









Ines Boukhris – Guide DevOps

Guide d'utilisation et de configuration de Jenkins et Ansible

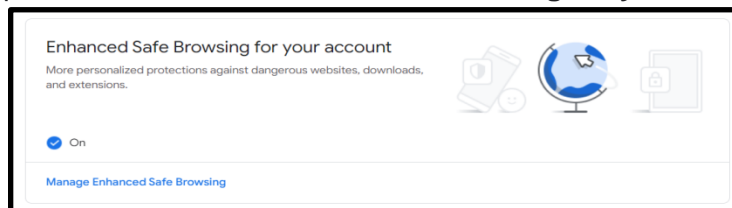
- 1) Créer un conteneur jenkins en lui associant un volume :
`docker run --name custom_jenkins -p 8080:8080 -p 50000:50000 -v /home/service/jenkins/volume/jenkins_home:/var/custom_home -v /var/run/docker.sock:/var/run/docker.sock custom_jenkins`
- 2) Lancer le serveur Jenkins à travers @IpOfHost:8080
- 3) Création des crédits:

| Credentials | | | | | | |
|---|---|---------|----------|--------------------------------------|----------------|--|
| T | P | Store ↓ | Domain | ID | Name | |
|  |  | System | (global) | 304c196d-f87d-4700-ab71-52c70baf8d9d | Git token | |
|  |  | System | (global) | 3753c5f9-7190-403b-8242-cea9d259cdcb | (Github token) | |
|  |  | System | (global) | 2bae0965-3651-4ae2-90a3-5184d4a27521 | DockerHub | |
|  |  | System | (global) | 5543266e-5175-4d09-8465-4f880c8472de | (Gmail) | |

→ Méthode pour générer Gmail token :

Allez vers : <https://myaccount.google.com/security>

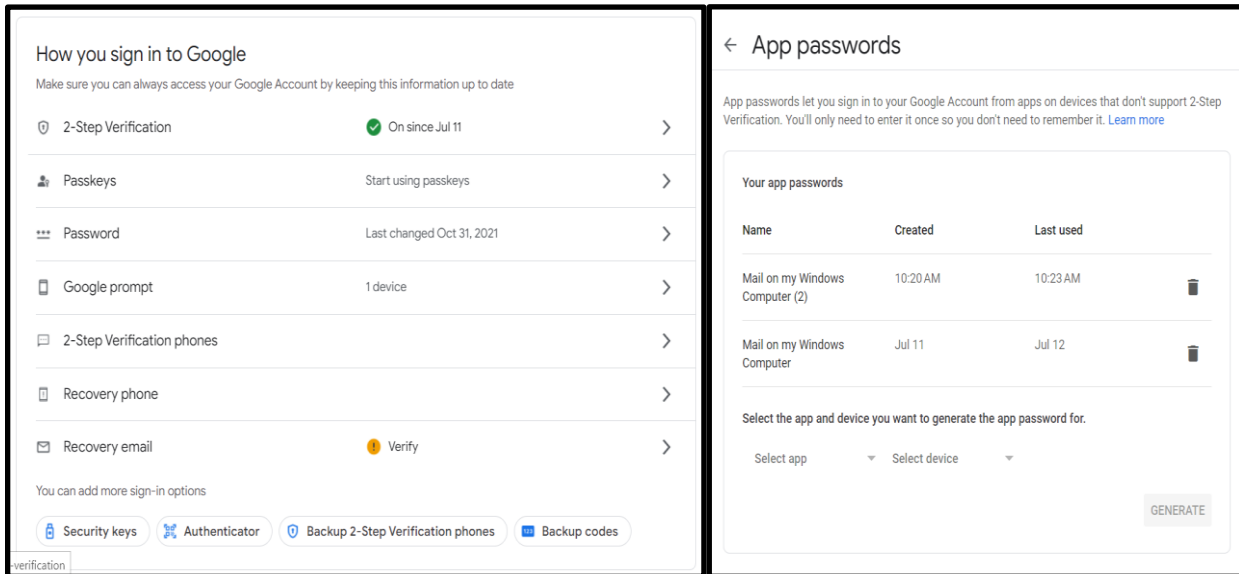
1er étape: Tourner **On Enhanced Safe Browsing for your account**



