

Dynamic Batch System Extension into the HNSciCloud

HNSciCloud Meeting | 2018-11-29

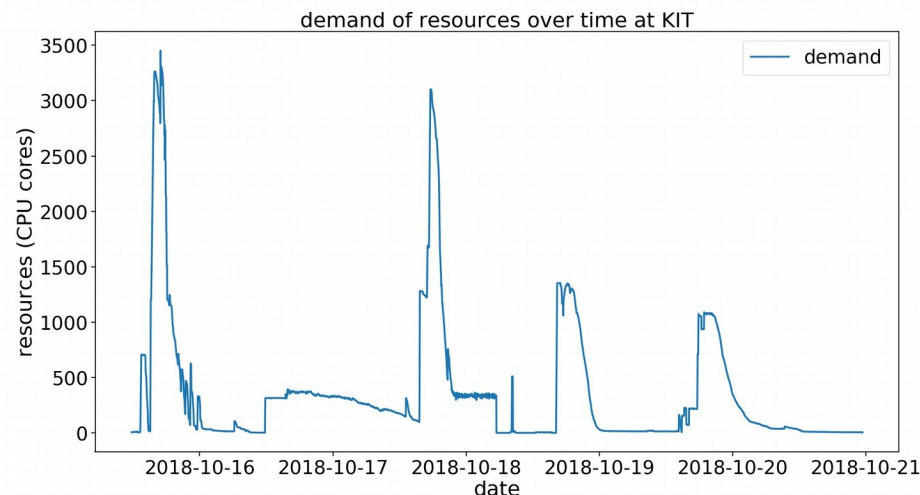
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SCC / ETP KIT



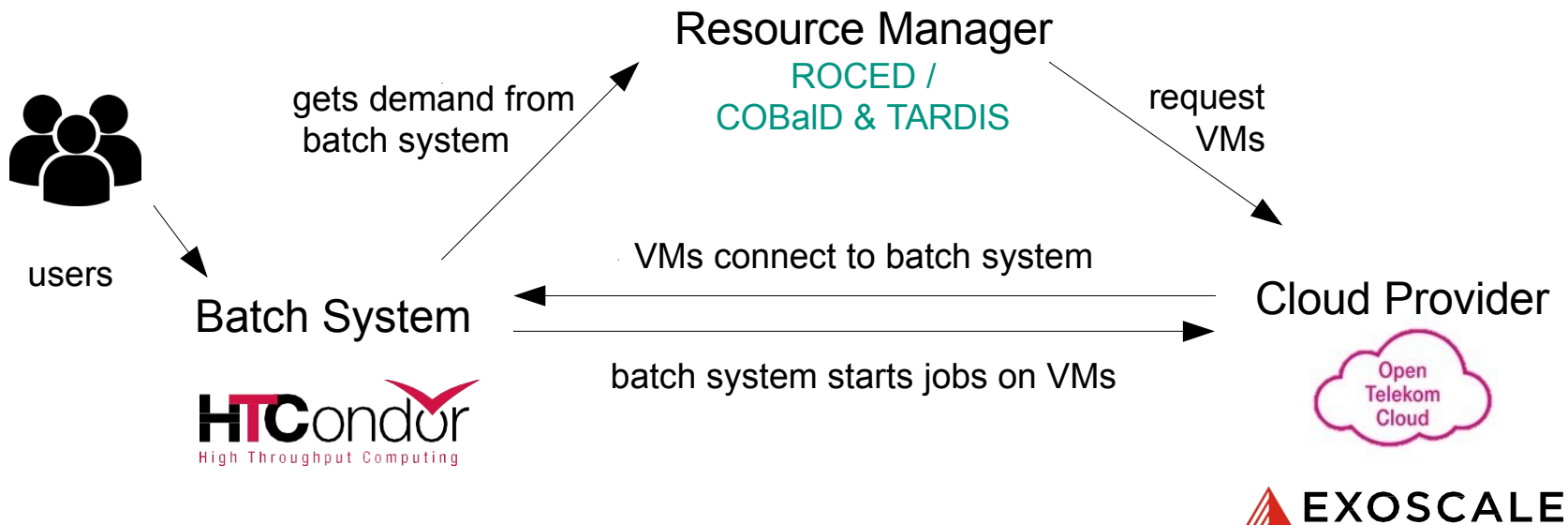
Dynamic computing needs

- High Energy Physics and Computing at KIT
 - Running a major T1 site in the WLCG
 - Active research groups in CMS, Belle and AMS with R&D in HEP computing
- Increasing demand for computing resources
 - Fluctuating demand for resources due to conferences and paper deadlines
 - More resources reduce analysis turn around cycles
 - Always on the lookout for opportunistic resources to supplement the dedicated in-house ones and cover peaks in demand



Dynamic Extension of Batch System

- Users interact only with batch system to submit jobs
- Request and integrate resources from cloud provider on demand
- Tools for dynamic lifecycle management developed at KIT
 - **ROCED** (based on job queue length)
 - **COBaID & TARDIS** (based on resource usage)
- Data streamed from KIT and other sites over GEANT



Project outcome

- About 55.000 successful user jobs which contributed to the HEP analysis activity at KIT
- Positive feedback from users
- Efficient usage of dynamically allocated computing power for about half a year
- Improve our readiness to extent further cloud providers
 - tools, management, experience, resource scheduling, integration

