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New data visualization of the LHC Era Monitoring (Lemon) system

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In the last few years, new requirements have been received for visualization of monitoring data: advanced graphics, flexibility in configuration and decoupling of the presentation layer from the monitoring repository. Lemonweb is the data visualization component of the LHC Era Monitoring (Lemon) system. Lemonweb consists of two sub-components: a data collector and a web visualization interface.
The data collector is a daemon, implemented in Python, responsible for data gathering from the central monitoring repository and storing into time series data structures. Data are stored on disk in Round Robin Database (RRD) files: one file per monitored entity, with all the available monitoring data. Entities may be grouped into a hierarchical structure, called "clusters"and supporting mathematical operations over entities and clusters (e.g. cluster A + cluster B /clusters C –entity XY). Using the configuration information, a cluster definition is evaluated in the collector engine and, at runtime, a sequence of data selects is built, to optimize access to the central monitoring repository.
An overview of the design and architecture as well as highlights of some implemented features will be presented. The CERN Computer Centre instance, visualizing ˜17k entries, will be described, with an example of the advanced cluster configuration and integration with the CLUMAN (a job management and visualization system) visualization module.

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