



Enabling Grids for E-scienceE

SCDB

C. Loomis / Michel Jouvin (LAL-Orsay)

Quattor Tutorial

LCG T2 Workshop

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- **Design Goals**
- **Implementation**
- **Status**
- **How to use it ?**

- **Multi-cluster mgt./configuration**
- **Hierarchical arrangement of templates**
- **Treat configuration directly as code mgt.**
 - Branching, tagging, ...
 - Merging, conflict resolution, ...
- **Usable “offline”**
 - modification, checking, building, ...
- **Must work on linux, Mac OSX, windows, solaris**

- **Complete, secure control of cluster from my laptop!**

- Relies as much as possible on existing tools.
- **Subversion**
 - Directory management
 - Atomic commits
- **Ant**
 - Equivalent of “make” for Java
 - Framework for including new “tasks”
 - Method for executing simple workflows
- **Eclipse (optional)**
 - Provides GUI interface
 - Integrates well with Subversion and ant (and PAN with little effort)

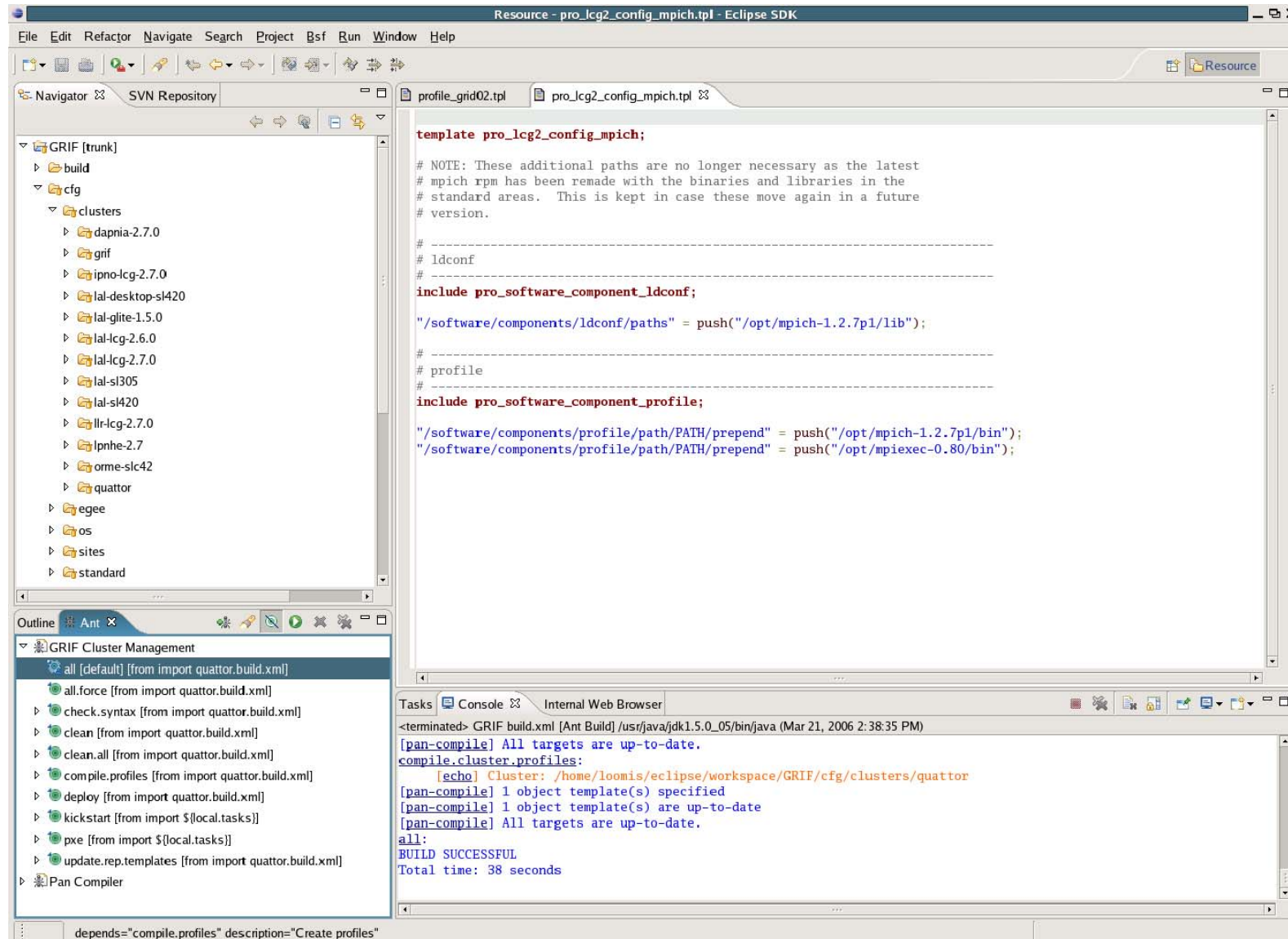
- **Apache 2 server**
- **Subversion server/client**
 - Subversion server can be an Apache module or standalone
- **Java 1.5**
- **Pan compiler**
- **Ant**
- **Eclipse**
 - Mandatory plug-ins : Subclipse, JavaSVN
 - Optional plug-ins : Colorer Editor, SunShade

- **When configuration is tagged for deployment, compile the configuration on the Web server that serves profiles.**
 - Compilation launched using a SVN hook script
 - Web server maintains a local workspace from the repository
 - svn update (switch) to update this copy with last modifications
 - Compilation using same ant procedure as the user
- **Key based ssh between SVN server and quattor server if on different machines**
 - Plan to move to CGI

- **Command line**

- ‘svn co / update’ to get a fresh copy/update local workspace
- Edit templates
- Compile locally and fix errors : ‘ant’
- svn ci to commit changes to repository
- ‘ant deploy’ : deploy changes
 - Checks compilation succeeded, no local changes not committed and no changes in the repository not in the local workspace
 - Involves creation of a SVN branch (tag) and compilation of this branch on the server (not sensitive to further changes to repository)
- Can take advantage of all SVN features
 - Branching, merge, directory renames, revert...

- **Eclipse GUI : menus for everything**
 - + : PAN syntax colouring
 - + : Error messages are URLs to source code causing the error
 - + : Ant targets displayed
 - - : PAN very slow on Windows (2x Linux)
 - Deploy not working on Windows if home directory on a network drive
- **Check machine profiles for changes (optional)**
 - Allow to verify before deploying that mods are what expected
 - Require to save previous result of compilation
 - A script provided in util/profiles in Quattor CVS repository



- **Not totally part of SCDB... but related**
- **Goal : avoid deploying a specific service if you just need http access to RPMs**
 - Some lacking features : ACLs, transport other than http
- **Repository = 1 directory in Apache documents**
 - Matched to a URL
 - Access control for updating is provided by the file system
- **1 template associated with each repository**
 - Must be in a repository/ directory
 - Updated by 'ant update.rep.templates' with directory content

- **Latest release available:**
 - <https://svn.lal.in2p3.fr/LCG/QWG/SCDB>
- **Components:**
 - Build files (300 LOC)
 - quattor.build.properties, cluster.build.properties (per cluster)
 - build.xml, quattor.build.xml, lal.tasks.xml, ...
 - quattor.jar (2k LOC) : ant tasks (pure java)
 - PanSyntaxTask, PanCompileTask
 - SvnTagTask, NotifyClientTask
 - RepositoryTask
 - Subversion hook scripts (200 LOC)
 - Eclipse PAN integration (100 LOC)
- **Documentation : Quattor Installation Guide**