



Jenkins World
2016

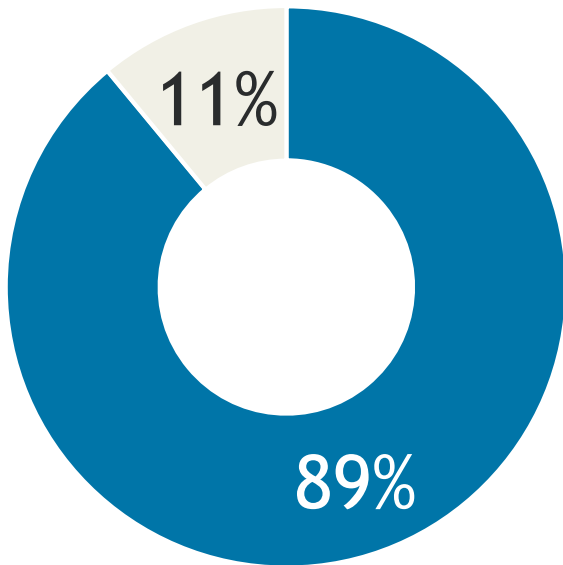
State of Jenkins 2016

Kohsuke Kawaguchi

Creator of Jenkins

CTO, CloudBees, Inc.

Has your company's use of Jenkins increased over the past year?



- Increased
- No Change
- Decreased

Is Jenkins mission critical?



Jenkins World
2016

2013 Survey

2015 Survey

83% → 92%

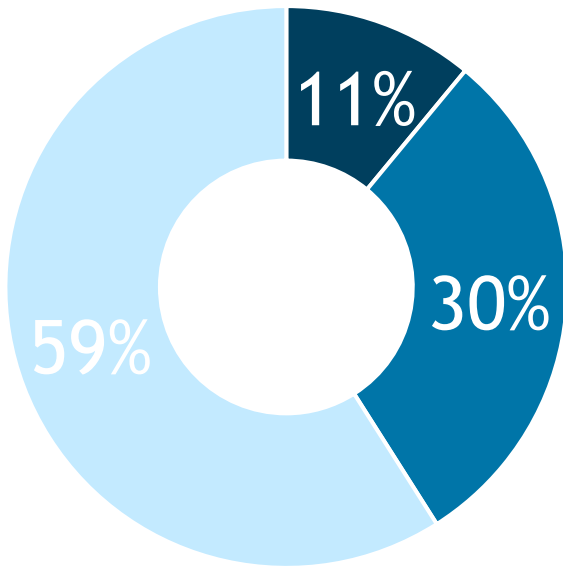
What types of tasks do you use Jenkins for?



Jenkins World
2016

	2013	2015
Build	95%	97%
Test	86%	90%
Deployment	48%	58%
Operations	15%	24%

What level of automation have you implemented in Jenkins?



- CD with fully automatic production deployment
- CD with manual deployment
- CI only



CI TOWN

The image shows a stylized map of a city with a grid of streets. A grey pipeline with blue dots runs diagonally from the bottom left to the top right. At the bottom left end of the pipeline is a dark circular opening. At the top right end, a cartoon man in a blue suit and red bow tie is walking away from the viewer, carrying a white box. Above him is a red sign that says 'CD TOWN'. Below the pipeline, a green road sign points towards the right and contains the text 'The fastest route to CD Town: The Pipeline Expressway'. At the bottom left of the image, the text 'Continuous Delivery is here and real' is written in large black letters, with 'JENKINS 20' in smaller red letters below it.

