

Continuous integration - Jenkins

Scout UGM 2016, Ludwigsburg

Scout User Group Meeting 2015...

- Eclipse Scout Neon Applications are:
 - written with Java
 - build with maven
- Easy integration with other tools
- Jenkins: Continuous Integration Server
- SonarQube: Code quality Dashboard

Jenkins Demo

The screenshot shows the Jenkins web interface for a project named "build-helloworld". The browser address bar shows the URL "localhost:8088/jenkins/job/build-helloworld/". The Jenkins logo and name are prominently displayed at the top left. A search bar and user information "JBR | log out" are at the top right. The main content area is titled "Project build-helloworld" and includes a sidebar with navigation options like "Back to Dashboard", "Status", "Changes", "Workspace", "Build Now", "Delete Project", "Configure", and "Move". Below the sidebar is a "Build History" section with a search box and a table of recent builds. The main area features a "Test Result Trend" bar chart showing a count of 3 for build #6. Below the chart is a "Permalinks" section with several links to specific build details.

Project build-helloworld

add description
Disable Project

Test Result Trend

count

#6

(just show failures) enlarge

Workspace
Recent Changes
Latest Test Result (no failures)

Permalinks

- Last build (#6). 4 min 56 sec ago
- Last stable build (#6). 4 min 56 sec ago
- Last successful build (#6). 4 min 56 sec ago
- Last completed build (#6). 4 min 56 sec ago

Build History trend

find x

Build Number	Timestamp
#6	Oct 23, 2016 6:12 PM
#5	Oct 23, 2016 6:04 PM

RSS for all RSS for failures

Jenkins 2 is here!



Jenkins 2 is here

Jenkins 2 brings Pipeline as Code, a new setup experience and other UI improvements while maintaining backwards compatibility with existing Jenkins installations!

[Learn more](#)

Backward compatible

- Jenkins has
 - an important user base / community
 - a rich ecosystem (a plugin for everything)
- Jenkins 1.x line was is 11 years old
 - This line is discontinued (no parallel support of the two lines)
- Jenkins 2.x:
 - Drop-in replacement for 1.x
 - First step to modernize the technical infrastructure
 - Interesting new concepts

Script your builds

Jenkinsfile

- Similar to travisCI “.travis.yml” File
- Code (groovy-like DSL) instead of configuration click
- The build steps can now be defined in a `Jenkinsfile`
 - In the job configuration
 - Inside your code repository
 - 3rd repository

Jenkinsfile Example

 jenkins-demo / simple-maven-project-with-tests
forked from jglick/simple-maven-project-with-tests

