

Fidium2 – plans in Munich (LMU/TUM)

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- Introduction
- Current Fidium activities
- Plans & ideas

Status & Setup in M

- Involved in
 - ATLAS (Biebel/LMU, Heinrich TUM)
 - Belle II (Kuhr/LMU)
 - ORIGINS excellence cluster (ODSL, C2PAP)
- Operational Tier-2 site for ATLAS since ~2005 (Federation with MPPMU)
- Actively involved in many computing activities
 - ATLAS grid production, HPC usage, Caching, HammerCloud, Rucio, ...
 - Belle II software and computing
 - PUNCH TA3 & TA6
 - Machine Learning and Data Science
 - Analysis technologies

Fidium – current activity

- TA3 – analysis technologies
- Main focus on ‘Benchmarking columnar analyses’:
 - Based on Iris-HEP Analysis Grand Challenge (D. Koch)
 - Perform standard analysis test-suite (Coffea/Dask) on different cluster environments in DE
 - Tests planned or in preparation at
 - Vispa/RWTH, Desy-NAF/Uni-HH,
 - LRZ-LMU: dCache, HDD XCache, SSD XCache, ...
 - Good progress, 1st results presented at DPG’23 and CHEP’23

Plans & Ideas

- Analysis Grand Challenge Tests – open issues & ideas
 - Detailed understanding of current results (scaling, saturation, bottlenecks)
 - Much larger dataset, other datasets, test different workloads (more IO bound)
 - Further infrastructures (eg K8s cloud)
- Optimized JupyterHUB/Dask cluster service
- AaaS (Analysis as a Service)
- Sustainability
 - Monitor power consumption/CO2 footprint w/ job
 - Build on existing tools (e.g. ATLAS production)
 - Automated start/shut-down of analysis cluster
 - Dynamic partitioning of prod/analysis cluster
 - On-demand start/suspend of nodes in institute cluster

Plans & Ideas - 2

- Caching and Data lakes
 - Not actively involved in current Fidium TA2
 - strong interest in topic,
 - operational setup with several xcache servers
 - used for ATLAS grid analysis (VP) and in AGC tests
- OpenStack/K8s cluster
 - Strong interest & activity on K8s analysis cluster by L. Heinrich group at TUM
 - Involved in ATLAS Google project
 - Substantial CPU procurement plans for 2023
 - C2PAP&ODSL cluster, ATLAS T2 – parts as K8s cluster?
 - Similar plans & experience at MPCDF partner site
- Workflow management
- Analysis preservation
- GPT any use for us?