



Enabling Grids for E-scienceE

Experiences with the ETICS support for testing in voms

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- **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 and running
- **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 every time. 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
- Part of the standard voms subsystem
 - Runs with every developer build, no impact for others
- Example:
 - http://etics-repository.cern.ch:8080/repository/reports/id/17790529-a63b-4375-a083-7178bcc2e527/sl5_x86_64_gcc412/-reports/index.html

- **How much of the software is actually tested?**
 - Coverage information would be useful
- **ETICS now supports coverage tools and multi-host tests**
 - Speaking with Lorenzo about how to use them.
 - Coverage will be integrated shortly
 - Coverage is already there in the dev sources, but does not depend on ETICS for the moment.
 - Multi-host is interesting:
 - Test if relying commands work, e.g: UI job submit commands
 - *Will require much more work*
 - *Will eventually be there too.*

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