CD TOWN

The fastest route
to CD Town:
The Pipeline Expressway

Continuous Delivery is here and real

JENKINS 20

JENKINS

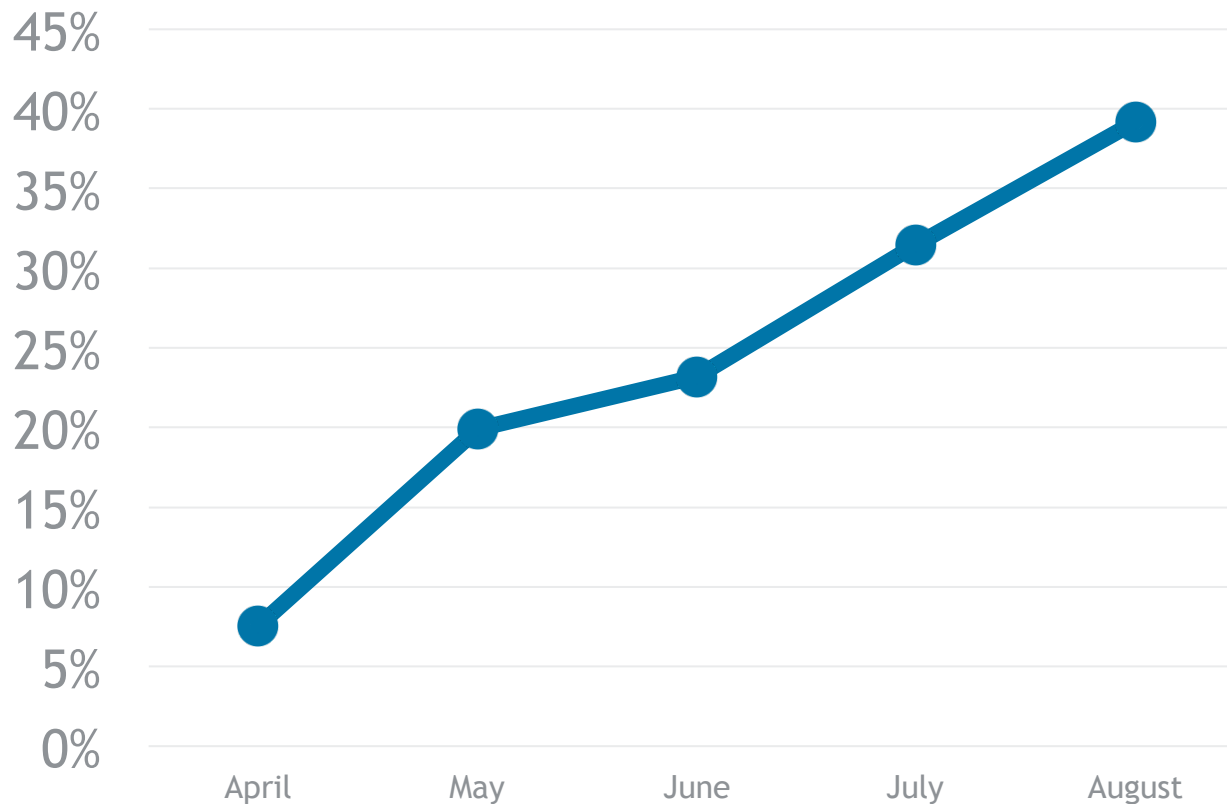


2

Adoption of Jenkins 2



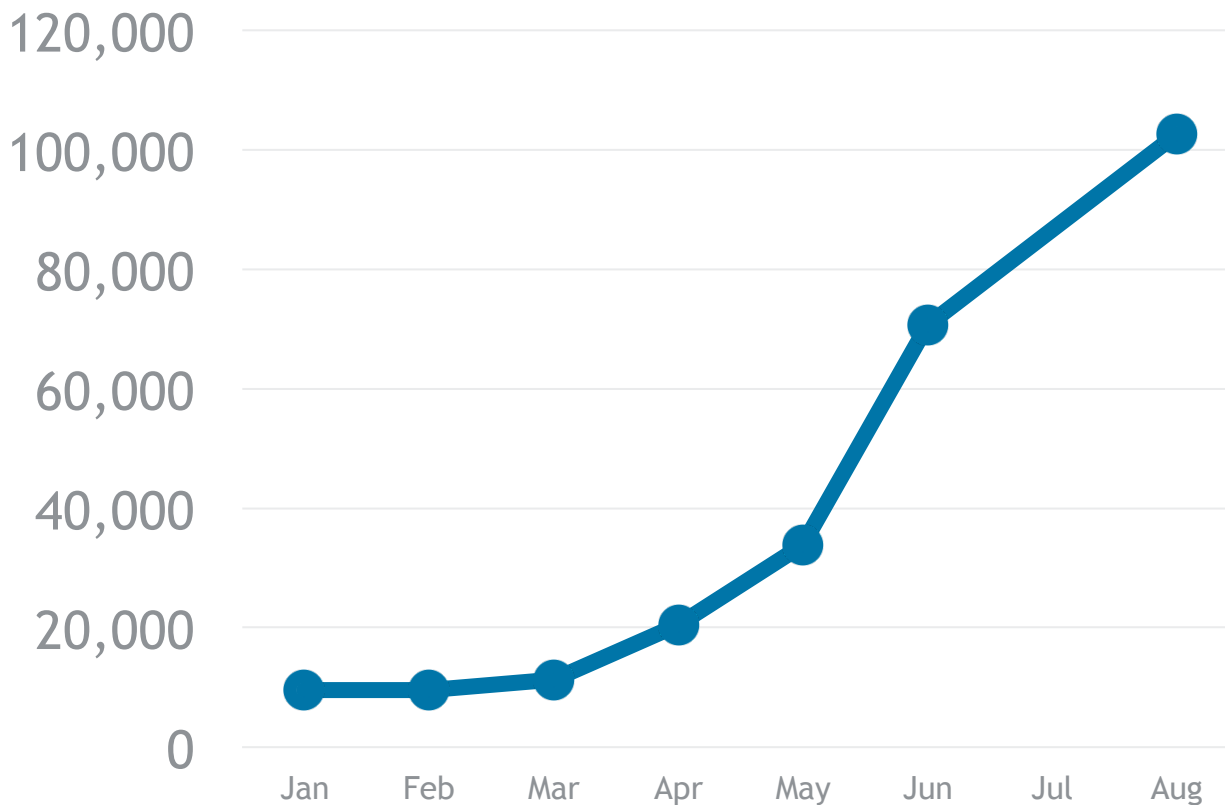
Jenkins World
2016



Pipeline Jobs



Jenkins World
2016



Better from the beginning



Jenkins World
2016

- 80% of use cases out of the box
- Guide users to best practice
- Start with recommended set of plugins

Customize Jenkins

Plugins extend Jenkins with additional features to support many different needs.

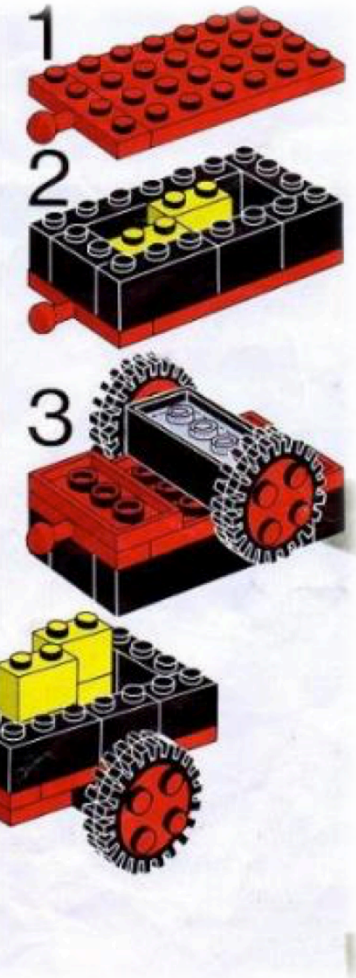
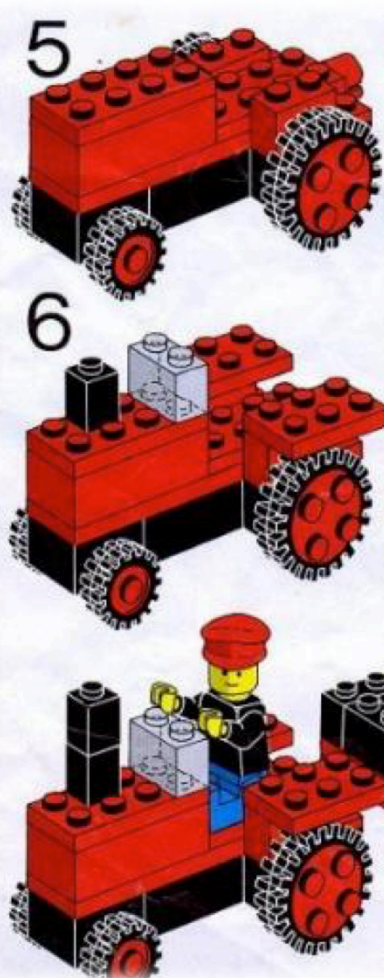
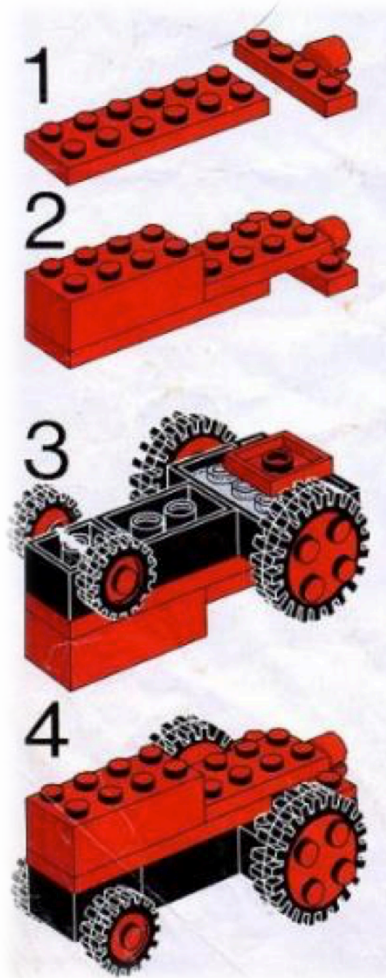
Install suggested plugins

Install plugins the Jenkins community finds most useful.

