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Service-oriented EPICS and data processing method based on high-availability cluster

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A novel service-based EPICS and new front-end data acquisition method based on a high-availability Kubernetes cluster built on the Proxmox VE platform are proposed in this paper to enhance the performance and stability of the data acquisition system. By deploying EPICS services on the Kubernetes cluster, a new efficient front-end data processing and acquisition method is realized. The data acquisition method utilizes distributed data sharing based on the Channel Access protocol to perform real-time processing and analysis of data. This approach offers advantages such as reducing hardware and maintenance costs, improving portability and flexibility, and enhancing data acquisition and processing efficiency. The practical application and testing have demonstrated that this method has the potential for use in large scientific facilities. In the future, its application value in other fields will be explored.

Footnotes

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Word

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