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Data acquisition and archiving system for HEPS RF system based on Archiver Appliance

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High Energy Photon Source is a 6 GeV fourth-generation synchrotron light source currently under construction in Huairou, Beijing. It consists of 13 Radio Frequency (RF) stations. Each RF station consists of a solid-state amplifier, an RF cavity, an LLRF controller, an interlock controller .etc. To monitor the status of all 13 RF stations, approximately 60,000 process variables need to be acquired and archived, which shall require 600 terabytes of hard disk space for 3-year data storage. For a large number of historical data, the conventional RDB Channel Archiver does not perform well in data retrieval. Therefore the EPICS Archiver Appliance is applied and its performance was evaluated. The results indicate that the new archiving system is reliable and convenient for management and maintenance. Compared with the RDB Channel Archiver, the Archiver Appliance has the advantages of clusterable design, high read/write performance, and ease of expansion. The architecture of the data acquisition and archiving system is presented in this paper.

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Footnotes

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Yes

Primary author: LI, Dongbing (Institute of High Energy Physics)

Co-authors: LIN, Haiying (Institute of High Energy Physics); LI, Jian (Institute of High Energy Physics); YE, Qiang (Institute of High Energy Physics); WANG, Qunyao (Chinese Academy of Sciences); ZHANG, Pei (Institute of High Energy Physics)

Presenter: LI, Dongbing (Institute of High Energy Physics)

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