Select plugins to install

Select and install plugins most suitable for your needs.





Guide users to best practice



Jenkins World
2016

- ✓ Git
- ✓ Folder
- ✓ Pipeline
- ✓ Email ext
- ✓ Build timeout
- ✓ Credentials
- ✓ Timestampers
- ✓ ...





Pipeline makes Jenkins robust



Jenkins World
2016

- Tolerates a restart
- Tolerates plugin updates
- Tolerates loss of master/agent communication

Jenkinsfile



Jenkins World
2016

```
node('java8') {  
    // Checkout our source code  
    stage('Checkout') {  
        checkout scm  
    }  
    // Build our project  
    stage('Build') {  
        sh 'mvn clean install'  
    }  
    // Run our test target  
    stage('Test') {  
        sh './test.sh'  
        // Archive our artifacts  
        archiveArtifacts 'target/**/*.*jar'  
    }  
}
```



git

Definition in repository



Jenkins World
2016

- Bring transparency to changes
- Capture intent, not just outcome
- Help remove state from Jenkins

#1 Tell Jenkins about your GitHub Org



Jenkins, Inc.

A fictional company to demonstrate Jenkins capabilities

📍 Everywhere 🔗 <http://demo.jenkins-ci.org/>

 Repositories

 People 1

Filters ▾

🔍 Find a repository...

securitay

Java ★ 1 🍴 0

Microservice component: securitay

Updated Apr 1, 2016

borat

Java ★ 0 🍴 0

Microservice component: borat

Updated Apr 1, 2016

meta

Shell ★ 1 🍴 0

Description and documentation about the demo itself

Updated Mar 3, 2016

release-engineering

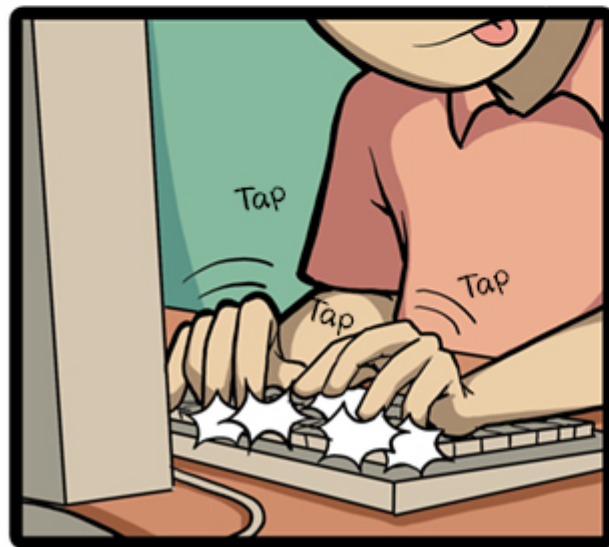
Groovy ★ 0 🍴 0

This is a release engineering territory

#2 Add Jenkinsfile



```
node('java8') {  
    // Checkout our source code  
    stage('Checkout') {  
        checkout scm  
    }  
    // Build our project  
    stage('Build') {  
        sh 'mvn clean install'  
    }  
    // Run our test target  
    stage('Test') {  
        sh './test.sh'  
        // Archive our artifacts  
        archiveArtifacts 'target/**/*.jar'  
    }  
}
```



#3 Sit & Watch



Jenkins, Inc.

Folder name: Jenkins,Inc.

Repositories

S

Name ↓



[borat](#)



[release-engineering](#)



[securitay](#)







