

Kontinuierliche Integration mit Hudson

(Noch) fauler werden in 10 Schritten

Dr. Simon Wiest

www.simonwiest.de

















Gearconf 2009

02.10.2009, Düsseldorf



Continuous Integration Builds for NetBeans Projects [\(machine\)](#)

All

S	W	Job ↓	Letzter Erfolg
		analytics-server	1 Monat 6 Tage (#1049)
		apitest	2 Stunden 4 Minuten (#410)
		javascript-tests	3 Monate 18 Tage (#242)
		karelnb	21 Stunden (#154)
		NB-Core-Build	3 Stunden 3 Minuten (#2832)
		nb-javac	3 Stunden 42 Minuten (#118)
		l10nkit	8 Monate 3 Tage (#471)
		latex	9 Stunden 56 Minuten (#10)



Build #805 (06.05.2009 12:52:45)



Revision: 1759

Changes

1. BUGFIX: Now all Attachments are at least listed. #4030 ([detail](#))

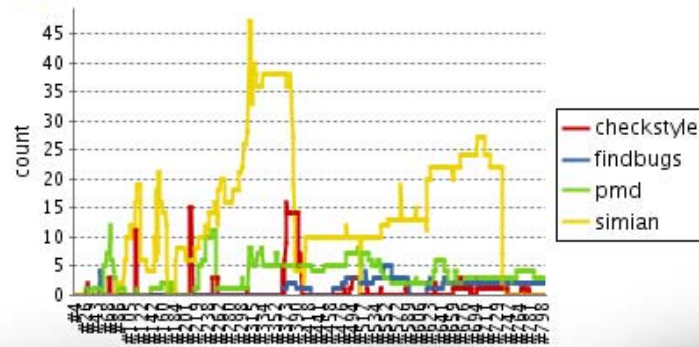


[Testergebnis](#) (1 fehlgeschlagener Test / +1)

[facade.impl.DownloadServiceTest.testGetProductFileList](#)



☀ checkstyle 0 ☀ findbugs 2 ☀ pmd 3 ☀ simian 0



Testergebnis : org.netbeans.modules.javascript.editing

Fehlschläge (-1)

Tests (±0)

Alle fehlgeschlagenen Tests

Testname	Dauer	Alter
org.netbeans.modules.javascript.editing.JsCodeCompletionTest.testAutoQuery2	0.0020	1
org.netbeans.modules.javascript.editing.HtmlCompletionTest.test1	3.131	28
org.netbeans.modules.javascript.editing.HtmlCompletionTest.test6	0.118	28
org.netbeans.modules.javascript.editing.JsTypeAnalyzerTest.testGetType	2.797	43
org.netbeans.modules.javascript.editing.JsTypeAnalyzerTest.testGetType2	0.106	43
org.netbeans.modules.javascript.editing.JsKeystrokeHandlerTest.testDeleteContComment	0.018	44
org.netbeans.modules.javascript.editing.JsKeystrokeHandlerTest.testNoDeleteContComment	0.024	44
org.netbeans.modules.javascript.editing.JsKeystrokeHandlerTest.testNoMatchInComments	0.11	44
org.netbeans.modules.javascript.editing.JsKeystrokeHandlerTest.testdeleteWord2	0.019	44
org.netbeans.modules.javascript.editing.JsIndexerTest.testIndexPrototypeNew	0.565	104
org.netbeans.modules.javascript.editing.JsIndexerTest.testWindow	0.707	104


Alle Tests

Klasse	Dauer	Fehlgeschlagen	(Veränderung)	Summe	(Veränderung)
AstOffsetTest	4.1 Sekunden	0		25	
AstUtilitiesTest	5.7 Sekunden	0		1	
ElementUtilitiesTest	2.5 Sekunden	0		1	
EmbeddedFormatterTest	4.7 Sekunden	0		4	
HtmlCompletionTest	4.2 Sekunden	2		10	
JsAnalyzerTest	4.7 Sekunden	0		17	
JsCodeCompletionTest	2 ms	1		1	
JsCommentFormatterTest	2.4 Sekunden	0		3	



checkout/src/main/java/controller/impl/AbstractProductFeaturesController.java

findbugs 1 violation

296  instanceof will always return true

simian 1 violation

309  Duplication of 9 lines from [line 692 in ShoppingCartActionsController.java](#).

File: AbstractProductFeaturesController.java Lines 287 to 319

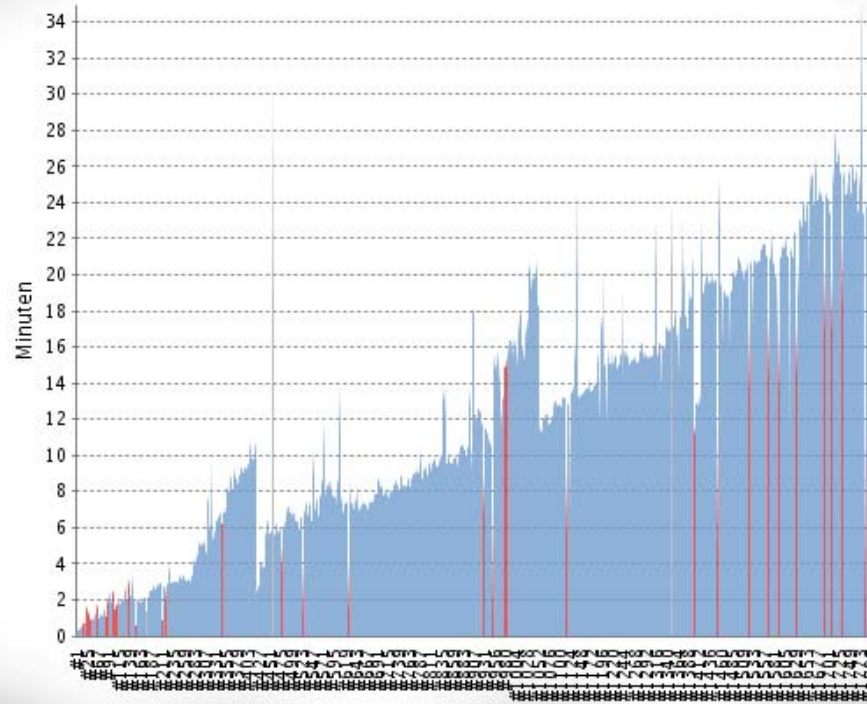
```
287     List<FeatureGroupDto> result = new ArrayList<FeatureGroupDto>();
288     IPimLocale locale = pbLocaleService.getByIsoCodeWithFallback(deeplinkView.getLocale());
289
290     //Build List of excluded IPimFeature.
291     List<IPimFeature> excludedFeatures = getCFGExcludedPimFeatures();
292
293     //Iterate over the FGs in the list.
294     for (IPimObject fgFsSNOBJECT : fgFsSnList) {
295         //Ignoring Objects which are not: IPimFeatureGroupFeatureSetStructureNode.
296         if (!(fgFsSNOBJECT instanceof IPimFeatureGroupFeatureSetStructureNode)) {
297             continue;
298         }
299         IPimFeatureGroupFeatureSetStructureNode fgFsSN = (IPimFeatureGroupFeatureSetStructureNode) fgFsSNOBJECT;
300         IPimFeatureGroup featureGroup = fgFsSN.getSource();
301         FeatureGroupDto featureGroupDto = null;
302         String fgName = this.localizedTextService.getLocalizedName(featureGroup);
303         if (lifecycleService.isLifecycleFeatureGroup(featureGroup)) {
304             //Generate lifecycle feature group dto.
305             featureGroupDto = getFeatureGroupDtoLifecycle(pimObject);
306         } else {
307             //Generate normal feature group dto.
308             featureGroupDto = getFeatureGroupDtoNormal(featureGroup);
309         }
310         result.add(featureGroupDto);
311     }
312     return result;
```

**Build-Verlauf****([Trend](#))**

-  #10 [28.10.2008 15:01:33](#)
-  #9 [28.10.2008 14:37:55](#)
-  #8 [28.10.2008 14:31:34](#)
-  #7 [28.10.2008 14:01:33](#)
-  #6 [28.10.2008 12:02:51](#)
-  #5 [28.10.2008 12:01:34](#)
-  #4 [27.10.2008 16:10:35](#)
-  #3 [27.10.2008 16:08:15](#)
-  #2 [27.10.2008 15:55:44](#)
-  #1 [27.10.2008 15:52:09](#)

[Alle Builds](#)[Nur Fehlschläge](#)

Build-Zeit (Trend)



Übersicht [Hudson] - Mozilla Firefox

http://deadlock.netbeans.org/hudson/

Hudson

Benutzer
Build-Verlauf
Projektbeziehungen
Fingerabdruck überprüfen

Geplante Builds
[rubytests](#)
[PHP-build](#)
[nb6.1_web-l10n](#)
[validate-project-xmls](#)

Build-Prozessor Status

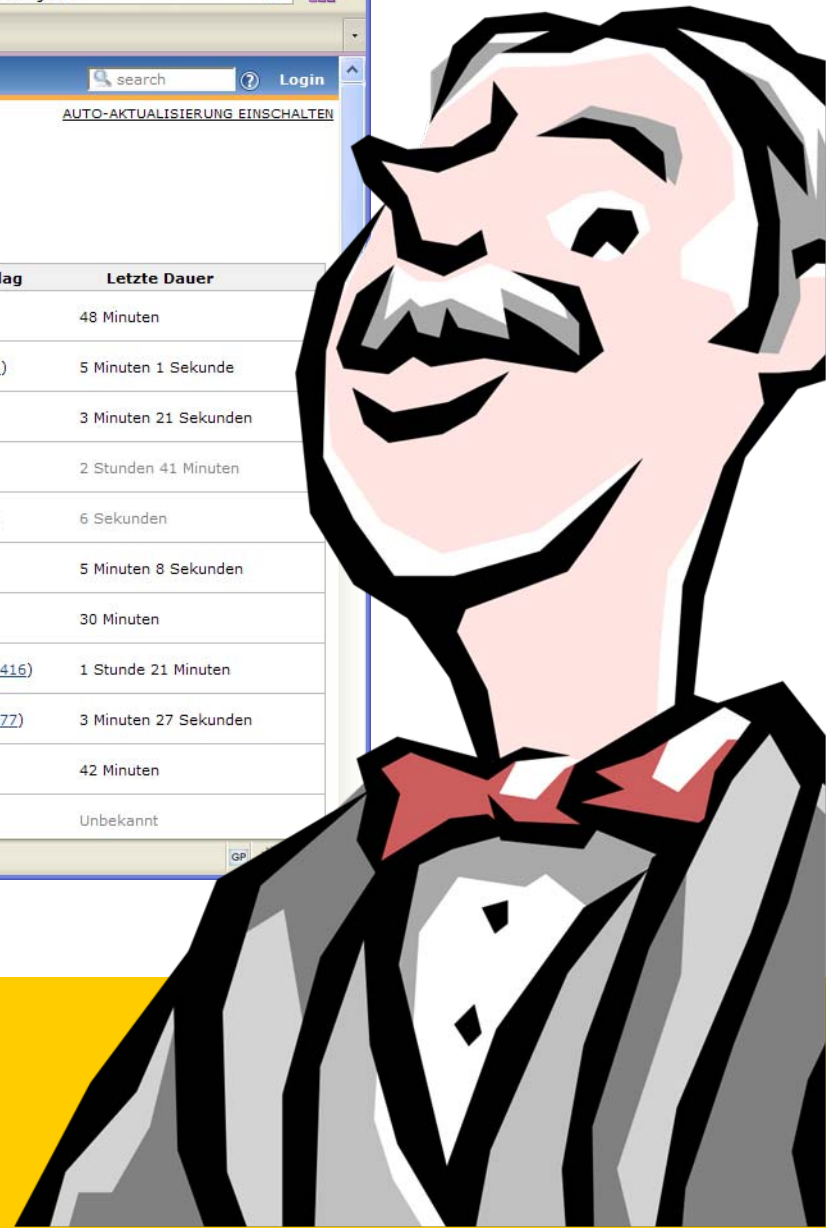
No.	Status
1	Baue NB-Core-Build #1345
2	Baue trunk #3750
3	Baue profiler-main #153

Continuous Integration Builds for NetBeans Projects

Services on this machine are described at: [DeadlockMachine](#)

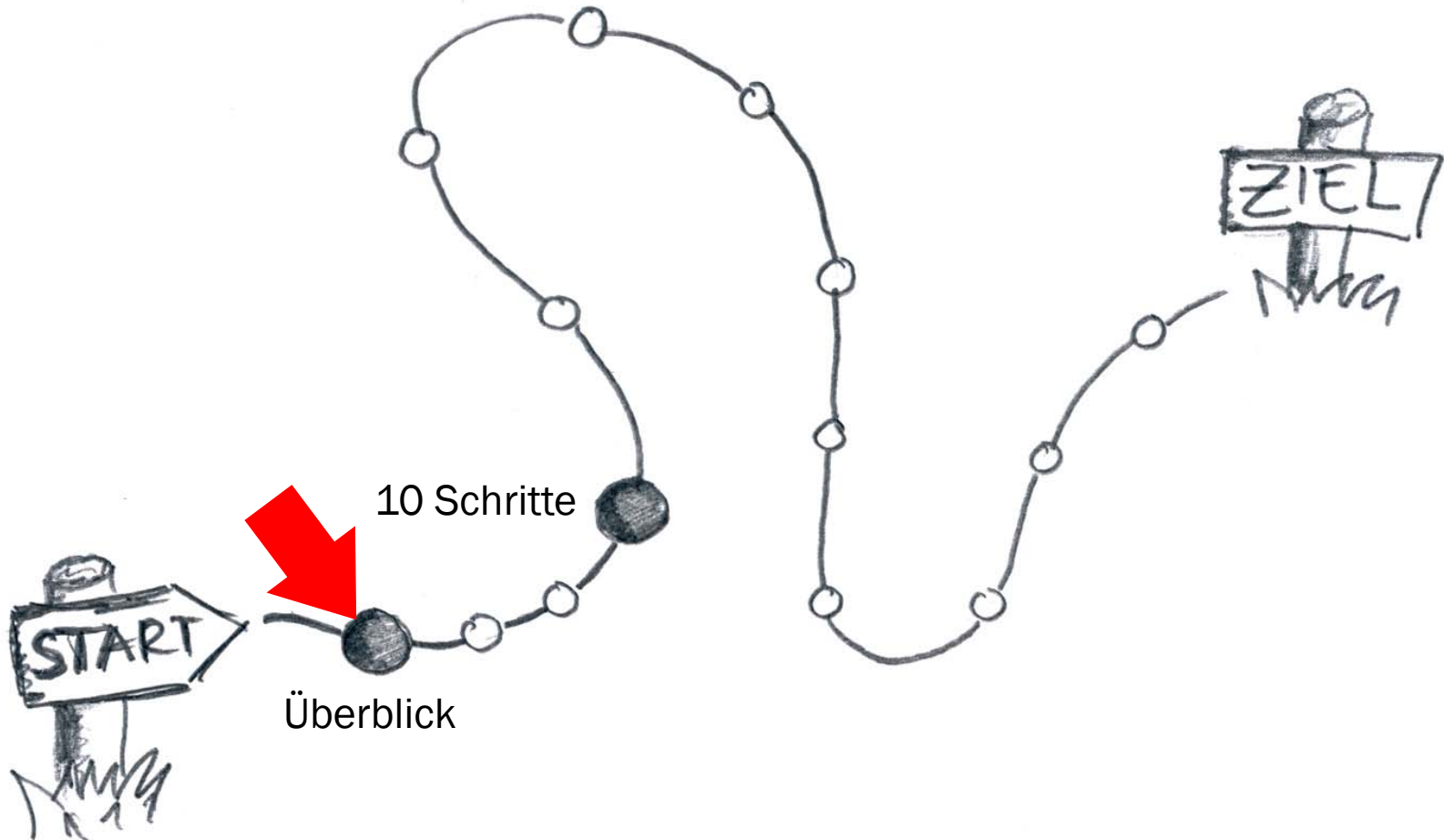
S	W	Job ↓	Letzter Erfolg	Letzter Fehlschlag	Letzte Dauer
☐	☀	analytics-server	4 Tage 9 Stunden (#789)	Unbekannt	48 Minuten
☐	☀	apitest	1 Stunde 24 Minuten (#118)	3 Monate 12 Tage (#1)	5 Minuten 1 Sekunde
☐	☀	fagsuck	6 Stunden 33 Minuten (#432)	Unbekannt	3 Minuten 21 Sekunden
☐	☀	FindBugs	10 Monate (#35)	Unbekannt	2 Stunden 41 Minuten
☐	☁	javadoc-nbms	2 Monate 4 Tage (#3)	2 Monate 4 Tage (#2)	6 Sekunden
☐	☀	JavaFX_NB_daily	10 Stunden (#159)	Unbekannt	5 Minuten 8 Sekunden
☐	☀	javascript-tests	7 Stunden 3 Minuten (#54)	Unbekannt	30 Minuten
☐	☀	l10nkit	16 Stunden (#422)	6 Tage 15 Stunden (#416)	1 Stunde 21 Minuten
☐	☁	latex	8 Stunden 32 Minuten (#280)	2 Tage 8 Stunden (#277)	3 Minuten 27 Sekunden
☐	☀	laziness	1 Stunde 33 Minuten (#131)	Unbekannt	42 Minuten
☐	☐	macpkg	Unbekannt	Unbekannt	Unbekannt

