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)

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- **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

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- **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?

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- **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

eGee

- **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 be 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!**