 Watch 0

 Star 0

 Fork 24

 Code

 Pull requests 1

 Wiki

 Pulse

 Graphs

 Settings

Branch: master

simple-maven-project-with-tests / Jenkinsfile

Find file

Copy path

22 lines (16 sloc) | 567 Bytes

Raw

Blame

History



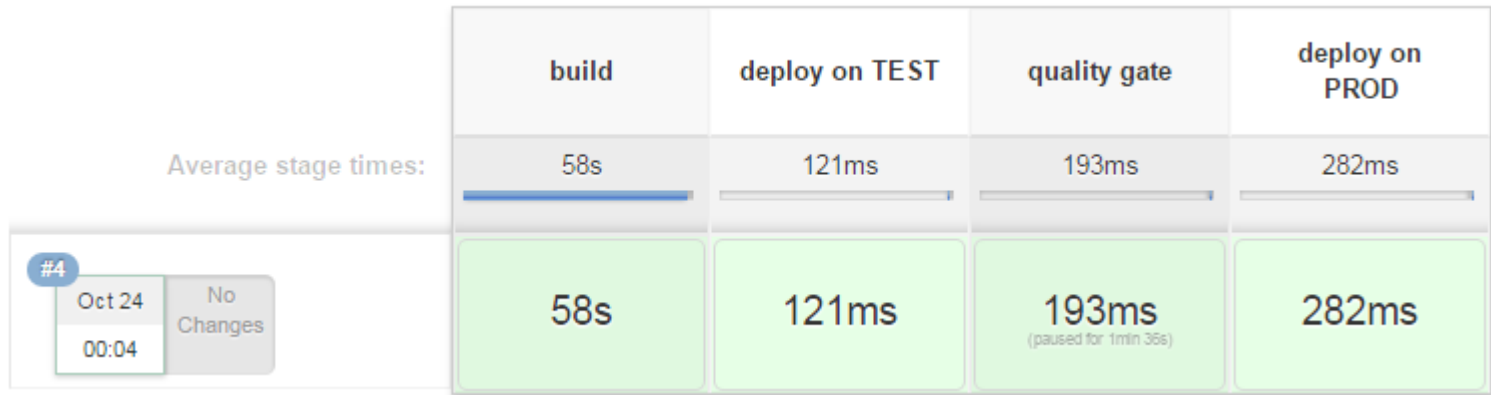
```
1 node {
2     // Mark the code checkout 'stage'....
3     stage 'Checkout'
4
5     // Get some code from a GitHub repository
6     checkout scm
7
8     // Get the maven tool.
9     // ** NOTE: This 'M3' maven tool must be configured
10    // **      in the global configuration.
11    def mvnHome = tool 'M3'
12
13    // Mark the code build 'stage'....
14    stage 'Build'
15    // Run the maven build
16    sh "${mvnHome}/bin/mvn -B clean verify -Dmaven.test.failure.ignore=true"
17
18    stage 'Report'
19    step([$class: 'JUnitResultArchiver', testResults: '**/target/surefire-reports/*.xml'])
20
21 }
```


Pipeline

Pipeline as code

- **No more need to glue multiple jobs** together to do one connected pipeline across multiple nodes or repos!
- Codify an **implicit series of stages/steps** directly in your job **definition** or into an explicit **Jenkinsfile** in your/a source repository
- **Built-in global library** to share Pipeline scripts, functions, variables across jobs on your master.
- Extend the DSL with your **own steps**.
- Have jobs wait for **input from users** before continuing to the next step.

Pipeline Stage View



User Experience improvements

Jenkins for new users

- **New setup wizard!**
- **Security configuration** is part of the setup wizard!
- A better, broader **set of plugins** included by default!

Security - Unlock Jenkins

```
*****
*****
*****
Jenkins initial setup is required. An admin user has been created and a password generated.
Please use the following password to proceed to installation:

2065d7b5a2e843c2845a89d693c0e017

This may also be found at: /Users/arnaud/.jenkins/secrets/initialAdminPassword

*****
*****
*****
```


Getting Started

Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been generated and written to the file on the Jenkins server here:
`/Users/arnaud/.jenkins/secrets/initialAdminPassword`

Please copy the password and paste it below.

Administrator password



Continue

Security - Create 1st administrator account

Getting Started ✕

Create First Admin User

Username:

