



Jenkins e-Portfolio

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PUBLIC

Agenda

Continuous integration tools (CI)

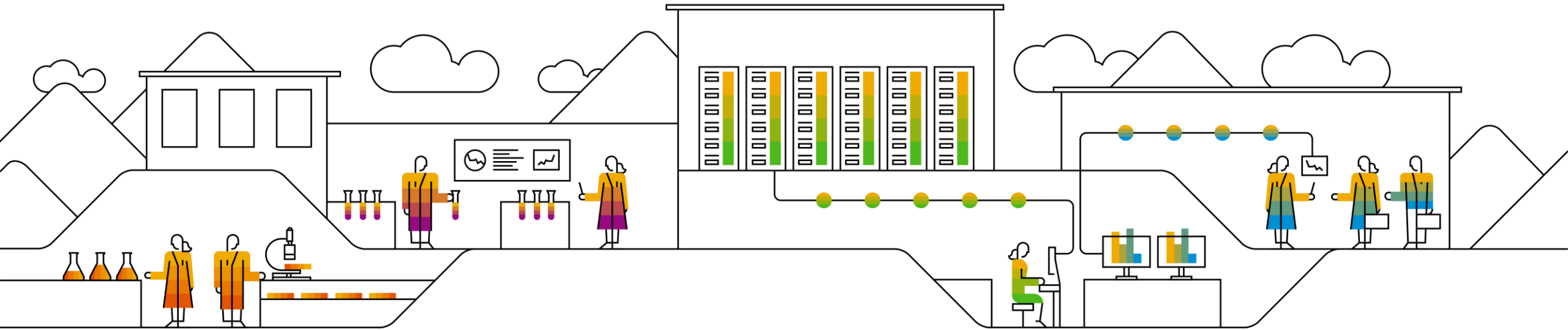
- What are continuous integration tools for?
- Features

Hudson / Jenkins

- General information
- Installation (for Ubuntu)
- Blue Ocean Plugin
- Multibranch Pipelines
- GitHub Integration

