

## **Monitoring the Availability of Grid Services using SAM and GRIDVIEW**

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The Grid Middleware consists of a set of Grid Services like Computing Element (CE), Storage Element (SE), Resource Broker (RB), Replica Catalog (RC), Information System (IS), User Interface (UI) etc. The Availability and Reliability of these Grid Services is critical to the functioning of Grid Infrastructure. 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. This paper describes Service Availability Monitoring (SAM) and GRIDVIEW, two complementary tools developed for monitoring the Availability of Grid Services and various sites in LCG. The SAM Framework launches periodic tests at various service instances to check their status. The results of these tests are published into a central database using Gridview's publishing web service. Using these test results, Gridview's summarization module computes the Availability of individual services and the overall availability of various sites. Gridview's Visualization module displays Graphs and Reports indicating the Availability of various sites and services. There is full traceability from the Availability Graphs to the detailed test results used to generate them. They are used by LCG Managers to view the overall availability of the Grid and by the Site Administrators for viewing the availability of their site and for troubleshooting the problems.