DR.WIEST
SOFTWARETECHNIK

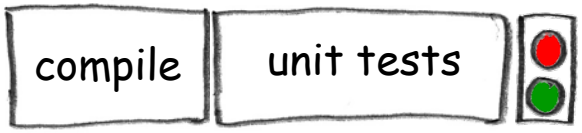
Liebling, ich habe den Build geschrumpft!

Endlich (wieder) schnellere Builds mit Hudson

Dr. Simon Wiest

XP-Days 2009
27.11.2009, Karlsruhe


compile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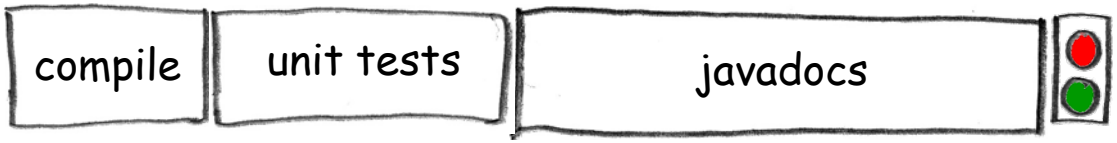
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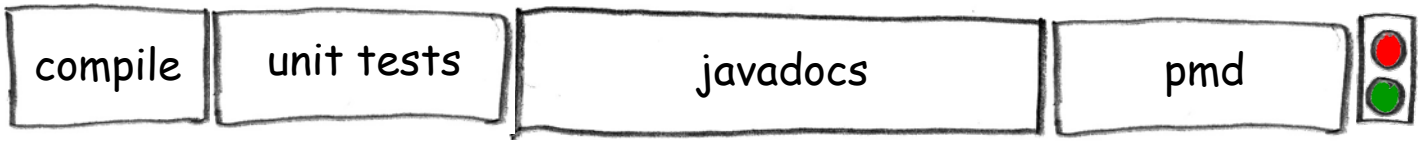
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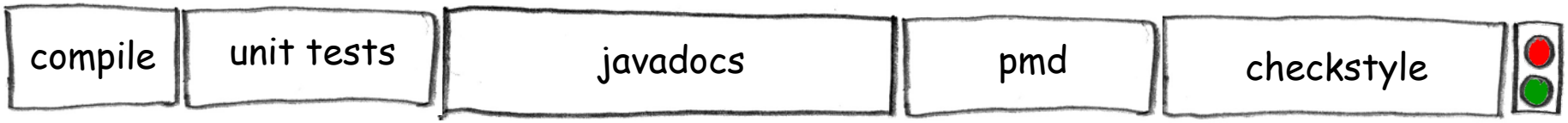
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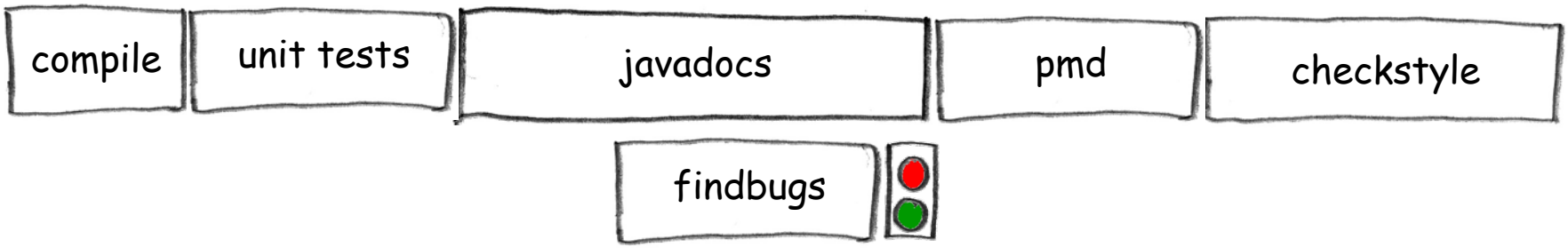
checkstyle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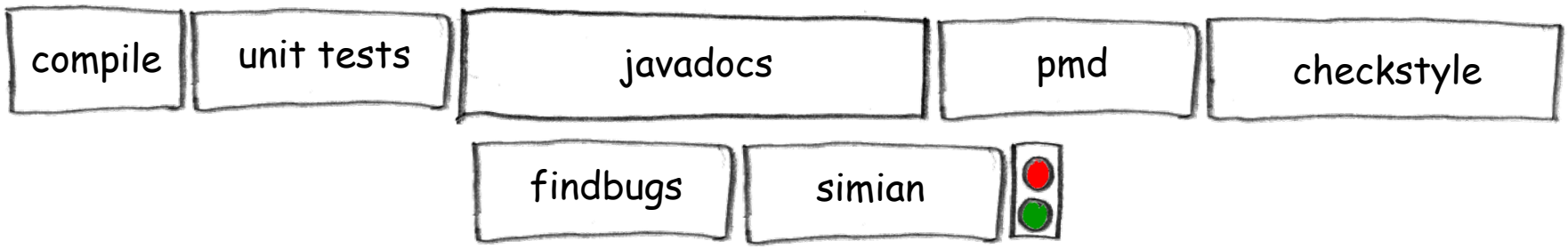