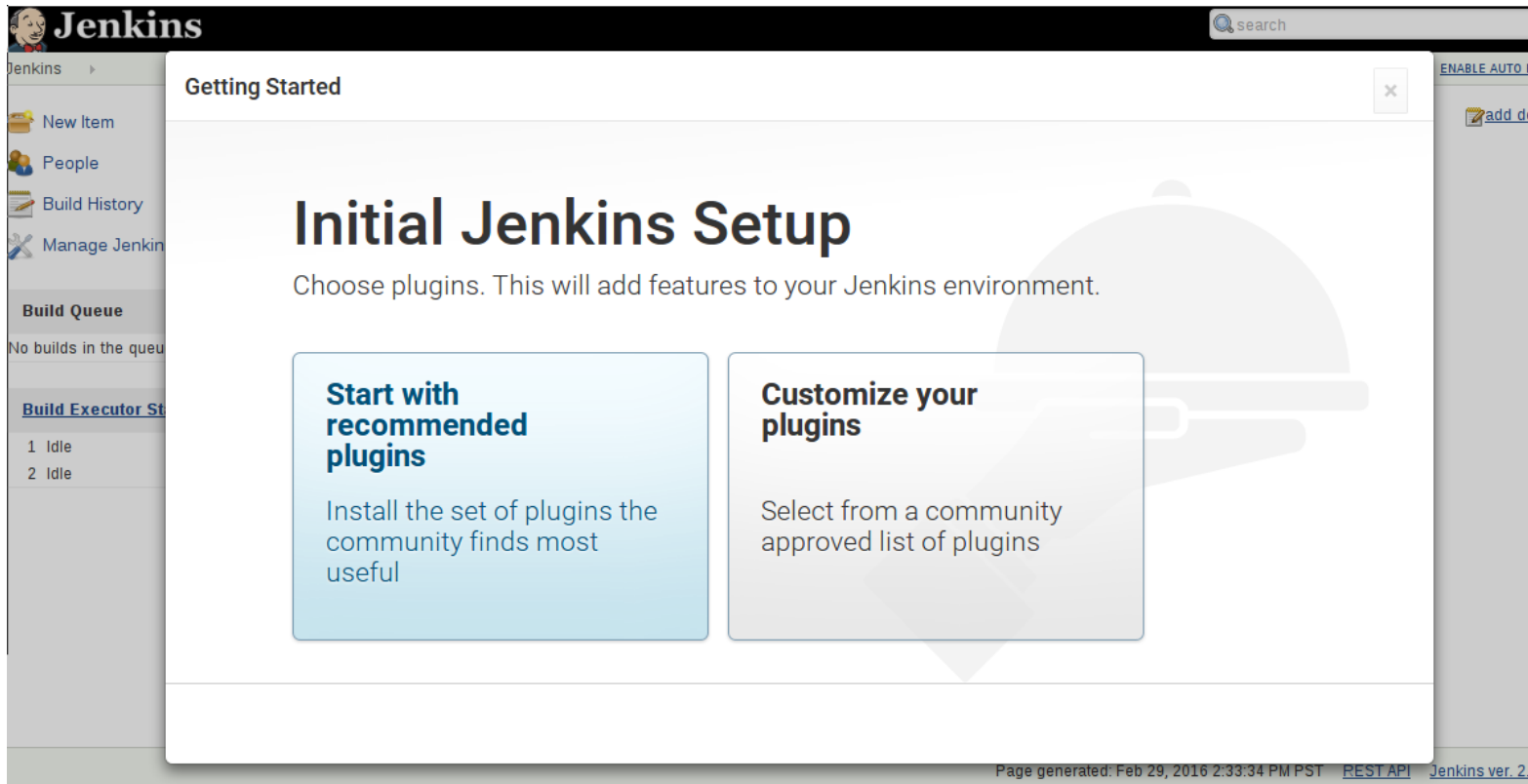
Password:

Confirm password:

Full name:

E-mail address:

Plugins installation wizard



The image shows a screenshot of the Jenkins web interface with a 'Getting Started' dialog box open. The dialog box is titled 'Getting Started' and contains the following content:

Initial Jenkins Setup
Choose plugins. This will add features to your Jenkins environment.

Start with recommended plugins
Install the set of plugins the community finds most useful

Customize your plugins
Select from a community approved list of plugins

The background of the dialog box features a large, faint watermark of the Jenkins logo (a blue robot head). The background interface shows the Jenkins navigation menu on the left, including 'New Item', 'People', 'Build History', and 'Manage Jenkins'. The 'Build Queue' section shows 'No builds in the queue' and the 'Build Executor Status' section shows two 'Idle' executors. The top right of the page has a search bar and a 'REST API' link. The bottom right corner of the page has the text 'Page generated: Feb 29, 2016 2:33:34 PM PST' and 'Jenkins ver. 2.0.0'.

User Interface Improvements

- Improved “**New Item**” page
- Jobs **configuration pages** are improved with tabs
- New **Global Tool Configuration** page
- More **consistent terminology** (exemple: agent vs ~~node~~ vs ~~slave~~)

New item page

Enter an item name

» Required field



Freestyle project

This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.



Pipeline

Orchestrates long-running activities that can span multiple build slaves. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.



Multi-configuration project

Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.



External Job

This type of job allows you to record the execution of a process run outside Jenkins, even on a remote machine. This is designed so that you can use Jenkins as a dashboard of your existing automation system. See [the documentation for more details](#).



Folder

Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.



