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The South African National Grid Initiative : From prototype to production

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South Africa has made significant investments in e-Infrastructure recently. These investments are partly in the form of centralised, centrally-funded initiatives such as the Centre for High-Performance Computing (CHPC) and South African Research Network (SANReN). However, a significant investment has also been made in parallel by universities and national laboratories of computing resources and manpower, dedicated to research support. The South African National Grid is a national federation of these efforts with the goal of deploying a production-quality regional e-Science infrastructure.

Detailed analysis

During the year of 2009, a shift of activities in South Africa has been made in two directions. The first is the move from prototype development of national grid infrastructure to a more stable, production-level platform. The second is a shift from inward dissemination of the project towards an outward dissimination effort of the project in an attempt to integrate operations with regional and global efforts. Several new sites have been formed and special service activities undertaken to ensure the national coherence of the platform. These include the development of a “clone” of the GILDA services, providing a virtualised pre-production and testing environment for new users and sites. Furthermore, an EUGridPMA-accredited Certificate Authority is under development for the Sub-Saharan Region. A core team of experts responsible for site operations has been formed and undergoes regular development in joint EGEE/SANReN/SAGrid training sessions.

Conclusions and Future Work

SAGrid is now moving to production status, along with the SANReN network which will be fully operational by March 2010. With the basis now solidly set for research support in a federal infrastructure, the next step is to greatly increase participation and usage. The goal is to provide a tool for collaboration which is transparently accessible and supported, independant of where the user may be located in Sub-Saharan Africa, and which is fully interoperable with EGEE/EGI.

Impact

This formalisation of the manpower dedicated to SAGrid has enhanced South Africa’s participation to large collaborations, including that of the EPIKH project, which ran its first school for application porting in South Africa this year, which was run entirely on SAGrid services. Several memoranda of understanding with existing projects with FP7 funding have been signed in order to accelerate usage of the infrastructure and introduce South African researchers to the possibilities of collaboration with these projects. South African research efforts with great impact in the physics, geomatics and bioinformatics domains are already seeing great benefit. However, the greatest impact lies in the collaboration agreement with the HP/UNESCO project which could see the seeds of the first regional Afrian grid initiative.

Keywords

URL for further information

<http://www.sagrid.ac.za>

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