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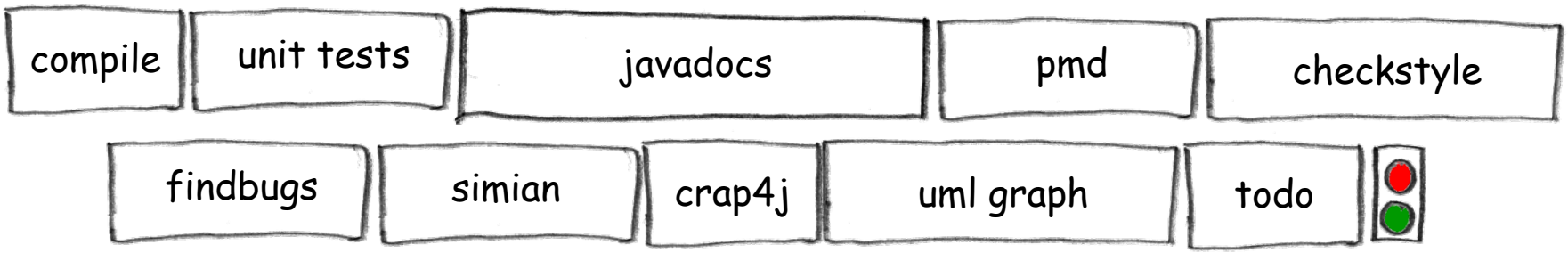
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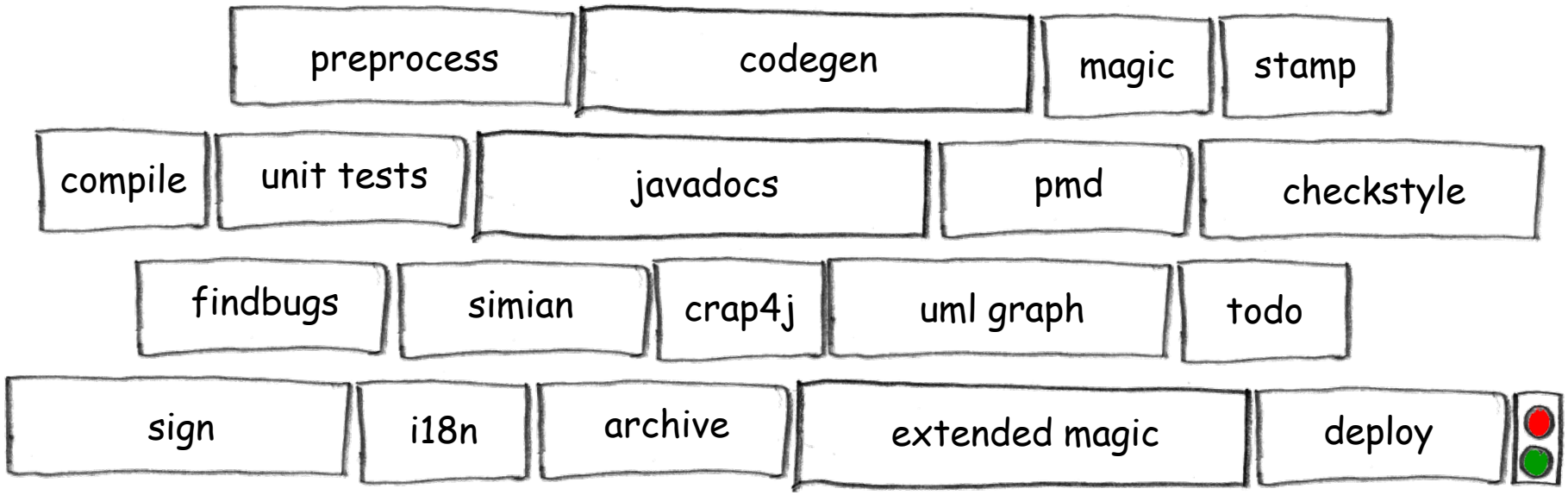
uml graph
todo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archive
extended magic
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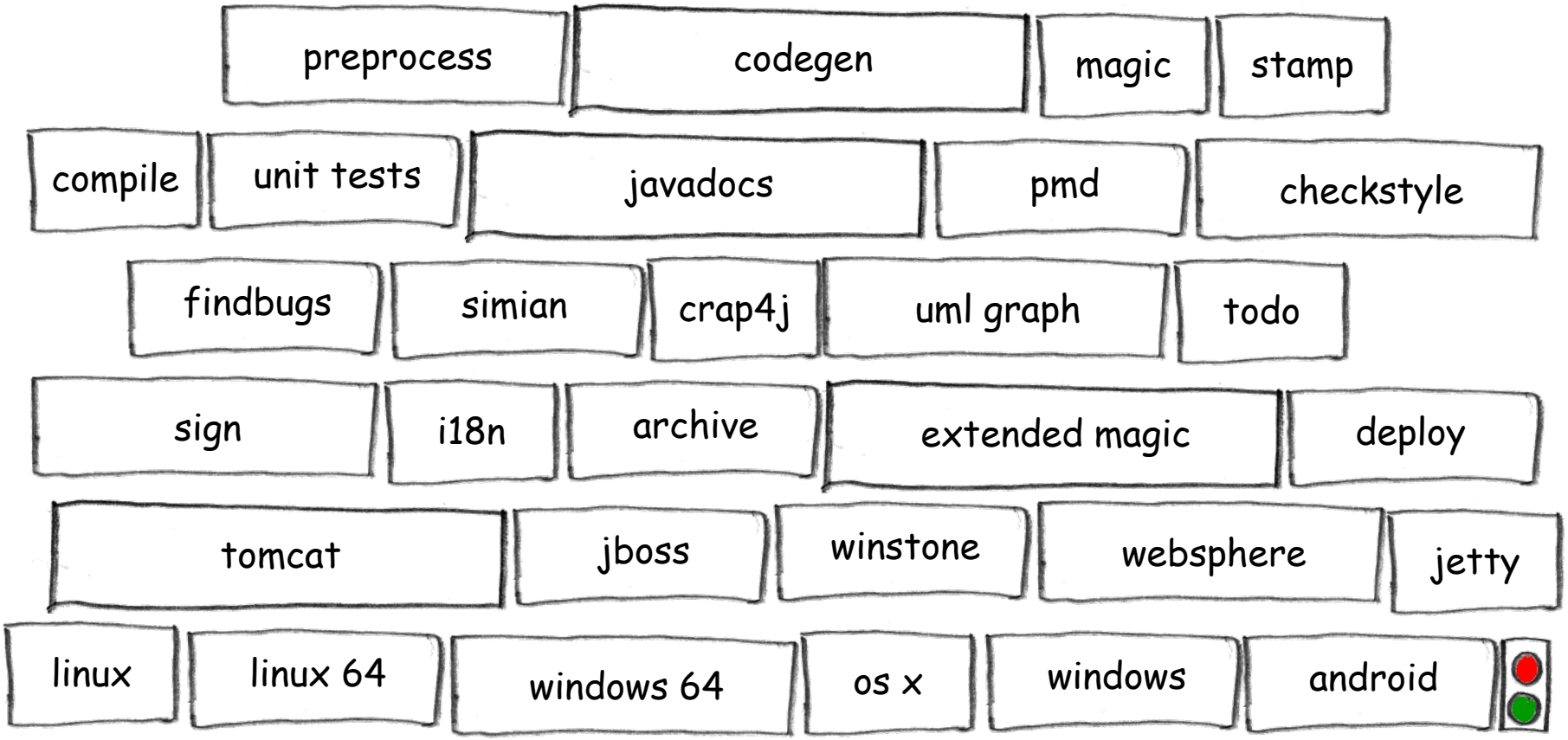
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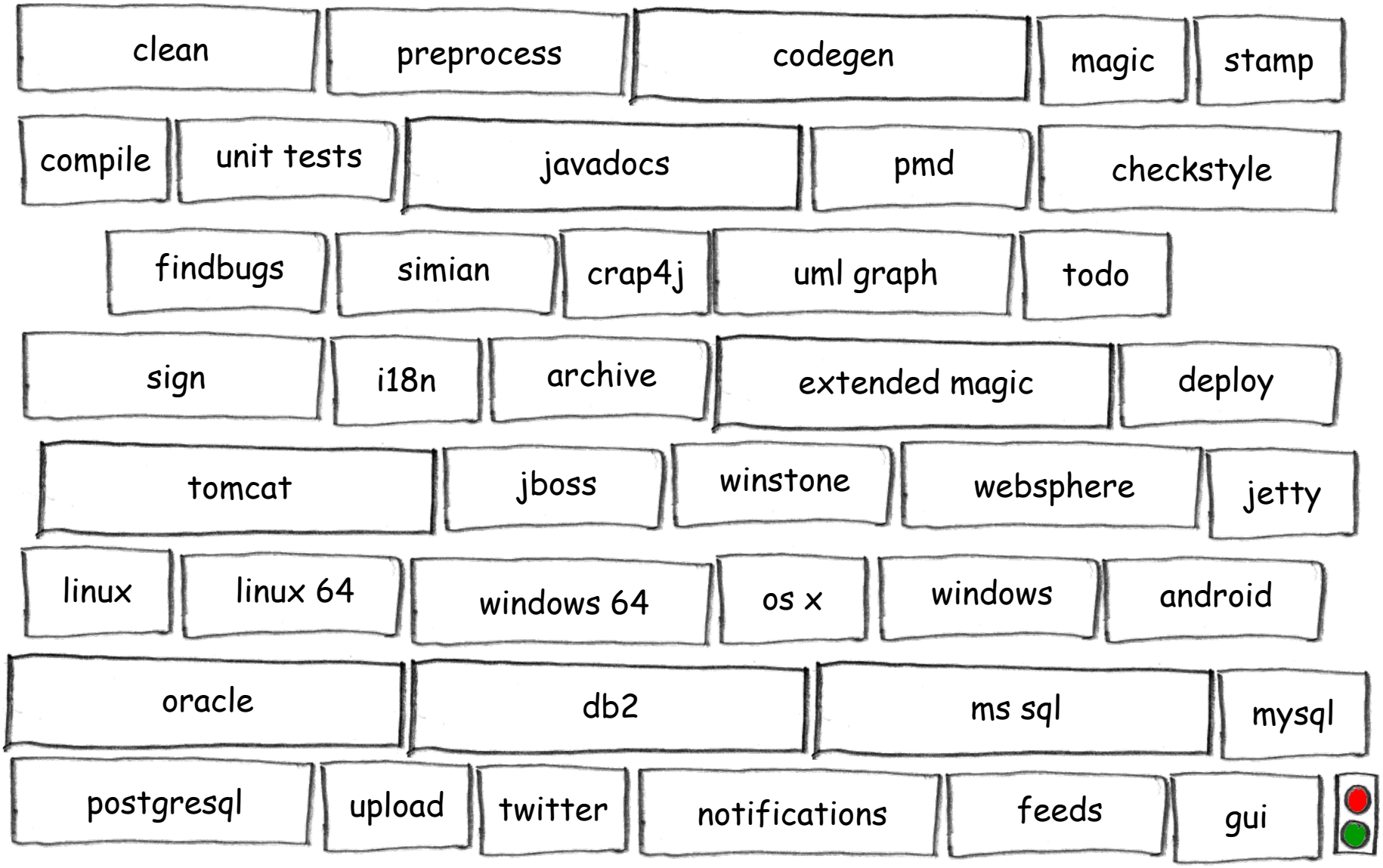
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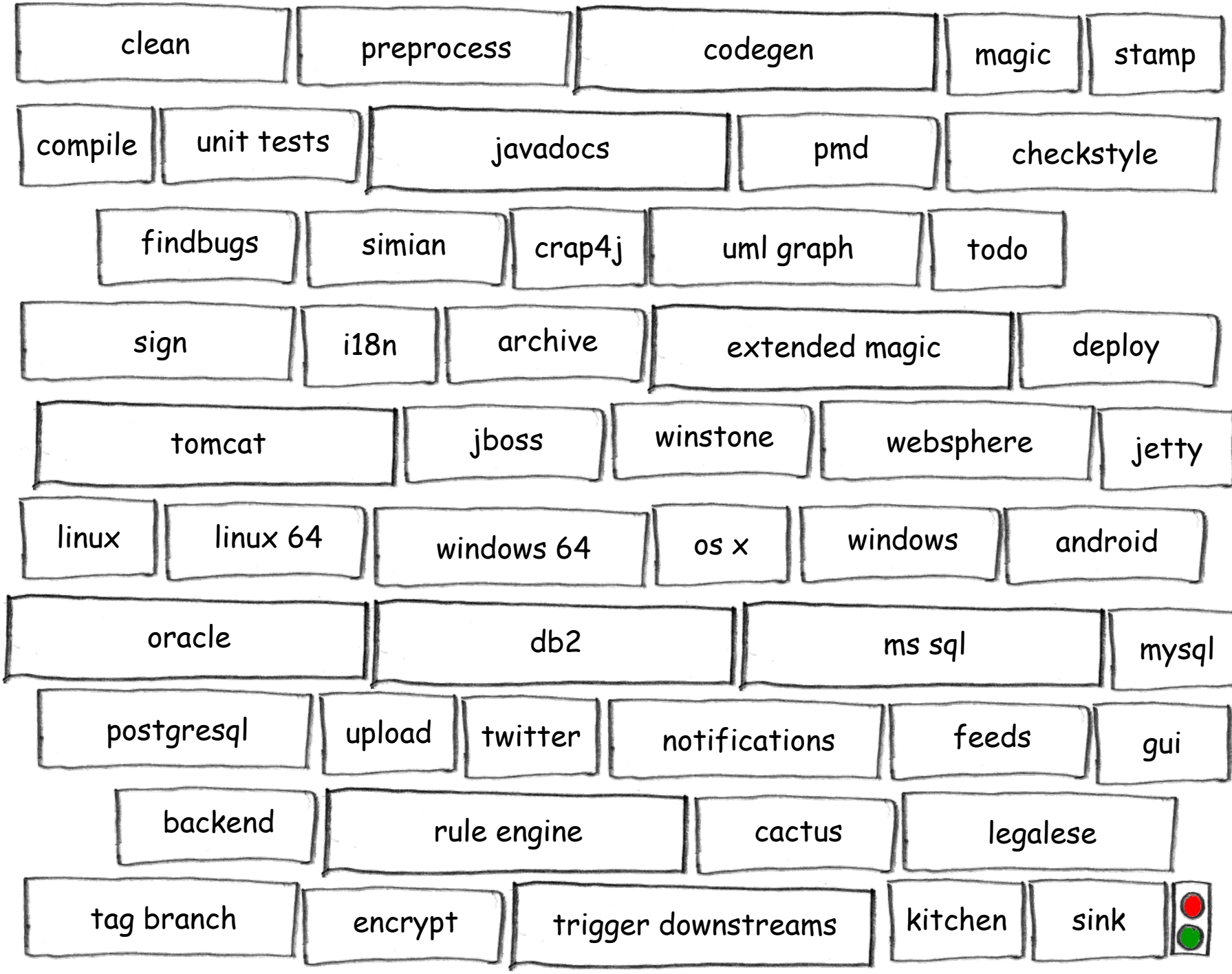
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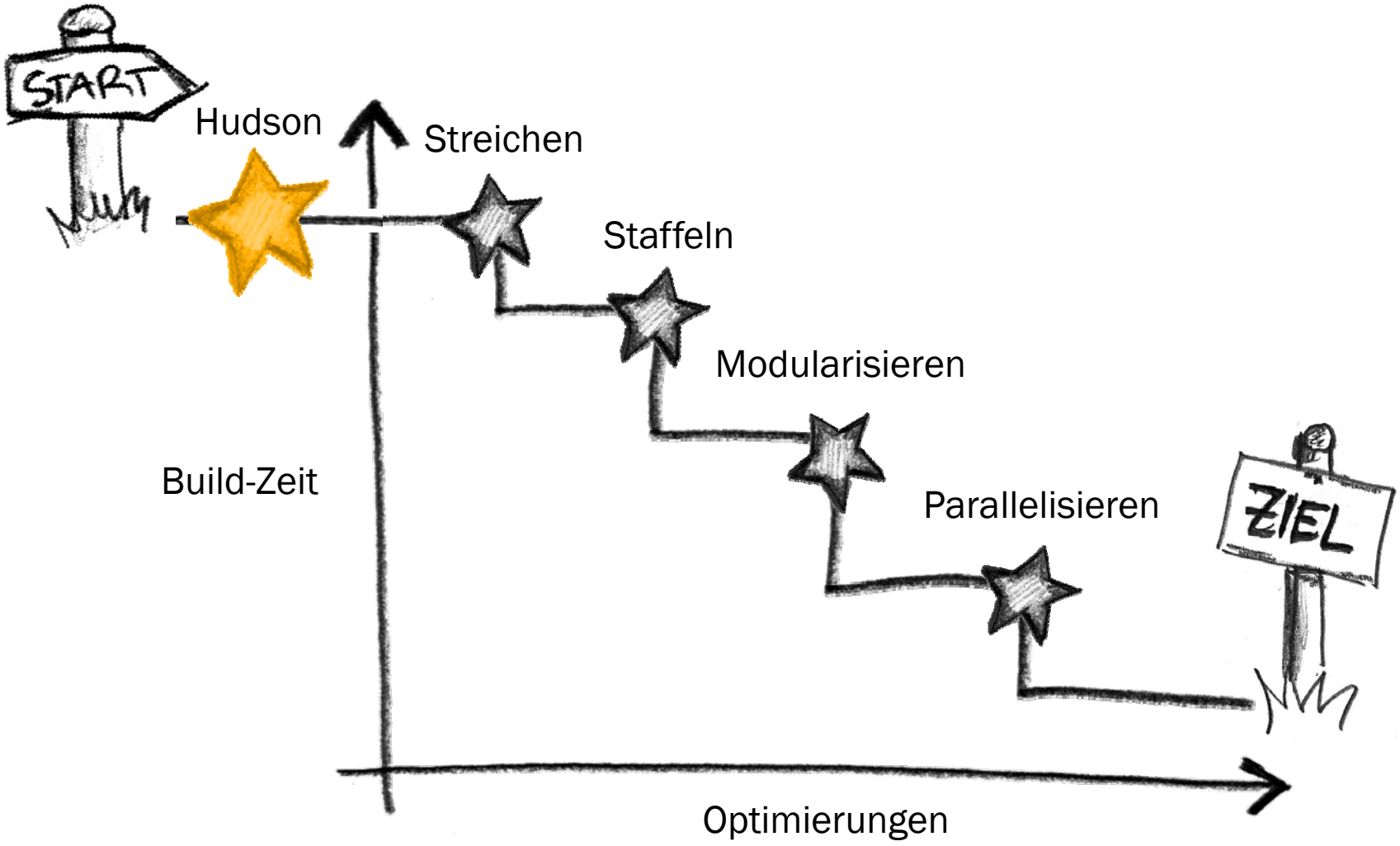
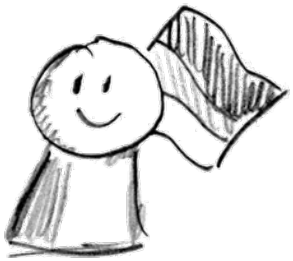
cactus
legalese
tag branch
encrypt
trigger downstreams
kitchen
sink