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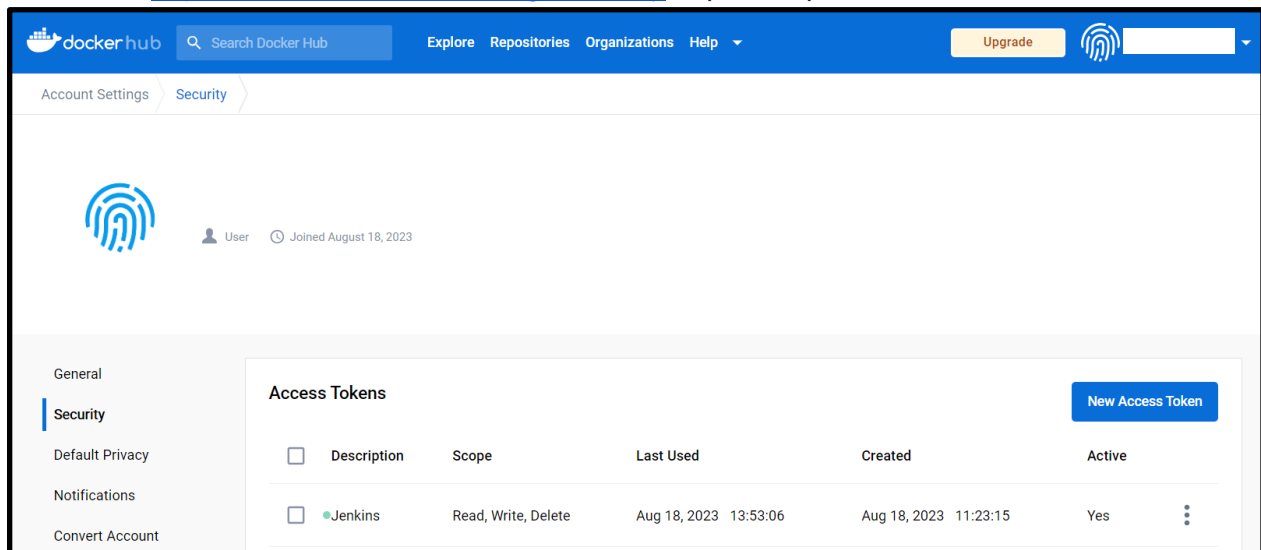
2ème étape:

Dans cette section cliquer sur 2 step-verification puis sur App password enfin Generate qui est le token souhaité.



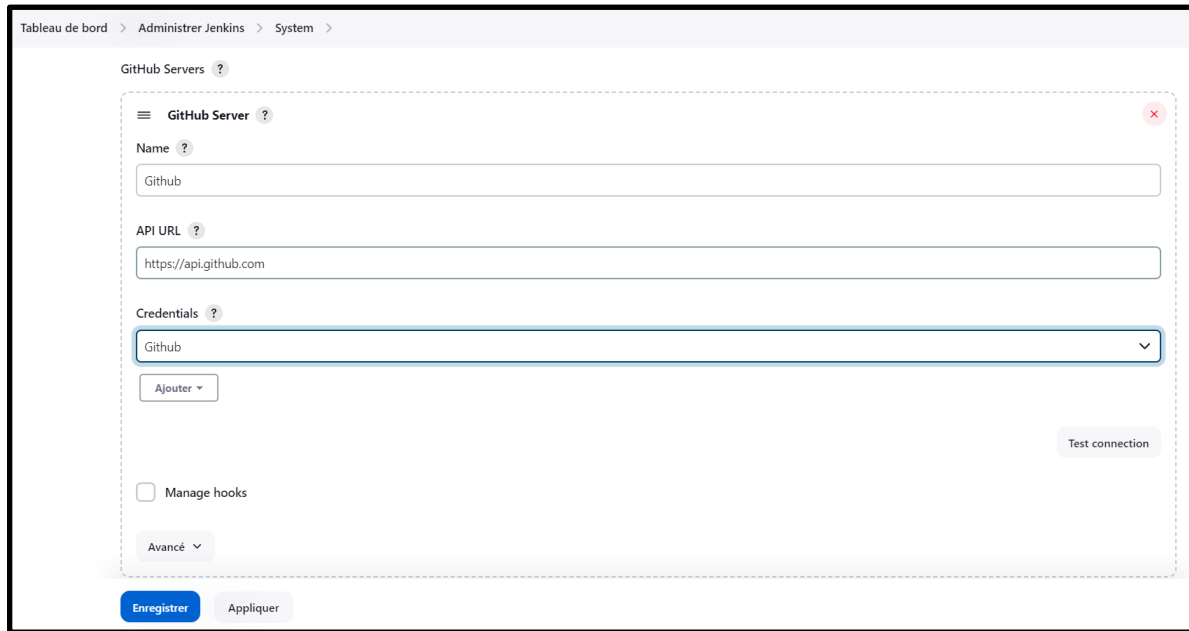
→ **Méthode pour générer Docker Hub Token :**

