Jenkins Pipelines

Tomislav Fabeta (Software Developer)

degordian

What is Jenkins?

Continuous Integration and Continuous Delivery

As an extensible automation server, Jenkins can be used as a simple CI server or turned into the continuous delivery hub for any project.

Easy installation

Jenkins is a self-contained Java-based program, ready to run out-of-the-box, with packages for Windows, Mac OS X and other Unix-like operating systems.

Easy configuration

Jenkins can be easily set up and configured via its web interface, which includes on-the-fly error checks and built-in help.

Plugins

With hundreds of plugins in the Update Center, Jenkins integrates with practically every tool in the continuous integration and continuous delivery toolchain.

Extensible

Jenkins can be extended via its plugin architecture, providing nearly infinite possibilities for what Jenkins can do.

Distributed

Jenkins can easily distribute work across multiple machines, helping drive builds, tests and deployments across multiple platforms faster.

Why Pipelines?

- implemented in code (Groovy syntax)
- readable
- extensible
- ability to fork/join, loop, perform work in parallel

Basic Usage

- JenkinsFile in a root of a project
- small configuration on Jenkins itself
- run pipeline

So, what is a Pipeline?

- a suite of plugins which supports implementing and integrating continuous delivery pipelines into Jenkins
- declarative & scripted

Some Pipeline keywords

- node
- pipeline
- stage
- stages
- steps
- step

Declarative Pipeline

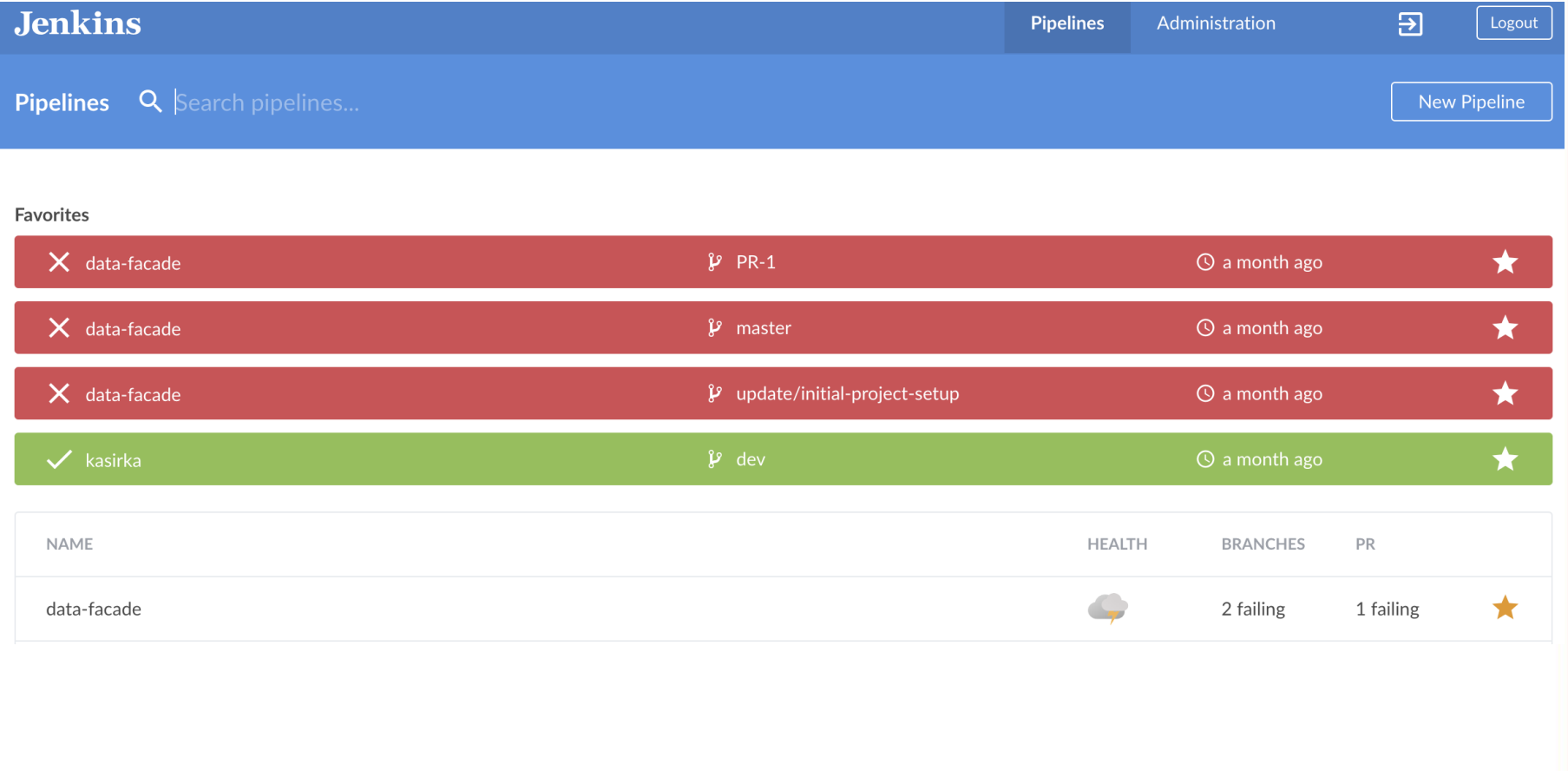
```
pipeline {
    agent any
    stages {
        stage('Build') {
            steps {
                //
            }
        }
        stage('Test') {
            steps {
                //
            }
        }
        stage('Deploy') {
            steps {
                //
            }
        }
    }
}
```

