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Workflow repository, user specific monitor, and vulnerability analyzer in SEE-GRID

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This talk introduces some high-level services, which extend the gLite-based SEE-GRID infrastructure in order to ease several tasks of end-users, application developers, and grid operators. The Common Workflow Repository Extension (CWRE), and the User/application Specific Grid Infrastructure Monitoring Extension (USGIME) of P-GRADE portal can provide efficient tools for user and application developer communities. With the Grid Site Software Vulnerability Analyzer (GSSVA) the grid operators can inspect the vulnerability/security level of the grid infrastructure with minimized intrusion.

Detailed analysis

The talk focuses on three important aspects of Grid exploitation and maintenance/operation.
(1) The CWRE provides support for users to share application workflows, and enhances the information dissemination and collaborative development in this way. The solution is based on the popular D-SPACE digital repository technology. The repository is accessible from the new Upload/Download portlets of P-GRADE portal, and via the D-SPACE native graphical interface from any web browser.
(2) Handling remote grid files is exceptionally critical and acts as source of frequent troubles and vast amount of user complaints. The new PAKITI based USGIME is able to monitor and check various scenarios of remote file handling systematically, and manage these user/application specific tests by the end-user.
(3) The primary goal of GSSVA is to provide accurate online status information about the vulnerability/security level of the grid infrastructure. The service provides a centralized system, which is monitoring the grid infrastructure from security point of view using traditional grid protocols in order to work on every site without modification in configuration/installing any new software.

Conclusions and Future Work

The presented services can contribute to easier, more secure, and less error prone execution of complex applications on the Grid. The future plans includes (among others) the development of enhanced interfaces for visualization of historical information (GSSVA), improvements towards more WEB2 functionalities (CWRE), and enhancements based on the new users feedbacks (USGIME).

Impact

The presented solutions can be easily adopted not only in SEE-GRID infrastructure but in other gLite-based production grids and VOs, and can be a solid base of porting to other Grid systems. These are ensured by several ways; all the presented services have been released under open source license (GPL), the P-GRADE portal related achievements are available on the sourceforge.net, and all these tools are already in production.
(1) CWRE repository can be exploited as a bridge between more than 15 different P-GRADE portal installations worldwide, fostering the creation of new application developer communities from the individual developers, and provides more visibility of research achievements.
(2) USGIME can assist the users to understand better the reasons for common critical failures and enable the

execution of application specific tests systemically.

(3) GSSVA addresses vulnerability issues of Grids, which can efficiently help administrators increase the security level of the site and leaving less chance for various attacks.

Keywords

SEE-GRID, glite, worklow, repository, vulnerability, monitoring

URL for further information

http://wiki.egee-see.org/index.php/JRA1_Commonalities

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