Agenda


START
Hudson
Streichen
Staffeln
Modularisieren
Parallelisieren
ZIEL
Build-Zeit
Optimierungen

Über den Referenten: Dr. Simon Wiest

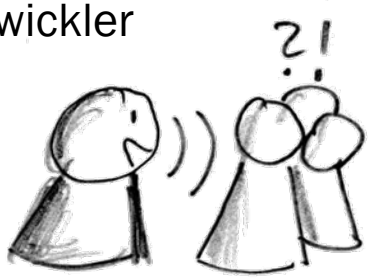
Privat: Hudson-Committer



Lokalisierung DE

Internationalisierung

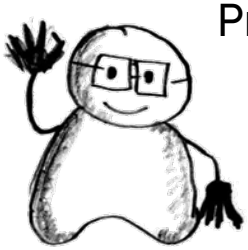
Plug-In Entwickler



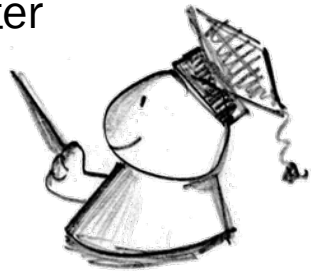
Support (Mailing Listen)

Beruflich: Hudson-Anwender

Projektleiter



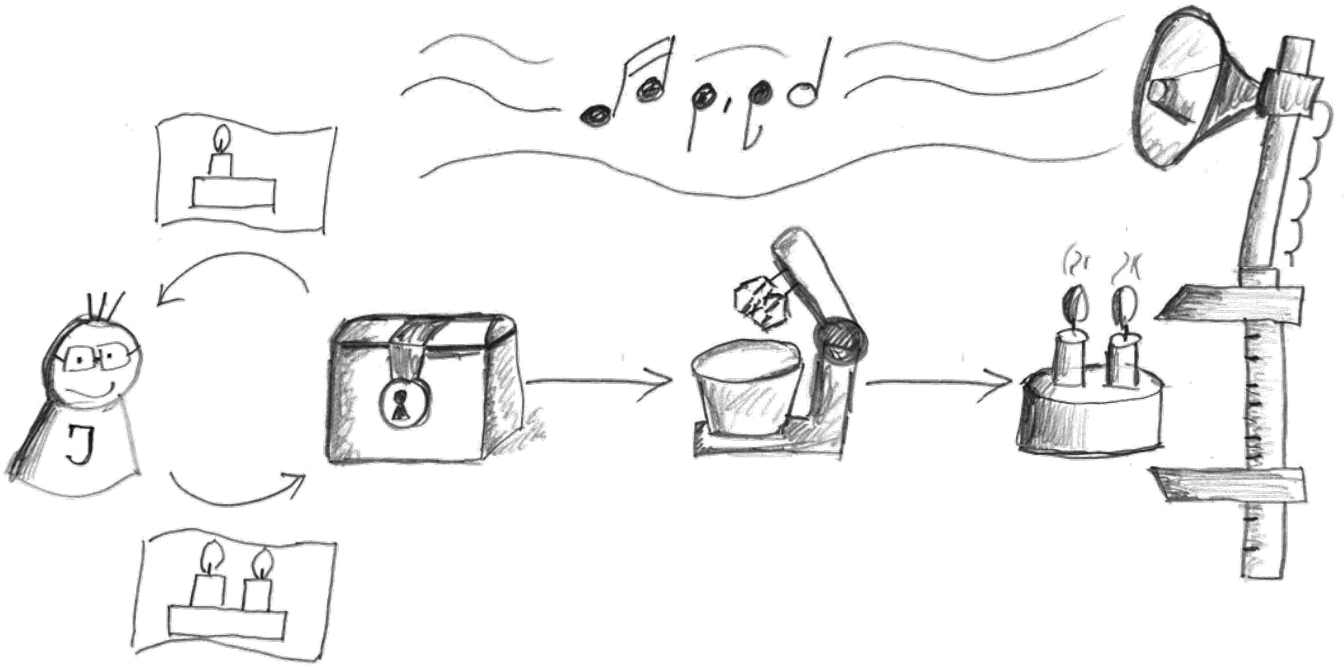
Java Architekt



Coach

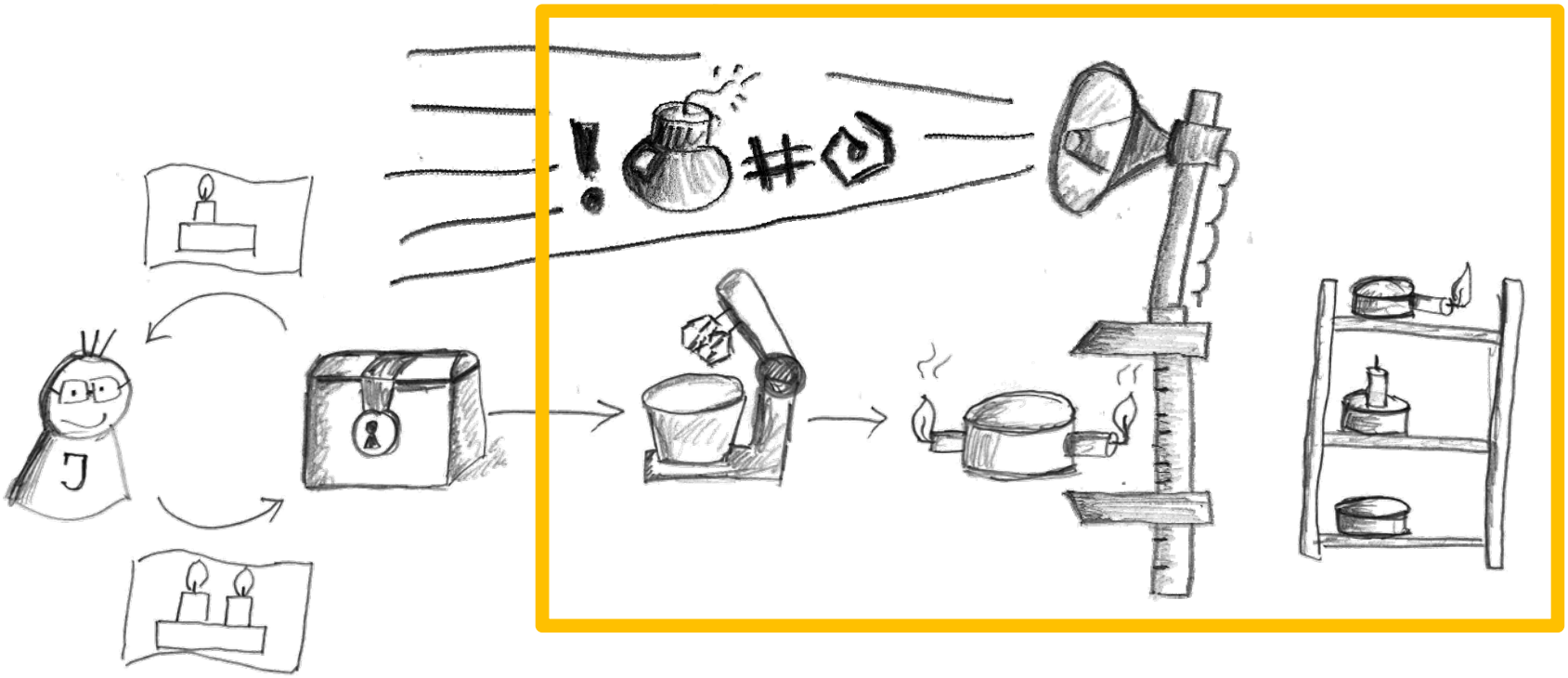
IT-Freiberufler

Was ist kontinuierliche Integration (CI)?

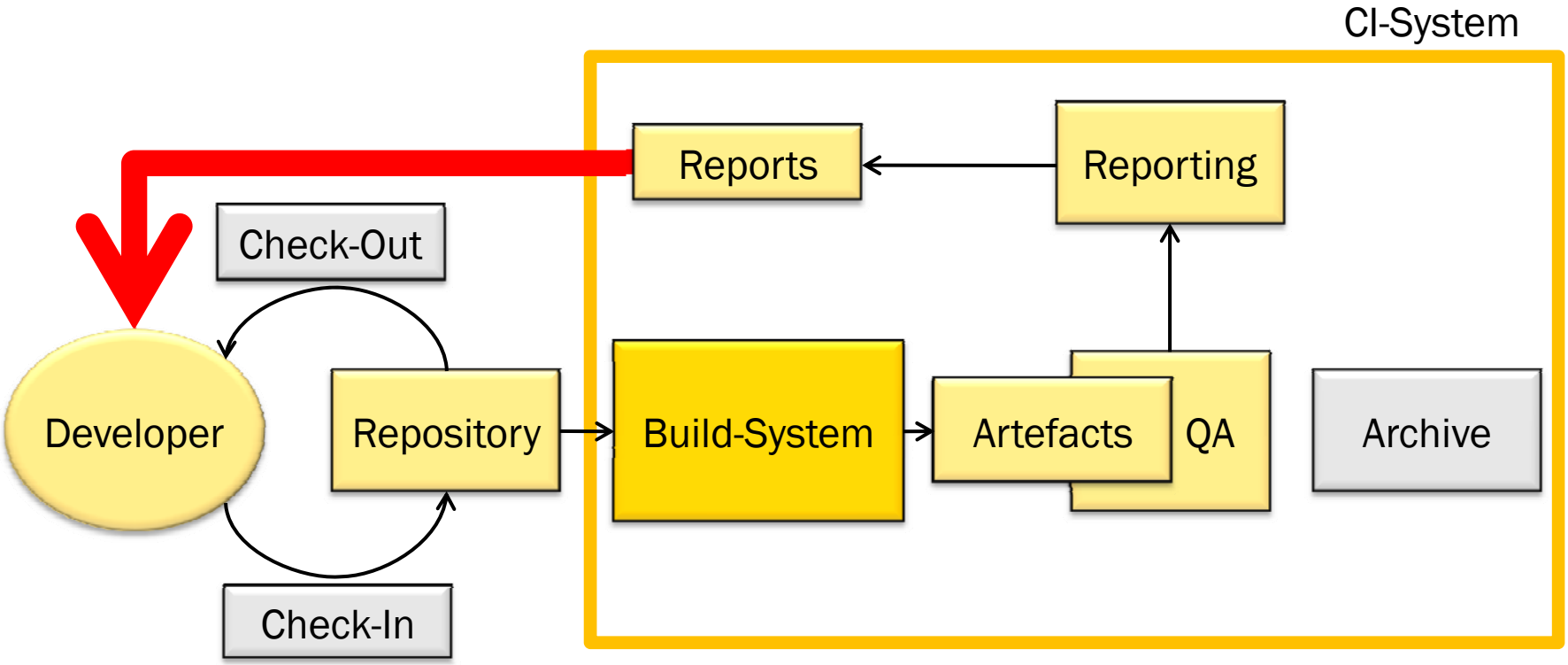


Was ist kontinuierliche Integration (CI)?

orchestriert durch CI-System



Was ist kontinuierliche Integration (CI)?