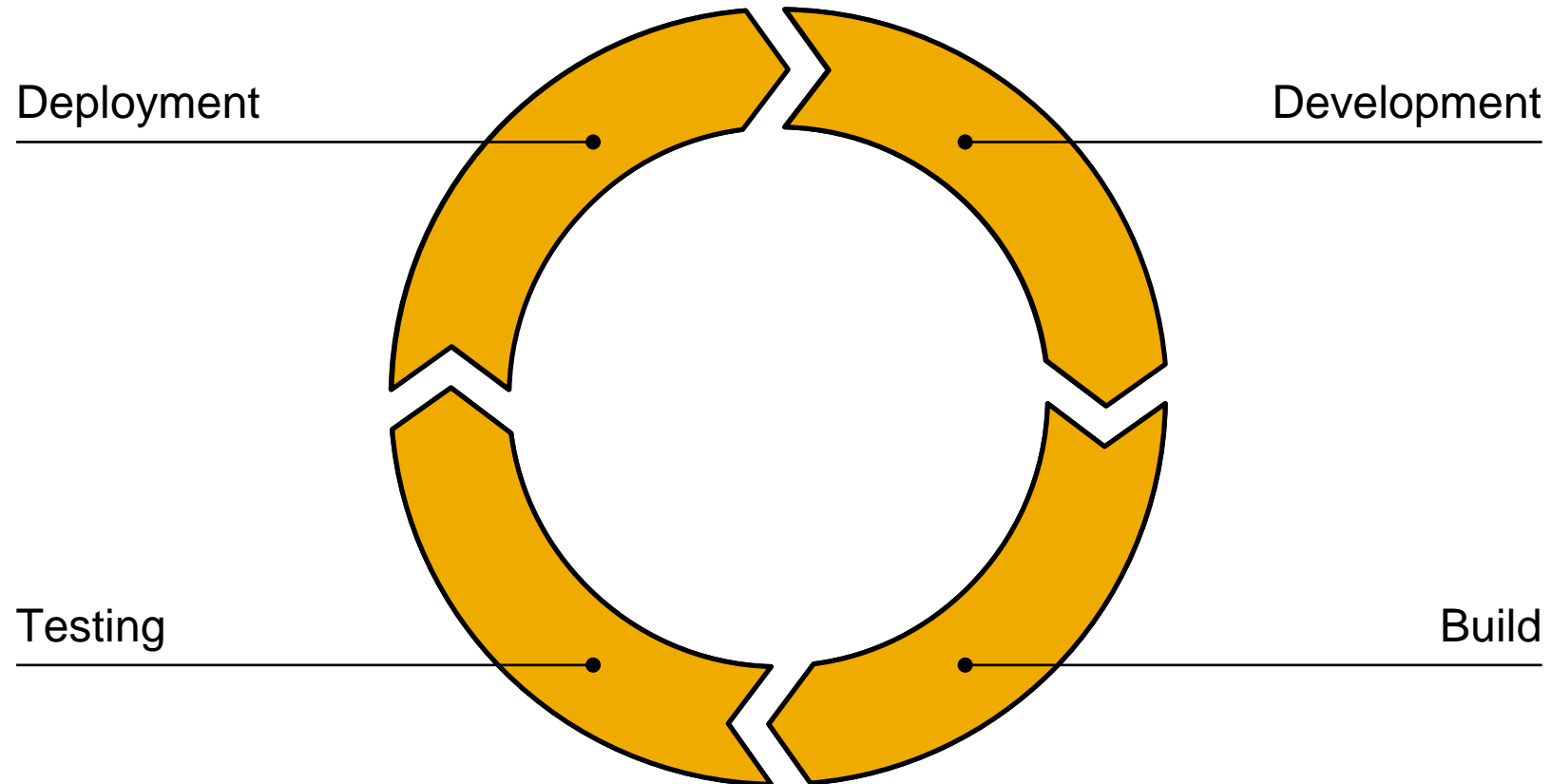
Demo

Continuous **integration** tools



What are continuous integration tools for?

Steps from Development to Deployment



What are continuous integration tools for?

Purpose

- Main Purpose: **Automate Everything!**
- Preventing integration problems (“integration hell”)
- Improve productivity

Hudson / Jenkins



Jenkins

Hudson / Jenkins

General Information

- CI tools
- Written in Java
- Hudson was created by Kohsuke Kawaguchi, Sun Microsystems / Oracle.
- Hudson is no longer maintained and was announced as obsolete in 2017.
- Jenkins is considered as a fork of Hudson

Hudson / Jenkins

Installation (for Ubuntu)

- Requirements:
 - Java JDK 8
- Adding Jenkins Debian repository
 - `wget -q -O - https://pkg.jenkins.io/debian/jenkins.io.key | sudo apt-key add -`
 - `sudo sh -c 'echo deb http://pkg.jenkins.io/debian-stable binary/ > /etc/apt/sources.list.d/jenkins.list'`
- Installing Jenkins:
 - `sudo apt update`
 - `sudo apt install jenkins`
- Check Jenkins service
 - `sudo systemctl status jenkins`

Hudson / Jenkins

Installation (for Ubuntu)

- Adjusting firewall (ufw)
 - `sudo ufw allow 8080`
 - `sudo ufw status`
- Setting up Jenkins
 - Enter Token (`sudo cat /var/lib/jenkins/secrets/initialAdminPassword`)
 - Install suggested plugins
 - Create administrative user
 - Configure Jenkins URL mapping
 - Let's get started! 😊

Hudson / Jenkins

Blue Ocean Plugin

- Plugin within Jenkins
- Considered as the next generation of Jenkins
- Improved UI with better user experience
- Contains only some features of the “old” Jenkins