Fertig



Gestatten, Hudson.

Agenda



Über den Referenten: Dr. Simon Wiest

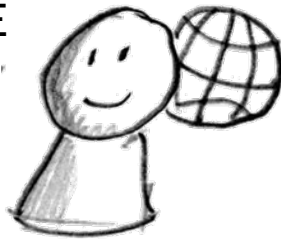
Privat: Hudson-Committer



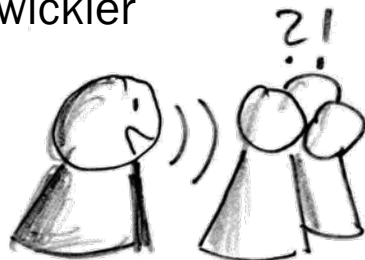
Lokalisierung DE



Plug-In Entwickler



Internationalisierung

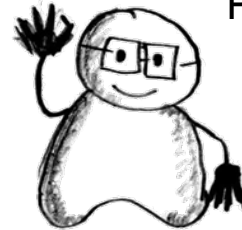


Support (Mailing Listen)

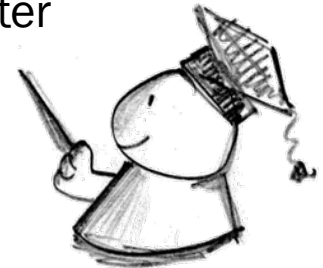
Beruflich: Hudson-Anwender



Projektleiter



Java Architekt

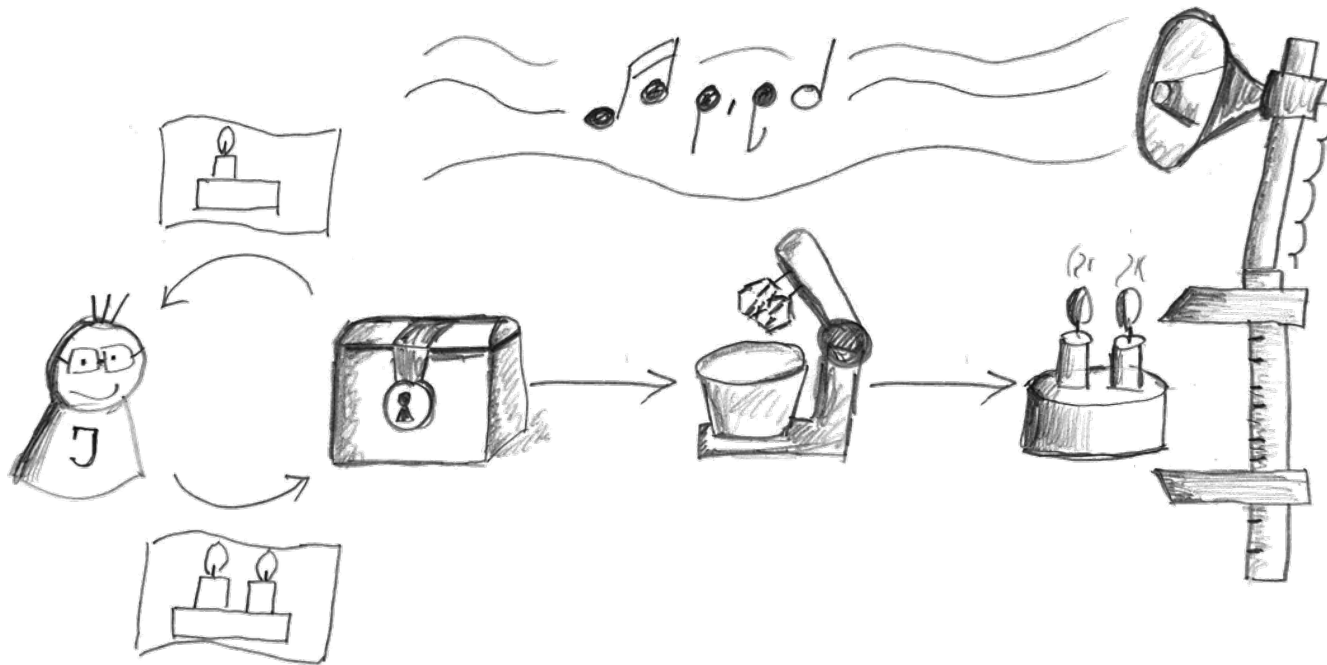


Coach



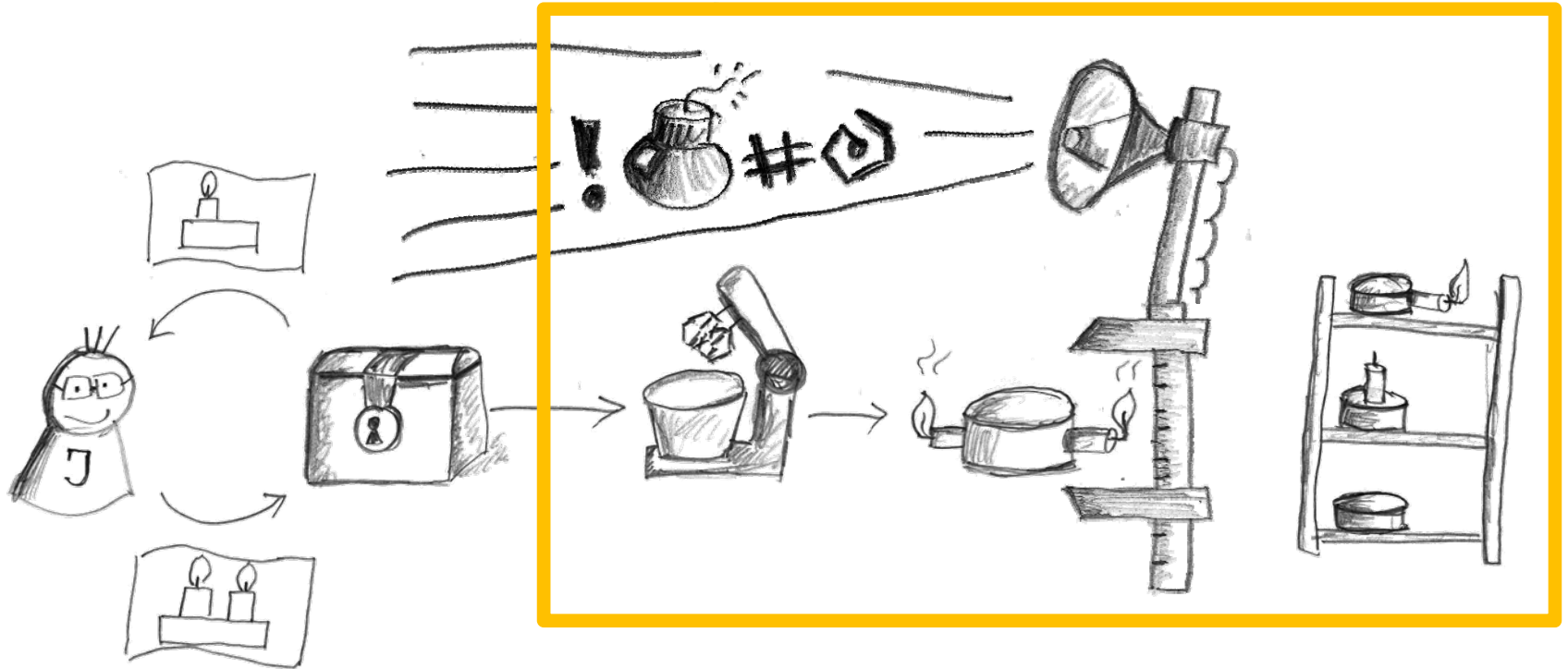
IT-Freiberufler

Was ist kontinuierliche Integration (CI)?

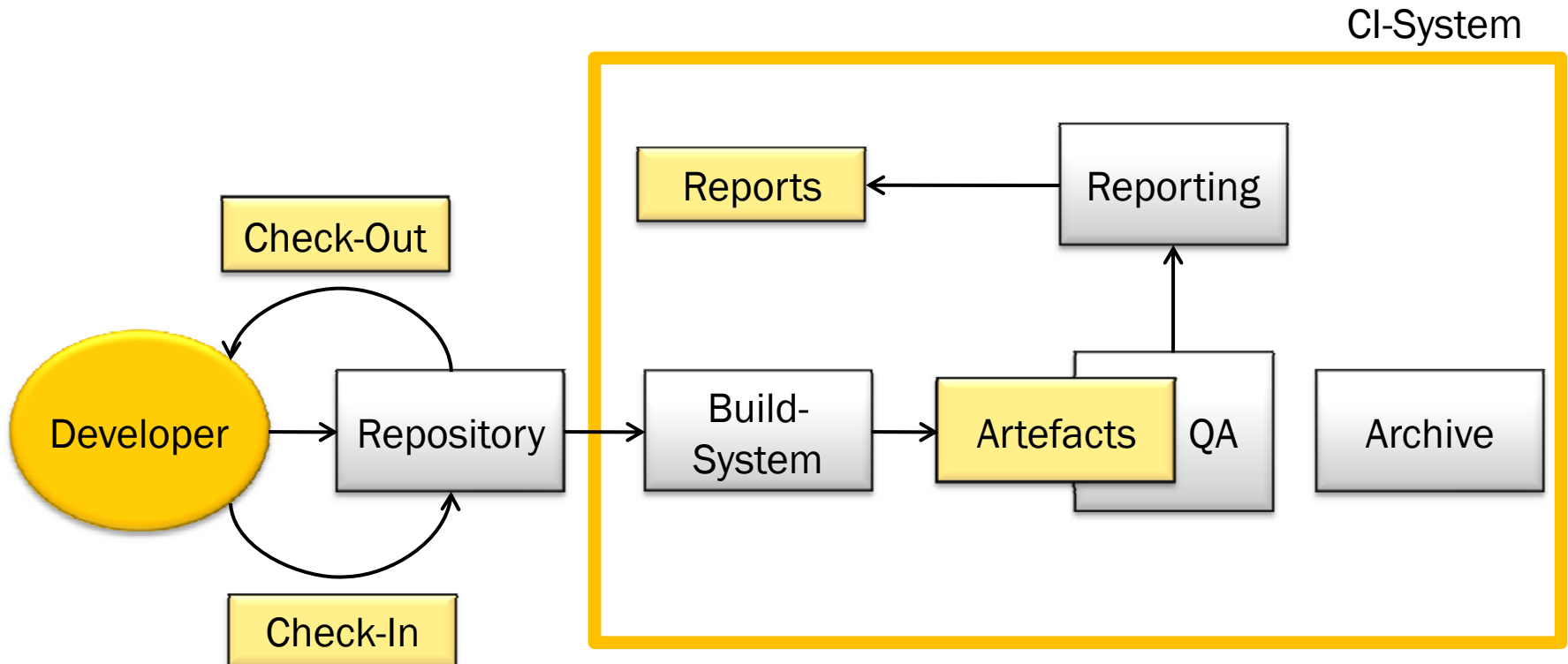


Was ist kontinuierliche Integration (CI)?

orchestriert durch CI-System



Was ist kontinuierliche Integration (CI)?



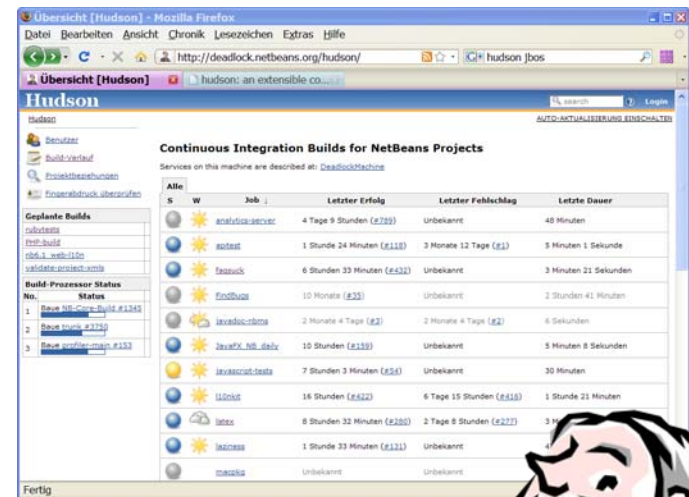
- Subversion
- CVS
- Perforce
- Git
- ...

- Ant
- Maven
- Shell-Skript
- Batch-Datei
- ...

- JUnit
- TestNG
- CheckStyle
- PMD
- ...