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

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

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

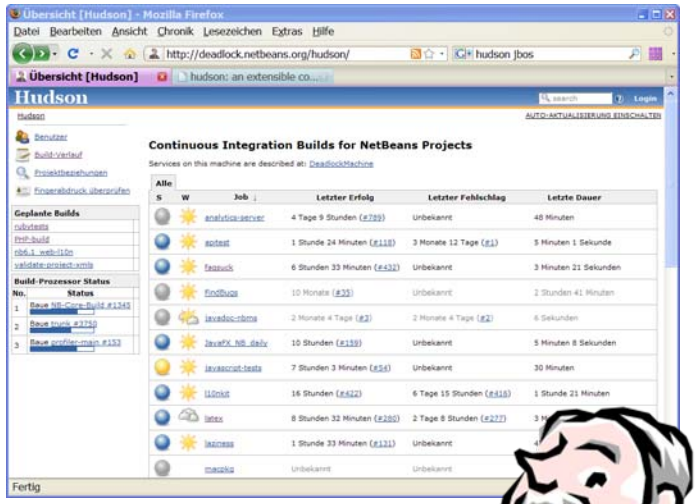
Rückmeldung mit Xtreme Feedback Devices (XFDs)




Photos: Kohsuke Kawaguchi, violet.net, Simon Wiest, Hartmut Lang

Hudson auf einen Blick

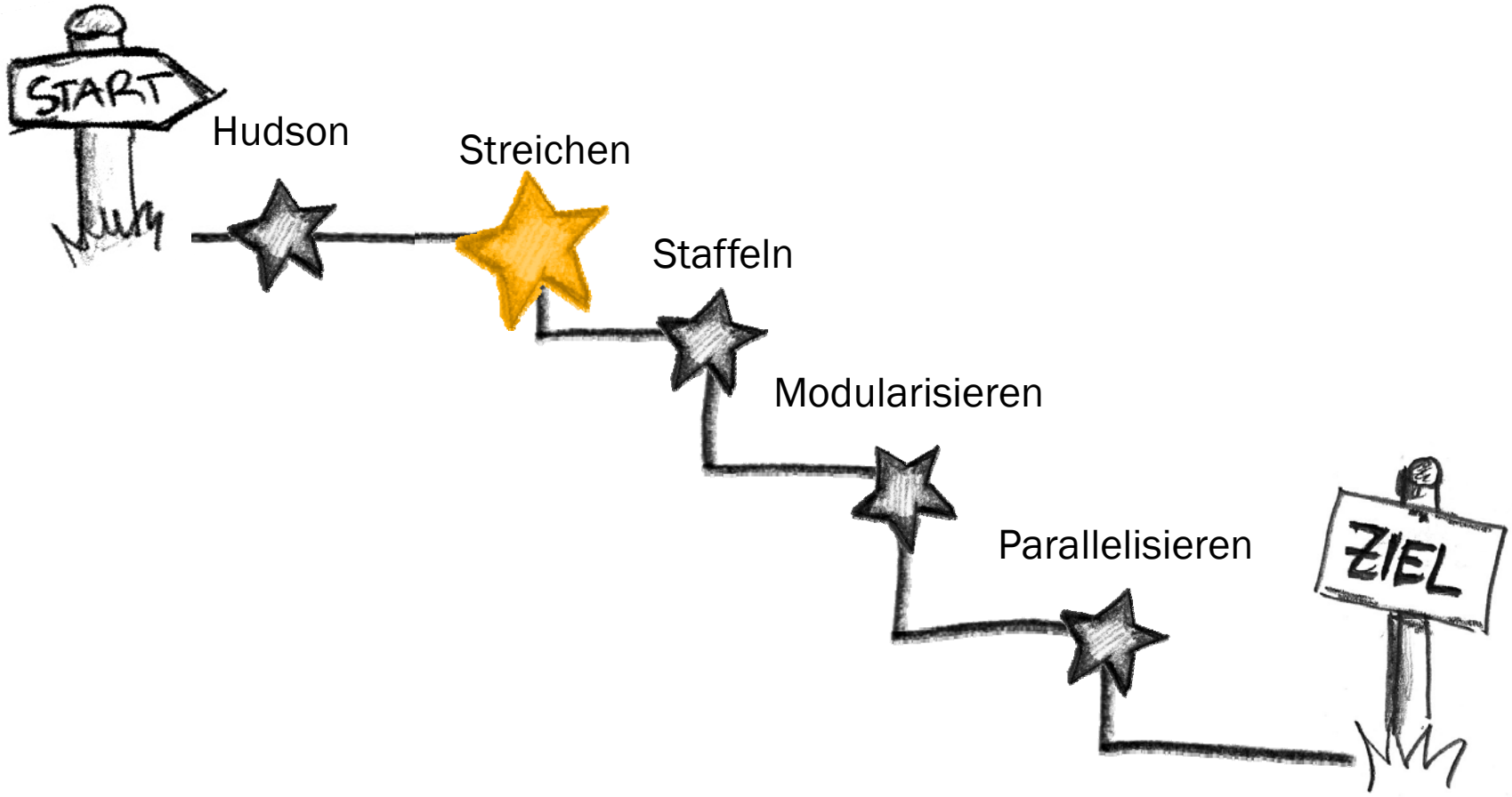
- Java-basierte Web-Anwendung
- Initiiert 2006/2007 von Kohsuke Kawaguchi (Sun)
- Teil des Projekts Glassfish
- Open Source (MIT Lizenz)
- 1,24 Mio. LOC (mit Plugins)
- Zur Zeit 180+ Plug-Ins
- 130+ Beitragende



Wer verwendet Hudson (und darf es zugeben)?

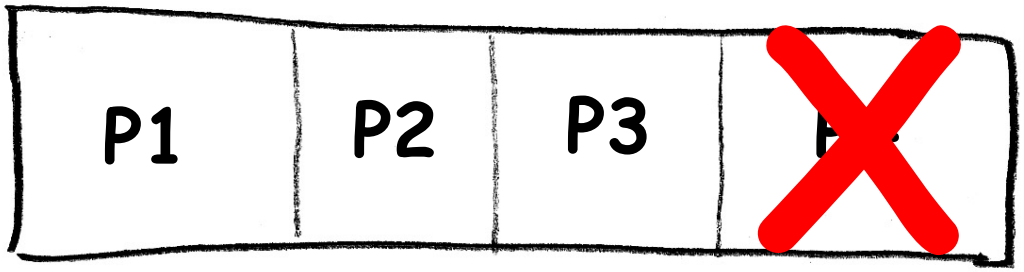
Quelle: Kohsuke Kawaguchi, wiki.hudson-ci.org//x/EYQ5Ag

Agenda


START
Hudson
Streichen
Staffeln
Modularisieren
Parallelisieren
ZIEL

Streichen: Was kann entfallen?

vorher



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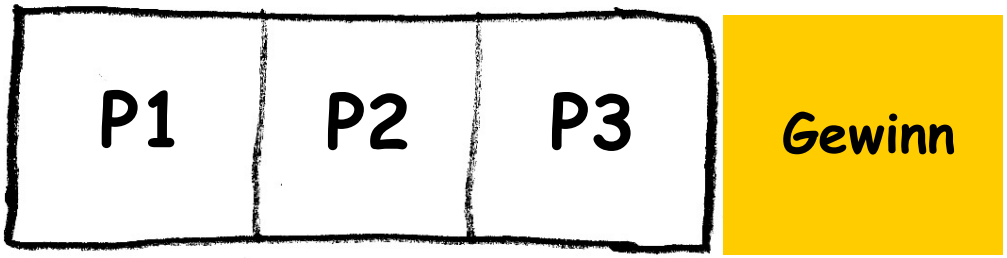
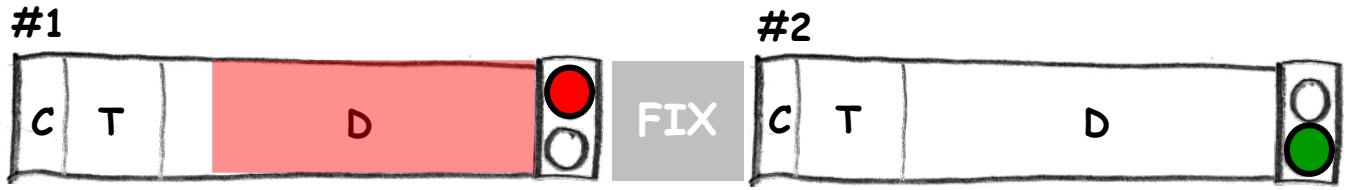


Streichen: Beispiel

vorher



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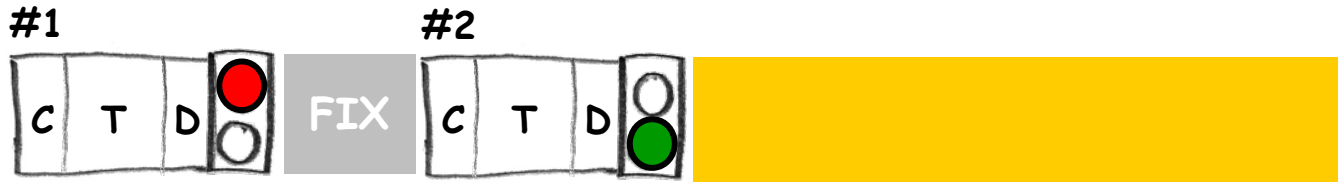
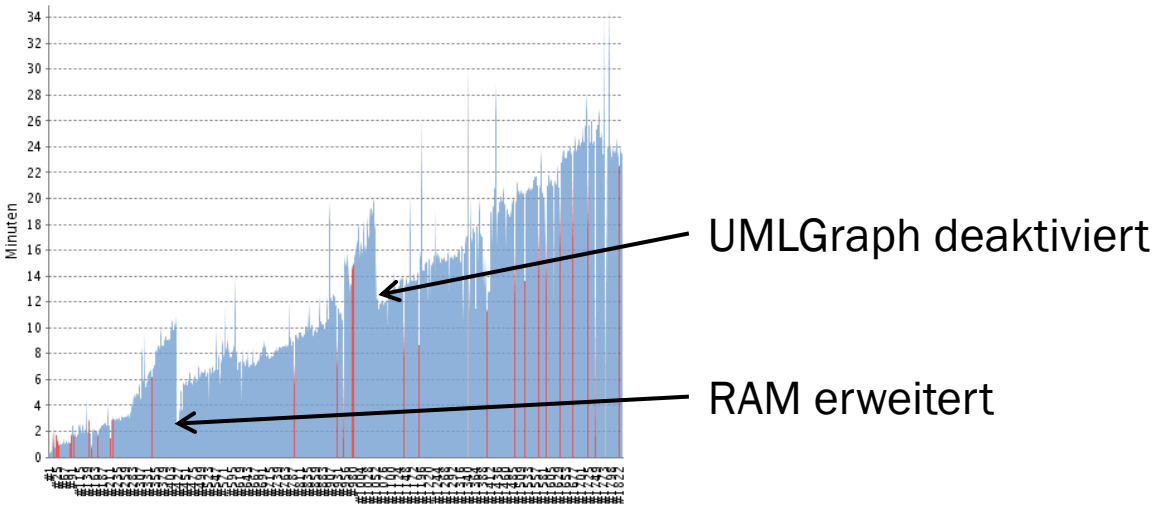


