

Jenkins User Conference, Palo Alto



@jenkinsconf

Branching + CI = <3
(things to consider)

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@shelajev



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WHO MAKES THIS
PRESENTATION POSSIBLE



My setup



Jenkins



mercurial

***ma*ven**

Why we CI

Bugs are found and fixed sooner

Project health is visible and measurable

Validates assumptions: env, functional, integration, usability

Reduces time to market

Workflow

checkout => branch => dev => ... => dev => commit => push =>
update master => pull branch + **merge** => commit => push

Problem



Omer van Kloeten

@omervk



Did you know? The collective noun for a group of programmers is a merge-conflict.

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2:34 PM - 26 Sep 13

Problem

CI wants you to integrate often
Feature branch wants to be isolated

Problem

CI wants you to integrate often

Feature branch wants to be isolated

Waiting until feature is complete reduces CI benefits

Workarounds

Make all 15000 engineers of yours push to default

Workflow

checkout => dev => commit => pull + **tiny merge** => push

Workarounds

Make all 15000 engineers of yours push to master
Feature flags

Workarounds

Make all 15000 engineers of yours push to master
Feature toggles

Branch by abstraction

+ decoupled components

No dependencies

Simple case

Project has several branches

We want branches to be integratable

Merges are problem

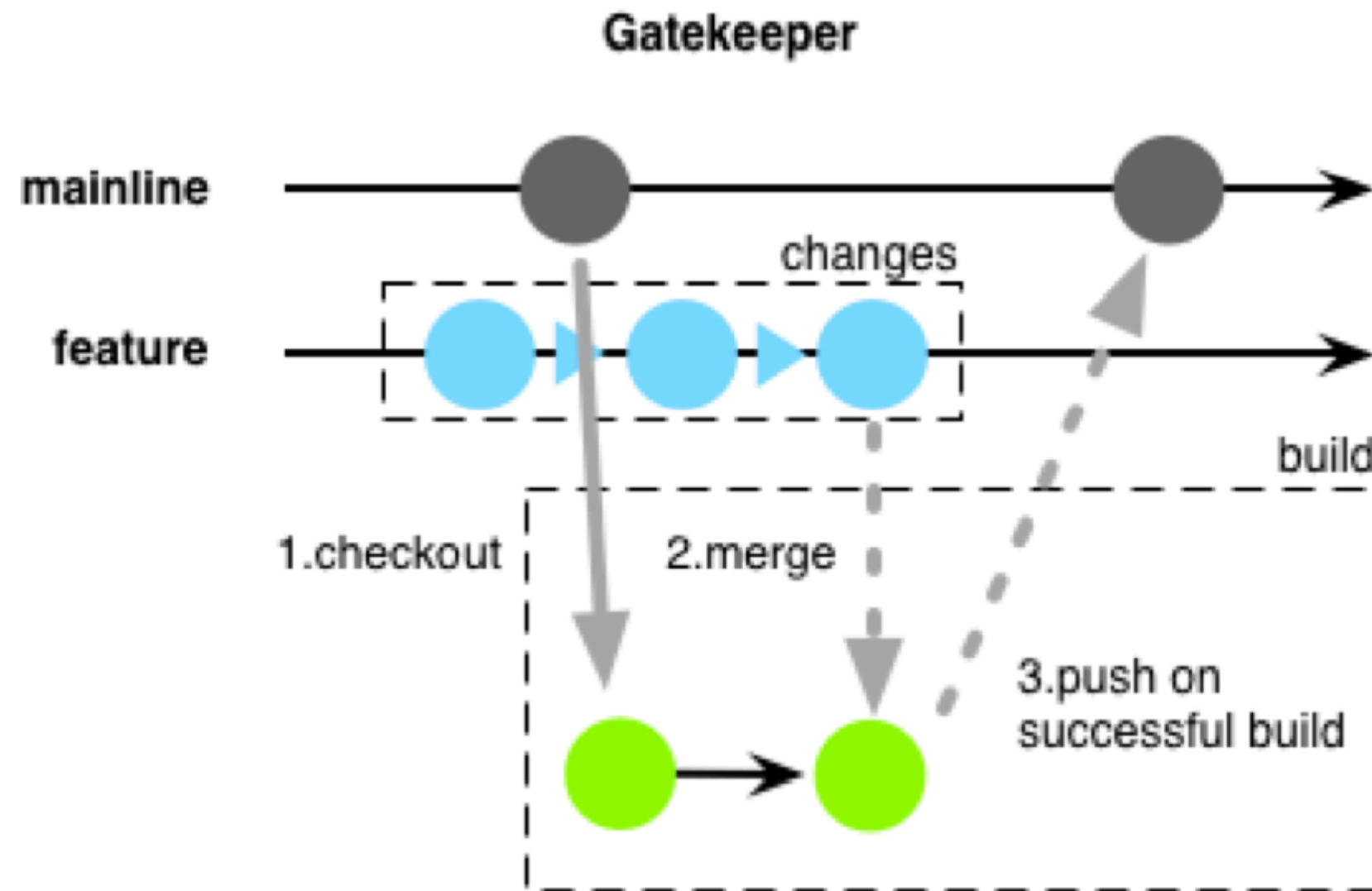
Multi-branch plugin

Multi-branch project

Children jobs

Run tests on all the branches

Bamboo plan branches



Branch updater:
default => branch **before**
Gatekeeper:
branch => default **after**

