



Continuous integration for GNOME

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What is Continuous Integration (CI)?



- **Wikipedia** defines it as follows:
 - Continuous Integration is a **software engineering term** describing a process that completely rebuilds and tests an application frequently.
 - Typically refers to the **eXtreme Programming** practice.
 - The more popular form (also called **Automated Continuous Integration**) takes the form of a server process or daemon that monitors a version control system and automatically runs the build process (and then runs test scripts).

Why CI for Gnome?

- Detect new errors in the software - early.
- Automatic testing: unit testing, functional testing, performance (speed and memory), code coverage, functionality testing...)
- The Pango/Cairo problem in Federico's Keynote could be detected **automatically**.
- ...

History of CI inside GNOME



- Before?
- Summer 2005: Luis Villa's work on Tinderbox (MicroTinder)
- Summer2005-Summer2006: No continuous integration for Gnome

Present of CI inside GNOME



- Currently for Gnome:
 - jhAutoBuild (<http://jhbuild.bxlug.be/>)
 - Tinderbox 2 for Gnome (<http://tinderbox.igalia.com>)
 - Tinderbox 3 for Gnome (<http://tbox3.igalia.com>)
- Other free software projects
 - Freedesktop: <http://tinderbox.anholt.net> (Tinderbox 3)
 - Gstreamer: <http://build.fluendo.com:8080/> (BuildBot)
 - Fisterra: <http://tinderbox.fisterra.org> (Tinderbox 2)
 - Samba: <http://build.samba.org/> (custom development)
 - PostgreSQL: <http://www.pgbuildfarm.org/> (custom dev)

Goals of the CI for GNOME (I)



- (Luis Villa's) Hard Requirements:
 - Supports Big List O'Modules
 - Many build types/sources
 - Reporting (easy view for non-experts, per-module)
 - Tests (supports LDTP/Dogtail), xvfb integration,
 - Documented (how to make the tool work with Gnome)
- **Also interesting:**
 - Integration with other tools like CVS/Bonsai/Bugzilla/LXR... (all the Mozilla tools)
 - Security (authentication, encryption, etc.)
 - Easy to deploy (installation should be trivial)

Goals of the CI for GNOME (II)

- (Luis Villa's) Bonus requirements:
 - Handle module dependencies
 - Notification features
 - Minimal duplication of build information
 - Distributed
 - Easy to set up/maintain
 - Builds Ekiga :-)
 - Active development community

Goals of the CI for GNOME



- (Luis Villa's) Serius Bonus:
 - Records last successful build of a module
 - Output binaries
 - Records Dogtail/LDTP tests with VNC2SWF or something similar
 - Mail maintainers of a broken module
 - Deposit special files in special locations
 - Support local patches (only used for CI)

Which tools should Gnome use?

- For the continuous integration (one or several?):
 - jhAutobuild?
 - Tinderbox3?
 - Buildbot?
- Complementary tools (value added):
 - Check
 - gcov
 - LDTP/Dogtail
 - ...

How to organize the work?

- Creating the CI Team
 - Volunteers?
 - Team structure? Roles?
 - Mailing lists, wiki sections, etc.
- Definition of a roadmap (priorities)
 - What to do before the end of the year
 - What to do during 2007