

Software Integration and Distribution in the Catch-All SAGrid VO with Jenkins CI and CVMFS

Tuesday, 20 May 2014 14:30 (20 minutes)

The South African National Grid (NGI_ZA) operates a catch-all Virtual Organisations which all South African researchers can use to access computing and data resources. Since it is not a domain-specific VO, there are several widely-varying uses for the applications supported by this VO, which have been requested by the users themselves. Porting and deploying the applications was usually done in the past by members of the VO with the SoftwareManager role. A great portion of the time taken to port applications consisted in identifying and satisfying the dependencies of the applications, which could not be guaranteed to be available on the worker nodes. This manual process, while successful, resulted in a long lead-time between identifying new applications and their actual usage once deployed.

This issue has been resolved in VO SAGrid using two pieces of now mature technology : CVMFS and the Jenkins Continuous Integration system. By providing a “clean” testing environment which replicates the worker node for various architectures and operating systems, the user themselves (with no special roles), can attempt the porting of the application. This is beneficial both to the user and the VO SoftwareManager, since the former knows their application well while the latter may have no prior knowledge. Once applications have passed compilation and execution tests, the VO SoftwareManager merely has to make a few manual checks before staging it to the VO SAGrid CVMFS repository, which is mounted on all the sites’ WN.

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Session Classification: EGI services for global software and common data distribution