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The computing and data infrastructure to interconnect EEE stations

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The Extreme Energy Event (EEE) experiment is devoted to the search of high energy cosmic rays through a network of telescopes installed in around fifty high schools distributed throughout the Italian territory. Such a structure requires a peculiar data management infrastructure to collect data registered in stations very far from each others and to allow a coordinated analysis. Such infrastructure is provided by INFN-CNAF, which operates a Cloud facility, based on the OpenStack opensource Cloud framework, that provide Infrastructure as a Service (IaaS) for its users.

In 2014 EEE started to use it for collecting, monitoring and reconstructing the data acquired in all the EEE stations. For file syncing between the stations and the INFN-CNAF infrastructure we used BitTorrent Sync, a free peer-to-peer software designed to optimize data synchronization between distributed nodes. All the data folders are synchronized with the central repository in real time to allow an immediate reconstruction of the data and their publication in a monitoring webpage. We present the architecture and the functionalities of this data management system that provides a flexible environment for the specific needs of the EEE project.

Collaboration

EEE experiment

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