Hudson auf einen Blick

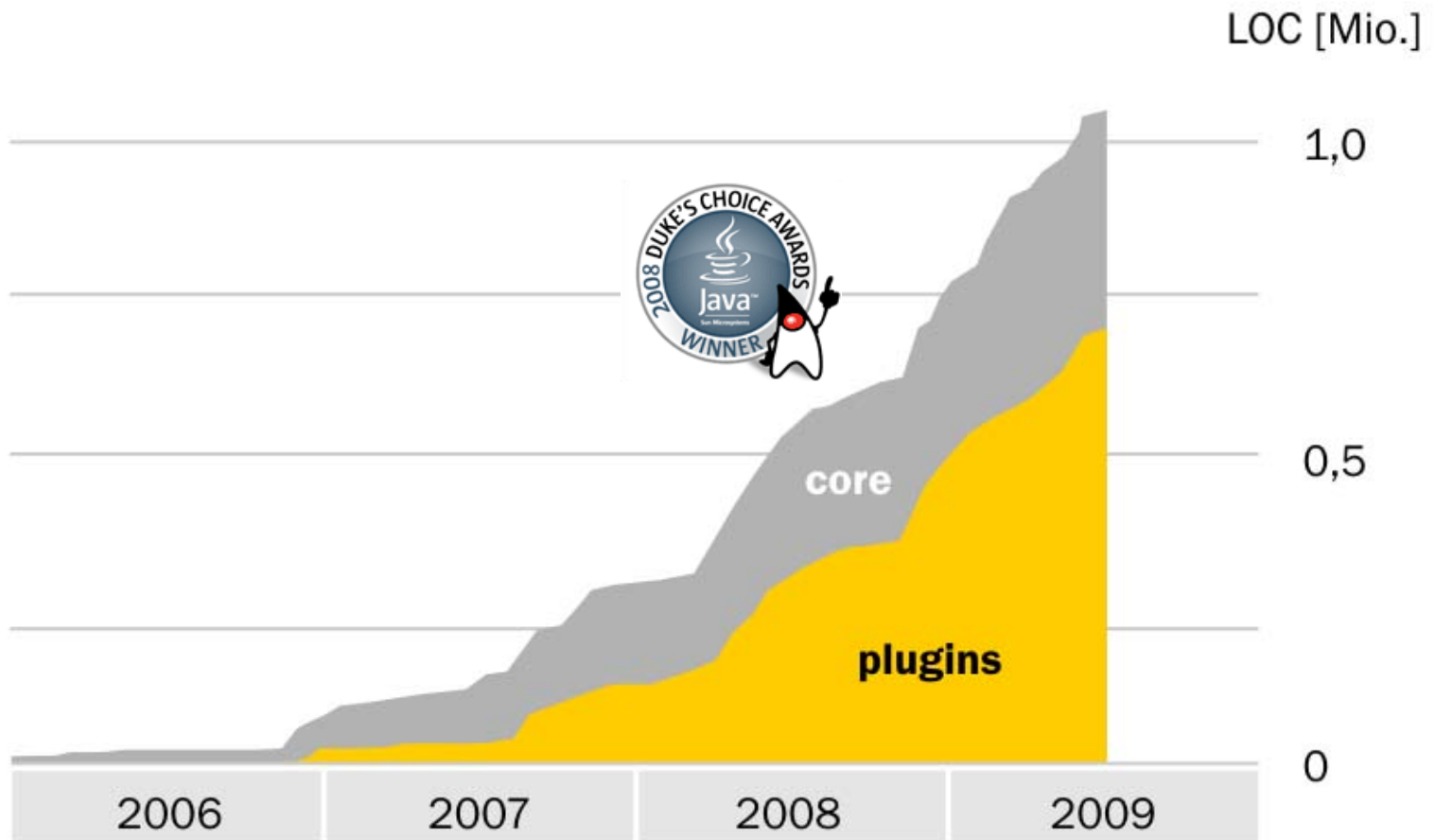
- Java-basierte Web-Anwendung
- Initiiert 2006/2007 von Kohsuke Kawaguchi (Sun)
- Teil des Projekts Glassfish
- Open Source (MIT Lizenz)
- 1,24 Mio. LOC (mit Plugins)
- Zur Zeit 180+ Plug-Ins
- 130+ Beitragende



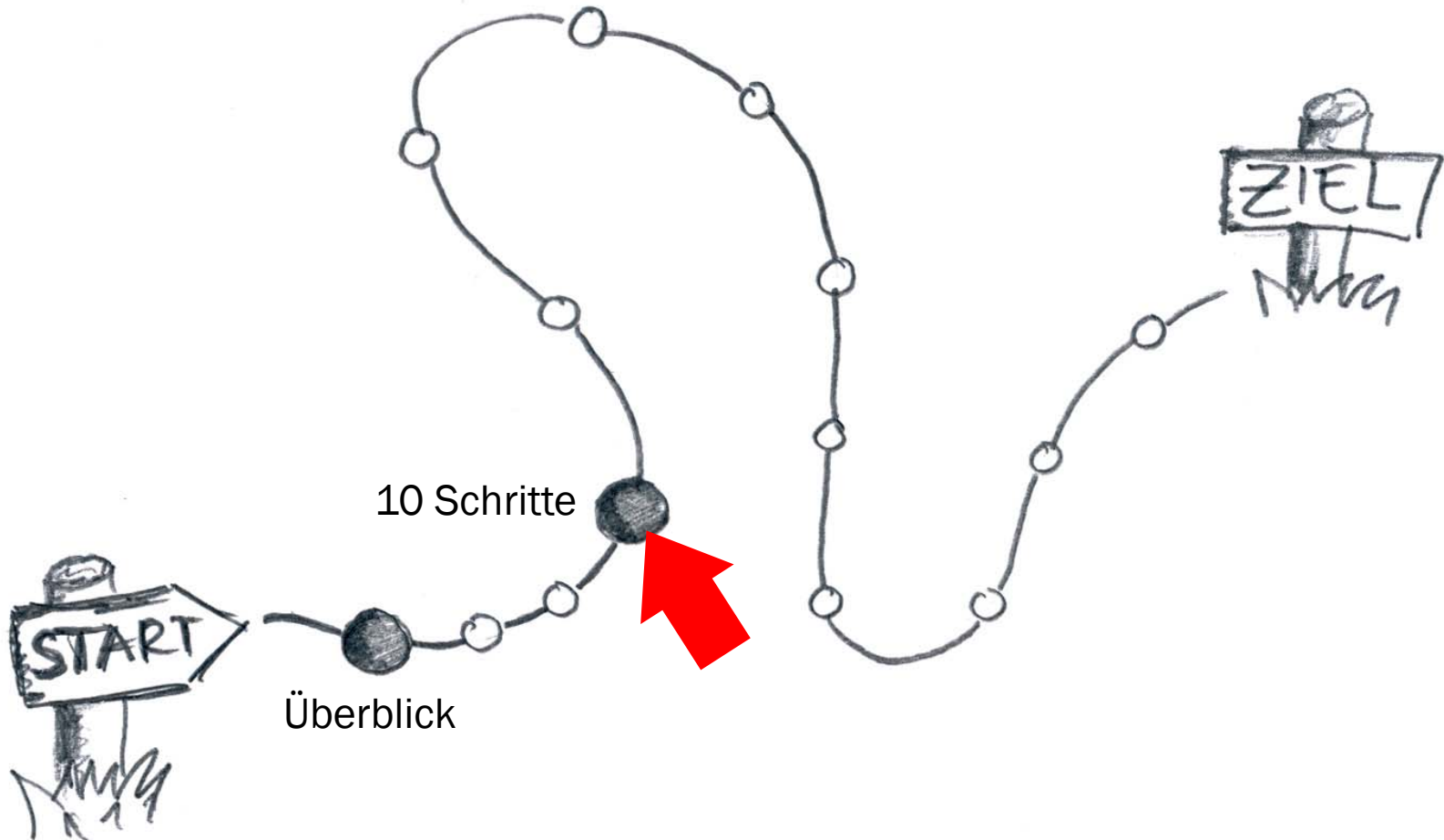
Wer verwendet Hudson (und darf es zugeben)?



Hudson: Ein Projekt in voller Fahrt.



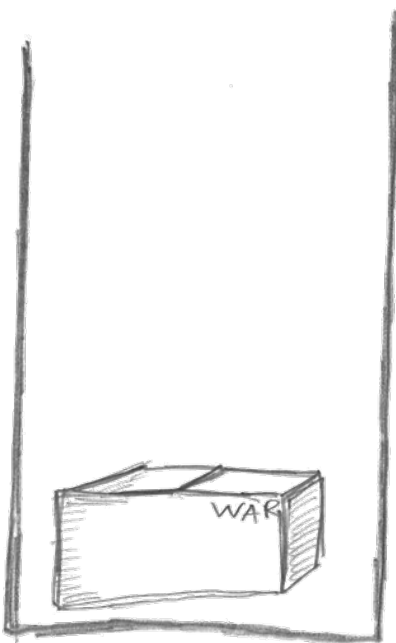
Agenda



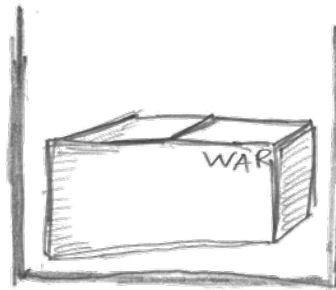
1. Installation: Denkbar einfach.



Download als
WAR-Datei
Ca. 26 MB



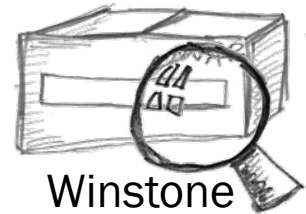
WebSphere



Tomcat



Jetty



Winstone
(Eingebettet)

2. Konfiguration: Komfortabel und übersichtlich.

The screenshot shows the Hudson web interface configuration page. It features a sidebar with navigation links like 'Neuen Job anlegen', 'Hudson verwalten', 'Benutzer', and 'Build-Verlauf'. The main content area is divided into sections: 'Geplante Builds' (showing no builds planned), 'Build-Prozessor Status' (a table with 2 ready builds), 'Globale Eigenschaften' (with checkboxes for environment variables and security), 'Maven' (with a table for installed versions, including 'Maven 2.1.0'), and 'JDK' (with a table for installed versions, including 'JDK 1.6.0_11'). Each input field has a help icon, and there are buttons for adding and removing installations.

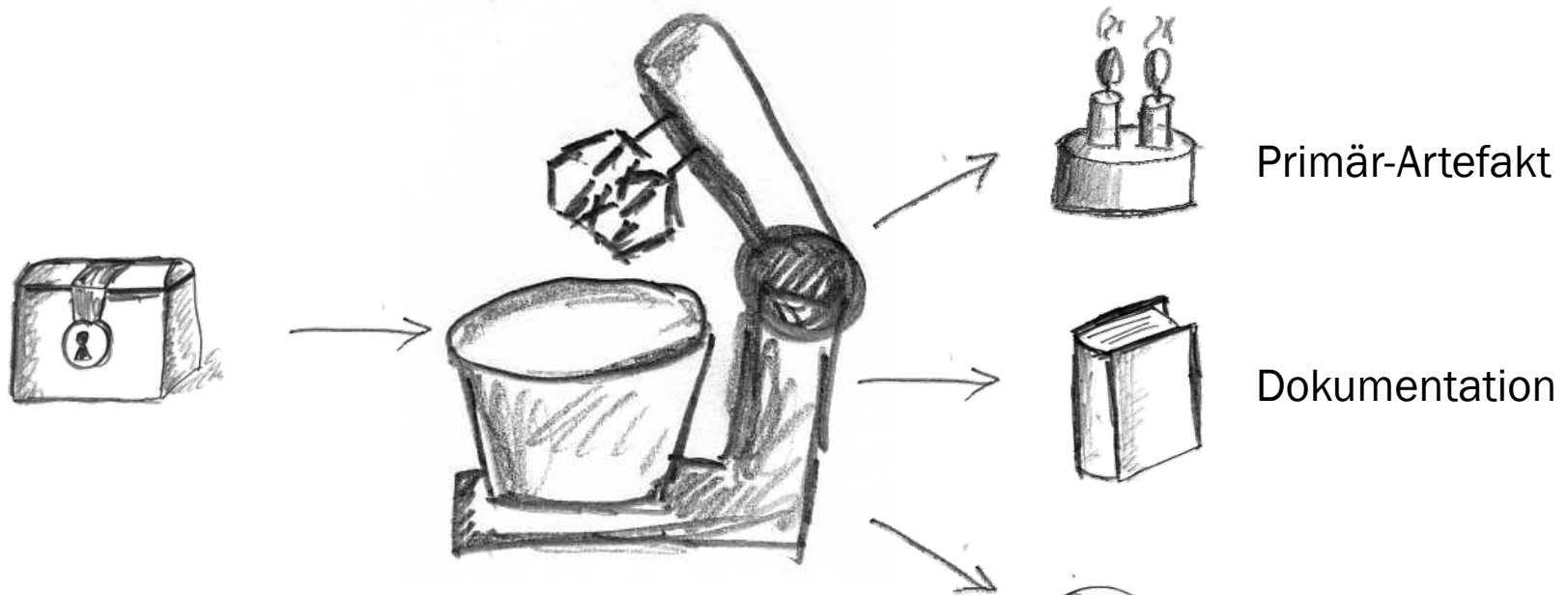
Web-Interface

```
1 <?xml version='1.0' encoding='UTF-8'?>
2 <hudson>
3   <version>1.313</version>
4   <numExecutors>2</numExecutors>
5   <mode>NORMAL</mode>
6   <authorizationStrategy class="hudson.security.AuthorizationStrategy$Unsecured">
7     <securityRealm class="hudson.security.SecurityRealm$None"/>
8   </authorizationStrategy>
9   <systemMessage>&lt;h1&gt; Willkommen auf dem JFS-Demo-Hudson-Server!&lt;/h1&gt;
10  &lt;a href="mailto://papierkorb@foobar.de"&gt;freundlichen Administrat
11  </systemMessage>
12  <jdks>
13    <jdk>
14      <name>JDK 1.6.0_11</name>
15      <home>C:\Programme\Java\jdk1.6.0_11</home>
16      <properties/>
17    </jdk>
18  </jdks>
19  <clauses/>
20  <slaves/>
21  <quietPeriod>5</quietPeriod>
22  <scmCheckoutRetryCount>0</scmCheckoutRetryCount>
23  <views>
24    <hudson.model.AllView>
25      <owner class="hudson" reference="../../../../"/>
26      <name>Alle</name>
27    </hudson.model.AllView>
28  </views>
29  <primaryView>Alle</primaryView>
30  <slaveAgentPort>0</slaveAgentPort>
31  <label></label>
32  <nodeProperties/>
33  <globalNodeProperties/>
34  <disabledAdministrativeMonitors/>
35 </hudson>
```

XML-Konfigurationsdateien

Wann immer möglich, werden Konventionen oder sinnvolle Vorgabewerte verwendet.