Jenkins-autojobs



Georgi Valkov
gvalkov

📍 Plovdiv, Bulgaria

🕒 Joined on Jan 27, 2010

9
followers

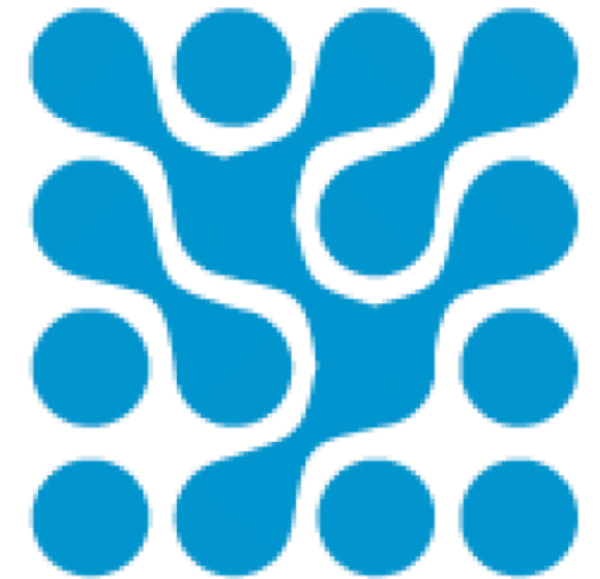
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Jenkins-build-per-branch plugin

- Jobs templates
 - whatever you do on master
- Copying job
 - configures copy of template per branch
 - cleans up closed branches



cbouton
entagen

📍 Newburyport, MA

🌐 <http://www.entagen.com>

🕒 Joined on Nov 26, 2011

14 public repos **3** members

Good old scripts

```
#!/bin/sh
# This script will update the Drupal core and modules.
# It will also update the database and clear the cache.
# It will also update the modules and features.
# It will also update the theme.
# It will also update the database.
# It will also update the cache.

# Set the directory to drupal root
cd /var/www/html

# Check drupal status
drush status

# Disable these things to make sure they are never enabled.
drush --yes pm-disable seven
drush --yes pm-disable bartik

# Enable some modules that must be enabled.
drush --yes pm-enable features
drush --yes pm-enable strongarm

# Enable project features.
drush --yes pm-enable ok_base
drush --yes pm-enable ok_event
drush --yes pm-enable ok_i18n
drush --yes pm-enable ok_menus
drush --yes pm-enable ok_news
drush --yes pm-enable ok_page
drush --yes pm-enable ok_search
drush --yes pm-enable ok_slideshow
drush --yes pm-enable ok_sidebar
drush --yes pm-enable ok_theme
drush --yes pm-enable ok_user
drush --yes pm-enable ok_wysiwyg

# Enable project theme.
drush --yes pm-enable ourprettytheme

# Update
drush --yes updb

# Disable unused modules and features.
drush --yes pm-disable features_override
drush --yes pm-uninstall features_override

# Remove an old content type and some fields.
drush --yes php-eval "node_type_delete('page');"
drush --yes php-eval "field_delete_field('field_news_tags');"
```

Mimic branch updater and gatekeeper

Works, but too manual

Feature Branch Notifier

Mercurial plugin add-on
Runs jobs on branches
Polls all branches



Tõnis Pool

Tartu

Member since May 2012


Continuous Integration & Feature Branches







Bachelor thesis



Tõnis Pool

University of Tartu

Feature Branch Notifier

 **Build History** [\(trend\)](#)

	#3	Apr 14, 2013 11:06:40 PM		feature - add persi...
	#2	Apr 14, 2013 11:06:00 PM		feature - improve Curren...
	#1	Apr 14, 2013 11:05:22 PM		

 [RSS for all](#)  [RSS for failures](#)

No dependencies - Jenkins flavor

Feature branch notifier handles branches and jobs
Branch updater and gatekeeper are scripted