Scripted Pipeline

```
node {
    stage('Build') {
        //
    }
    stage('Test') {
        //
    }
    stage('Deploy') {
        //
    }
}
```

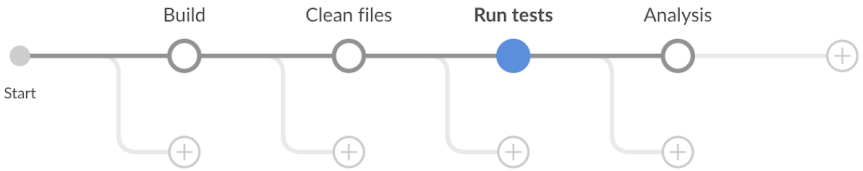
Blue Ocean Plugin

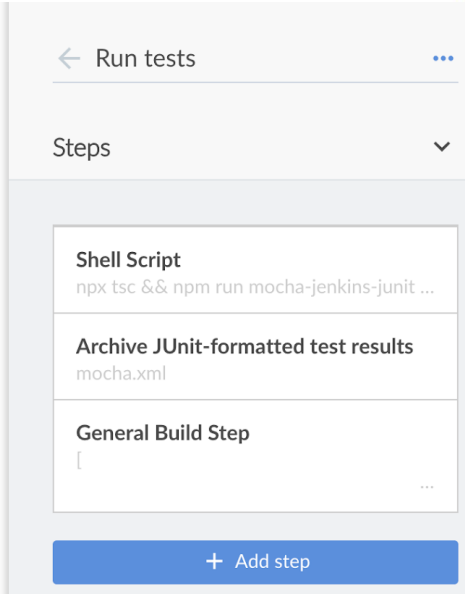
- GUI for Pipelines
- for projects with JenkinsFile
- refreshing


Jenkins
Pipelines
Administration
Logout
Pipelines
Search pipelines...
New Pipeline
Favorites
data-facade
PR-1
a month ago
data-facade
master
a month ago
data-facade
update/initial-project-setup
a month ago
kasirka
dev
a month ago
NAME
HEALTH
BRANCHES
PR
data-facade
2 failing
1 failing

Analysis - 21s

✓	npm run tslint-jenkins > tslint.xml — Shell Script	21s
✓	Set GitHub commit status (universal)	<1s
✓	Publish Checkstyle analysis results	<1s
✓	Jenkins is finished with success! — Print Message	<1s


Build
Clean files
Run tests
Analysis
Start


Run tests
Steps
Shell Script
npx tsc && npm run mocha-jenkins-junit ...
Archive JUnit-formatted test results
mocha.xml
General Build Step
[
...
Add step

Build Clean files Run tests Analysis

Pipeline Settings

Pipeline Script

```
pipeline {
  agent any
  stages {
    stage('Build') {
      steps {
        echo 'Build started...'
        withNPM(npmrcConfig: 'fda0ac5d-dc76-41c8-9dd7-7ebc2c3ba5f2') {
          sh 'npm install'
        }

        step([
                                                                    $class: "GitHubCommitStatusSetter",
                                                                    contextSource: [$class: "ManuallyEnteredCommitContextSource", context: "Build"],
                                                                    errorHandlers: [[$class: "ChangingBuildStatusErrorHandler", result: "UNSTABLE"]],
                                                                    statusResultSource: [ $class: "ConditionalStatusResultSource", results: [[$class:
"AnyBuildResult", message: "npm install", state: "SUCCESS"]] ]
                                                                ])
          echo 'Success checkout'
        }
      }
      stage('Clean files') {
        steps {
          sh 'rm -f mocha.html'
          sh 'rm -f mocha.xml'
          sh 'rm -f tslint.xml'
        }
```

Update

QUESTIONS?

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MAKES YOU CURIOUS.

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