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A Scalable Grid User Management System for Large Virtual Organization

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We present a work-in-progress system, called GUMS, which automates the processes of Grid user registration and management and supports policy-aware authorization at well. GUMS builds on existing VO management tools (LDAP VO, VOMS and VOMRS) with a local grid user management system and a site database which stores user credentials, accounting history and policies in XML format. We use VOMRS, being developed by Fermilab, to collect user information and register legitimate users into the VOMS server.

Our local grid user management system jointly retrieves user information and VO policies from multiple VO databases based on site security policies. Authorization can be done by mapping the user's credential to local accounts. Four different mapping schemes have been implemented: user's existing account, recyclable pool account, non-recyclable pool account and group shared account. The mapping selection is determined by the type of target resource and its usage policies. We already deployed our automatic grid mapfile generators on the BNL Grid Gatekeeper, GridFtp server and HPSS mass storage system. Work is in progress to enable "single-sign-on" based upon X509 certificate credential for job execution and access to both disk and tape storage resources.

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