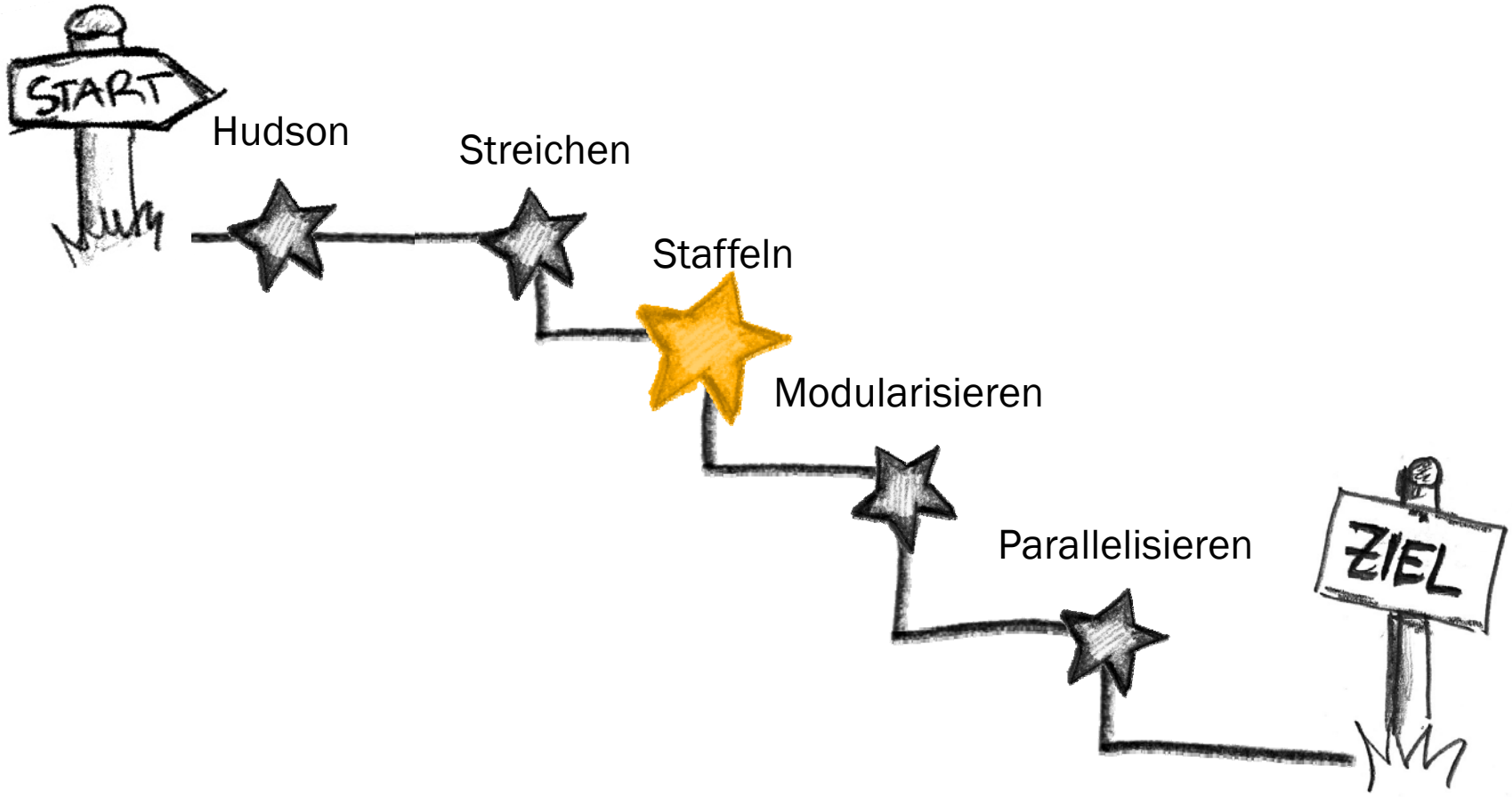
Streichen: Wie unterstützt hier Hudson?

- Trends über Projektverlauf, z.B. Buildzeit



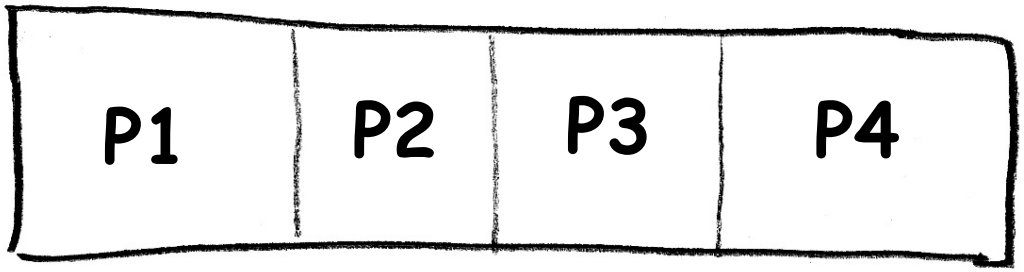
- Intuitive Ad-Hoc-Analyse in Web-Oberfläche

Agenda


START
Hudson
Streichen
Staffeln
Modularisieren
Parallelisieren
ZIEL

Staffeln: Das Wichtigste zuerst!

vorher



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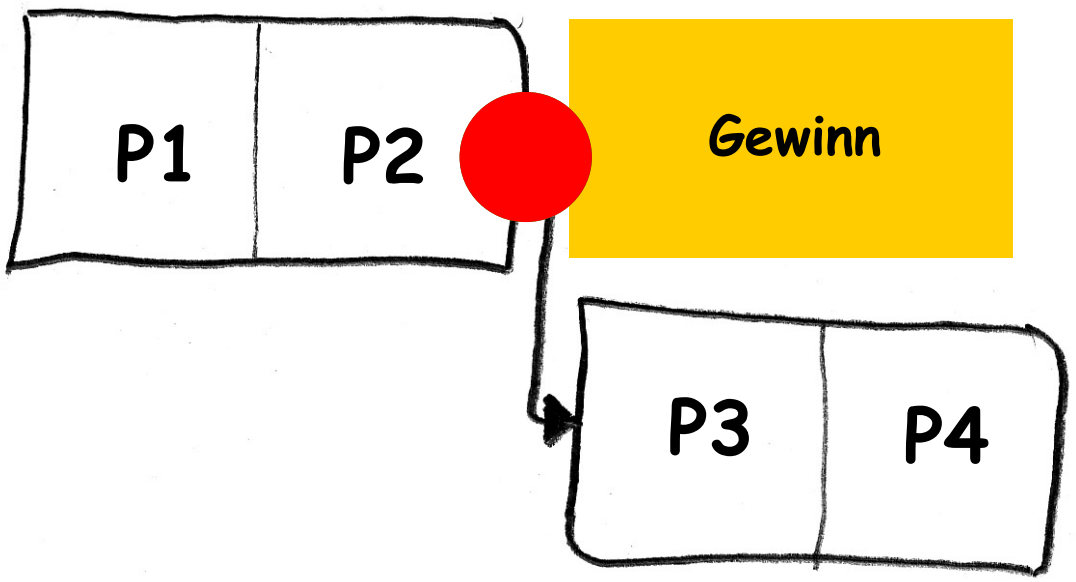
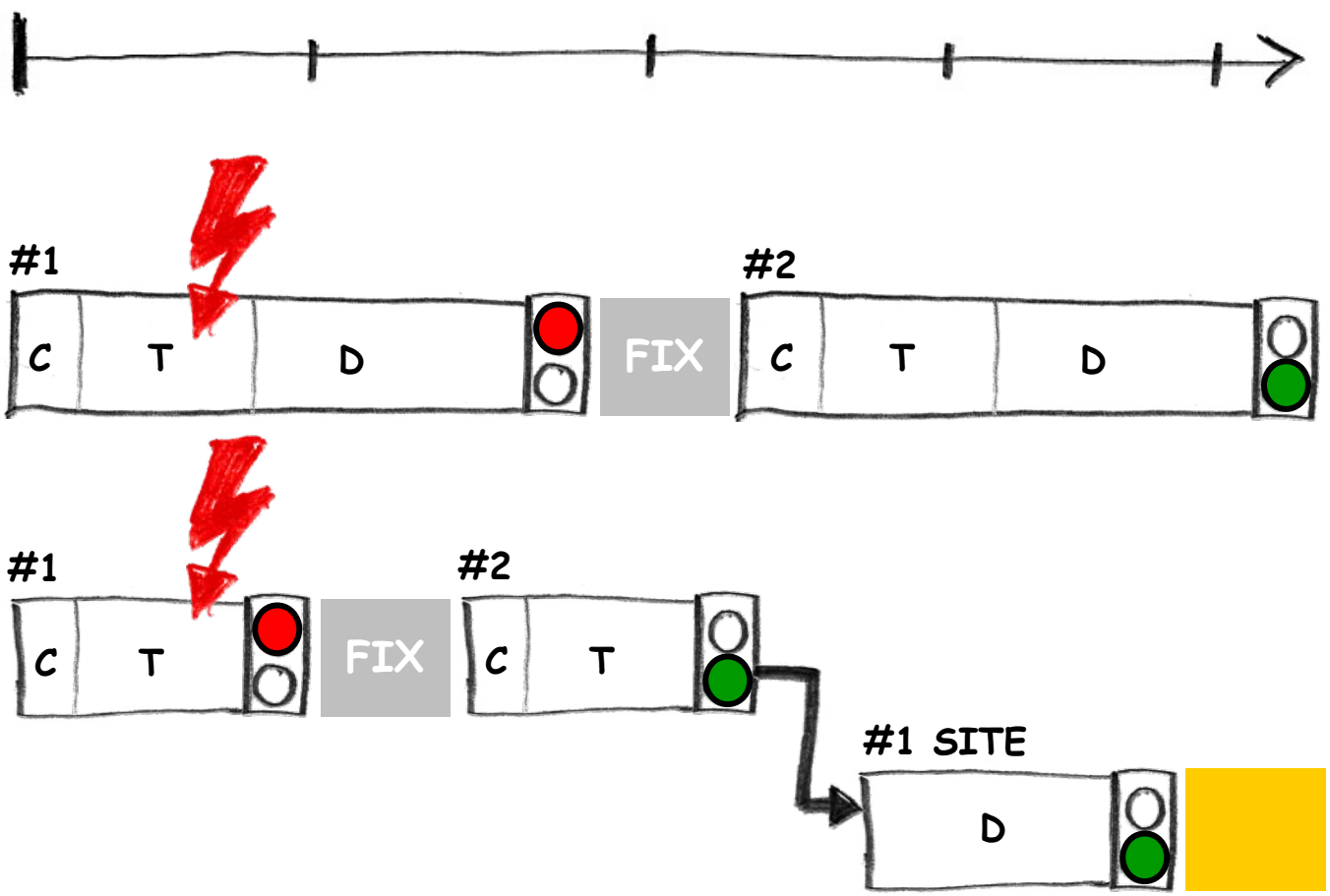


Staffeln: Beispiel

vorher

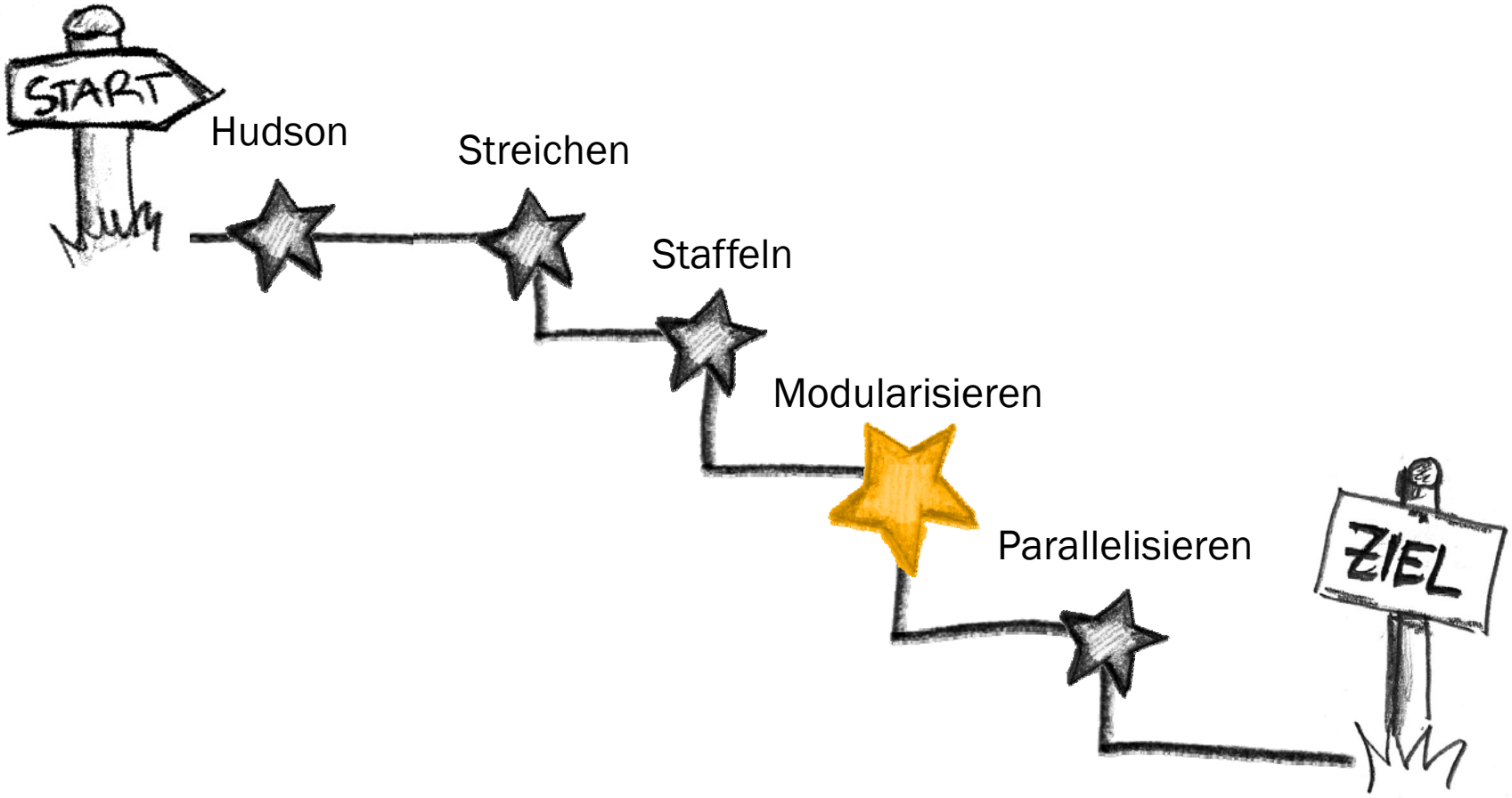
nachher



Staffeln: Wie unterstützt hier Hudson?

