Jenkins
e-Portfolio

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THE BEST RUN **SAP**

Agenda

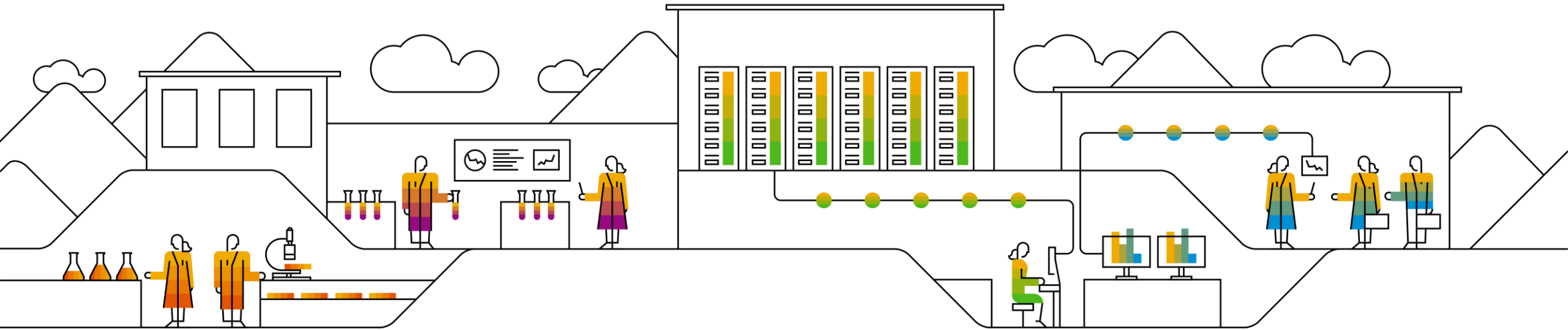## Continuous integration tools (CI)

- What are continuous integration tools for?
- Features

Hudson / Jenkins

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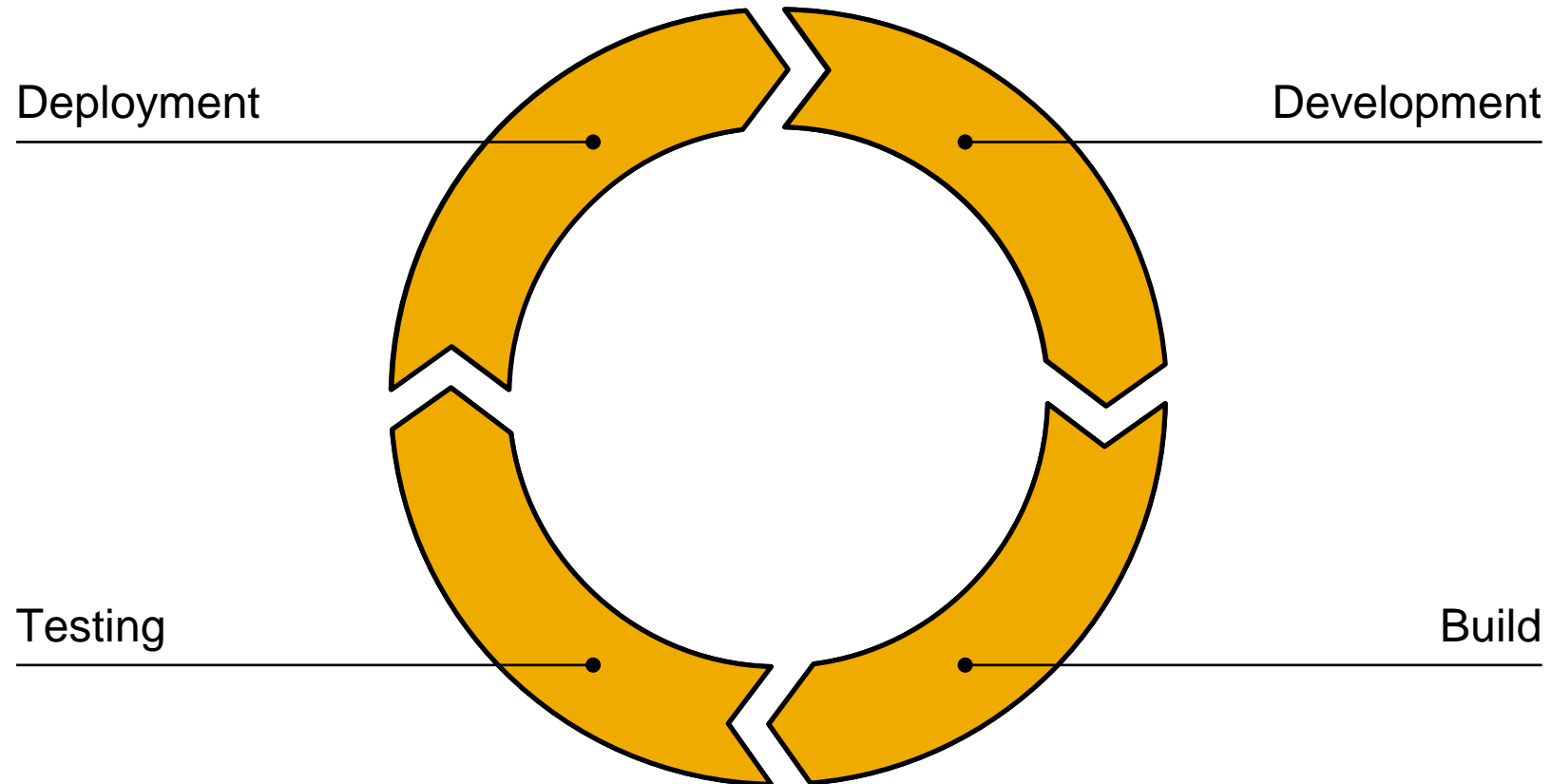- Multibranch Pipelines
- GitHub Integration