3. Build-Systeme: Java – und darüber hinaus!



Eingebaut

- Ant
- Maven
- Shell Skript
- Windows Batch

Über Plug-Ins

- Gant, Groovy
- MSBuild, Nant
- Rake, Ruby
- und viele mehr!

Primär-Artefakt

Dokumentation

Testergebnisse

4. Berichten: Grenzenlos durch Plugins.

Hudson 100.4-gspim-server

Projekt 100.4-gspim-server
Server-Back End der PIM-Komponente aus der GIANTsuite.

Verfügbare Online-Dokumentationen:

- javadoc API
- Package-Schema
- Javadoc
- classycle.xml

Documentations: Arbeitsbereich, Letzte Änderungen, Letztes Testergebnis (Kein Test fehlergeschlagen.)

Build-Verlauf (Trend)

Build-ID	Datum	Zeit
#948	10.09.2008	17:31:40
#947	10.09.2008	17:01:40
#946	10.09.2008	16:31:40
#945	10.09.2008	14:28:33
#944	10.09.2008	13:31:40
#943	10.09.2008	13:01:40
#942	10.09.2008	12:01:40
#941	09.09.2008	17:55:25
#940	09.09.2008	16:26:07
#939	09.09.2008	16:01:58
#938	09.09.2008	15:05:18
#937	09.09.2008	14:51:32
#936	09.09.2008	14:31:59
#935	09.09.2008	14:01:58
#934	09.09.2008	11:01:59
#933	09.09.2008	10:38:53
#932	09.09.2008	09:28:52
#931	09.09.2008	18:01:58
#930	09.09.2008	17:01:58
#929	09.09.2008	17:31:58
#928	09.09.2008	17:01:58
#927	09.09.2008	16:01:58
#926	09.09.2008	13:57:19
#925	09.09.2008	12:01:58
#924	09.09.2008	09:31:59
#923	04.09.2008	17:03:49
#922	04.09.2008	16:02:25
#921	04.09.2008	14:31:50
#920	04.09.2008	13:31:50
#919	04.09.2008	12:05:49

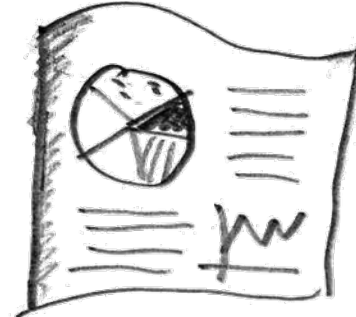
Trend der Testergebnisse

checkstyle 3 findbugs 1 pmd 3 (+1) simian 44 (+2)

Offene Punkte Trend

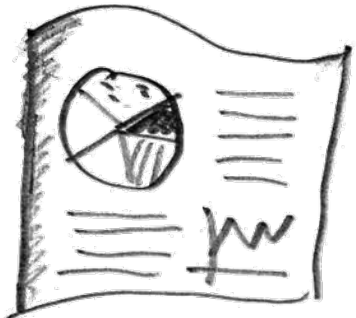
FindBugs Trend

Hudson ver. 1.252



Eingebaut

- JUnit
- TestNG



Über Plug-Ins

- CheckStyle
- PMD
- FindBugs
- Simian
- u.v.m.

5. Source Code Repositories: Mehr als nur „Auschecken“.

Hudson 100.4-asmim-server #950

Änderungen

Zusammenfassung

1. Added addFile method (#1926).
2. Change: Adjustments to the Calculators concerning selection data values.
3. Change: Refactorings for the Calculators concerning precision formatting.
4. CHANGE: #2247 Replaced hard-coded Sub-Root ExplorerNode appending.
5. Change: Refactorings for the Calculators concerning data value conversion from the profile.

Revision 2183 by Andreas Schack:
Added addFile method (#1926).
[\(trunk/asmim/asmim-server/src/main/java/de/netzgganten/gantsuite/asmim/client/flex/controller/ExplorerController.java \(diff\)\)](#)

Revision 2181 by Phatthana Sithideth:
Change: Adjustments to the Calculators concerning selection data values.
[\(trunk/asmim/asmim-server/src/main/java/de/netzgganten/gantsuite/asmim/core/domain/rules/...](#)
[\(trunk/asmim/asmim-server/src/test/resources/de/netzgganten/gantsuite/asmim/persistence/rules/valid/feature-rule-set-mlf.xml \(diff\)\)](#)
[\(trunk/asmim/asmim-server/src/main/java/de/netzgganten/gantsuite/asmim/core/domain/rules/calculation/AbstractCalculator.java \(diff\)\)](#)
[\(trunk/asmim/asmim-server/src/test/java/de/netzgganten/gantsuite/asmim/core/domain/rules/calculation/AbstractCalculatorTest.java \(diff\)\)](#)
[\(trunk/asmim/asmim-server/src/main/java/de/netzgganten/gantsuite/asmim/core/domain/rules/calculation/AbstractSumCalculator.java \(diff\)\)](#)
[\(trunk/asmim/asmim-server/src/main/java/de/netzgganten/gantsuite/asmim/core/domain/rules/calculation/MinCalculator.java \(diff\)\)](#)

Polarion SVN Web Client

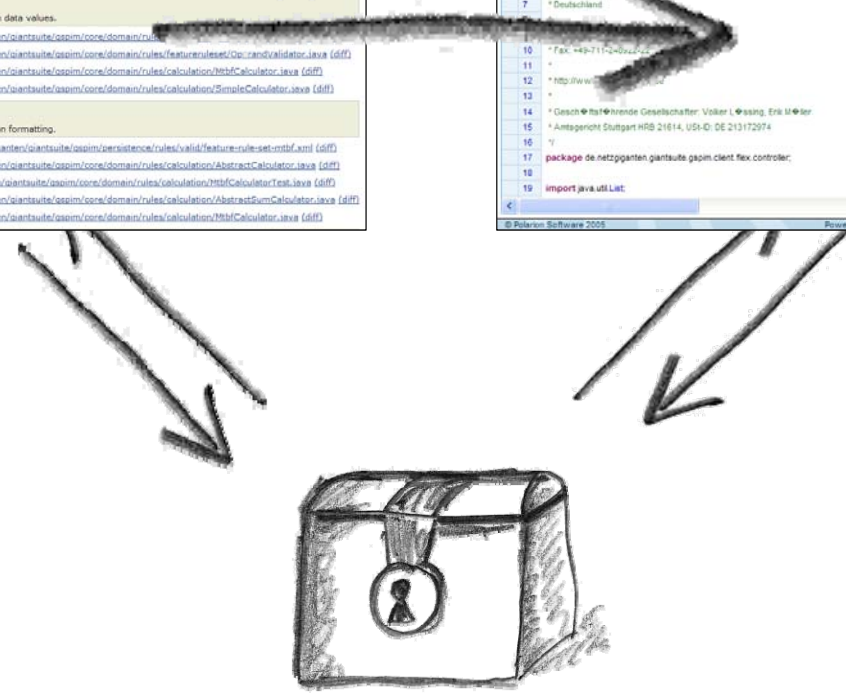
Path: gantsuite/trunk/gpmi/gpmi-server/src/main/java/de/netzgganten/gantsuite/gpmi/client/flex/controller/ExplorerController.java

Revision: 1764 Age: 4 weeks Author: mstransfeld
Revision: 2183 [HEAD] Age: 3 hours 20 minutes Author: aschack

Comment: CHANGE: Refactored signatures of several ExplorerController methods (UI-Locale expected).
Comment: Added addFile method (#1926).

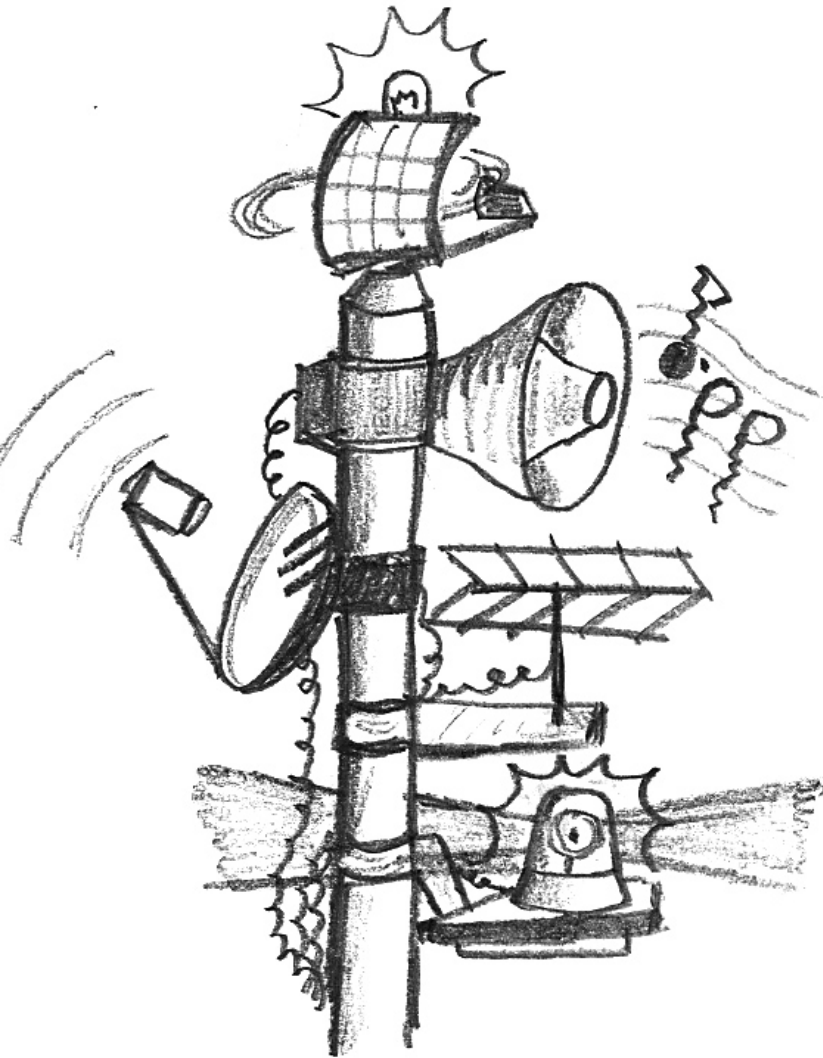
Added: 1 Changed: 0 Deleted: 0

```
1  * Copyright 2008
2  *
3  *
4  * Netzgganten GmbH
5  * Gerokstraße 8
6  * 70188 Stuttgart
7  * Deutschland
8  *
9  * Tel: +49-711-24922-166
10 * Fax: +49-711-24922-22
11 *
12 * http://www.netzgganten.de
13 *
14 * Geschäftsführende Gesellschafter: Volker L., Erik U.
15 * Amtsgericht Stuttgart HRB 21614, USt-ID: DE 213172974
16 *
17 package de.netzgganten.gantsuite.gpmi.client.flex.controller;
18
19 import java.util.List;
```



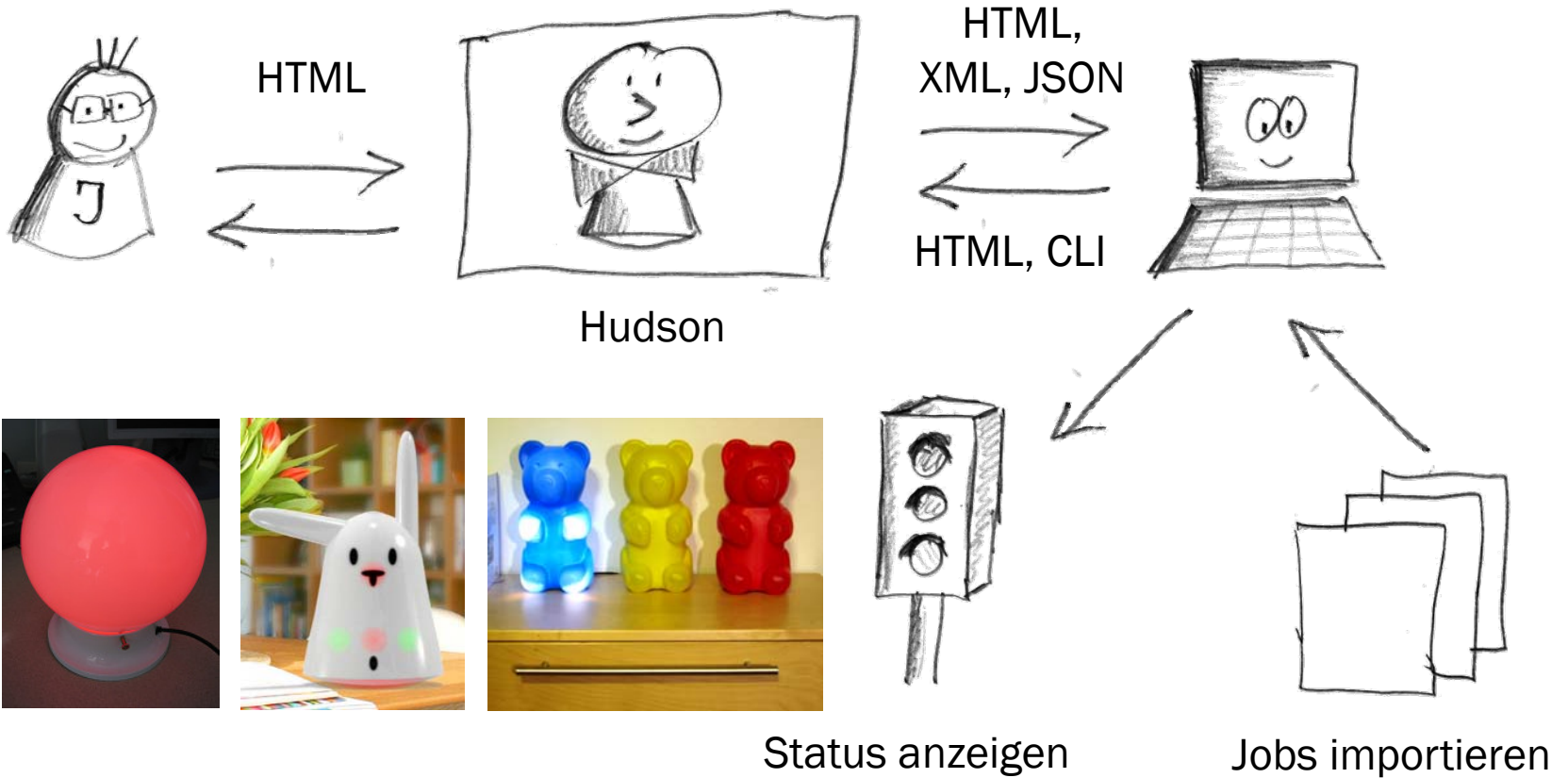
Repository

6. Benachrichtigungen: Viele Kanäle stehen offen.

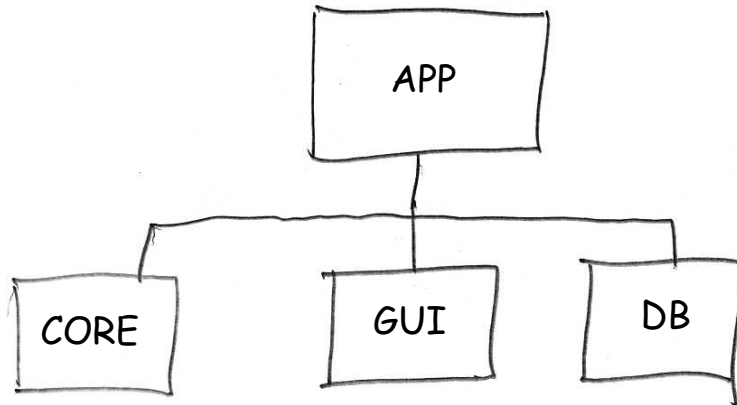


- E-Mail
- RSS-Feeds
- Instant Messenger
- Twitter
- Plugins für IDEs & Browser
- Desktop-Gadgets