- Projektbeziehungen (vor-/nachgelagerte Projekte)
- Speicherung von Fingerabdrücken
- Nachvollziehbarkeit des Buildprozesses über verknüpfte Projekte hinweg

Agenda


START
Hudson
Streichen
Staffeln
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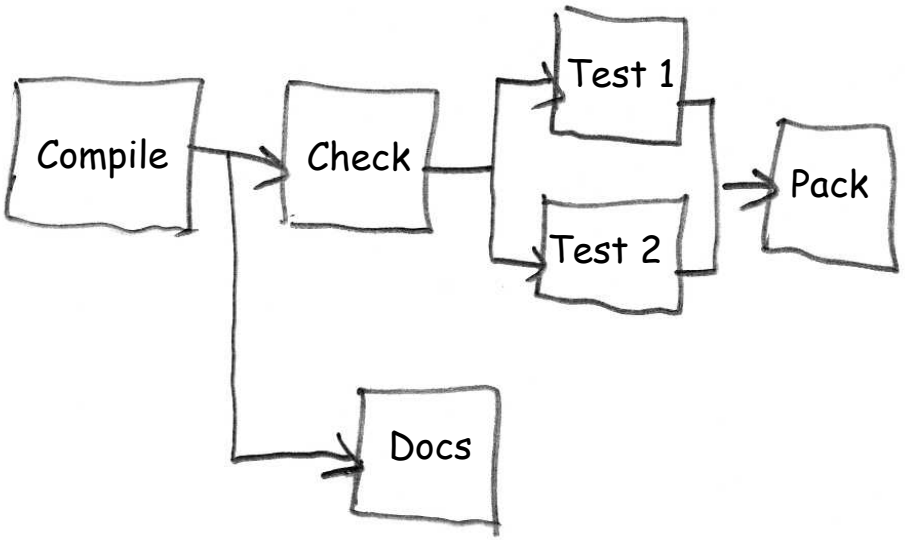
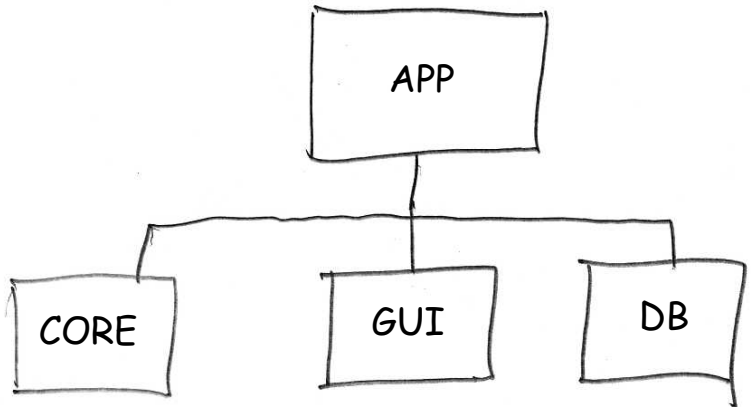
Parallelisieren
ZIEL

Die nächste Ebene: Wir betrachten Module statt Phasen.



Abhängigkeiten zwischen **(Build-)Phasen**

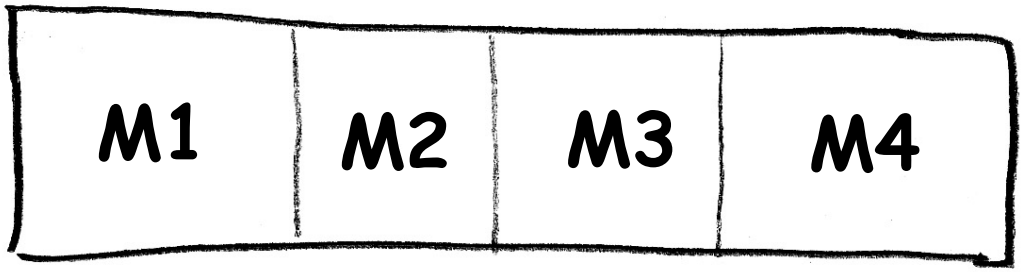


Abhängigkeiten zwischen **Modulen**

Modularisieren: Was lässt sich wiederverwenden?

#1

vorher



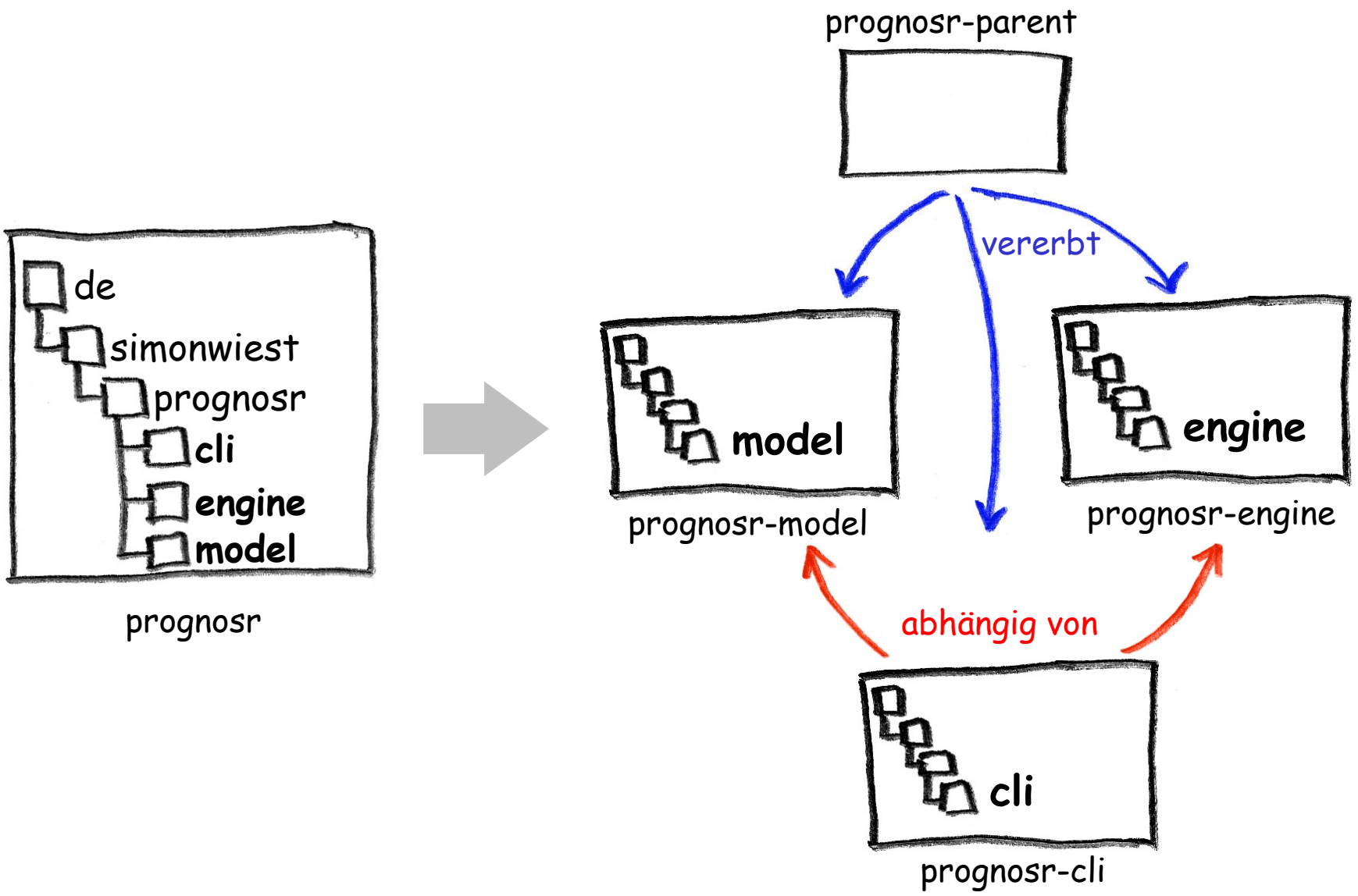
wiederverwenden

#2

nachher

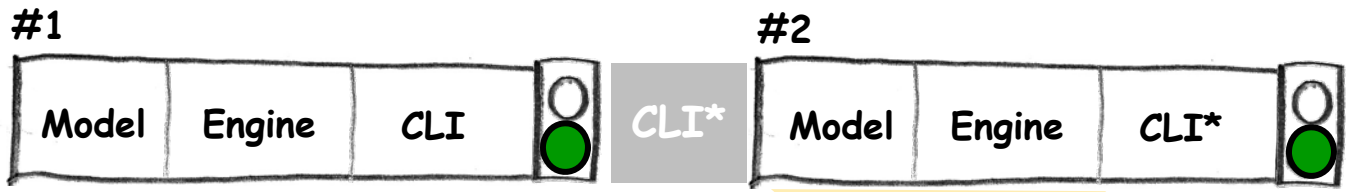
neu bauen

Modularisieren: Das Projektlayout wird verändert.

