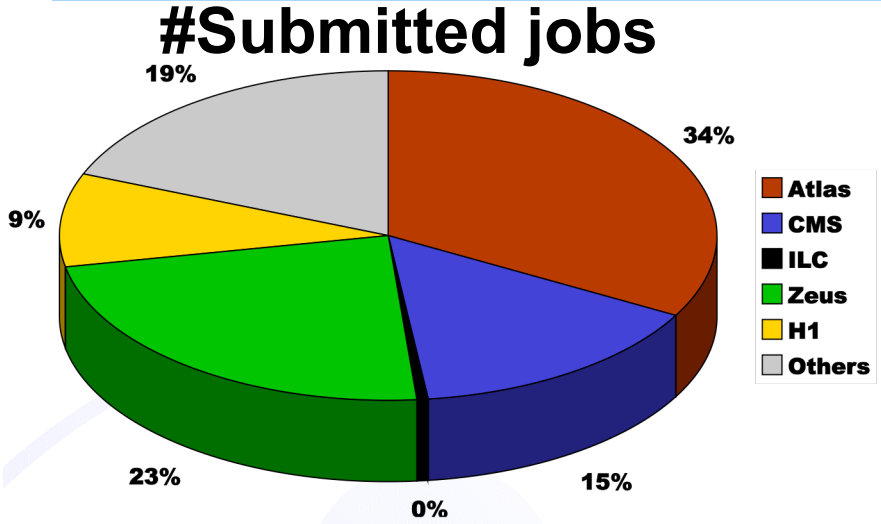
As of today!

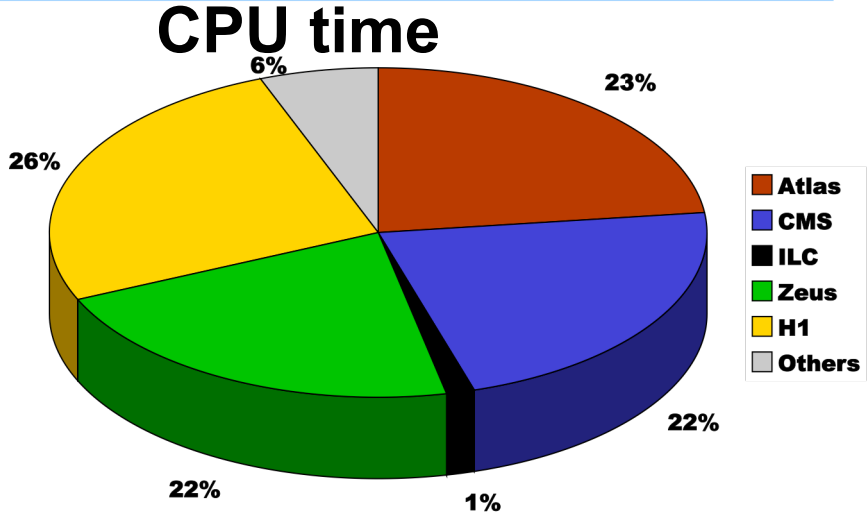
Revised hardware resources plan

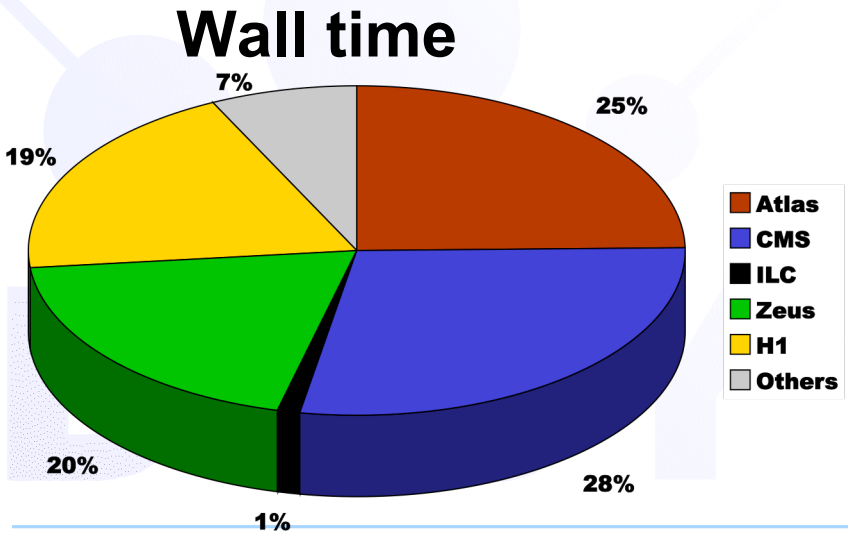
ramp up (total for DESY)

	2007	2008	2009	2010
CPU [kSI2k]	380	1500	2300	4000
Disk [TB]	150	460	840	1440
Tape [TB] (?)				

Statistics:







- From 1.1.07 - Now
- All Desy CE
- 100% is
  - 631.000 jobs
  - 2192 kh Wall time
  - 1495 kh CPU time

Desy IT: More than “anonymous” Grid

- Basic service: Email, Web, … administration
- Providing support for local groups:
  - H1, Zeus, Photon science, theory…
  - … and local Atlas and CMS needs
  - Workgroups server, infrastructure, SW install, …
- Participating in Data/Analysis challenges
- Collaboration with local groups concerning Grid business
- National Analysis Facility:
  - Planning, prototyping and running of the NAF in coordination with the experiment people.

Contribution to ATLAS DDM ops.

- Kai Leffhalm from DESY/Zeuthen
- Processing of Savannah bug reports
  - DQ2 bugs reported by users, missing datasets or files…
- Monitoring of RDO and AOD dataset transfer
- Deletion of old files
  - Problem: Diskspace
  - Check if deletion successful

DDM ops, contd.

- Integrity checks of files in Cern-Castor and CERN LFC
  - Broken transfers, lost files, software bugs
  - Multitude of scripts
- Develop and extend monitoring tools for DDM operations
  - Many scripts → high load on catalogs
  - Improvements: Higher speed, less load
  - T1-T2 transfer, deletion and integrity monitoring
- Coordination of replication activity in DDM ops team

Summary

- DESY has working Grid infrastructure
  - Atlas T2 well integrated
- Local groups have support beside T2
- Collaboration with local groups for T2 business
- Planning of NAF
- DESY actively participating in DDM operations and development of monitoring tools