

Automating Your Builds with Maven, Hudson and Nexus

maven

Nexus



Sonatype

the **maven** company



About Me

Who am I?

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What do I do?

Independent developer, mostly using Java.

What else?

Open Source Enthusiast
Amateur SysAdmin

Maven, Hudson and Nexus

- Maven
 - Software project management tool that...
 - ...can make your project easy to build and encourage consistency and modularization.
- Hudson
 - Continuous integration engine to...
 - ...build your projects automatically, notify you of problems, and tracks trends.
- Nexus
 - Maven repository manager that...
 - ...makes Maven more practical for complex projects.

Preview

All three in action...

Maven - Overview

- Maven is a “project management and comprehension tool”.
- Apache Project - <http://maven.apache.org/>
- Maven 1.x betas in 2003, Maven 2.0 in 2005
- Maven 2.0.10 released February 2009

Maven – Why use it?

- Make the build process easy and consistent
- Manage transitive dependencies
- Assist with releases
- Focus on artifacts and encourage modularization.
- Leverage the many Maven plugins.

Maven – Show and Tell

Let's take a closer look...

Maven - Plugins

- Build: JARs, WARs, EARs, OSGI bundles, zip/tarball assemblies, Javadoc, JXR, site
- Run: Ant tasks, Java apps, native apps
- Execute tests under: Junit, TestNG, Canoo WebTest, Selenium
- Analyze code with: Checkstyle, Clirr, Clover, Cobertura, Crap4J, Emma, Findbugs, JavaNCSS, PMD, Sonar, and others
- For use with: Hibernate, DbUnit, Jetty, et. al.

Maven – What's not to like?

- Initial builds can be slow while dependencies download
- Strongly encourages Maven project layout
- Not always simple to retrofit mature projects
- XML in POMs easily becomes verbose
- Plugins are of varying quality and maturity

Hudson - Overview

- Hudson is an “extensible continuous integration engine”.
- Started by Kohsuke Kawaguchi of Sun
- MIT licensed
- Rapid releases:
 - 1.10 in August 2005
 - 1.285 a few days ago
 - About 6.5 releases per month
- Very active community, including plugin devs

Hudson - Architecture

- Hudson is CI engine designed to be extended
- Over 20 extension points
- Many plugins – probably approaching 100
- Contribution strongly encouraged by Kohsuke

Hudson – Why use it?

- Provides feedback to gauge project health
 - Online reports
 - RSS/Atom feeds
 - Email or IM for successful and/or failed builds
- Watch for project trends
- Control a build farm with matrix builds
- Easy to install and configure
- Active, helpful community
- Support for many project types

Hudson – Show and Tell

Hudson in action...

Hudson - Plugins

- 100+ plugins listed on Hudson wiki
- Examples:
 - SCM: CVS, SVN, Git, Mercurial, Perforce, ClearCase, BitKeeper, MS Team Foundation Server, VSS
 - Feedback: Email-ext, IRC, Jabber, SameTime, Twitter, Google Calendar
 - Reports: Checkstyle, Clover, Cobertura, Crap4J, .., Task Scanner, Violations, Warning

Hudson – Plugins (cont.)

- More examples:
 - Integration: JIRA, Bugzilla, Trac, Redmine, Firefox status bar, Sonar, Active Directory, Atlassian Crowd
 - Misc: CI Game, Deploy Plugin, Build Publisher, SCP

Hudson – What's not to like?

- Frequent releases are mostly good, but no stable branch can occasionally cause problems

Nexus - Overview

- Nexus is a Maven repository manager
- Sonatype product with contributions by Jason van Zyle, one of the Maven founders
- Open Source version under GPL
- Professional version adds procurement, staging and LDAP integration tools
- Built with Plexus, Restlet, ExtJS, Lucene
- Easy to install

Nexus – Why use it?

- Maven repository manager is useful for complex and commercial projects...
 - Allows for private (or public) repository for internal artifacts
 - Supports modularization
 - Acts as proxy between developers and public Maven repositories
 - Can enforce controls over available artifacts
 - Local cache of artifacts allows for faster builds

Nexus – Show and Tell

Let's take a tour...

Nexus – What's not to like?

- Relatively new project with some rough edges
 - Remote repository indexing bug
 - Difficult to troubleshoot mod_proxy authentication problems

Discussion

Questions?

Experiences with Maven, Hudson or Nexus?

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