

DevOps World



Jenkins World



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Featured Speaker

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Automating Jenkins (re)installation: some thoughts, tips, and tricks



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Automating Jenkins (re)installation:

some thoughts, tips, and tricks

Presentation available at: <https://jmMeessen.github.io/slides/jw-eu-2019>

Hello !!

- Jean-Marc MEESEN:



Who are you?

What is configuration Management?





Pet versus Cattle



Automation, automation, automation!

- Frees precious time
- Repeatable
- Best emergency/repair tool
- Best way to avoid any malicious modification

In Source Control

- Visibility
- Peer review
- History
- Versioned \Rightarrow Revertable

Why should CI/CD systems be
handled as a Pet ?

Automation objectives

- Provision new CI/CD cluster (or major components)
 - efficiently
 - repeatably
 - consistant
- Update the system
 - ex: change a setting, add a plugin

Automation objectives

- Peer-review mechanism for configuration changes
 - Keeps the audit/compliance team happy
- Easily manage very large CI/CD cluster
- Properly document the system
- support CI/CD power users
 - behind the scene warranty for creativity

Configuration Management philosophies

Golden Image

- in the early days
 - a lot of work to maintain
 - messy
 - "one size fits nobody"

Configuration Scripting

- Scripts solved a lot of these problems
 - added
 - readability
 - versioning
- At first ad hoc (bash) scripting
- then Chef, Puppet, Ansible, etc.

Golden Image revisited

- Docker/Containers
 - Golden Image new momentum
 - very short start time
 - image definition description files (dockerfiles)
 - particularly adapted to the Cloud scheduler (ex K8S)

But no silver bullet

- reality lies between
 - generalization (general purpose images)
 - need for fine grained customizations to adapt to the local constrains

Jenkins configuration vectors



Direct file System manipulation

- classical way to configure a system
- copying/updating files on the file system (JENKINS_HOME)
- Typical Ansible modules.
 - copy
 - template
 - lineinfile
 - xml

File system vector: Pro

- easy/natural for tools like Ansible

File system vector: Con

- lot of reverse engineering required
- stability of these undocumented configuration is not guaranteed.
 - particularly plugins configuration

Command Line Interfaces

- two types
 - REST API
 - Jenkins CLI

REST API

- using HTTP requests to GET, PUT, POST and DELETE data.

```
curl -X POST "<jenkinsURL>/testProject/build" --user jmm:<password|token>
```

REST API - CSRF protection

- be aware of CSRF protection (should be on, isn't it?)
 - session hijacking
 - requires a token or "crumb" when using password
 - not required when using an API Token

REST API

- To learn more:
 - <https://wiki.jenkins.io/display/JENKINS/Remote+access+API>
 - <https://wiki.jenkins.io/display/JENKINS/Authenticating+scripted+clients>

Jenkins CLI

- Traditional way, via the `jenkins-cli.jar`
- To list the very functions list (dependant of installed plugin):
 - view it in "Manage Jenkins → Jenkins CLI"
 - or simply use "help" CLI command.

Jenkins CLI - Classic

```
java -jar jenkins-cli.jar -http -s $JENKINS_URL -auth $USERNAME:$API_token command ...
```

Much better:

```
java -jar jenkins-cli.jar -http -s $JENKINS_URL -auth @FILE command ...
```

Jenkins CLI - SSH

Jenkins CLI - More details

- <https://jenkins.io/doc/book/managing/cli/>

Pros & Cons

Groovy Scripts

(Jenkins) Configuration as Code

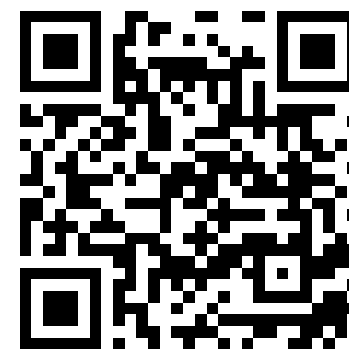
Thank You !



 @jm_meessen

 jmMeessen

Slides: <https://jmMeessen.github.io/slides/jw-eu-2019>



Source on : <https://github.com/jmMeessen/slides/tree/jw-eu-2019>