Allez vers: <https://hub.docker.com/settings/security> et puis cliquer sur **New Access Token**



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4) Configuration du Github:



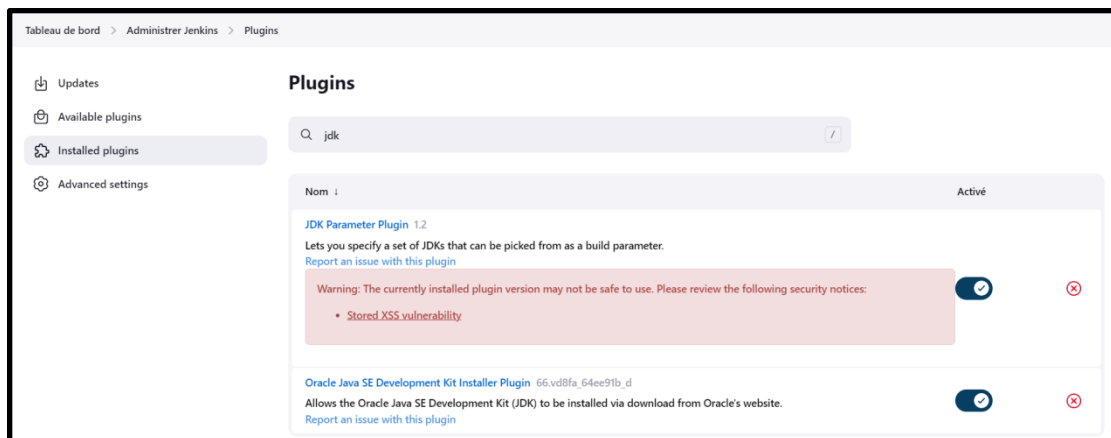
The screenshot shows the 'GitHub Servers' configuration page in Jenkins. The breadcrumb trail is 'Tableau de bord > Administrer Jenkins > System > GitHub Servers'. A dashed box highlights the configuration for a new 'GitHub Server'. Inside this box, there is a 'Name' field with 'Github' entered, an 'API URL' field with 'https://api.github.com' entered, and a 'Credentials' dropdown menu with 'Github' selected. Below these fields is an 'Ajouter' button. To the right of the dashed box is a 'Test connection' button. Below the dashed box, there is a 'Manage hooks' checkbox (unchecked) and an 'Avancé' dropdown menu. At the bottom of the page are two buttons: 'Enregistrer' (highlighted in blue) and 'Appliquer'.

