



Continuous Intergration and Jenkins

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Agenda

- CI, CD, DevOps and friends
- Jenkins – the way to automatization
- Pipeline and Blue Ocean – new trends
- Demo: Pipeline, Jenkinsfile, GitHub integration

CI, CD, DevOps and friends

CI, CD, DevOps and friends

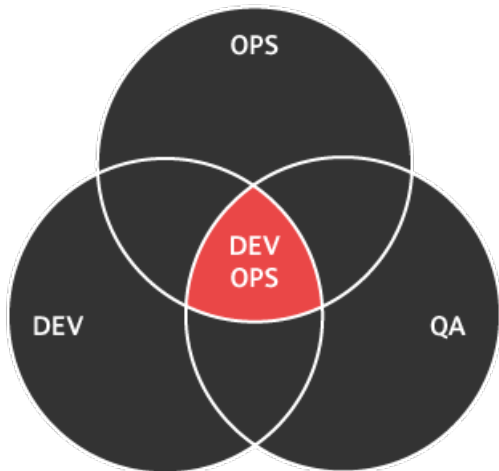
Benefits of Continuous Integration

- Frequent integrations (daily?) prevent complex code conflicts
- Testing of every integrations prevents unexpected interference of changes
- Deterministic builds ensure consistent, comparable results
- Next step: **Continuous Delivery**
 - Once we have it integrated, let's deploy it as well!
 - CD ensures that end user has fixes and new features delivered fast
 - CD is not for every environment though (box SW products vs. web apps)

CI, CD, DevOps and friends

DevOps

- Dev benefits from frequent integrations and deployments (less conflicts)
- Ops benefits from fast resolution of bugs and issues
- QA (not in the acronym!) benefits from testing of small batches of changes
- Collapse of the traditional barrier between Dev, Ops and QA - **DevOps!**



=> Need for automation



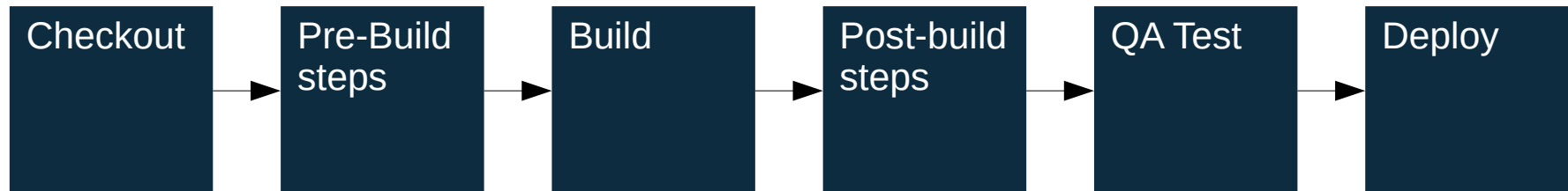
Jenkins – the way to automation

Jenkins – the way to automation

What is Jenkins?

Open source automation server (MIT license)