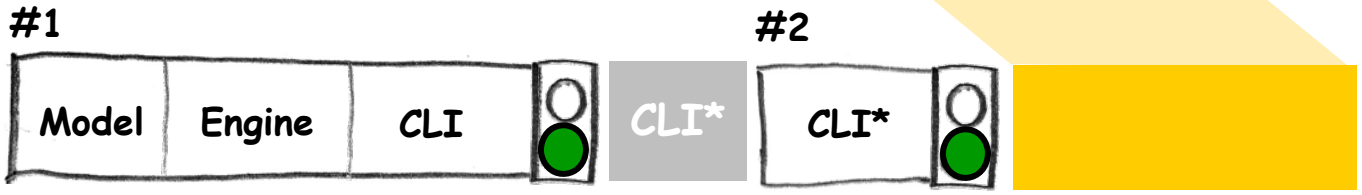


Modularisieren: Beispiel

vorher



nachher

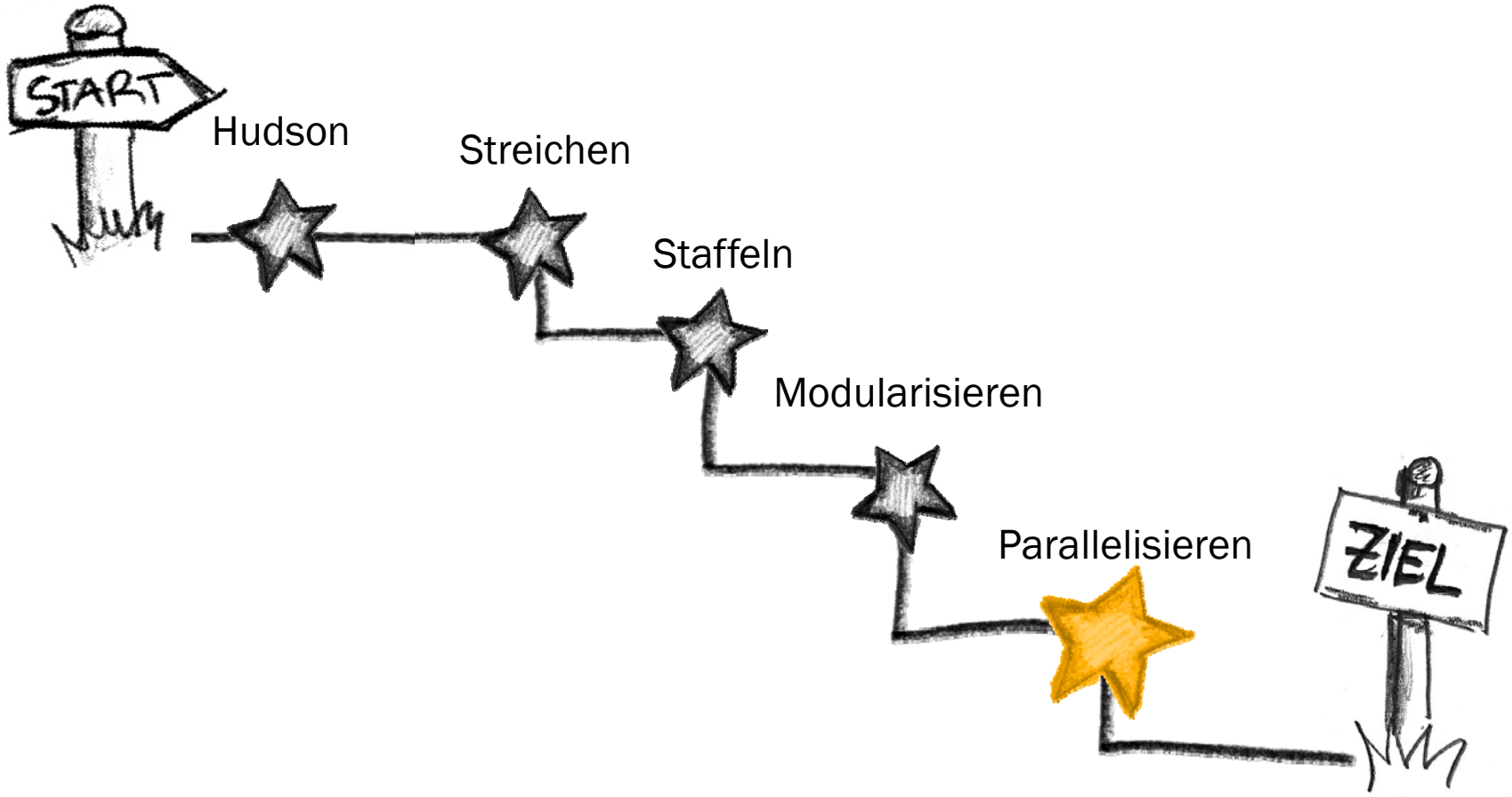


Voraussetzung: Artefakte müssen archiviert werden, z.B. in Maven Repository.

Modularisieren: Wie unterstützt hier Hudson?

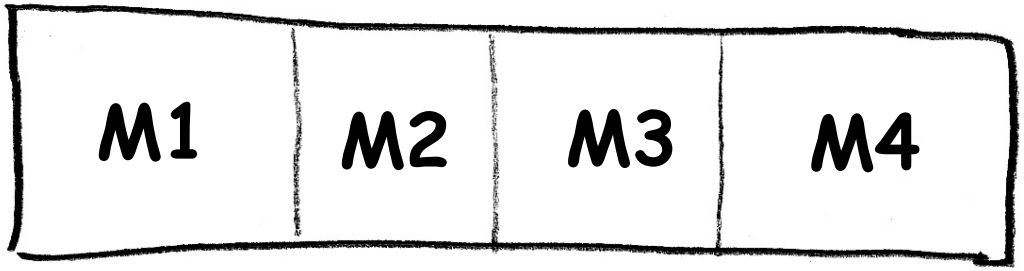
- Direkte Unterstützung des Maven-Modulkonzeptes
- Verwendungsnachweis der Build-Ergebnisse
- Filterung der angezeigten Projekte über reguläre Ausdrücke in Ansichten

Agenda


START
Hudson
Streichen
Staffeln
Modularisieren
Parallelisieren
ZIEL

Parallelisieren: Was lässt sich gleichzeitig bauen?

vorher



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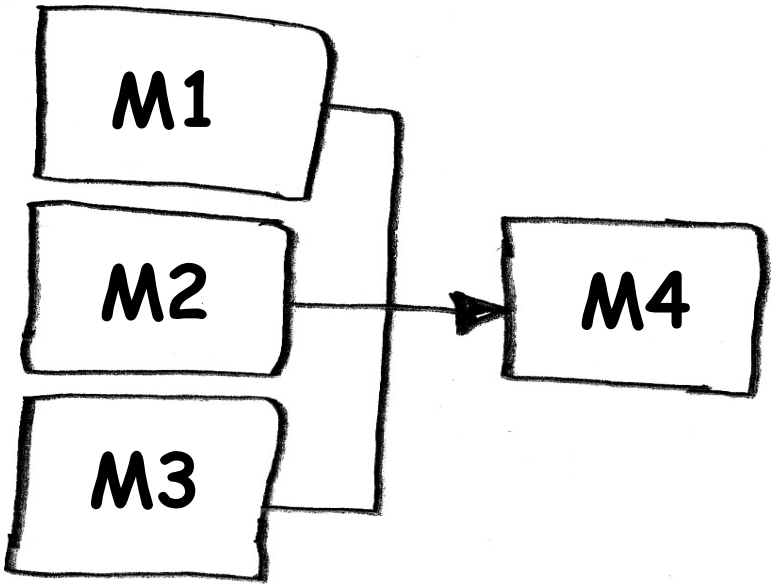

Parallelisieren: Beispiel

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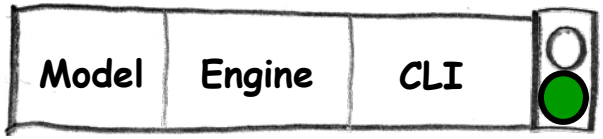

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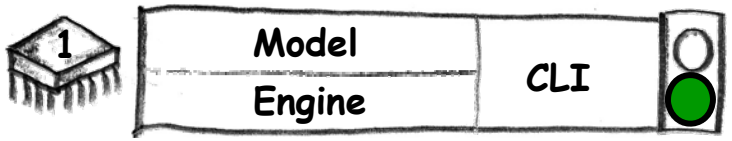
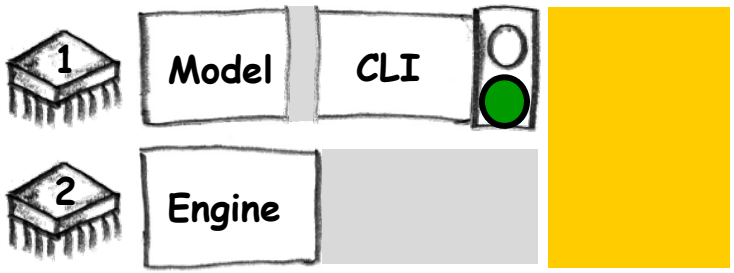
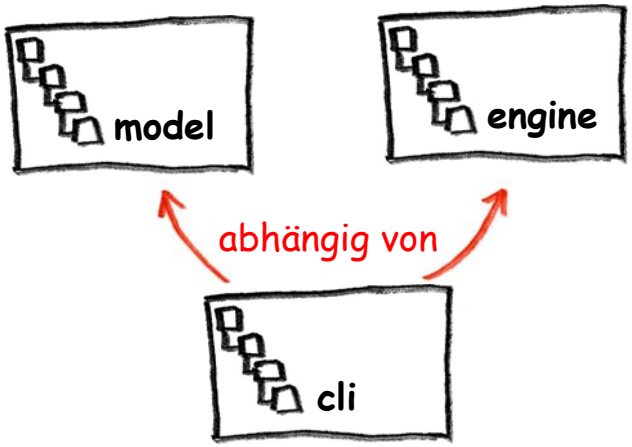
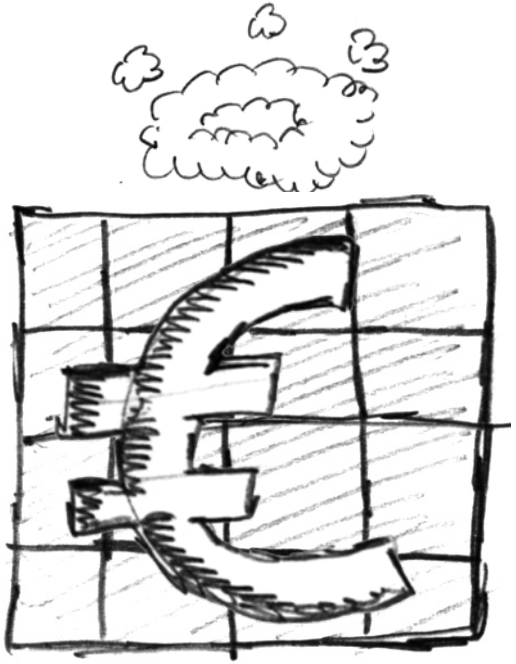


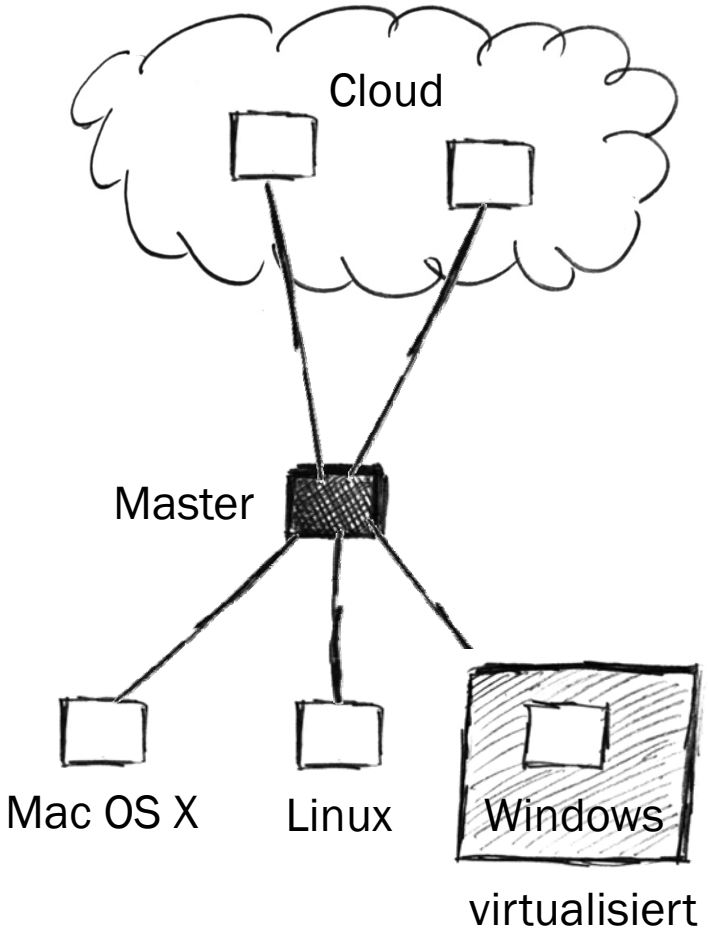




Parallelisieren: Verteilte Builds sind meist wirtschaftlicher.



lokale Builds

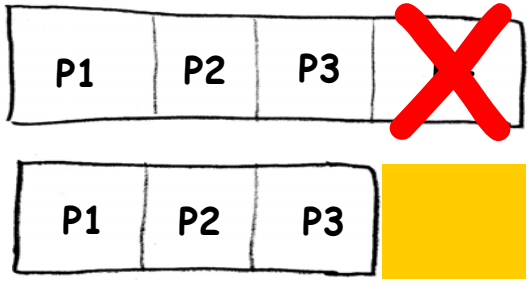


verteilte Builds

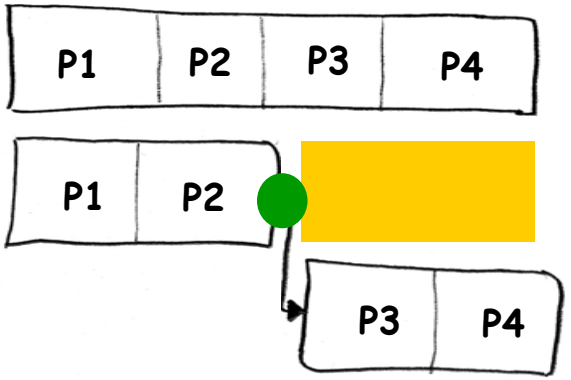
Parallelisieren: Wie unterstützt hier Hudson?