#3 Sit & Watch



securitay

Branches

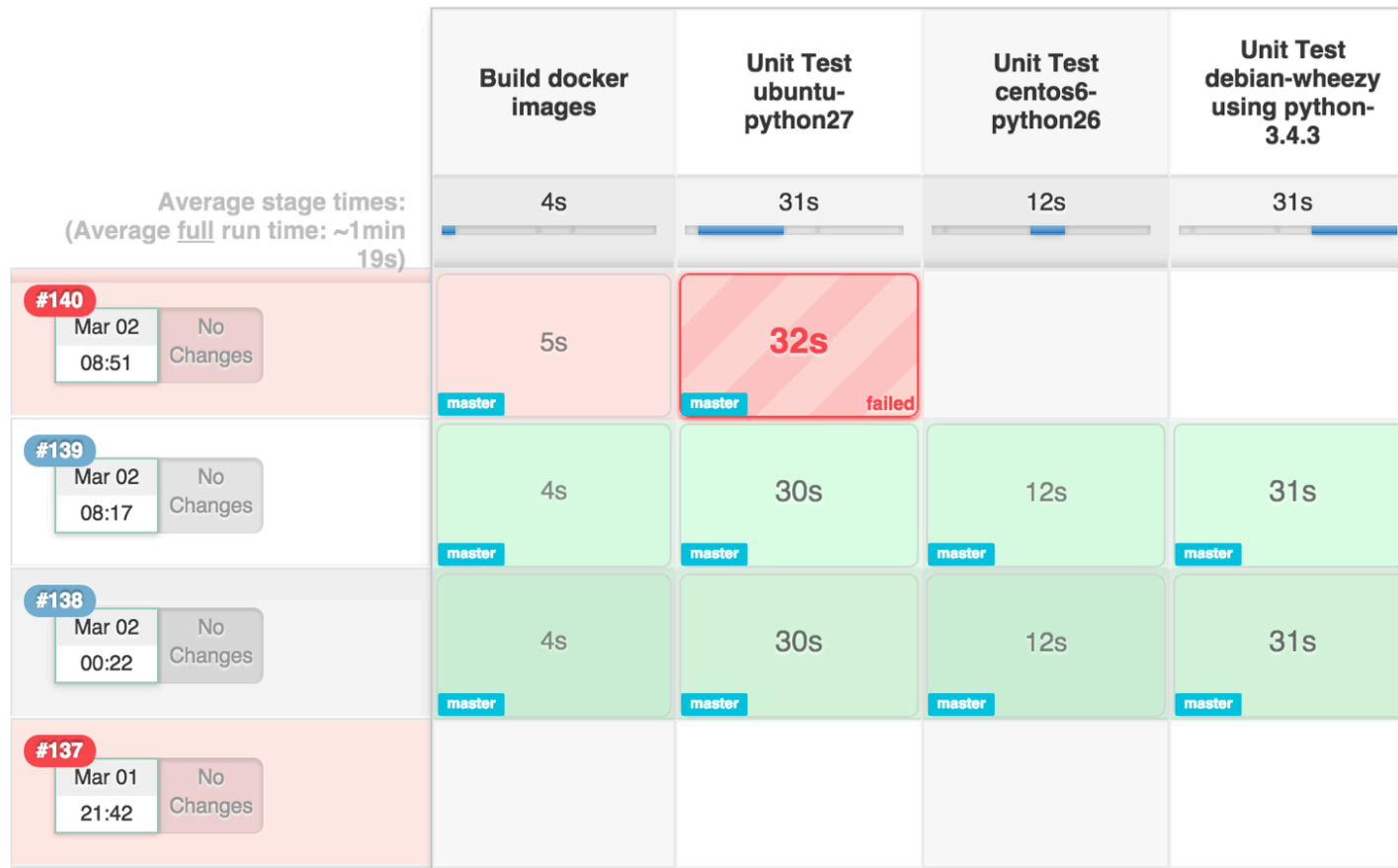
Pull Requests

S	W	Branch ↓	Last Success	Last Failure	Last Duration
		dev	4 mo 21 days - #207	5 mo 19 days - #1	33 sec
		prod	4 mo 21 days - #414	N/A	37 sec
		staging	4 mo 21 days - #208	N/A	48 sec

Pipeline Visualization



Jenkins World
2016



fabric8 = Kubernetes + Jenkins Pipeline



Jenkins World
2016

- fabric8 is microservices platform based on Docker, Kubernetes, and Jenkins Pipeline



fabric8



Jenkins

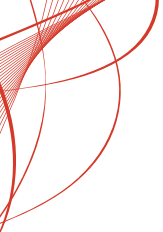


redhat

JENKINS



2

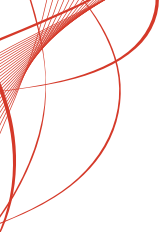




Jenkins World

2016

#JenkinsWorld



2016 : One Big Party For Everyone



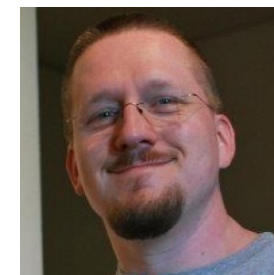
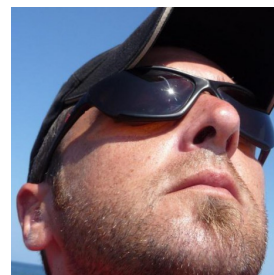
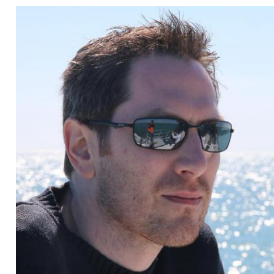
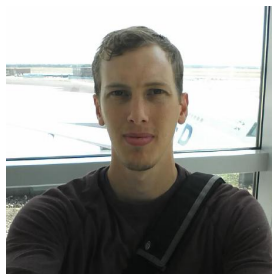
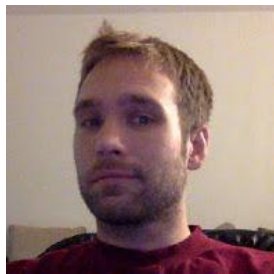
Jenkins World
2016



© CommitStrip

- Contributors
- Users
- Companies

Contributors from everywhere are here



Google Summer of Code



Jenkins World
2016

- 9 detailed project ideas
- 15 mentors, 3 admins
- Dozens of applications
- 5 accepted



One of them is here!



Jenkins World
2016



- **External workspace manager for Pipeline**
 - Student: Alex Somai
 - Mentors: Martin d'Anjou & Oleg Nenashev

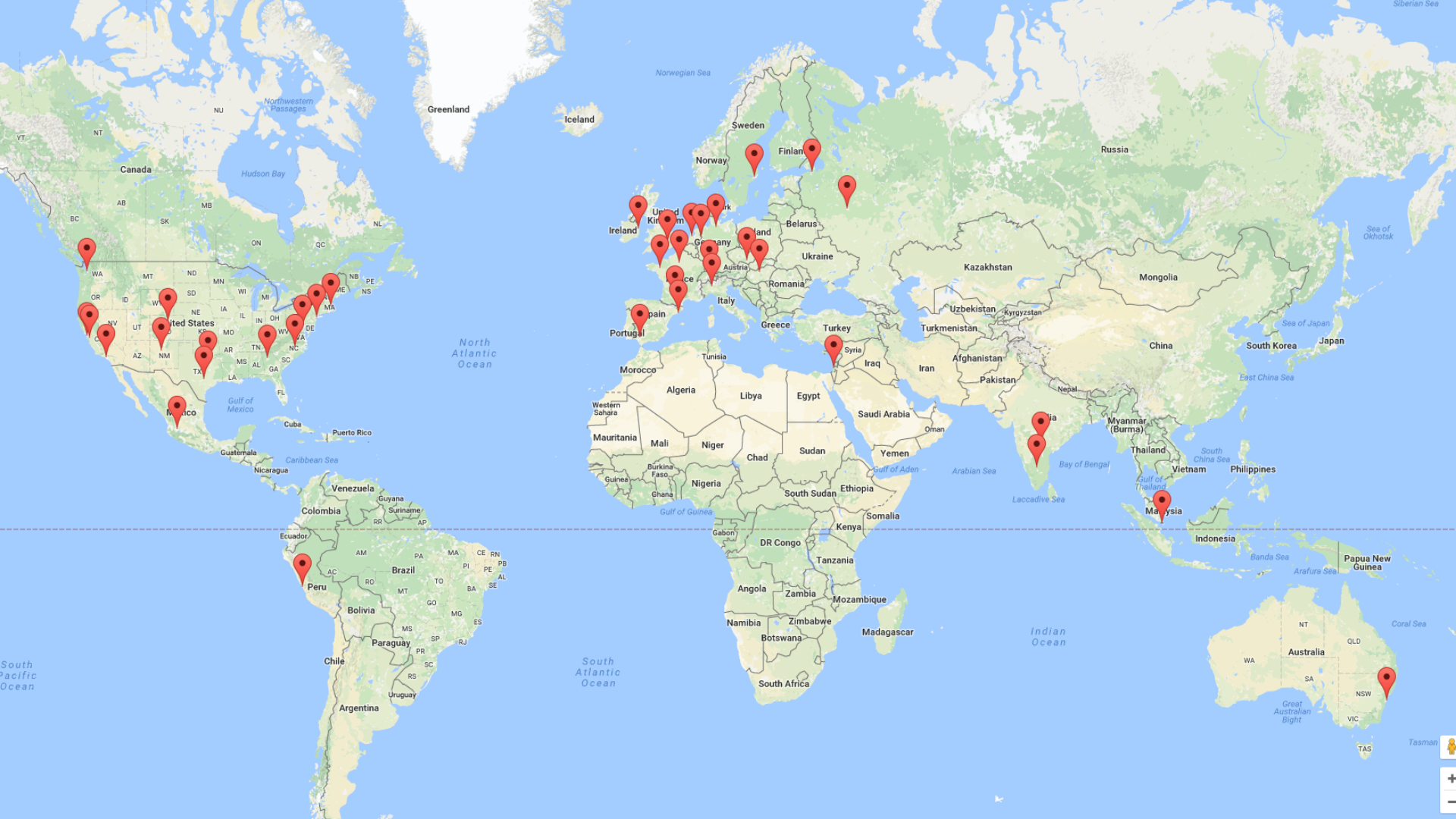
JAM : Jenkins Area Meetup



Jenkins World
2016

- Let's have more local meetups
- We help local leaders
 - Swag, speaker referrals, promotion, ...