One job run on all branches

Demo

Multiple dependencies

Merges are still a problem

Multiple dependencies

Merges are still a problem

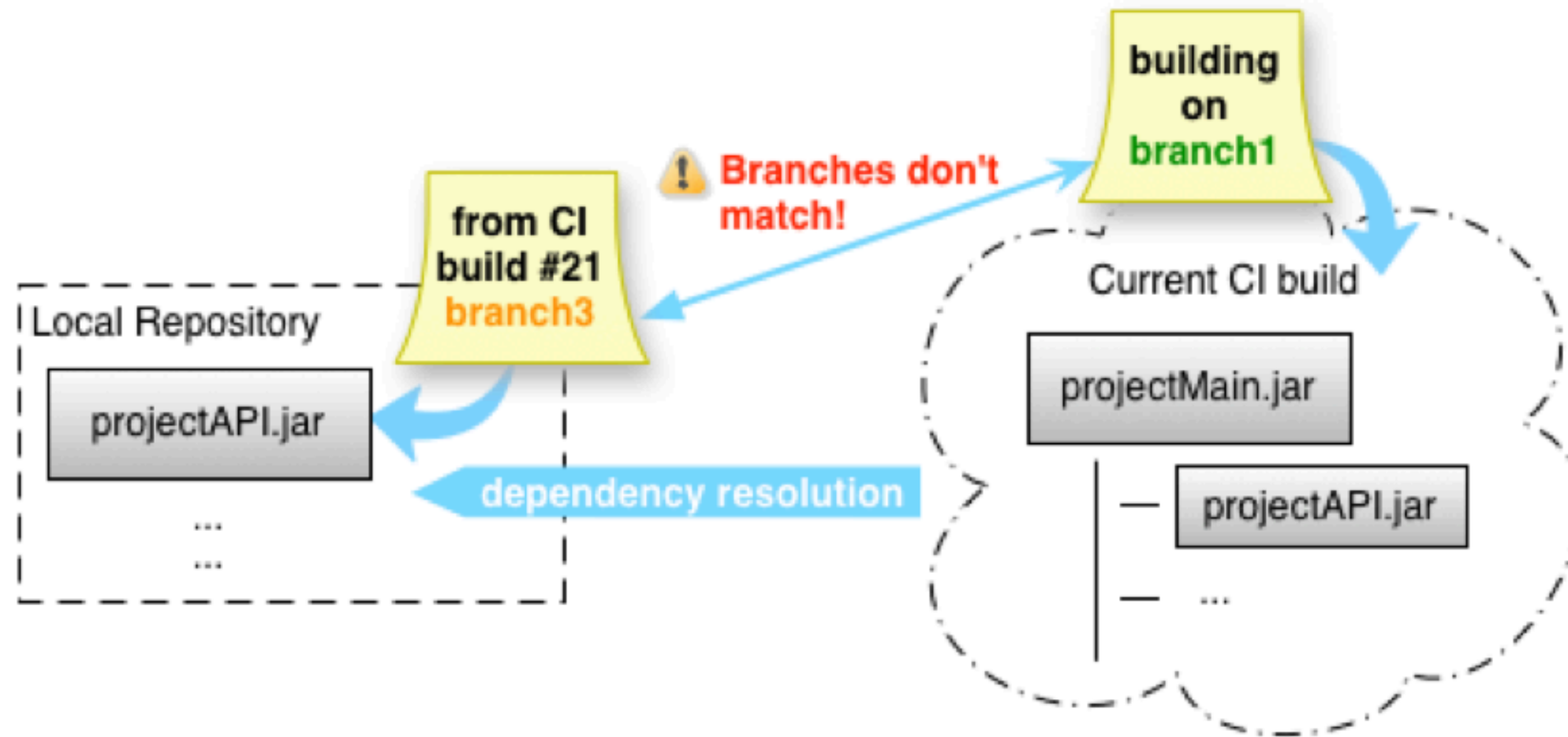
+

Artifact propagation

+

Distributed builds

Artifact propagation



Throttle concurrent builds plugin



Andrew Bayer
abayer

🕒 Joined on Aug 27, 2009

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Organizations



Limit number of builds running
simultaneously

Poor's man artifact propagation solution



Jenkins Multijob Plugin



Phases & jobs: sequential and parallel

Job	S	W	Last Success	Last Failure	Last Duration	Console
jenkins-multijob-inherent			N/A	N/A	N/A	
<i>creating-plugin</i>						
jenkins-multijob-plugin			N/A	N/A	N/A	
<i>packging-plugin</i>						
jenkins-multijob			N/A	N/A	N/A	

Getting it all together

Feature build notifier manages branches

Multijob plugin managed job dependencies

Throttle concurrent builds keep things from breaking

Scripted Branch Updater + Gatekeeper per multijob



Jenkins Multijob Plugin

Feature branch notifier is Multijob aware

Being directly downstream from Multijob propagates trigger

Branch tag is propagated through hierarchy

Demo


The devil is in details

Getting built archives from tests
Rerunning tests with the same archive

Build name setter plugin

Build Environment

Set Build Name 

Build Name 

Embed branch info in build name

CI + Branches = 

Semi-automatic solution



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THE PRESENTATION

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JRebel