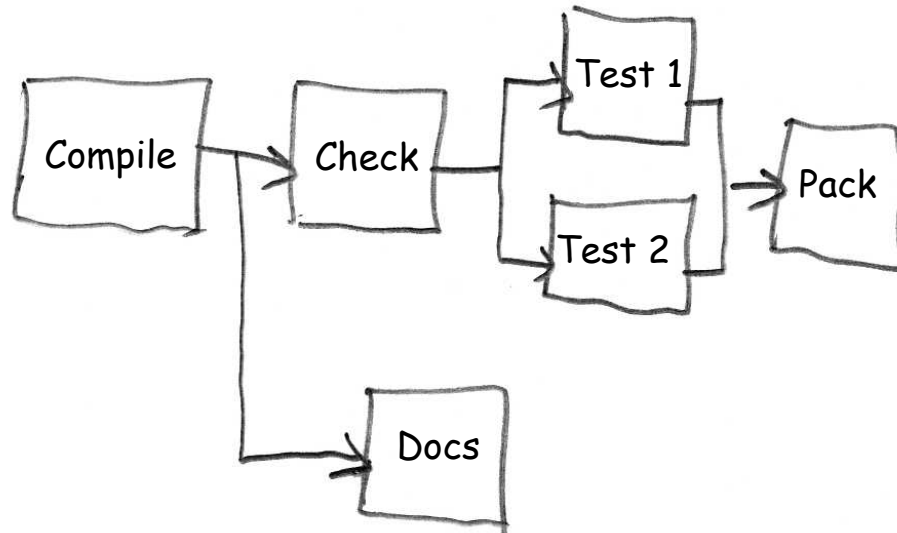
7. Remote API: Hudson lässt sich einfach automatisieren.



8. Abhängigkeiten zwischen Jobs: Intelligentes Bauen.

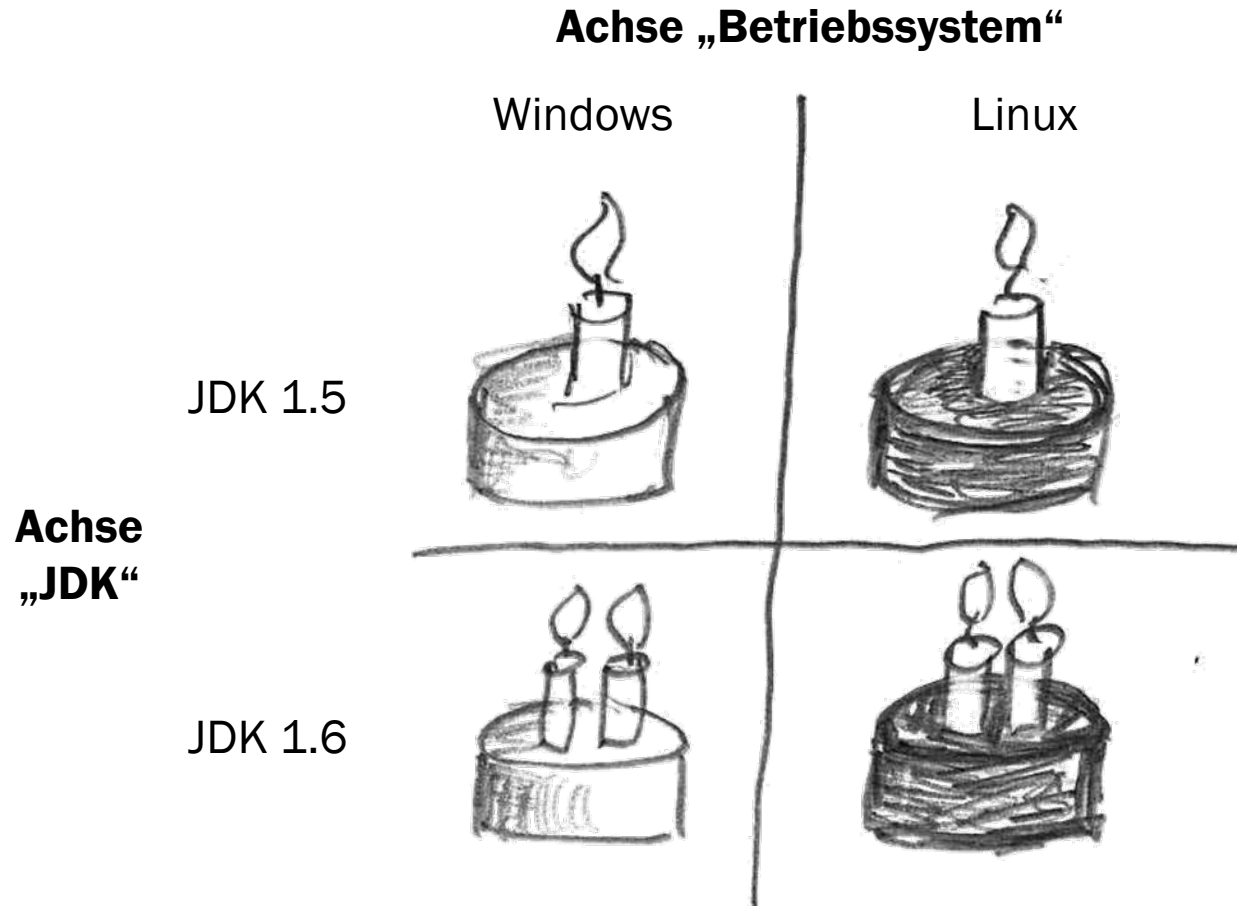


Abhängigkeiten
zwischen
Komponenten

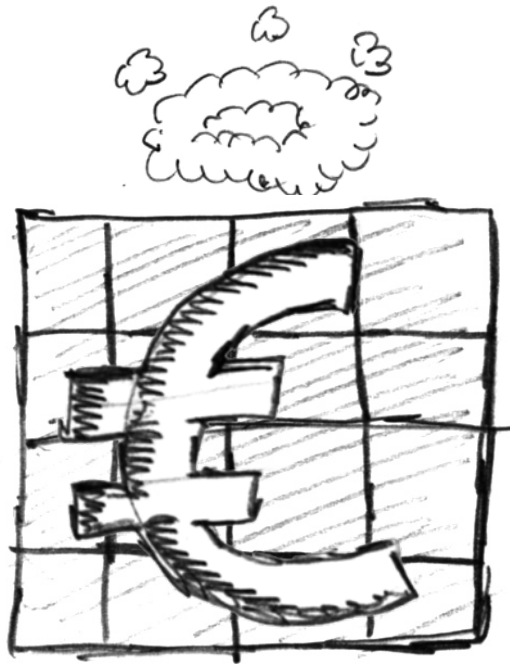


Abhängigkeiten
zwischen
Build-Schritten

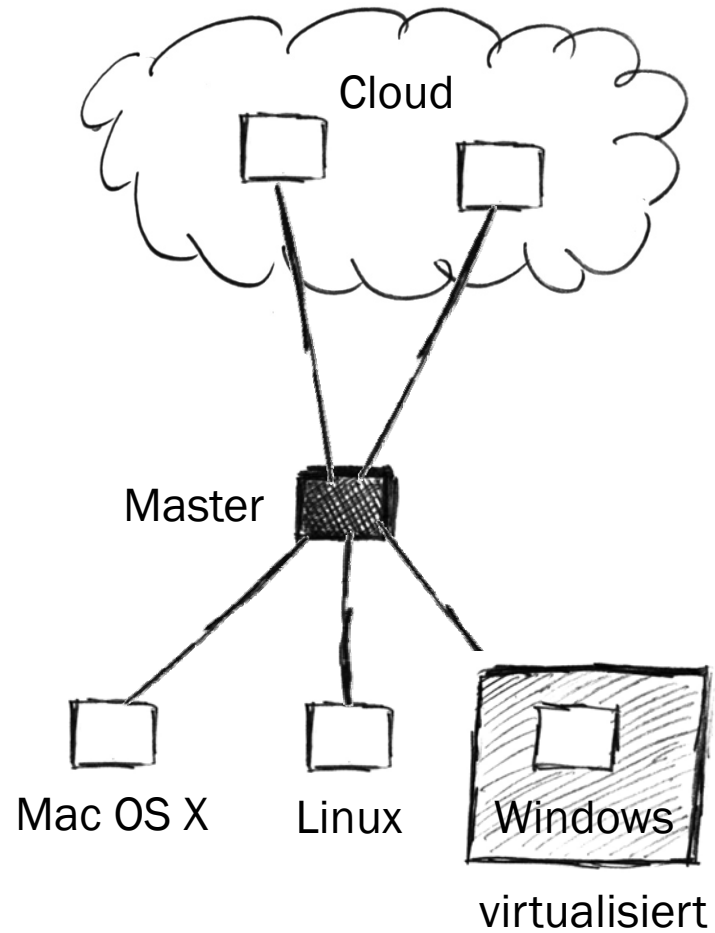
9. Matrix-Builds: Hudson übernimmt die Fleißarbeit.