GitHub Organization

Scans a GitHub organization (or user account) for all repositories matching some defined markers.



Multibranch Pipeline

Creates a set of Pipeline projects according to detected branches in one SCM repository.

OK

Tabs in the configuration pages

The screenshot displays the Jenkins configuration interface for a 'freestyle' job. At the top, a breadcrumb trail shows 'Jenkins > freestyle'. Below this, a horizontal tab bar contains six tabs: 'General', 'Source Code Management', 'Build Triggers', 'Build Environment', 'Build', and 'Post-build Actions'. The 'Source Code Management' tab is currently selected and active.

The 'Source Code Management' section includes a radio button for 'None' (which is selected) and a button labeled 'Source Code Management'. Below this is a radio button for 'Git'.

The 'Build Triggers' section contains five checkboxes, each with a help icon to its right:

- Trigger builds remotely (e.g., from scripts)
- Build after other projects are built
- Build periodically
- Build when a change is pushed to GitHub
- Poll SCM

The 'Build Environment' section contains four checkboxes, with a help icon to the right of the last one:


- Delete workspace before build starts
- Abort the build if it's stuck
- Add timestamps to the Console Output
- Use secret text(s) or file(s)

The 'Build' section features a button labeled 'Add build step' with a dropdown arrow.

The 'Post-build Actions' section features a button labeled 'Add post-build action' with a dropdown arrow.

At the bottom of the configuration page, there are two buttons: 'Save' and 'Apply'.

Global Tool Configuration

 **Jenkins** search admin | log out

Jenkins > Global Tool Configuration

[Back to Dashboard](#) [Manage Jenkins](#)

Global Tool Configuration

Maven Configuration

Default settings provider

Default global settings provider

JDK

JDK installations

List of JDK installations on this system

Git

Git installations

Git

Name

Path to Git executable

Install automatically

description

Gradle

Gradle installations

List of Gradle installations on this system

Ant

Ant installations

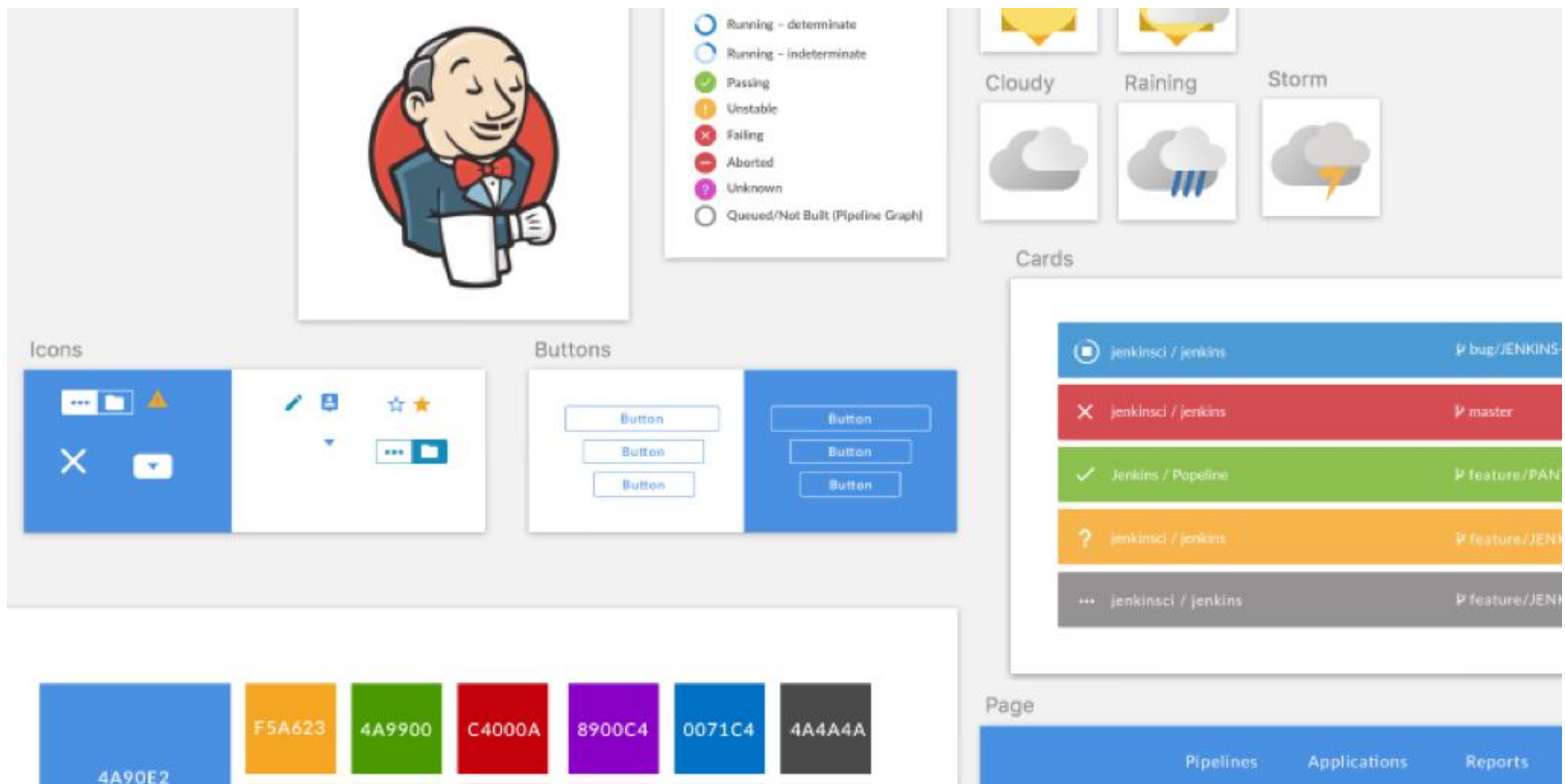
List of Ant installations on this system