Jenkins Online Meetup

- On Google Hangout

Jenkins Online Meetup

[Home](#) [Members](#) [Photos](#) [Pages](#) [Discussions](#) [More](#)



[San Jose, CA](#)
Founded Mar 4, 2016

[About us...](#)

[Invite friends](#)

Jenkins fans1,192

Group reviews2

Upcoming Meetups1

Past Meetups4


Our calendar

Worldwide37

Help support your Meetup

Chip in

Organizers:

 **Maxwell Arbuckle**, Alyssa Daniel Beck, Oleg Nenashnev, R. Tyler Croy, Thomas McGonagle

[Contact](#)

We're about:

Open Source · Software


Welcome!

[+ Suggest a new Meetup](#)

[Upcoming 1](#) [Past](#) [Calendar](#)

Plugin Development - Web UI

Needs a locationComing soon



This meetup is devoted to Web interface development frameworks available in Jenkins. This meetup may be interesting to Jenkins plugin developers and folks who are... [Learn more](#)

Hosted by: [Oleg Nenashnev](#) (Co-Organizer), and [R. Tyler Croy](#) (Co-Organizer)

Tue Sep 6

11:00 AM

[RSVP](#)

7 days left


118 going

4 comments

Recent Meetups

4 days ago · 11:00 AM

GSoC 2016 project presentations by students




86 Jenkins fans

This year the Jenkins project participated in Google Summer of Code. Five students have been working on different areas in the Jenkins core, plugins and the project... [LEARN MORE](#)

June 14 · 9:00 AM

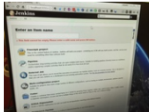
Plugin Development - Basics



295 Jenkins fans | ★★★★★

Starting June 14 we will be conducting the first of a three-part online JAM series focusing on plugin development. The first part will be on the basics of plugin... [LEARN MORE](#)

What's new



[NEW RSVP](#)

[Marcela](#) RSVPed Yes for [Plugin Development - Web UI](#) Yesterday

[NEW RSVP](#)

[zeal](#) RSVPed Yes for [Plugin Development - Web UI](#) Yesterday

[NEW MEMBER](#)

[Jordi levant](#) joined 2 days ago

[NEW RSVP](#)

[Gem](#) RSVPed Yes for [Plugin Development - Web UI](#) 3 days ago

[NEW RSVP](#)

[Sankarkumar Ponnusmay](#) RSVPed Yes for [Plugin Development - Web UI](#) 3 days ago

[NEW MEMBER](#)

[Sankarkumar Ponnusmay](#) joined 3 days ago

[NEW RSVP](#)

[Hiren](#) RSVPed Yes for [Plugin Development - Web UI](#) 3 days ago

[NEW MEMBER](#)

[Hiren](#) joined 3 days ago

[NEW RSVP](#)

Number of JAM leaders are here!



Jenkins World
2016

- Khai Do & Tim Condit from [Seattle](#)
- Casey Vega & Jon Hermansen from [Los Angeles](#)
- Tracy Ragan from [Albuquerque](#)
- Mor Lajb from [Tel Aviv, Israel](#)
- Kenichiro Ohta from [Tokyo, Japan](#)
- Susie Hernandez & Hazzim Anaya from [Guadalajara, Mexico](#)
- Eddu Melendez & Edson Chavez from [Lima, Peru](#)

Project Voltron



Jenkins World
2016



New Plugin Site in Jenkins.io



Jenkins World
2016

Plugins by topic

Source code management

Jenkins has native support for Subversion and CVS as well as the following plugins:

- [AccuRev Plugin](#) — This plugin allows you to use [AccuRev](#) as a SCM.
- [archive-files-scm-plugin](#) — ArchiveFilesSCM - This plugin for Jenkins checkouts archive files and extracts to Jenkins job workspace
- [AWS CodePipeline Plugin](#) — [AWS CodePipeline](#) is a continuous delivery service for fast and reliable application updates.
- [Bazaar Plugin](#) — This plugin integrates [Bazaar](#) version control system to Jenkins. The plugin requires the Bazaar binary (bzr) to be installed on the target machine.
- [Bitbucket Branch Source Plugin](#) — Multibranch projects and Team/Project folders from [Bitbucket Cloud](#) and [Server](#). Please note that this plugin requires a server running BitBucket 4.0 or later; Stash 3.x and earlier are not supported.
- [BitKeeper Plugin](#) — Add BitKeeper support to Jenkins
- [BlameSubversion](#) — This plug-in provides utilities for getting svn info from upstream job to downstream job
- [ClearCase Plugin](#) — Integrates Jenkins with [ClearCase](#).
- [ClearCase UCM Baseline Plugin](#) — Allows using ClearCase UCM baselines as the input of builds: When using this SCM, users will be asked at build-time to select the baseline on which the job has to work.
- [ClearCase UCM Plugin](#) — A Pragmatic integration to ClearCase UCM, simplifying continuous integration with Jenkins.
- [Clone Workspace SCM Plugin](#) — This plugin makes it possible to archive the workspace from builds of one project and reuse them as the SCM source for another project.
- [CMVC Plugin](#) — This plugin integrates [CMVC](#) to Hudson.
- [Compuware Source Code Download for Endeavor, PDS, and ISPW Plugin](#) — The Compuware Source Code Download for Endeavor, PDS, and ISPW plugin allows Jenkins users to download Endeavor, PDS, or ISPW members from the mainframe to the PC.
- [Config Rotator Plugin](#)
- [CVS Plugin](#) — This bundled plugin integrates Jenkins with CVS version control system.
- [Darcs Plugin](#) — This plugin integrates [Darcs](#) version control system to Jenkins. The plugin requires the Darcs binary (darcs) to be installed on the target machine.
- [Dimensions Plugin](#) — This plugin integrates the [Serena Dimensions CM](#) SCM with Jenkins.
- [File System SCM](#) — Use File System as SCM.
- [Git Plugin](#) — This plugin allows use of [git](#) as a build SCM, including repository browsers for several providers. A recent Git runtime is required (1.7.9 minimum, 1.8.x recommended). Interaction with the Git runtime is performed by the use of the [Git Client Plugin](#), which is only tested on official [git client](#). Use exotic installations at your own risk.
- [GitBucket Plugin](#) — This plugin integrates [GitBucket](#) to your Jenkins.
- [GitHub Branch Source Plugin](#) — Multibranch projects and organization folders from GitHub.
- [Gitlab Merge Request Builder Plugin](#) — A plugin to build merge requests created in Gitlab.
- [Google Git Notes Publisher Plugin](#) — {color:#888a85}This plugin provides automatic recording of Jenkins build actions to Git Notes {color}
- [Google Source Plugin](#) — This plugin provides the credential provider to use Google Cloud Platform OAuth Credentials (provided by the [Google OAuth Credentials plugin](#)) to access source code from [https://source.developer.google.com](#) as well as [https://googlesource.com](#). It supports both kinds of credentials provided by [Google OAuth Credentials plugin](#) : [Google Service Account from metadata](#) as well as [Google Service Account from private key](#).
- [Harvest Plugin](#) — This plugin allows you to use [CA Harvest](#) as a SCM.
- [HP Application Automation Tools](#) — This plugin allows Jenkins to trigger HP tests such as: Test sets on Application Lifecycle Management, tests running on Mobile Center, and tests saved on the file system from Unified Functional Testing or LoadRunner scenarios.
- [IBM z/OS Connector](#) — IBM z/OS Connector is a plugin which lets you connect your Jenkins to z/OS.
- [IFTTT Build Notifier](#) — A Simple Jenkins Build Status Notifier for IFTTT Maker Channel Trigger