10. Verteilte Builds: Skalierbare Leistung mit OS-Vielfalt.



lokale Builds

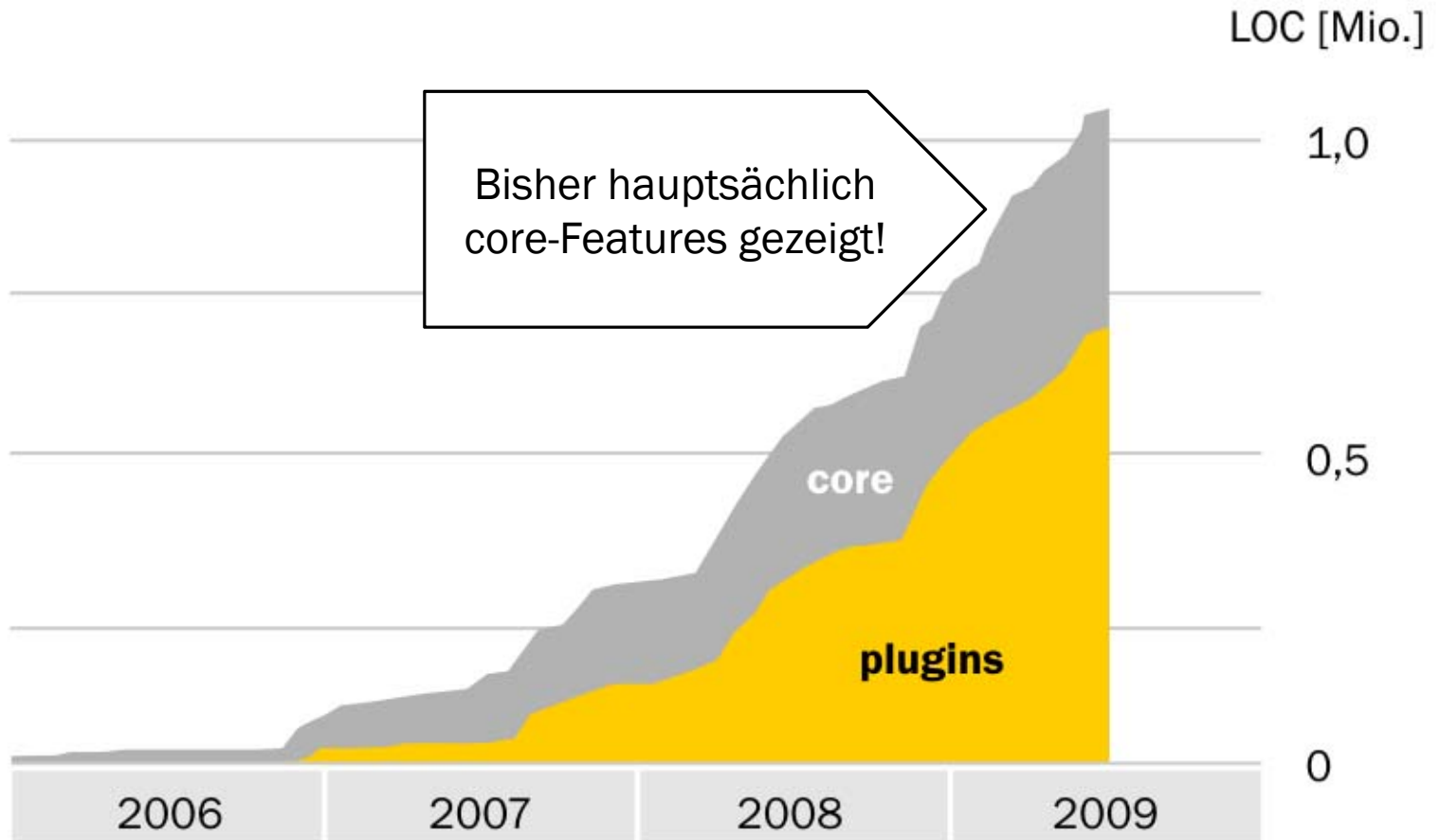


verteilte Builds

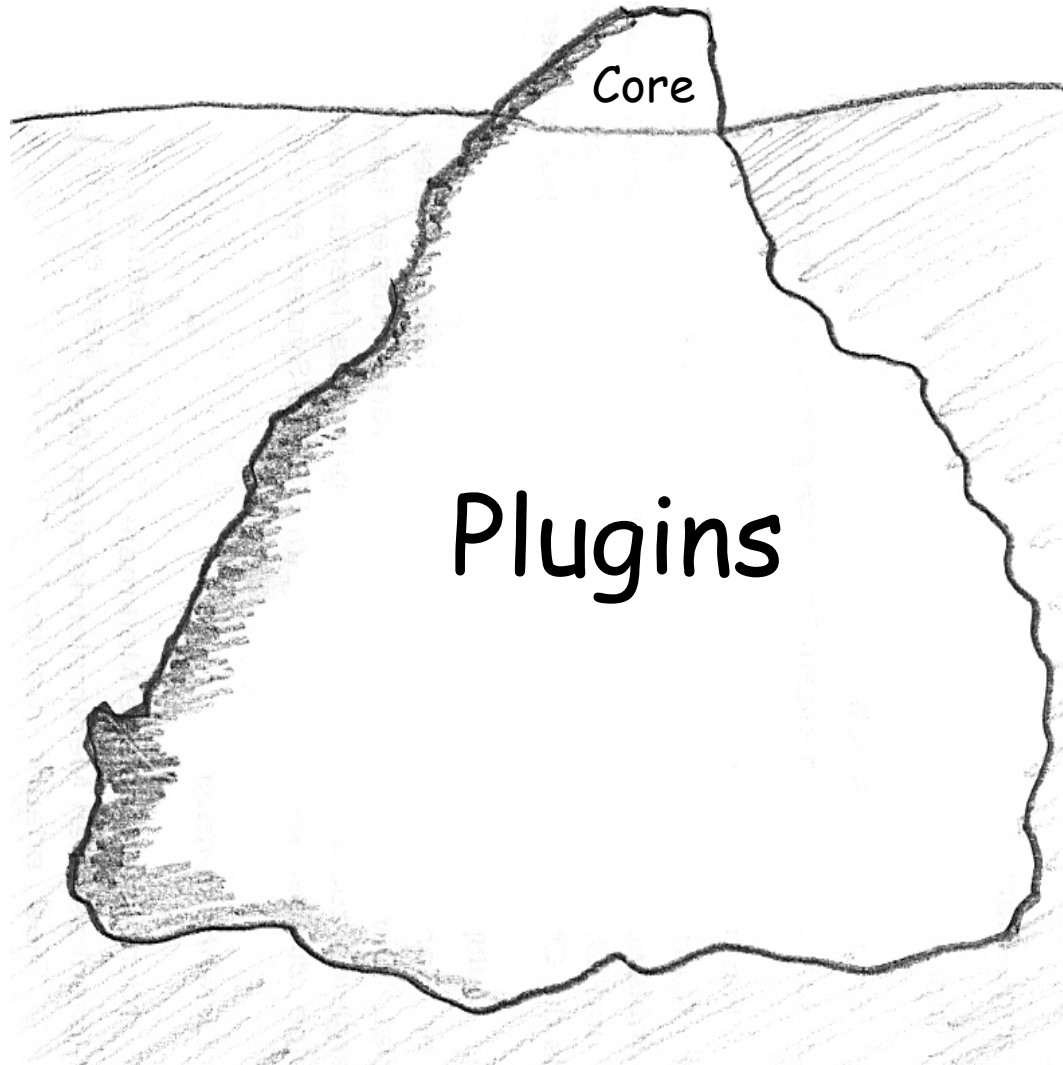
Zusammenfassung: Alle 10 Schritte auf einen Blick

- Installation
- Konfiguration
- Build-Support
- Berichte
- SCM-Integration
- Kommunikation
- Remote-API/CLI
- Abhängige Jobs
- Matrix-Builds
- Verteilte Builds

Haben wir da nicht etwas vergessen?

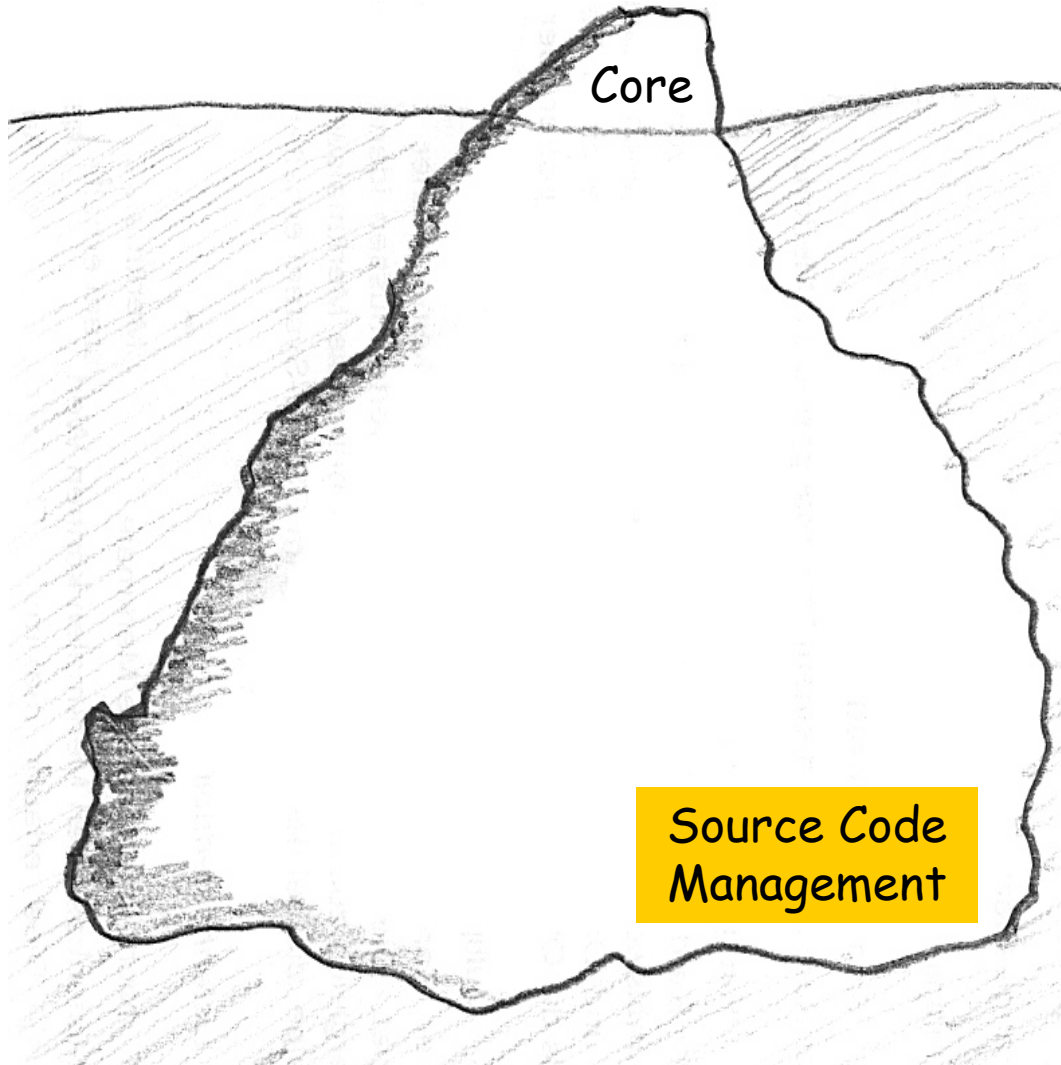


Über 180 Plugins erweitern den Core!



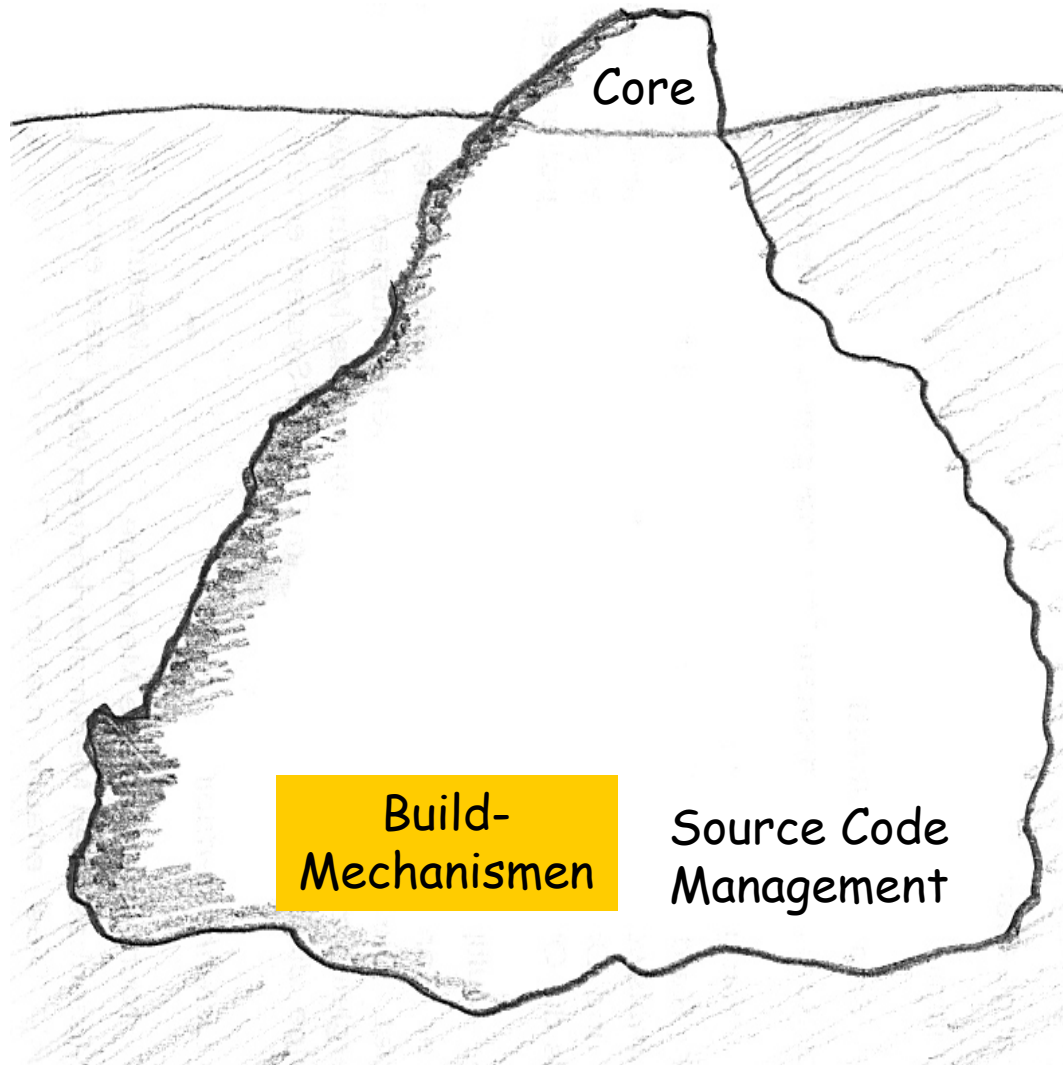
- Update-Center für einfache Installation und Aktualisierung
- 1-2 neue Plugins pro Woche(!)
- Maven-Tools für Plugin-Entwicklung
- Gute Unterstützung durch Developer-Mailingliste

Über 180 Plugins erweitern den Core!



Accurev
Bazaar
BitKeeper
ClearCase
CMVC
CVS
File System SCM
Git
Harvest
Mercurial
Perforce
PVCS
Subversion
Synergy
Team Foundation Server
Template Project
URL
Visual SourceSafe

Über 180 Plugins erweitern den Core!



