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Integrating InfluxDB and Grafana in a Dockerized CA EPICS Monitoring System

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A data monitoring system based on CA and EPICS designed for particle accelerators is proposed, which leverages Docker containers for deployment and integrates InfluxDB for data storage and Grafana for data visualization. The Data Collection Engine built with Python gathers data through EPICS Channel Access, caches it temporarily, and stores it permanently in InfluxDB. A two-level cache design is used to optimize data access. The monitoring system also offers a web application for configuration management and a web application for online data access and visualization in real-time, which provides a powerful and user-friendly solution for data collection, storage, visualization, and management in particle accelerator experiments.

Footnotes

Funding Agency

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Yes

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