- A project is underway to hopefully replace the current one



Jenkins World
2016

Demo

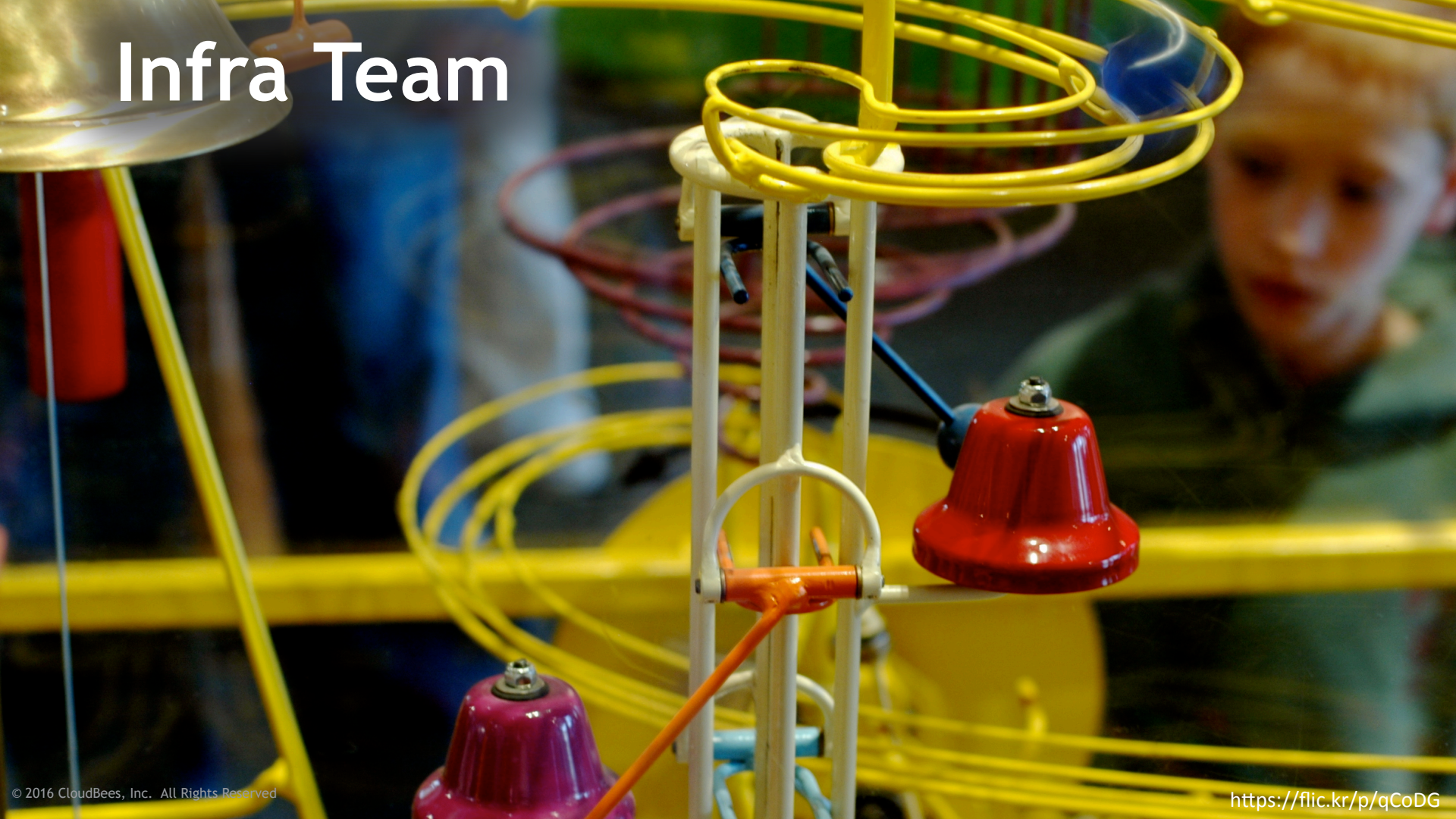
New Plugin Site

Security Team

- 1 year of Daniel Beck as security officer!
- Coordinated vulnerability reporting, fixing, & releasing process
- Involves plugin developers and other security organizations