Ant

Batch File

Buckminster

Gant

Gradle

Grails

Groovy

Kundo

Maven

MSBuild

Nant

PowerShell

Rake

Ruby

SCons

SCTMExecutor

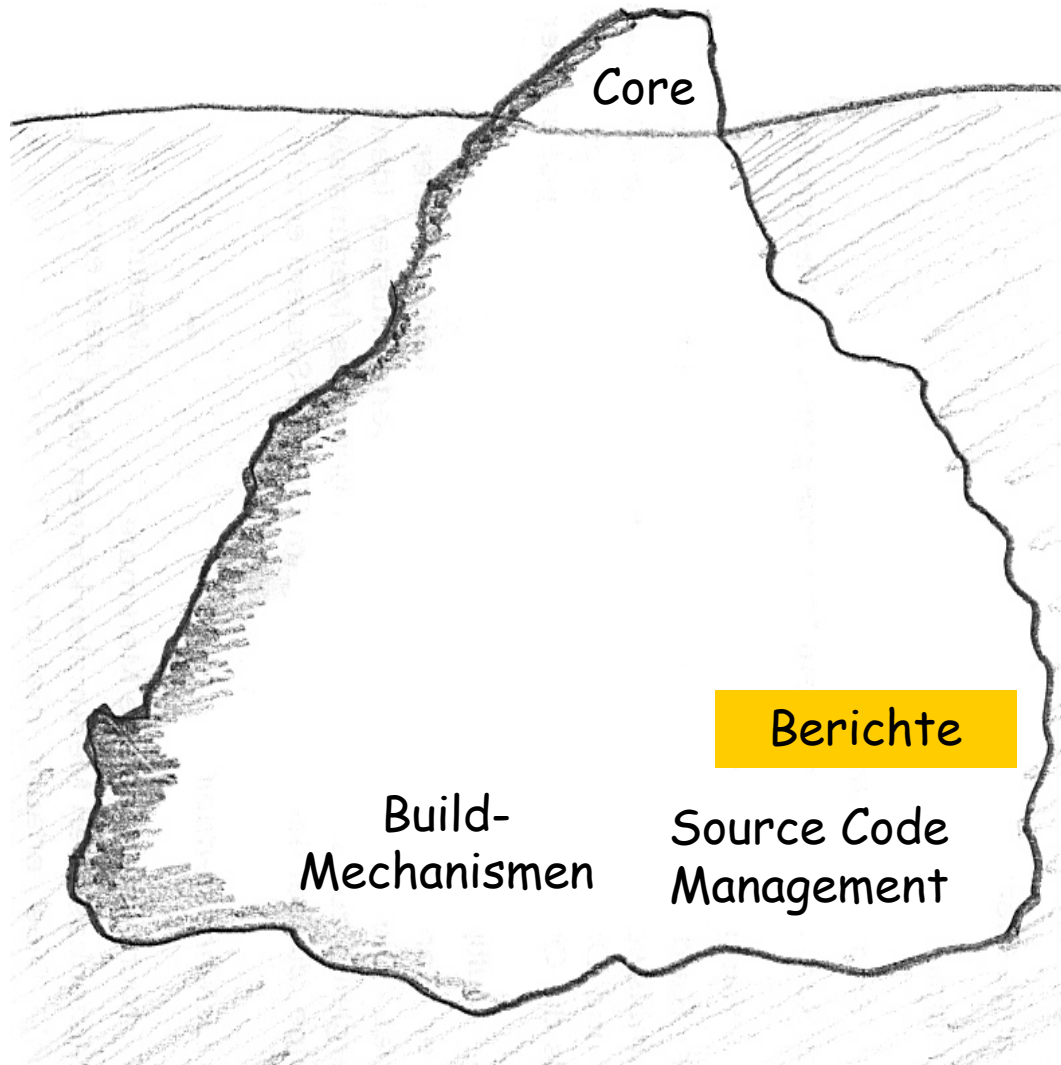
Shell script

Selenium AES

Seleniumhq

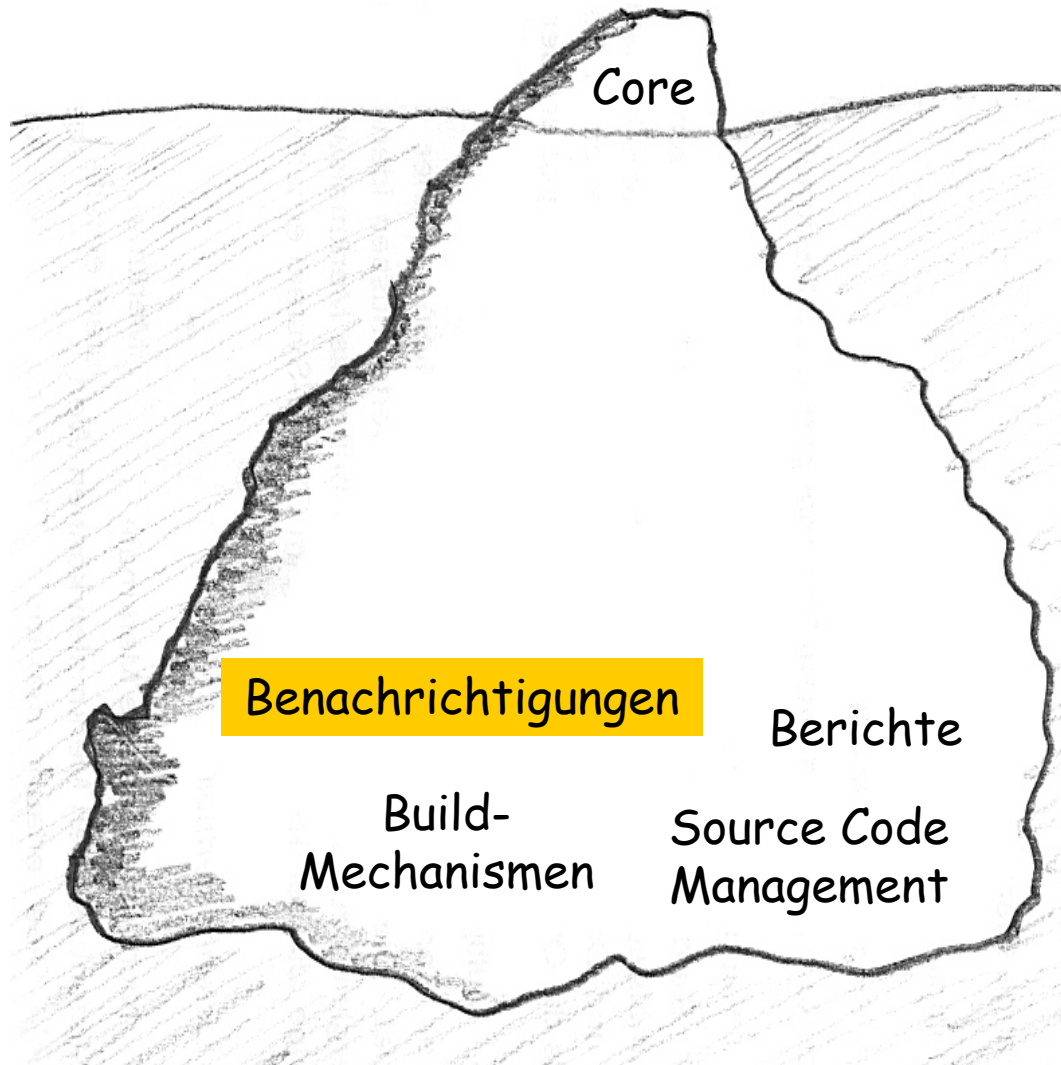
(und weitere)

Über 180 Plugins erweitern den Core!



CCCC	NCover
Checkstyle	NUnit
Clover	Plot
Cobertura	PMD Plugin
CppUnit	PureCoverage
Crap4J	Ruby metrics
Doxygen	Selenium AES
DRY	Seleniumhq
Emma	Serenitec
FindBugs	SLOCCount
Gallio	Task Scanner
Gnat	Testability
Grinder	Explorer
Japex	Violations
Javadoc	Warnings
JavaNCSS+	WebTest
JavaTest Rprt.	Presenter
JUnit	
MSTest	

Über 180 Plugins erweitern den Core!



Campfire

Email

Google Calendar

hudsonTracker

IRC

Jabber

Nabaztag

SameTime

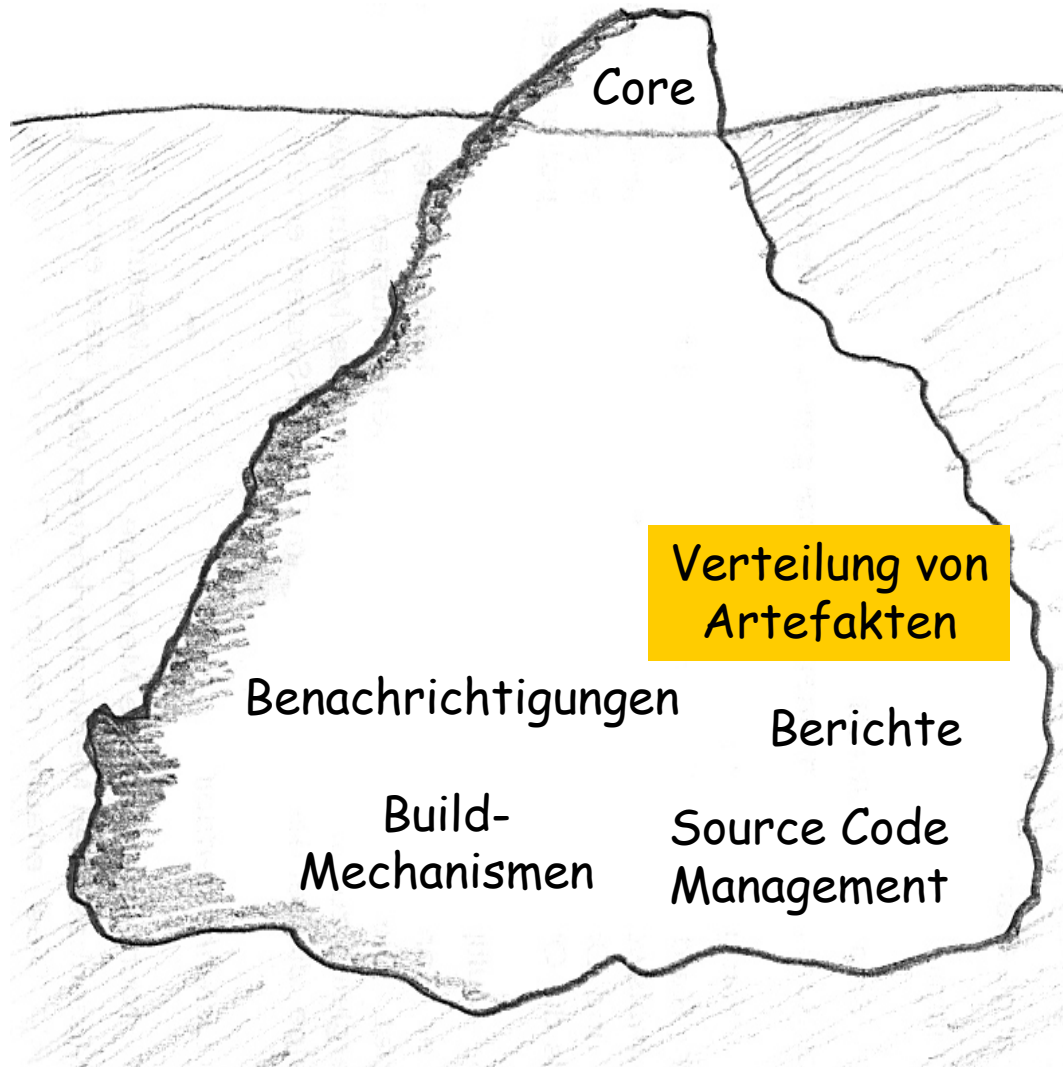
Status Monitor

RSS

TuxDroid

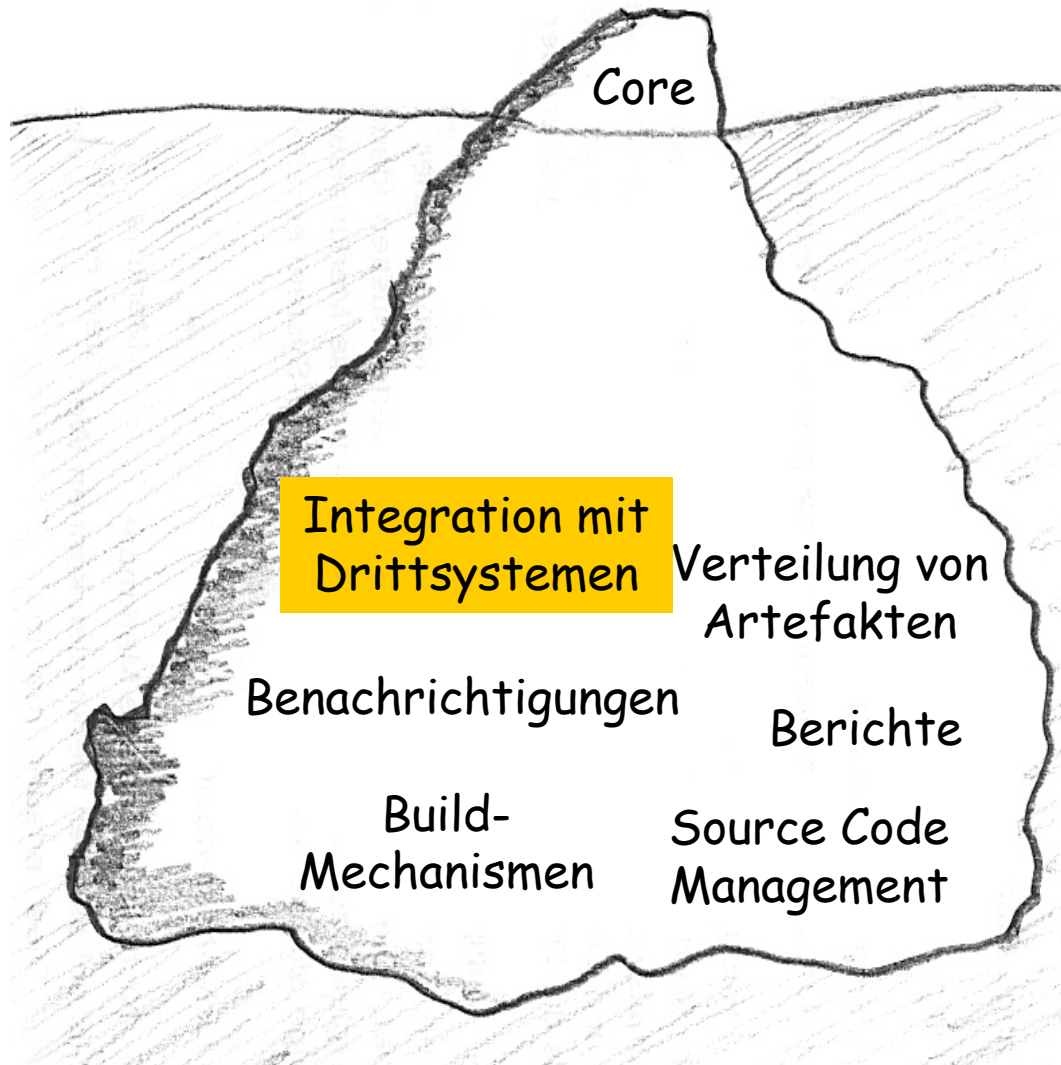
Twitter

Über 180 Plugins erweitern den Core!



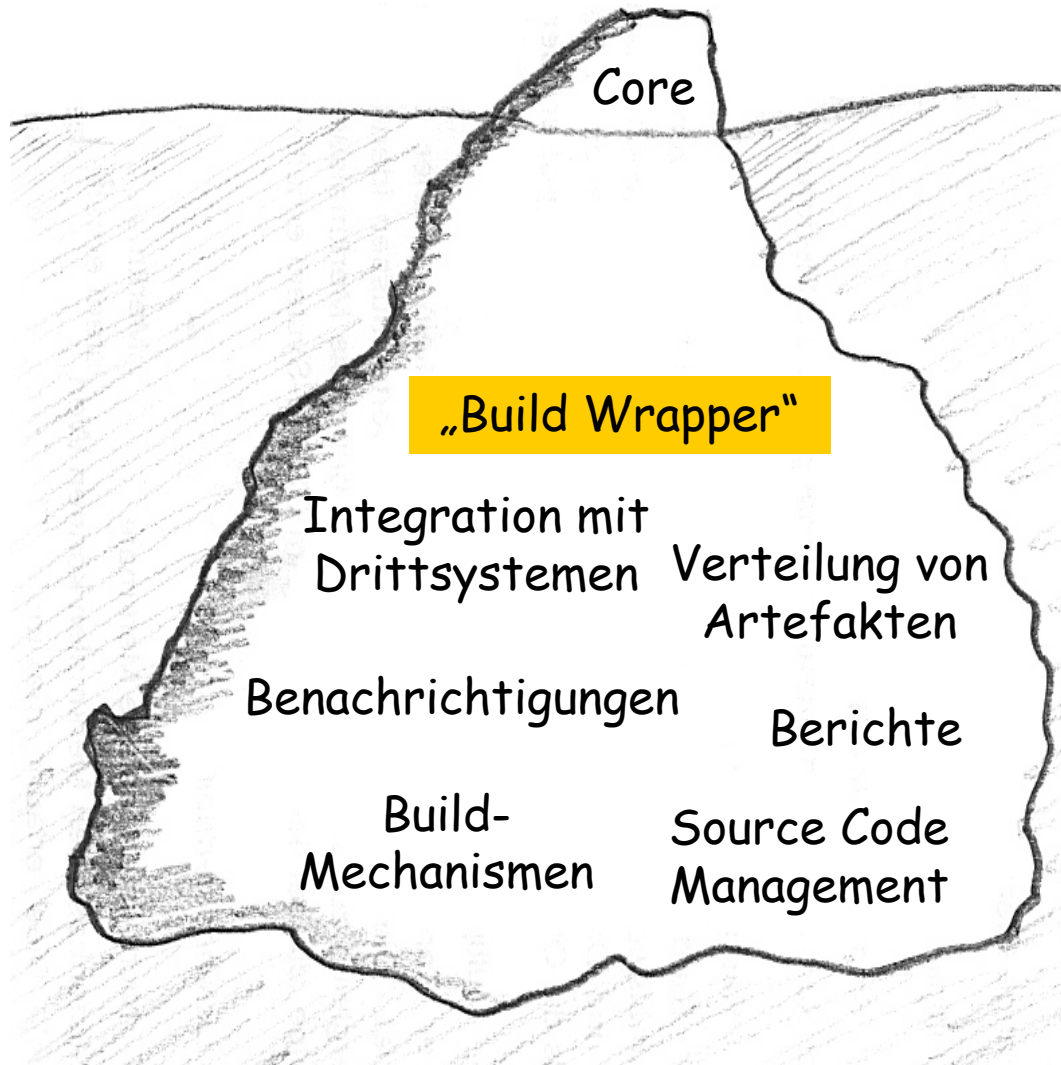
FTP Publisher
java.net Uploader
SCP
SFEE
SVN

Über 180 Plugins erweitern den Core!