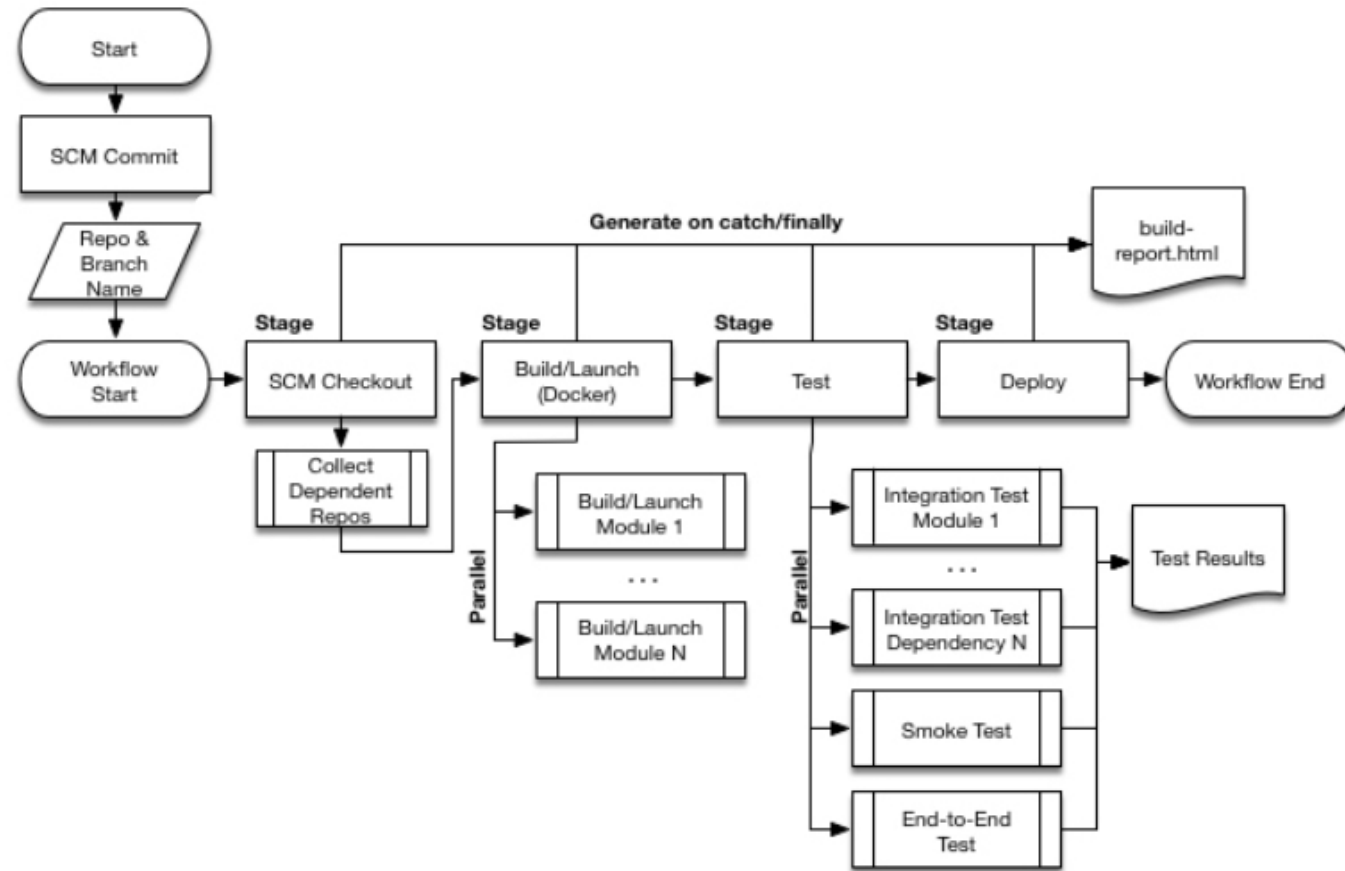
Hudson / Jenkins

Multibranch Pipelines

- “Jenkins pipeline [...] is a suite of plugins that supports implementing and integrating *continuous delivery pipelines* into Jenkins”
- Integration of version control system
- Defining own steps

Hudson / Jenkins

Multibranch Pipelines



Hudson / Jenkins

Multibranch Pipelines

- Jenkinsfile
 - JSON Format
 - Pipeline build for all branches and pull requests
 - Code review with builds
- Example:

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

Hudson / Jenkins

GitHub integration

— Branches

Overview

Yours

Active

Stale

All branches

Search branches...

