Jenkins as Code

Who am I?

Name: Ewelina Wilkosz

Work: IT Consultant @ Praqma

Previous experience: Software Developer

    @ Ericsson (6 years) in Krakow

Tools I work with: **Jenkins (as Code)**, Git, Docker

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PRAQMA

8 offices Denmark, Norway & Sweden

Consulting Continuous Delivery & DevOps

Community Conferences, meet-ups & hackathons

What is Jenkins?

- Automation server
- Written in Java
- Open Source

- Jenkins is typically run as a standalone application in its own process with the built-in Java servlet container/application server (but there are other options)

But why I am talking about Jenkins?

Well, it isn't Cloud Native, so far...

Manual steps after installation

- **Post-installation setup wizard -** When you first access a new Jenkins instance, you are asked to unlock it using an automatically-generated password

- **Customize Jenkins with plugins**

- **Create the first administrator user**

- **Configure**

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Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log (not sure where to find it?) and this file on the server:

`/var/jenkins_home/secrets/initialAdminPassword`

Please copy the password from either location and paste it below.

Administrator password

<div style="border:1px solid #ccc; padding:20px;"></div>

Continue

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Create First Admin User

Username:

Password:

Confirm password:

Full name:

E-mail address:

Create First Admin User

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New Item

People

Build History

Manage Jenkins

My Views

Build Queue ‒

No builds in the queue.

Build Executor Status ‒

🖥️ **master**

1 Idle

2 Idle

🖥️ **bar** (offline)

Manage Jenkins

⚠️ New version of Jenkins (2.89.1) is available for **download** (**changelog**).

⚠️ Allowing Jenkins CLI to work in −remoting mode is considered dangerous an Please refer to the **CLI documentation** for details.

Warnings have been published for the following currently installed componen

⛔ • **Jenkins 2.60.3 core and libraries:**
  ○ **Multiple security vulnerabilities in Jenkins 2.88 and earlier, and L**
  ○ **Multiple security vulnerabilities in Jenkins 2.83 and earlier, and L**

Configure which of these warnings are shown

⚠️ **Agent to master security subsystem is currently off. Please read the documer**

Configure System
Configure global settings and paths.

Configure Global Security
Secure Jenkins; define who is allowed to access/use the system.

Global Tool Configuration
Configure tools, their locations and automatic installers.

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Home directory	/var/jenkins_home

System Message

[Plain text] Preview

# of executors

2

Labels

Usage

Use this node as much as possible

Quiet period

5

SCM checkout retry count

0

☐ Restrict project naming

Global properties

☐ Environment variables
☐ Tool Locations

Usage Statistics

☐ Help make Jenkins better by sending anonymous usage statistics and crash reports to the Jenkins project.

Administrative monitors configuration

Jenkins Location

Jenkins URL

http://localhost:8080/

⚠ **Please set a valid host name, instead of localhost**

System Admin e-mail address

address not configured yet <nobody@nowhere>

Shell

Shell executable

E-mail Notification

SMTP server

Default user e-mail suffix

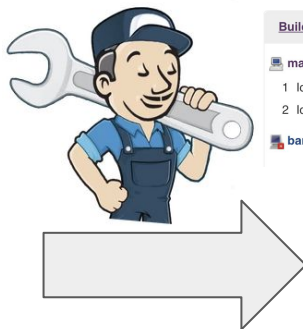Save   Apply

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Do it as Code

jenkins.yaml

```yaml
jenkins:
  securityRealm:
    ldap:
      configurations:
        - server: ldap.acme.com
          rootDN: dc=acme,dc=fr
          managerPasswordSecret:
${LDAP_PASSWORD}
          cache:
            size: 100
            ttl: 10
          userIdStrategy: CaseSensitive
          groupIdStrategy: CaseSensitive
```

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SCM checkout retry count 0
Restrict project naming
Global properties
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Shell
Shell executable
E-mail Notification
SMTP server
Default user e-mail suffix

Save   Apply

Why as code?

- Safety
- Traceability
- Speed
- Easy to use
- Easy to reuse

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How it started?

https://github.com/Praqma/JenkinsAsCodeReference - successfully used by some of our customers and Praqma itself, but it has its pains...

- You have to be all in (dockerized solution)
- Complicated and time consuming redeployment process
- **'What' mixed with 'how' -** configuration files and the scripts kept in the same place, making it difficult to pull/share improvements
- Fork it before to use it!

We want to make it better!

Where are we now?

We're making a plugin, and Cloudbees is involved

https://github.com/jenkinsci/configuration-as-code-plugin

And there are challenges:

- *Configure **ALL** jenkins initial setup (including plugins) - no manual step*

- *Support **most** (if not all) plugins without extra development effort*

- *Generate documentation and validation tools (schema)*

- *And more...*

Where do we want to be?

JEP: https://github.com/jenkinsci/jep/tree/master/jep/201

Feedback most welcome!

Jenkins Developers mailing group:

https://groups.google.com/forum/#!topic/jenkinsci-dev/6TjlxEqHUEs

https://groups.google.com/forum/#!topic/jenkinsci-dev/MuRJ-yPRRoo

Questions?