Demo

Continuous integration tools

What are continuous integration tools for?

Steps from Development to Deployment

Deployment

Development

Testing

Build

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- Hudson is no longer maintained and was announces as obsolete in 2017.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
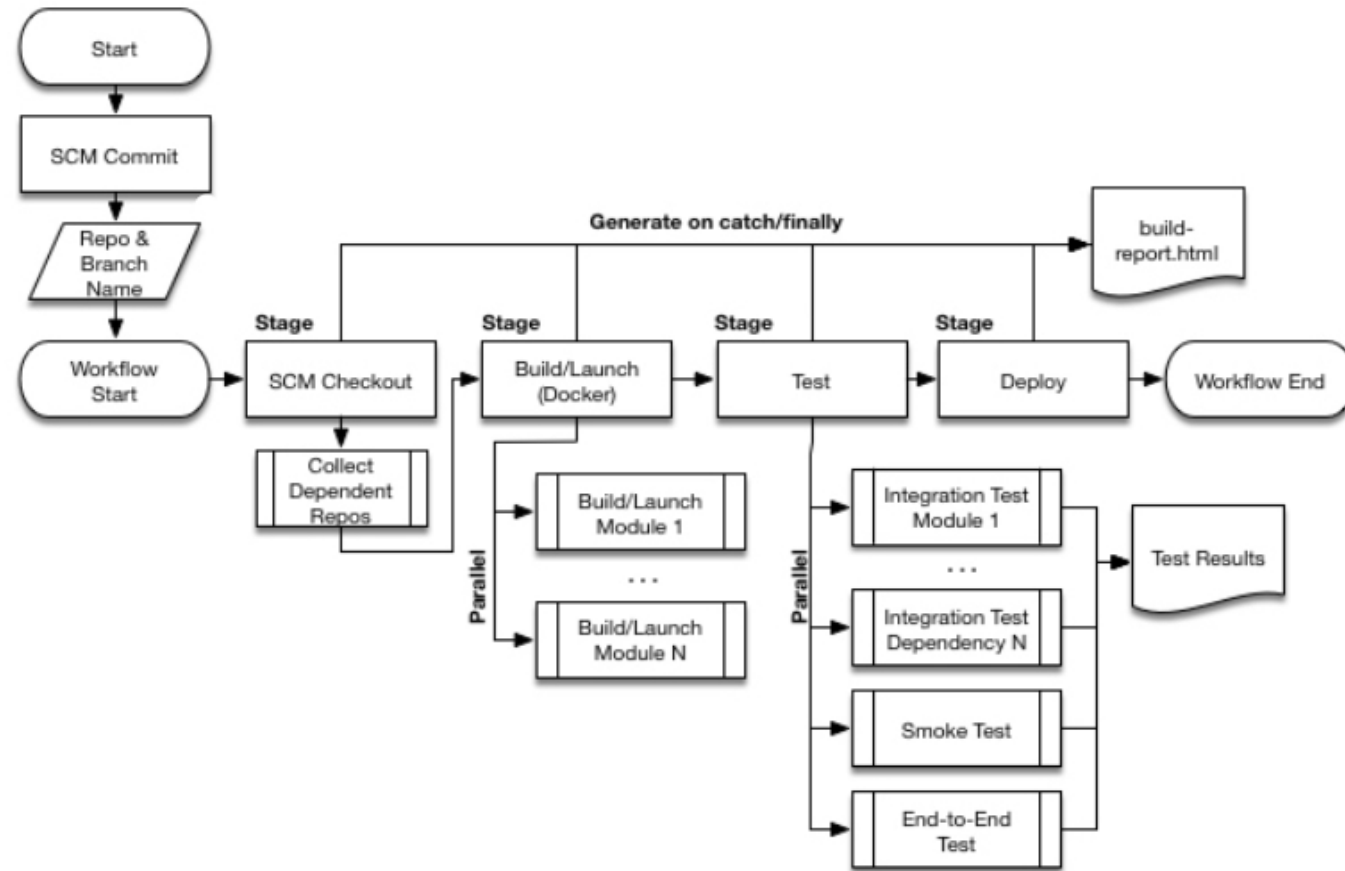
Hudson / Jenkins