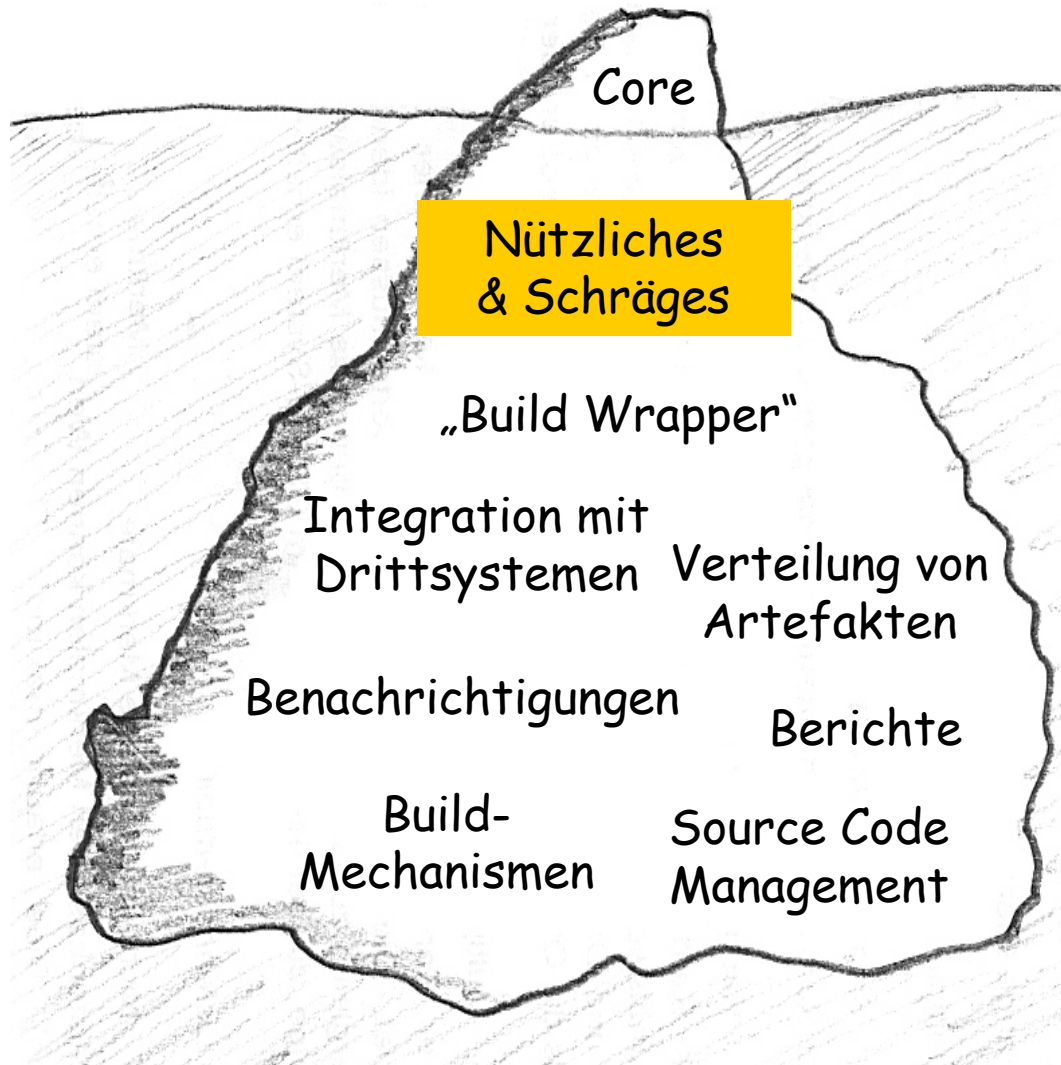
Active Directory Mantis
Android App PXE
Audit Trail Polarion
Backlog Redmine
Bugzilla RegEx Email
Cluster mgmt. SFEE
Crowd Selenium
Firefox Add-on Sonar
Github Swarm
Google Calend. Trac
Google Code Windows Tray
Google Desktop
HGCA
Hadoop
iPhone App
JIRA
Java.net
Kagemai
LDAP Email

Über 180 Plugins erweitern den Core!



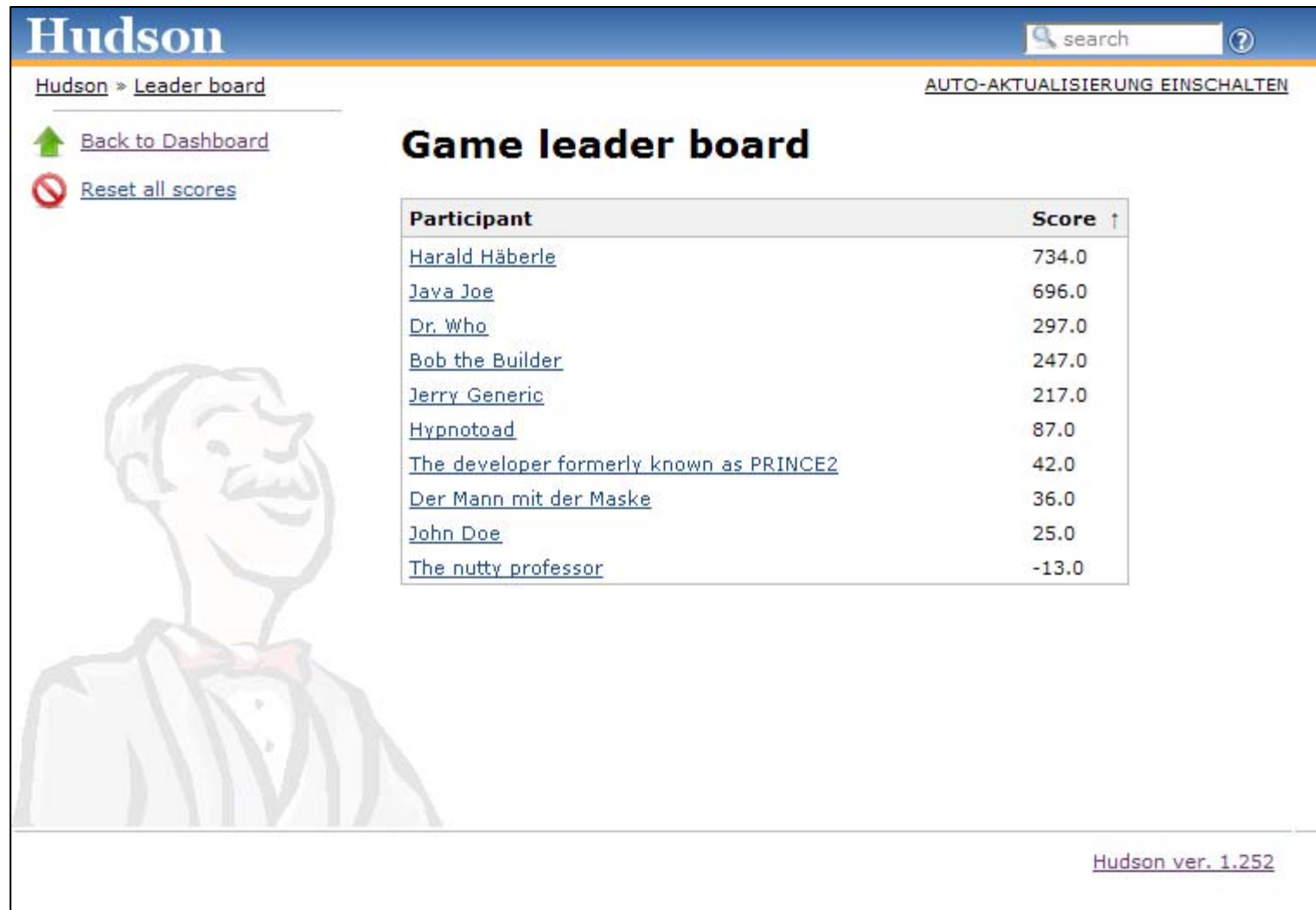
Hudson Central. Job(Re)Action
Hudson Distr. Workspace Clean
Locks and Latches
M2 Extra Steps
M2 Release
Release
Template Project
VMware
Xvnc
ZenTimestamp

Über 180 Plugins erweitern den Core!



Build-timeout
Change Log History
Claim
Configuration Slicing
Cygpath
Emotional Hudson
Google Analytics
Green Balls
JBPM
Locale
Port Allocator
Promoted Builds
Radiator View
Retry Failed Builds
Sectioned View
Sidebar-Link
Slave-status
Continuous Integration Game

Plugin „Continuous Integration Game“



The screenshot shows the Hudson CI Game Leaderboard interface. At the top left, the word "Hudson" is displayed in a large blue font. To its right is a search bar with the text "search" and a question mark icon. Below the search bar, the breadcrumb "Hudson > Leader board" is visible. On the right side of the header, there is a link "AUTO-AKTUALISIERUNG EINSCHALTEN".

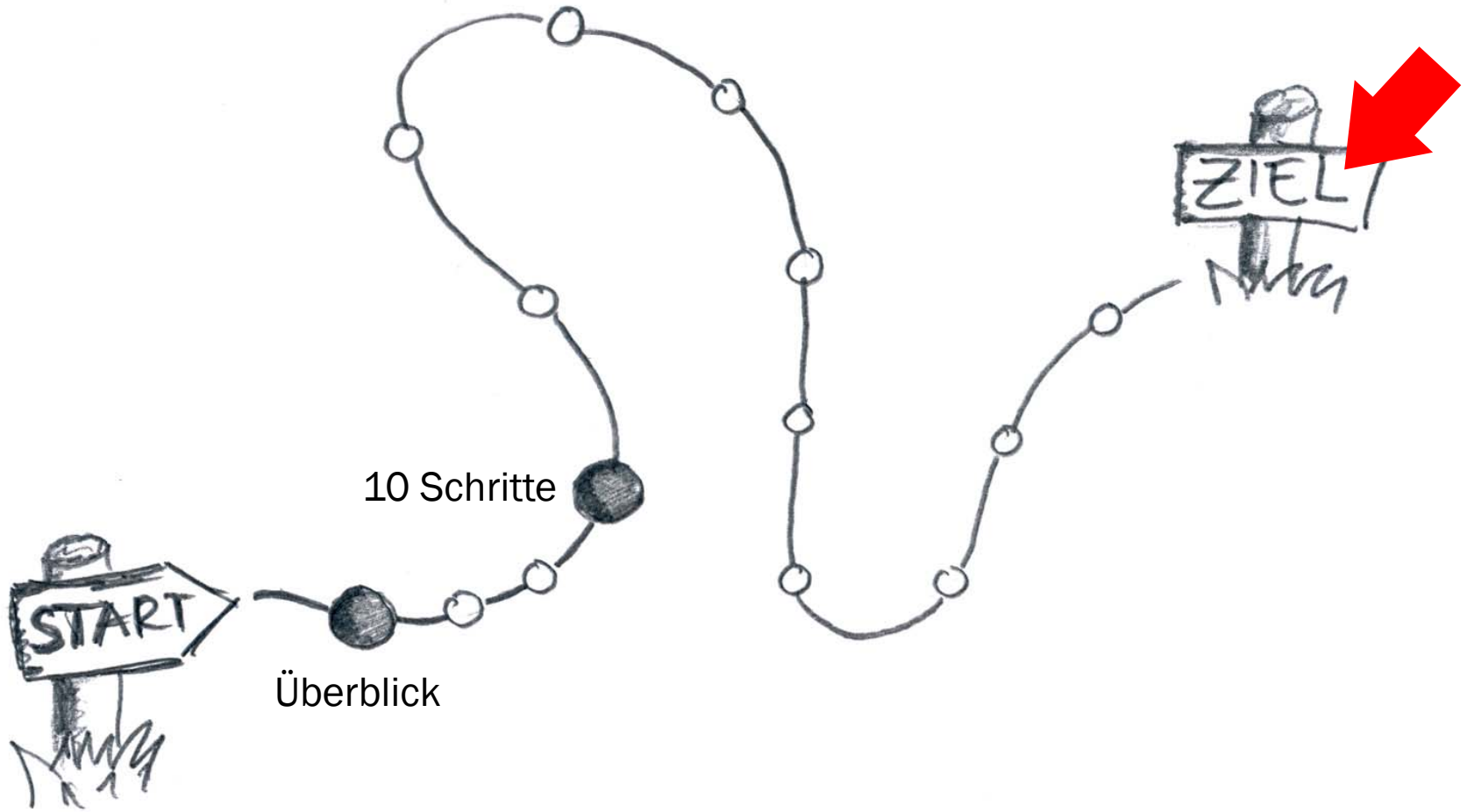
On the left side of the main content area, there are two links: "Back to Dashboard" with a green upward arrow icon, and "Reset all scores" with a red prohibition sign icon.

The main content area is titled "Game leader board" in a large, bold, black font. Below the title is a table with two columns: "Participant" and "Score". The table lists ten participants with their respective scores, sorted in descending order.

Participant	Score ↑
Harald Häberle	734.0
Java Joe	696.0
Dr. Who	297.0
Bob the Builder	247.0
Jerry Generic	217.0
Hypnotoad	87.0
The developer formerly known as PRINCE2	42.0
Der Mann mit der Maske	36.0
John Doe	25.0
The nutty professor	-13.0

In the bottom right corner of the page, the version number "Hudson ver. 1.252" is displayed.

Agenda



HERUNTERLADEN

EINSETZEN

WEITERSAGEN

MITMACHEN

hudson.dev.java.net

Vielen Dank fürs Zuhören.

Dr. Simon Wiest

Ingenieurbüro für Softwaretechnik
Wiesfleckenstrasse 13
72810 Gomaringen
www.simonwiest.de



Empfohlene Nachlese

■ Hudson

- Projektseite. hudson.dev.java.net
- JBoss Hudson CI Server. hudson.jboss.org/hudson
- Interview mit Hudson-Initiator Kohsuke Kawaguchi
blogs.sun.com/glassfishpodcast (Episode #007)

■ Continuous Integration

- White Paper von Martin Fowler. www.martinfowler.com
- CI Feature Matrix. confluence.public.thoughtworks.org
- P.M. Duvall: Continuous Integration. 2007.

■ Projektautomatisierung (allgemein)

- J. F. Smart: Java Power Tools. 2008.
- M. Hüttermann: Agile Java-Entwicklung in der Praxis. 2007.

BACKUP

Wie funktionieren die Bären?

Mehr dazu im Hudson Wiki
wiki.hudson-ci.org//x/AQA1AQ