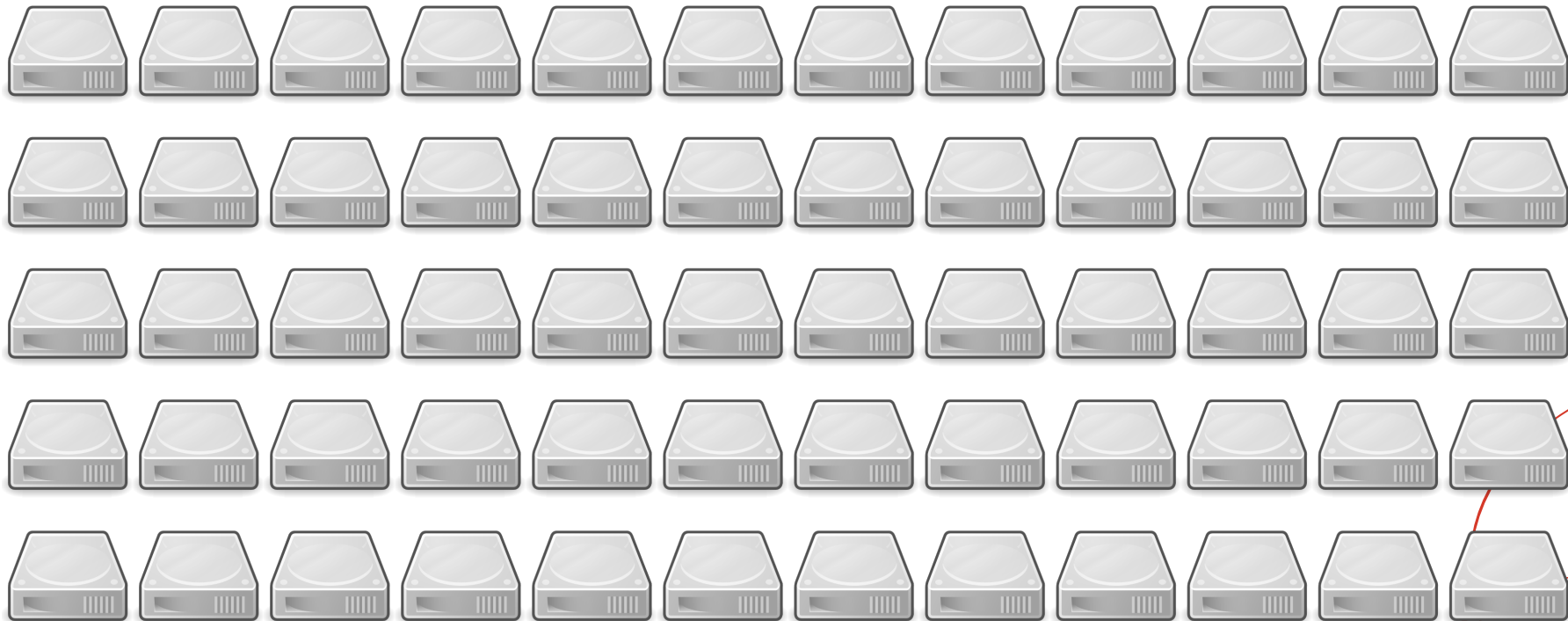
Infra Team



60TB/month of goodness delivered!



Jenkins World
2016



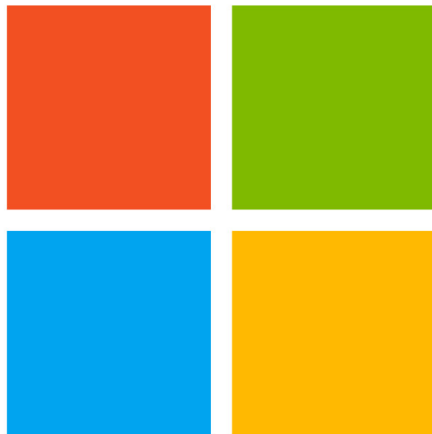
Jenkins + Microsoft = Love



Jenkins World
2016



Jenkins



Microsoft

We are moving to Azure

- More consistent, uniform infra
- Support the growing needs of the community
- Practice what we preach; kick-ass DevOps for infra





Hudson



Hudson

[ENABLE AUTO REFRESH](#)[New Job](#)[Configure](#)

Build Queue



jax-fast

jax-fast-2.0

jaxb-ri

Build Executor Status

No.	Status
1	Building jaxb-ri #397 <div><div></div></div>

Job	Last Success	Last Failure	Last Duration
 java.net cvs keep-alive	25 minutes (#389)	N/A	1 seconds
 java.net log processor (daily)	8 hours (#4)	N/A	1 minutes
 java.net log processor (weekly)	4 days (#1)	N/A	4 minutes
 java.net mail automation	2 hours (#20)	N/A	0 seconds
 java.net version check	20 minutes (#319)	6 days (#160)	3 seconds
 javadoc	10 hours (#19)	1 days (#18)	11 minutes
 jax-fast	30 minutes (#354)	1 days (#335)	9 minutes
 jax-fast-2.0	1 hours (#134)	36 minutes (#135)	8 minutes
 jaxb-ri	43 minutes (#396)	1 hours (#393)	6 minutes
 msv nightly	19 hours (#9)	N/A	15 minutes
 stapler	7 days (#39)	9 days (#38)	17 seconds

General

Build Triggers

Advanced Project Options

Pipeline

Definition

Pipeline script from SCM

SCM

Git

Repositories

Repository URL `https://github.com/jenkins-infra/javadoc`Credentials `- none -`

Add

Advanced...

Add Repository

Branches to build

Branch Specifier (blank for 'any') `*/master`

Add Branch

Repository browser

(Auto)

Additional Behaviours

Add

Script Path

Jenkinsfile

[Pipeline Syntax](#)

Save

Apply



Blue Ocean Project Goals



Jenkins World
2016

- Complete rethink of Jenkins UX
- Focused initially on developer UI around pipelines
 - Gradually take over the whole UI over time
- Personalized
 - Is it safe to go home today?
- And just like other projects in Jenkins...
 - Extensible by plugins
 - Design Language to help plugin developers build great UI