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

– 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*
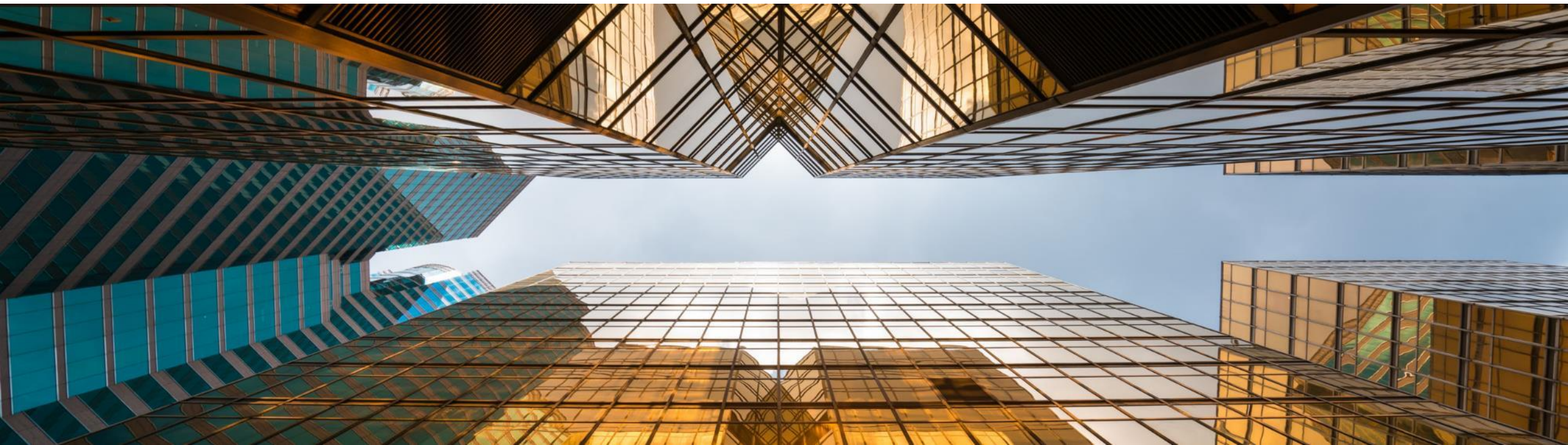
  – **Copy token!!!**

– Enter token in Jenkins

Demo

Thank you.

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