- Master-/Slave-Architektur
- Einfache Konfiguration von Knoten
- Automatischer Start/Stopp von Slave-Knoten
- Zusammenfasste Darstellung der Ergebnisse verteilter Builds
- Breite Unterstützung von Betriebssystemen und Startmechanismen

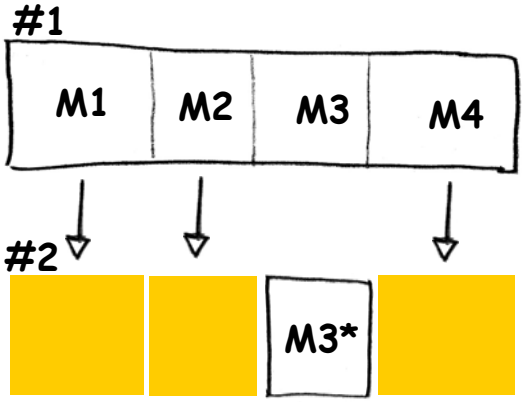
Die vier Strategien zusammengefasst:



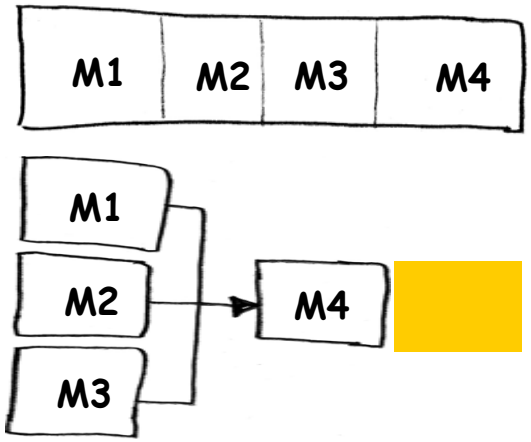
Streichen



Staffeln

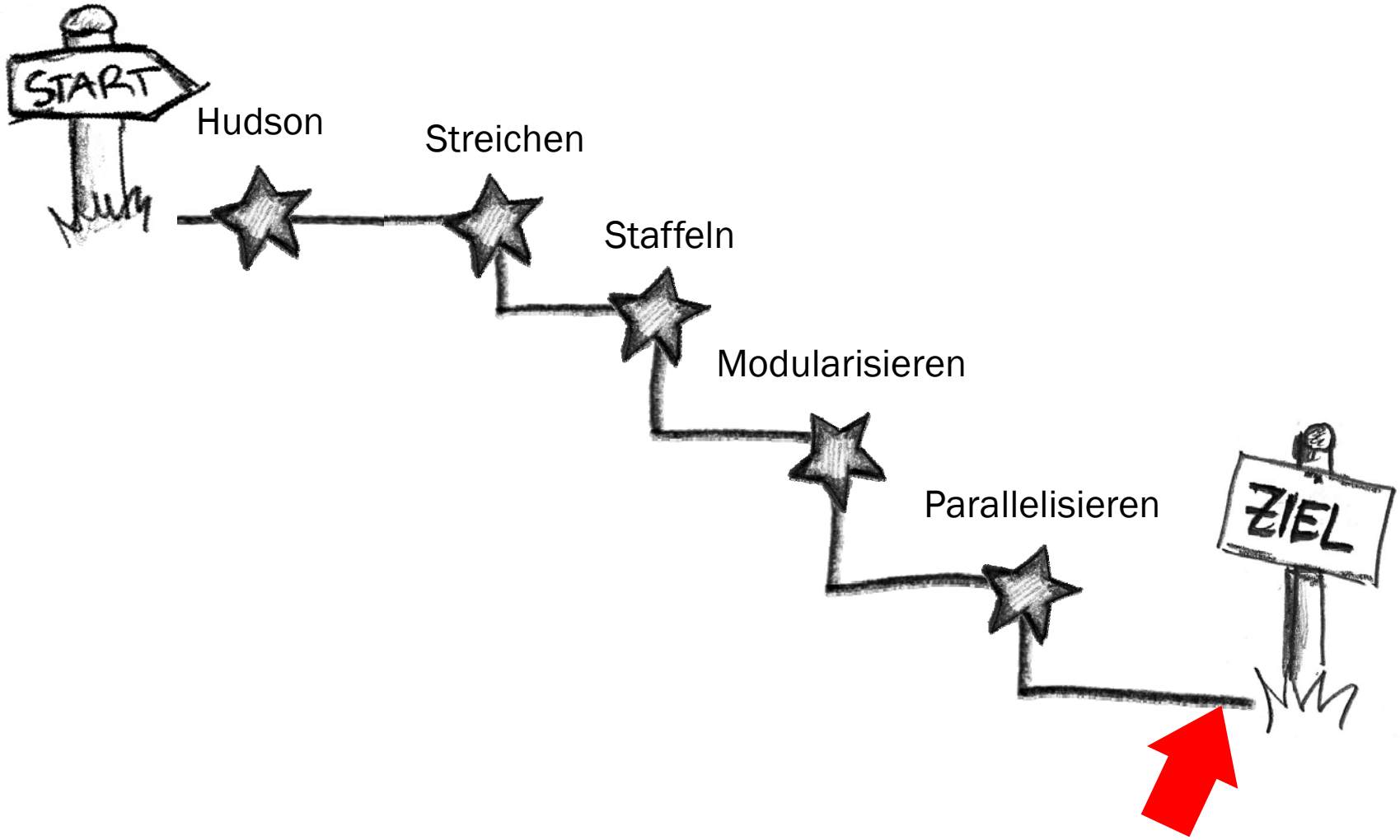


Modularisieren



Parallelisieren

Agenda


START
Hudson
Streichen
Staffeln
Modularisieren
Parallelisieren
ZIEL

HERUNTERLADEN

EINSETZEN

WEITERSAGEN

MITMACHEN

DR.WIEST
SOFTWARETECHNIK

hudson.dev.java.net

Vielen Dank fürs Zuhören.

Dr. Simon Wiest

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72810 Gomaringen

www.simonwiest.de

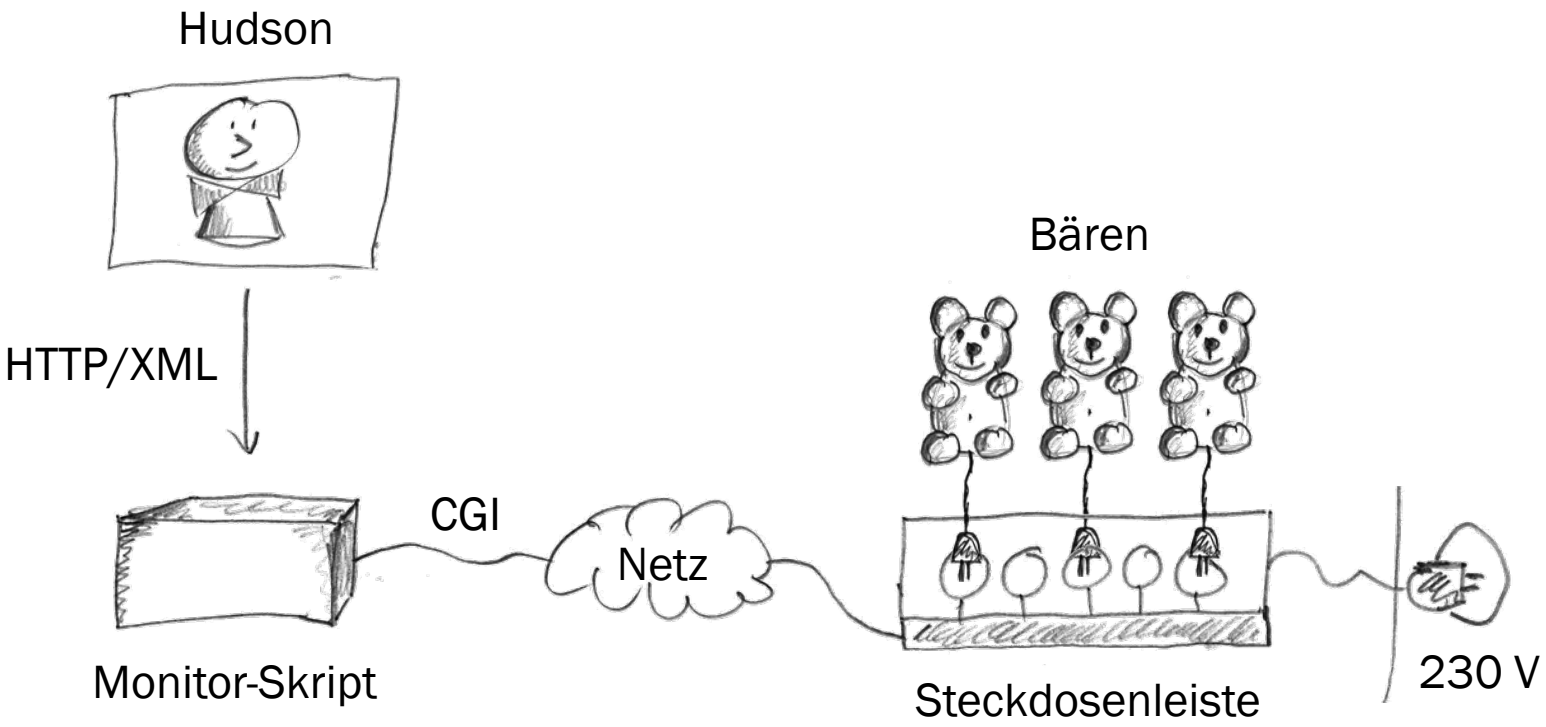
BACKUP

Empfohlene Nachlese

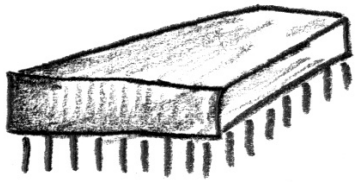
- Hudson
  - Projektseite. hudson.dev.java.net
  - JBoss Hudson CI Server. hudson.jboss.org/hudson
  - Interview mit Hudson-Initiator Kohsuke Kawaguchi
    blogs.sun.com/glassfishpodcast (Episode #007)
- Continuous Integration
  - White Paper von Martin Fowler. www.martinfowler.com
  - CI Feature Matrix. confluence.public.thoughtworks.org
  - P.M. Duvall: Continuous Integration. 2007.
- Projektautomatisierung (allgemein)
  - M. Hüttermann: Agile Java-Entwicklung in der Praxis. 2007.
  - G. Popp: Konfigurationsmanagement mit SVN, Maven, Redmine. 2009.
  - J. F. Smart: Java Power Tools. 2008.

Wie funktionieren die Bären?

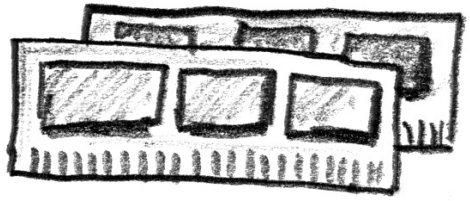
Mehr dazu im Hudson Wiki
wiki.hudson-ci.org//x/AQA1AQ



Bonus-Folie: Hardware aufrüsten lohnt.



CPU



Hauptspeicher

Festplatte

Netzwerk

Quelle: „Schneide Blog“ der Softwareschneiderei GmbH, http://schneide.wordpress.com

Cloud: Verteilung, Virtualisierung und Rechenzeit auf Abruf