5) Configuration Maven et JDK:

Tout d'abord, il faut installer les plugins nécessaires:



The screenshot shows the 'Plugins' page in Jenkins. The breadcrumb trail is 'Tableau de bord > Administrer Jenkins > Plugins'. On the left sidebar, there are links for 'Updates', 'Available plugins', 'Installed plugins' (highlighted), and 'Advanced settings'. The main area has a search bar with 'maven' entered. Below the search bar, a table lists installed plugins. The first entry is 'Maven Integration plugin 3.2.2', which is active (toggle switch is on). The description for this plugin states: 'This plugin provides a deep integration between Jenkins and Maven. It adds support for automatic triggers between projects depending on SNAPSHOTS as well as the automated configuration of various Jenkins publishers such as Junit.' There is a link to 'Report an issue with this plugin'.



The screenshot shows the 'Plugins' page in Jenkins, continuing from the previous one. The search bar now has 'jdk' entered. The table lists two more plugins. The first is 'JDK Parameter Plugin 1.2', which is active. Its description says: 'Lets you specify a set of JDKs that can be picked from as a build parameter.' There is a warning box below it: 'Warning: The currently installed plugin version may not be safe to use. Please review the following security notices: • Stored XSS vulnerability'. The second entry is 'Oracle Java SE Development Kit Installer Plugin 66.vd8fa_64ee91b_d', which is also active. Its description says: 'Allows the Oracle Java SE Development Kit (JDK) to be installed via download from Oracle's website.' Both plugins have links to 'Report an issue with this plugin'.

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Configuration des outils:

Tableau de bord > Administrer Jenkins > Tools

Installations JDK

Installations JDK ^ Edited

Ajouter JDK

JDK

Nom

Jdk

☒ Install automatically ?

Install Oracle Java SE Development Kit from the website ?

Version

Java SE Development Kit 8

☒ J'approuve l'accord de licence Java SE Development Kit

⚠ Oracle Java SE 11+ is not available for business, commercial or production use without a commercial license.

Public updates for Oracle Java SE 8 released after January 2019 will not be available for business, commercial or production use without a commercial license.

[Oracle Java SE Licensing FAQ](#)

Enregistrer Appliquer

Installations Maven

Installations Maven ^ Edited

Ajouter Maven

Maven

Nom

Maven_var

☒ Install automatically ?

Install from Apache

Version

3.9.3

Ajouter un installateur ▾

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6) Configuration du serveur SMTP:

Tableau de bord > Administrer Jenkins > System >

Extended E-mail Notification

SMTP server

smtp.gmail.com

SMTP Port

25

Avancé ^ Edited

Credentials

@gmail.com/***** (Gmail)

Ajouter ▾

☒ Use SSL

☐ Use TLS

☐ Use OAuth 2.0

Tableau de bord > Administrer Jenkins > System >

Advanced Email Properties

Default user e-mail suffix ?

@gmail.com

Avancé ▾ Edited

Default Content Type ?

Plain Text (text/plain)

List ID ?

☐ Add 'Precedence: bulk' E-mail Header ?

Tableau de bord > Administrer Jenkins > System >

Default Recipients ?

inesboukhris20@gmail.com

Reply To List ?

Emergency reroute ?

Allowed Domains ?

Excluded Recipients ?

Default Subject ?

\$PROJECT_NAME - Build # \$BUILD_NUMBER - \$BUILD_STATUS!

Maximum Attachment Size ?

Tableau de bord > Administrer Jenkins > System >

Notification par email

Serveur SMTP

smtp.gmail.com

Suffixe par défaut des emails des utilisateurs ?

@gmail.com

Avancé ^ Edited

☒ Use SMTP Authentication ?

Nom d'utilisateur

@gmail.com

Mot de passe

Concealed

☒ Utiliser SSL ?

☐ Use TLS

Enregistrer Appliquer

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7) Installation des plugins nécessaires pour Docker:

Docker Pipeline 563.vd5d2e5c4007f

Build and use Docker containers from pipelines.
[Report an issue with this plugin](#)

This plugin is up for adoption! We are looking for new maintainers. Visit our [Adopt a Plugin](#) initiative for more information.