Maven

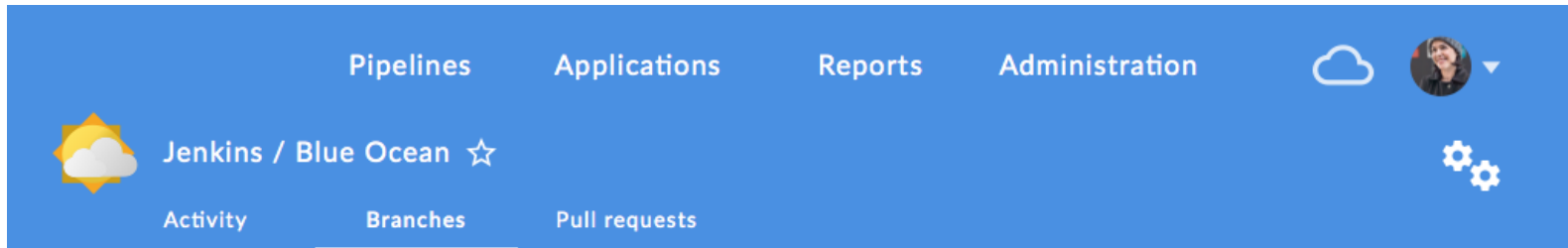
Maven installations

List of Maven installations on this system

















More to come: Blue Ocean theme



More to come: Blue Ocean theme



The navigation bar is a solid blue horizontal strip. On the left, there is a sun and cloud icon followed by the text 'Jenkins / Blue Ocean' and a star icon. Below this, three tabs are visible: 'Activity', 'Branches', and 'Pull requests'. In the center, there are four menu items: 'Pipelines', 'Applications', 'Reports', and 'Administration'. On the right side, there is a cloud icon, a circular profile picture of a woman, and a gear icon.

Health	Status	Branch	Latest commit	Latest message	Completed		
		master	601366d	Updated dashboard color scheme...	-		
		feature1	601366d	Updated dashboard color scheme...	82 seconds ago		
		feature2	601366d	Updated dashboard color scheme...	82 seconds ago		
		feature3	601366d	Updated dashboard color scheme...	82 seconds ago		

Thanks

@EclipseScout

This presentation is inspired by the «Jenkins 2» Talk given by **Arnaud Héritier** and **Nicolas De Loof** at **Jug Summer Camp'16**. A lot of content is reused.