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Distributed resources of the Czech WLCG Tier-2 center

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The Computing Center of the Institute of Physics (CC FZU) of the Czech Academy of Sciences provides compute and storage capacity to several physics experiments. Most resources are used by two LHC experiments, ALICE and ATLAS. In the WLCG, which coordinates computing activities for the LHC experiments, the computing center is a Tier-2. The rest of computing resources is used by astroparticle experiments Pierre Auger Observatory (PAO) and Cherenkov Telescope Array (CTA) and particle experiments like NOvA and DUNE.

Storage capacity is distributed to several locations. DPM servers used by the ATLAS and the PAO are all in the same server room. ALICE uses several xrootd servers located at the Nuclear Physics Institute in Rez, about 10 km away. The storage capacity for the ATLAS and the PAO is extended by resources of the CESNET (the Czech National Grid Initiative representative) located in Ostrava, more than 100 km away from the CC FZU. Storage is managed by a dCache instance, which is published in the CC FZU BDII. ATLAS users can use these resources using the standard ATLAS tools in the same way as the local storage without noticing this geographical distribution.

The computing center provides about 8k CPU cores which are used by the experiments based on fair-share. The CPUs are distributed amongst server rooms in the Institute of Physics, in the Faculty of Mathematics and Physics of the Charles University, and at CESNET. For the ATLAS experiment, the resources are extended by opportunistic usage of the Salomon HPC provided by the Czech national HPC center IT4Innovations in Ostrava. The HPC provides 24-core nodes. The maximum number of allowed single-node jobs in the batch system is 200. The contribution of the HPC to the CPU consumption by the ATLAS experiment is about 15% on average.

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