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Experiences with a lightweight GRID infrastructure using AFS

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The Andrews File System (AFS) with certificate-based authentication can be used to provide a system of input and output sandboxes which is simpler and easier to use than the usual tarball. We describe how such a system was set up at Manchester, the experiences of various different users, and the implications for design of Tier3 facilities.

Detailed analysis

Development was carried out using the 1800 CPU Tier2 centre at Manchester and the local user community. The worker nodes run an afs client system, and the gssklog program is used to connect running jobs to the local afs server.

Several user projects have been and are being successfully undertaken using this, in the areas of accelerator simulation, reactor studies, and particle physics data analysis. We describe these cases and the lessons learned from them.

Using this system users can run jobs on the Tier 2 centre in exactly the same environment as when running test jobs on the local cluster. This makes the path the online test and debugging environment to the offline production environment extremely smooth.

Conclusions and Future Work

This is a successful lightweight system which makes access by users considerably easier and encourages use of the centre, and speeds up their computing tasks

Impact

This system provides a way of opening up the facilities of a large Grid centre to a user with minimal adaptation on their part, and has encouraged our transition to grid computing. Other centres and other users will be interested in adopting this system.

Keywords

infrastructure; user adoption; sandbox

URL for further information

<http://www.hep.man.ac.uk/u/roger/gssklog>

Author: Prof. BARLOW, Roger (Manchester University)

Co-authors: Ms FORTI, Alessandra (Manchester University); Dr MCNAB, Andrew (Manchester University); Dr JONES, Michael (Manchester University)

Presenter: SINCLAIR, Gillian (University of Manchester)

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