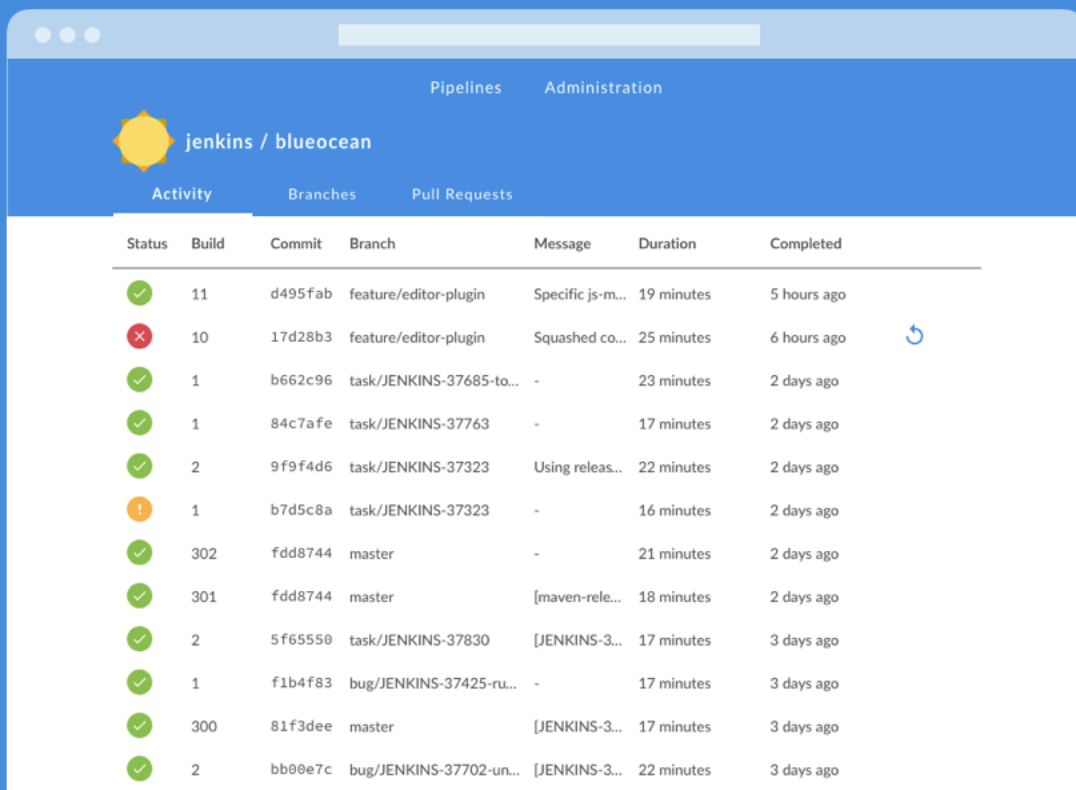


Jenkins World
2016

Demo

Blue Ocean

Blue Ocean 1.0 beta



The screenshot displays the Jenkins Blue Ocean 1.0 beta web interface. At the top, there are tabs for 'Pipelines' and 'Administration'. Below these, the breadcrumb 'jenkins / blueocean' is shown next to a yellow gear icon. A secondary set of tabs includes 'Activity' (which is selected), 'Branches', and 'Pull Requests'. The main content area is a table of build activities with the following columns: Status, Build, Commit, Branch, Message, Duration, and Completed. The table lists 15 builds, most of which are successful (green checkmark), with one failed build (red X) and one with a warning (orange exclamation mark). A refresh icon is visible on the right side of the table.

Status	Build	Commit	Branch	Message	Duration	Completed
✓	11	d495fab	feature/editor-plugin	Specific js-m...	19 minutes	5 hours ago
✗	10	17d28b3	feature/editor-plugin	Squashed co...	25 minutes	6 hours ago
✓	1	b662c96	task/JENKINS-37685-to...	-	23 minutes	2 days ago
✓	1	84c7afe	task/JENKINS-37763	-	17 minutes	2 days ago
✓	2	9f9f4d6	task/JENKINS-37323	Using releas...	22 minutes	2 days ago
!	1	b7d5c8a	task/JENKINS-37323	-	16 minutes	2 days ago
✓	302	fdd8744	master	-	21 minutes	2 days ago
✓	301	fdd8744	master	[maven-rele...	18 minutes	2 days ago
✓	2	5f65550	task/JENKINS-37830	[JENKINS-3...	17 minutes	3 days ago
✓	1	f1b4f83	bug/JENKINS-37425-ru...	-	17 minutes	3 days ago
✓	300	81f3dee	master	[JENKINS-3...	17 minutes	3 days ago
✓	2	bb00e7c	bug/JENKINS-37702-un...	[JENKINS-3...	22 minutes	3 days ago

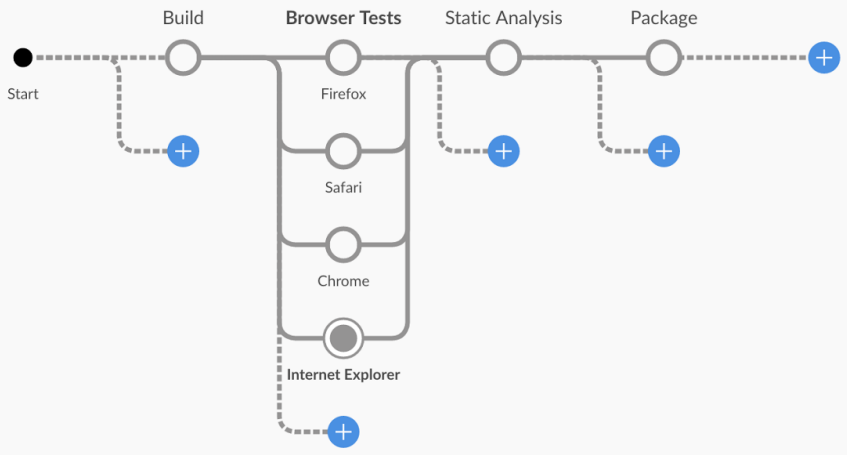


Next round of efforts focused on ease of use



Jenkins World
2016

- Simplified model of pipeline that's easy to explain & understand
- No more snowflake Jenkinsfile
- Look less like programming, more declarative
- Fails when Jenkins reads it, not when it runs it
- Cater to both point-and-click people & vi/emacs people



Internet Explorer

Delete stage

≡

Run Script

≡

Run Script

Add step

Run Script

```
wget -o Results.json https://www.cloudtest.com/CloudBeers/beta-pipeline/ie9.json
./testing/parseResults.sh
```

Delete step

Jenkinsfile, simplified



Jenkins World
2016

```
pipeline {  
  agent docker:"node_js:0.10"  
  stages {  
    stage('build') {  
      sh './build.sh'  
    }  
    stage('test') {  
      sh './run-test.sh'  
    }  
  }  
}
```

Common idioms, simplified



Jenkins World
2016

```
environment {  
    SAUCE_USERNAME = 'bootstrap'  
    SAUCE_PASSWORD = secret("pJkBwnuae9dKU5tEcCqccfS1QQw7/...")  
}
```

```
notifications {  
    failure {  
        mail to: 'jenkins-team-notifications@lists.jenkins.io'  
    }  
}
```


Walled garden of idiom



More ease of use



Jenkins World
2016

- New documentation site
 - Search
 - Use-case driven examples
- Better error handling & reporting
- Security sandbox improvements
- Language discrepancy





Imagine the world where ...



Jenkins World
2016

You install new plugins &
modify security setting
through pull requests

Meet Jenkins Config as Code



Jenkins World
2016

- Plugins, global configuration, views, jobs, agents, credentials configured via `$JENKINS_HOME/conf.d/*.conf`
- Covers all plugins dynamically without custom code for each
- Machine generated reference manual & syntax checks

Imagine the world where ...



Jenkins World
2016

You never have to throw away
any build records

Storage Pluggability



Jenkins World
2016

- Reduce & eventually eliminate local disk usage
- Benefits
 - Better scalability for larger deployments
 - Better index & data analysis
 - Better fail-over and disaster recovery
 - Faster startup time

Imagine the world where ...



Jenkins World
2016

Single Jenkins master handles your global workload

Cloud Native Jenkins



Jenkins World
2016

- Single master that spans across multiple JVMs on multiple machines
- 24/7 Availability without down time
- Attractive but big disruptive changes



We are ALL IN! What are you waiting for?



Jenkins World
2016

- Jenkins 2
 - Upgrade!
- Blue Ocean
 - Install it and tell us what you think!
- Pipeline
 - Have one job converted during JW!
- More exciting projects coming down the road



**DEAD
END**