Docker plugin 1.4

This plugin integrates Jenkins with [Docker](#)
[Report an issue with this plugin](#)

This plugin is up for adoption! We are looking for new maintainers. Visit our [Adopt a Plugin](#) initiative for more information.

docker-build-step 2.9

This plugin allows to add various docker commands to your job as build steps.
[Report an issue with this plugin](#)

8) Installation du plugin 'publish over ssh' et 'ssh server':

SSH Server

Name ?

ansible_server

Hostname ?

@IP of Host

Username ?

Username of host

Remote Directory ?

☐ Avoid sending files that have not changed ?

Avancé ▾

✎ Edited

Success

Test Configuration

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9) Installation du Ansible sur la machine:

```
afriservice@afriservice:~$ ansible --version
ansible [core 2.12.10]
  config file = /home/afriservice/ansible.cfg
  configured module search path = ['/home/afriservice/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python3/dist-packages/ansible
  ansible collection location = /home/afriservice/.ansible/collections:/usr/share/ansible/collections
  executable location = /usr/bin/ansible
  python version = 3.8.10 (default, May 26 2023, 14:05:08) [GCC 9.4.0]
  jinja version = 2.10.1
  libyaml = True
```

10) Configurer l'adresse IP de la machine dans le fichier spécifique /etc/ansible/hosts:

```
[ansible]
192.168.1.2
```

11) Donner des privilèges root pour l'utilisateur afriservice dans le fichier /etc/sudoers:

```
GNU nano 4.8                                sudoers
#
# This file MUST be edited with the 'visudo' command as root.
#
# Please consider adding local content in /etc/sudoers.d/ instead of
# directly modifying this file.
#
# See the man page for details on how to write a sudoers file.
#
Defaults                env_reset
Defaults                mail_badpass
Defaults                secure_path="/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/snap/bin"

# Host alias specification

# User alias specification

# Cmnd alias specification

# User privilege specification
root    ALL=(ALL:ALL) ALL

# Members of the admin group may gain root privileges
%admin   ALL=(ALL) ALL

# Allow members of group sudo to execute any command
%sudo   ALL=(ALL:ALL) ALL

# See sudoers(5) for more information on "#include" directives:
afriservice ALL=(ALL) NOPASSWD: ALL
#include_dir /etc/sudoers.d
```

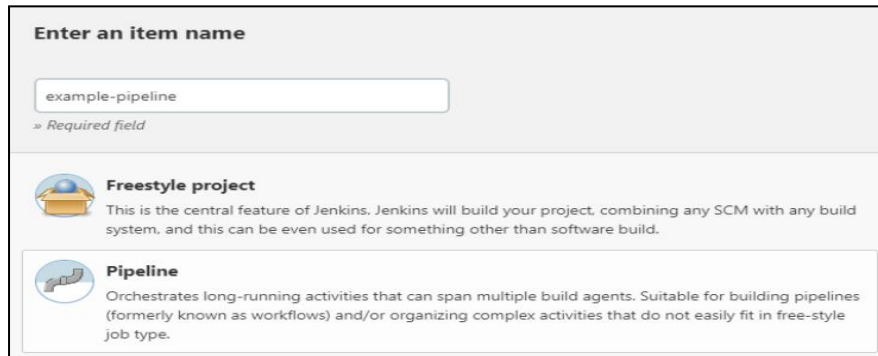
12) Se connecter à Docker Hub à partir de la machine :

```
afriservice@afriservice:~$ docker login --username=africomservices
Password:
WARNING! Your password will be stored unencrypted in /home/afriservice/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
afriservice@afriservice:~$
```

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13) Création d'un pipeline sous Jenkins



Enter an item name

example-pipeline

» Required field

Freestyle project
This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.

Pipeline
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

14) Création d'un Pipeline script et Ajout du contenu du Jenkinsfile dans le script



Pipeline

Definition

Pipeline script

Script ?

```
1 pipeline
2 {
3 .....
4 }
```

☒ Use Groovy Sandbox ?

15) Création d'un ansible playbook dans la machine virtuelle

16) Lancer le pipeline jenkins