

Experiences with the ETICS support for testing in voms

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JRA1 All-Hands

- **There are several kinds of testsuites:**
 - Performance, unit, system, integration, etc...
- **I was interested in system testing, library testing and regression testing**
 - Make sure that all clients and the server work as intended
 - Make sure that all the APIs worked as intended
 - Make sure that bugs already fixed do not reappear.

- **APIs are in several different languages: C, C++, Java**
 - I wanted ONE test infrastructure, not three.
- **Client/Server architecture**
 - Testing needs to setup both. Also, communication among them may be faulty.
- **PKI Infrastructure needed**
 - Needed to setup a working PKI infrastructure (CA, CRL, Certificates, Signing Policies)
- **Needed a detailed report**
 - Not just passed/failed, but additional info in case of failure
 - Necessary for debugging with remote builds.
- **Software divided into at least two packages**
 - `org.glite.security.voms`, `org.glite.security.voms-(mysql|oracle)`

- **Dejagnu was chosen as the framework for testing.**
- **PROs:**
 - Extremely portable (based on TCL)#
 - Easily expandable
 - HTML report + failure information ~ 100 lines of code, and no interference on (original) textual reports
 - Language agnostic
 - Can test libraries in any language
 - Easily test applications, too
 - Supports automating test of interactive programs
 - Perfect for client/server architectures
 - Proven: standard GNU testing framework
 - Used by gcc, gdb, binutils, ld, etc...
- **CONs:**
 - Emacs-like release times
 - Version 1.5 branch created roughly one year ago
 - *Not so big a problem. Version 1.4.4 is very stable*

- **Just do ‘make check’ after ‘make’ and ‘make install’**
 - Be sure you have also installed `org.glite.security.voms-mysql`
 - Also, be sure you have MySQL installed
- **Remote testing**
 - Could not normally be tested during etics remote build.
 - There is no DB running!
 - Voms-mysql is not installed.
 - Even so, how do you access the reports?
 - Well, it is not quite true
 - ETICS **does** have support for testing software
 - *It's just that it was not used in gLite before*

- **Problem 1: Having a running MySQL**
 - Etics does have a concept of configuring and running additional services during a build.
 - They are called deployment modules
 - There was not one for MySQL
 - *So it was created*
 - *(omitted rant on MySQL installation documentation) 😊*
 - mysql-deployment v. 4.1.20-1.RHEL4
 - mysql-deployment v. 5.0.45-7.el5
 - Adding a dependency on one of these modules, allows ETICS to install and configure MySQL, and provides two commands to start/stop it at will

- **Problem 2: Having voms-mysql installed**
 - This is easy: just add a dependency from it
- **Problem 3: Accessing the reports**
 - Etics allows user-defined reports to be added to its own report page.
 - Just name the main html this way:
 - *Index-custom-<NAME>.html*
 - And put it in the ETICS report directory
 - It will appear as <NAME> in the report page
 - Caveats:
 - *Symbolic links from the main report to ancillary pages should be relative, not absolute*
 - *This should be an actual file or an hard link: soft links get broken during the process*

- **Problem 4: Actually running the testuite**
 - ETICS provides two choices:
 - A 'test' target in the "Build Commands" page
 - A 'Test Commands' page
 - The former gets run for every build
 - The latter gets run only when one runs a 'TEST' type of build
 - Chose to use the Build Commands one, so that it would run everytime. However, the Test Commands page is much more flexible. Any 'clean' way to call it from build?

- **Putting it all together:**

- The org.glite.voms.voms-testsuite-run module
- Right now runs independently. Next step will be adding it to the subsystem
 - Just waiting on Andreas for two dependencies
 - *mysql-deployment and dejagnu*
- Example:
 - http://etics-repository.cern.ch:8080/repository/reports/id/12a2d10f-4f13-4739-941e-1cbf7db71809/slc4_ia32_gcc346/-/reports/index.html

- **How much of the software is actually tested?**
 - Coverage information would be useful
- **Will ETICS support coverage tools?**
 - Spoke with Alberto about this.
 - Yes, coverage will be supported, but not yet.
 - Will be ready by end of May
 - Volunteered VOMS as the first package to test it

- **Many thanks to ETICS support and in particular to Valerio Venturi for all the time spent with me to make this work!**