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Gridview : A Grid Monitoring and Visualization Tool

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The LHC Computing Grid (LCG) connects together hundreds of sites consisting of thousands of components such as computing resources, storage resources, network infrastructure and so on. Various Grid Operation Centres (GOCs) and Regional Operations Centres (ROCs) are setup to monitor the status and operations of the grid. This paper describes Gridview, a Grid Monitoring and Visualization Tool being developed for use primarily at GOCs and ROCs. It can also be used by Site Administrators and Network Administrators at various sites to view metrics for their site and by the VO Administrators to get a brief of resource availability/usage for their virtual organizations. The objective of this tool is to fetch grid status information and fault data from different sensors and monitoring tools at various sites, archive it into a central database, analyze, summarize it and display it in a graphical form. It is intended to serve as a dash-board (central interface) for status and fault information of the entire grid. The tool is based on the concept of loosely coupled components with independent sensors, transport, archival, analysis and visualization components. The sensors can be LCG information providers or any other monitoring tools, the transport mechanism used is Relational Grid Monitoring Architecture (R-GMA), Gridview provides the central archival, analysis and visualization functionality. The architecture of the tool is very flexible and new data sources can be easily added in the system. The first version of Gridview is deployed and was used extensively for online monitoring of data transfers among grid sites during LCG Service Challenge 3 (SC3) throughput tests. The paper discusses the architecture, current implementation and future enhancements to this tool. It summarizes the architectural and functional requirements of a monitoring tool for the grid infrastructure.

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