

Computational infrastructure for the Monitoring System of the Cherenkov Telescope Array

We hereby present the computational requirements of the infrastructure needed by the Monitoring System (MON) of the Cherenkov Telescope Array (CTA) in two different scenarios: the performance tests and the on-site deployment. The CTA will be composed of hundreds of telescopes working together to attempt to unveil some fundamental physics of the high-energy Universe. Along with the scientific data, a large volume of housekeeping and auxiliary data coming from weather stations, instrumental sensors, logging files, etc., will be collected as well. MON is the subsystem of ACADA that is responsible for monitoring and logging the overall CTA array. It acquires and stores monitoring points and logging information from the array elements, at each of the CTA sites. MON is designed and built in order to deal with big data time series and exploits some of the currently most advanced technologies in the field of the Internet of Things (IoT). The complex software architecture of MON would require large resources in terms of I/O throughput and the number of CPU cores, which will probably necessitate the full-exclusive use of several bare metal nodes.

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