Hudson Plugin Categories and Usage Analysis

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The slides in this document present Hudson Plugin Categories based on their importance in a Continuous Integration System and usage by community.

See also [http://wiki.hudson-ci.org/display/HUDSON/All+Plugins+by+Topic](http://wiki.hudson-ci.org/display/HUDSON/All+Plugins+by+Topic)
Successful Agile Team

The three main concepts,

• Test Driven Development
• Continuous Integration
• Continuous Delivery or Deployment

are the solid supporting pillars of a Successful Agile Team.

In a Test Driven Development build pipeline, Continuous Integration is the first step and the end result is the Continuous Delivery.

Best tool of the trade for all the above is Hudson.
Continuous Integration

Martin Fowler in his landmark article described Continuous Integration as

“Continuous Integration is a software development practice where members of a team integrate their work frequently, usually each person integrates at least daily - leading to multiple integrations per day. Each integration is verified by an automated build (including test) to detect integration errors as quickly as possible.”
Ten commandments of continuous integration

- Maintain a Single Source Repository.
- Automate the Build
- Make Your Build Self-Testing
- Everyone Commits To the Mainline Every Day
- Every Commit Should Build the Mainline on an Integration Machine
- Keep the Build Fast
- Test in a Clone of the Production Environment
- Make it Easy for Anyone to Get the Latest Executable
- Everyone can see what's happening
- Automate Deployment

Rest of the slides categorize Hudson Plugins based on these guidelines
Maintain a Single SCM

This principle encourages the project team to use SCM to maintain their source code. Hudson supports various SCMs via plugins.

99% of Hudson users use one of

- Git
- CVS
- SVN
- Perforce
- Clearcase
- Mercurial

Hudson supports ~20 additional SCM which are used by less than 1% of the users.
Automate the Build

Automating the build using a single command is an important principle of a CI build. Hudson supports various Build Tools via Plugins.

99% of Hudson users use one of

- Ant
- maven
- gradle
- MSBuild
- Nant
- Rake

Hudson supports ~40 additional build tools which are used by less than 1% of the users
Automate the Build (Cont..)

Before the build starts, the build must be prepared for proper build. Hudson must support various type **Build Wrappers**. They can be used to post process the build results. Hudson supports various Build wrappers via Plugins. Build wrappers are usually very specific to the Software Project.

Few useful plugins used by 99% of the users are

- Lock & Latch
- Setenv
- EnvInject

Hudson supports ~25 additional build wrappers which are used by less than 1% of the users
Every commit should build the mainline on an integration machine

Automating the build based on user commit is part of CI. Hudson supports various Build Triggers via plugins.

99% of Hudson users use one of

- SCM trigger
- Upstream/Downstream
- Gerrit Trigger
- URL Change
- Scheduled
- Parameterized Trigger

Hudson supports ~15 additional build triggers which are used by less than 1% of the users
Make your build self-testing

CI build is not about catching compilation error but also catching bugs more quickly and efficiently. Hudson supports various Unit Testing Frameworks via Plugins.

99% of Hudson users use one of

- jUnit
- nUnit
- Selenium
- CppUnit
- TestNg
- xUnit

Hudson supports ~10 additional Unit Test which are used by less than 1% of the users
Make your build self-testing (Code Coverage)

Self testing is best achieved if there is uniform code coverage. Hudson supports various **Code Coverage Tools** via Plugins

99% of Hudson users use one of

- Clover
- Cobertura
- Emma
- Serenity
- Sonar
- NCover

Hudson supports ~2 additional Code Coverage which are used by less than 1% of the users
Make your build self-testing (Code Analysis)

Static Analysis improves the confidence of Self testing. Hudson supports various **Static Code Analysis Tools** via Plugins

99% of Hudson users use one of

- Checkstyle
- PMD
- Dry
- Findbugs
- Crap4J
- Warnings
- CCM
- Violations

Hudson supports ~2 additional Code Analysis which are used by less than 1% of the users
Make it easy for everyone to get latest executable

Make the build artifacts to stakeholders is important in CI. Hudson supports various Artifact Up uploaders via Plugins.

95% of Hudson users use one of

- CopyArtifacts
- SCP
- FTP Publisher
- Artifactory
- Maven Release
- HTML Publisher

Hudson supports ~10 additional Artifact Uploaders used by less than 5% of the users
Everyone can see what is happening

Communicate the state of the build especially if it is broken. Hudson supports various Build Notifiers via plugins.

95% of Hudson users use one of

- Email
- Email-Ext
- IRC
- Jabber
- SMS

Hudson supports ~20 additional Build Notifiers used by less than 5% of the users
Test in a clone of the production environment

The build must happen in various slaves that clone the production environment. Hudson supports various kind of Slave Management via plugins so builds can happen in clones of production environment.

99% of Hudson users use one of

- SSH Slave
- Windows Slave
- Slave Status
- EC2
- Virtual Box
- JCloud

Hudson supports ~15 additional Slave Management Tools used by less than 1% of the users
Automate deployment

One of the CI best practices is to automate the deployment. Hudson supports various type of **Deployment or External Tool Integration** via plugins.

95% of Hudson users use one of

- Tomcat
- Websphere
- Weblogic
- Jboss
- JRebel
- IIS

Hudson supports ~40 additional External Tool Integration used by less than 5% of the users.
Hudson Security

Hudson supports various types of **Authentication & Authorization** mechanisms via plugins.

99% of Hudson users use one of

- LDAP
- Active Directory
- Crowd
- OpenID
- PwAuth (Unix)

Hudson supports ~15 additional Authentication used by less than 5% of the users.
Various parts of Hudson UI can be configured or Augmented. These UI configurations are supported via Plugins.

95% of Hudson users use one of:

- Chuck Norris
- Disk Usage
- Plot
- Build Dependency
- Radiator View
- Xfpanel
- Green Balls
- Build Pipeline
- Nested View
- Downstream Build View
- Dashboard View

Hudson supports ~50 additional UI configurations used by less than 5% of the users
Hudson Utilities

Various Utilities, supported via Plugins can be added to Hudson to improve day to day CI activities.

95% of Hudson users use one of

- Translation
- Build timeout
- backup
- Log parser
- Audit Trail
- Status Monitor
- Global Build Stats
- Project Stats
- Slave Status

Hudson supports ~20 additional Utilities used by less than 5% of the users