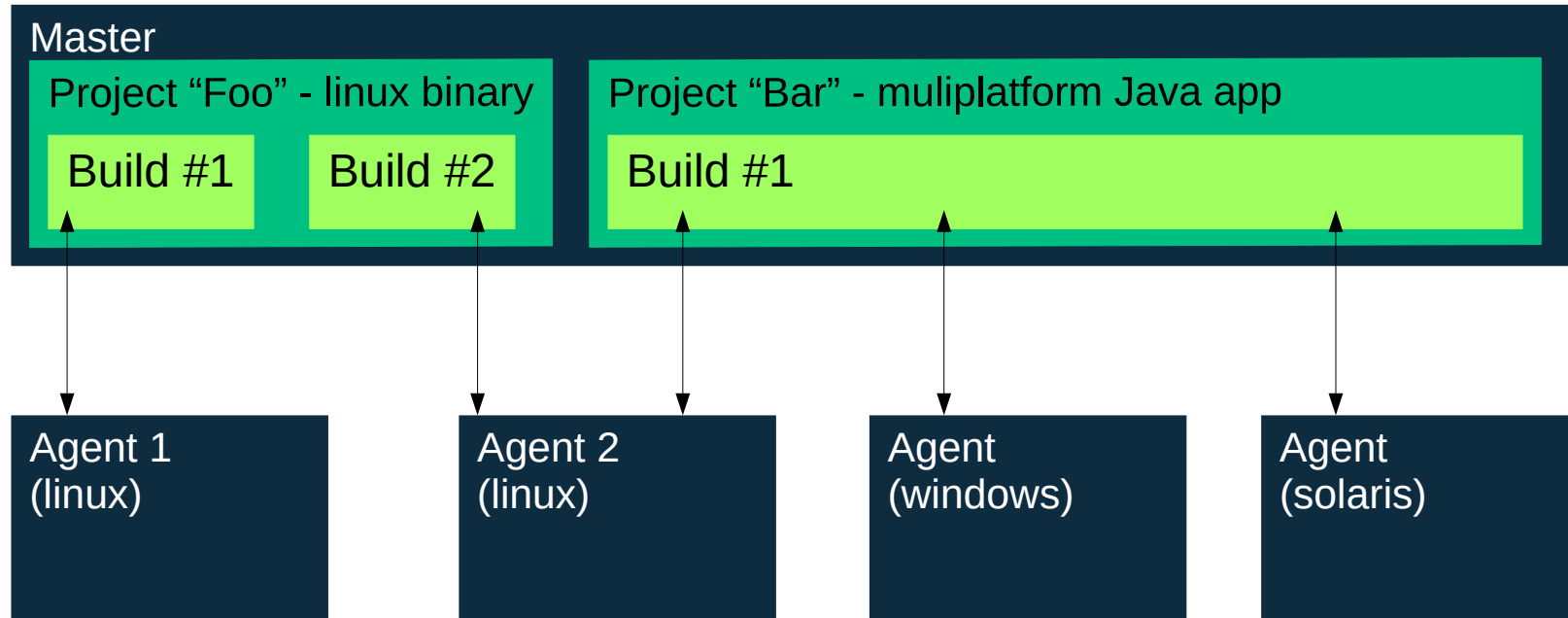
Typical usage:



- Thousands of plugins, e.g. various SCM: Git, Mercurial, Subversion...
- Platform independent: Linux, UNIX, Windows (everything that runs Java JRE)
- Excellent native support of Java technologies (Maven, Junit), Docker, Git/GitHub, live community for Android, Python, Ruby, C/C++...
- Everything is possible, where there is no plugin, you can always use a shell script

Jenkins – the way to automation

Jenkins architecture



Jenkins – the way to automation

Project History

- Author: Kohsuke Kawaguchi
- 2005: Sun Microsystems, Hudson
- 2010: Kohsuke leaves Sun, InfraDNA is founded, later merged with CloudBees
- 2011: Sun → Oracle, project forked as Jenkins, mainline development continues here, with majority of the original Hudson community
- 2015: Reached 100 000 installations (known ones)
- Role of CloudBees Inc:
 - Sponsoring of the project
 - Training and certification of users and admins
 - JenkinsWorld conference (formerly Jenkins User Conference)
 - Closed-source product CloudBees Jenkins Enterprise with commercial support and premium features

Pipeline and Blue Ocean – new trends

Pipeline and Blue Ocean – new trends

Pipeline

- Configuration in code instead of traditional BUI-created jobs
- Version-controlled groovy scripts instead of XML config files
- All benefits of code – conditions, loops, functions...

Blue Ocean

- New, modern, well-organized BUI
- New features primarily here
- Separate plugin as of now, plans to switch to it as default interface in the future

Demo

BUI...

Jenkins Job Builder

```
# jenkins-jobs delete-all
```

```
# jenkins-jobs update jjb-test
```

```
# cat jjb-test/hello.yaml
```

```
- job:
```

```
  name: hello-world
```

```
  project-type: freestyle
```

```
  defaults: global
```

```
  description: 'JJB test, do not edit this job through the web!'
```

```
  disabled: false
```

```
  display-name: 'Hello World'
```

```
  builders:
```

```
    - shell: |
```

```
      echo Hello
```

Blue Ocean

Jenkinsfile in GitHub repository

Autodiscovery

Q&A



We adapt. You succeed.