Default branch

master Updated 3 days ago by raphaelmue

×

Your branches


deployment Updated 3 days ago by raphaelmue

×

All checks have failed

1 errored check

×

 continuous-integration/jenkins/branch — This commi... Details

New pull request

🗑

— Pull Requests

Hudson / Jenkins

GitHub Integration (Tutorial)

- Generate a token
 - Settings → Developer Settings → Personal Access Tokens
 - Enter a name
 - Select *repo*, *read:org*, *admin:repo_hook*, *user:read*, *user:email*
 - **Copy token!!!**
- Enter token in Jenkins

Token description

Token Name

What's this token for?

Select scopes

Scopes define the access for personal tokens. [Read more about OAuth scopes.](#)

<input checked="" type="checkbox"/> repo	Full control of private repositories
<input checked="" type="checkbox"/> repo:status	Access commit status
<input checked="" type="checkbox"/> repo_deployment	Access deployment status
<input checked="" type="checkbox"/> public_repo	Access public repositories
<input checked="" type="checkbox"/> repo:invite	Access repository invitations
<input type="checkbox"/> admin:org	Full control of orgs and teams
<input type="checkbox"/> write:org	Read and write org and team membership
<input checked="" type="checkbox"/> read:org	Read org and team membership
<input type="checkbox"/> admin:public_key	Full control of user public keys
<input type="checkbox"/> write:public_key	Write user public keys
<input type="checkbox"/> read:public_key	Read user public keys
<input checked="" type="checkbox"/> admin:repo_hook	Full control of repository hooks
<input checked="" type="checkbox"/> write:repo_hook	Write repository hooks
<input checked="" type="checkbox"/> read:repo_hook	Read repository hooks

Tokens you have generated that can be used to access the [GitHub API](#).

Make sure to copy your new personal access token now. You won't be able to see it again!

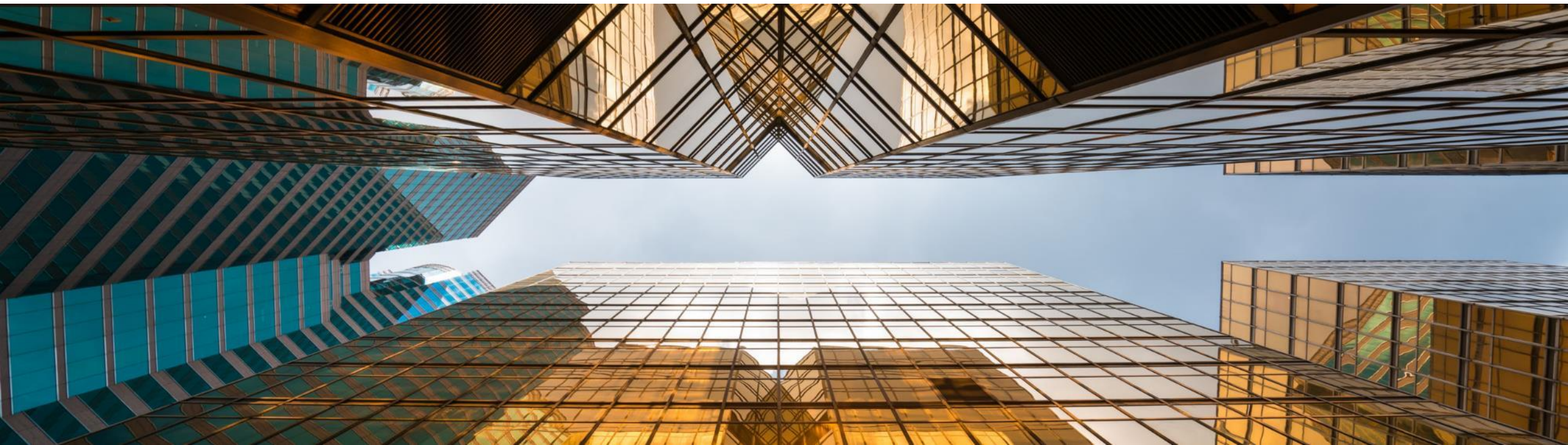


[Redacted token]



Delete

Demo



Thank you.

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